

January 24, 2018

Mr. Allen Hoshik Yoo
Sr. Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Updated Health Risk Assessment (HRA)

Facility: GS II, Inc.
1431 W E Street
Wilmington, CA 90744
ID No. 57094/New ID 183567

Dear Mr. Yoo,

Please find enclosed the updated Health Risk Assessment (HRA) for the above referenced facility to reflect the base year 2012 mission inventory. A total of three (3) hard copies and three (3) electronic copies is included in this Report.

If you have any questions or comments, please do not hesitate to call me at 310-9528800 Ext. 8802 or Ms. Pragya Sharma at (949) 567-9880 x105.

Sincerely,

GS II, INC.



Jay Griffith
Plant Manager

cc: Mr. Bill Woyshner, Western Regional EHS Manager Saint-Gobain Corporation
Mr. Carlos Davis, Air Permit Manager, Saint-Gobain North America

Enclosed: Three (3) hard copies, one (1) electronic copy in CD-ROM



AB 2588 HEALTH RISK ASSESSMENT
GS II, Inc./CertainTeed > Wilmington, CA



Prepared By:

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January 2018

Project 160501.210



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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1-1
1.1. Health Risk Modeling	1-2
1.2. Summary of Results	1-3
1.2.1. Potential Carcinogenic Risks	1-3
1.2.2. Chronic Noncarcinogenic Health Hazards	1-3
1.2.3. Acute Noncarcinogenic Health Hazards	1-4
2. INTRODUCTION	2-1
2.1. Facility Identification	2-1
2.2. Applicable Regulations	2-1
2.3. Background	2-2
2.4. Report Format	2-2
3. HAZARD IDENTIFICATION	3-1
3.1. Facility Description	3-1
3.2. Process Description	3-1
3.2.1. Asphalt Coating & Granule Processing	3-1
3.2.2. Cooling of Coated Fiberglass Sheet	3-2
3.2.3. Coating, Windseal & Laminant Asphalt Delivery & Storage	3-2
3.2.4. Windseal & Laminant Asphalt Application	3-2
3.2.5. Oil Heating System	3-3
3.3. Emissions Inventory	3-3
3.4. Chemicals Of Interest	3-3
4. EXPOSURE ASSESSMENT	4-1
4.1. Air Dispersion Modeling	4-1
4.1.1. Model Options	4-1
4.1.2. Source Parameters	4-2
4.1.3. Receptors	4-2
4.1.4. Building Downwash	4-3
4.1.5. Meteorological and Elevation Data	4-3
4.2. Assessment of Chemical Exposure	4-4
4.2.1. Exposure Pathways	4-4
4.2.2. Carcinogenic Health Impacts	4-4
4.2.3. Noncarcinogenic Health Impacts	4-5
5. RISK CHARACTERIZATION	5-1
5.1. Zone of Impact	5-1
5.2. Carcinogenic Health Effects	5-1
5.2.1. Point of Maximum Impact (PMI)	5-1
5.2.2. Maximum Exposed Individual Resident (MEIR)	5-1
5.2.3. Maximum Exposed Individual Worker (MEIW)	5-1
5.2.4. Sensitive Receptors	5-2
5.2.5. Population Cancer Burden	5-2
5.3. Noncancer Chronic Health Effects	5-2
5.3.1. Point of Maximum Impact (PMI)	5-2
5.3.2. Maximum Exposed Individual Resident (MEIR)	5-2

5.3.3. <i>Maximum Exposed Individual Worker (MEIW)</i>	5-3
5.3.4. <i>Sensitive Receptors</i>	5-3
5.4. Noncancer Acute Health Effects	5-3
5.4.1. <i>Point of Maximum Impact (PMI)</i>	5-3
5.4.2. <i>Maximum Exposed Individual Resident (MEIR)</i>	5-3
5.4.3. <i>Maximum Exposed Individual Worker (MEIW)</i>	5-3
5.4.4. <i>Sensitive Receptors</i>	5-4

6. REFERENCES	6-1
APPENDIX A: NOTICE TO PREPARE HEALTH RISK ASSESSMENT	A-1
APPENDIX B: ATIR SUMMARY TABLE	B-1
APPENDIX C: COPY OF SCAQMD OPERATING PERMIT	C-1
APPENDIX D: RESIDENTIAL CANCER, CHRONIC AND ACUTE RISK BY RECEPTOR	D-1
APPENDIX E: WORKER CANCER, CHRONIC AND ACUTE RISK BY RECEPTOR	E-1
APPENDIX F: COMPACT DISC/THUMB DRIVE	F-1

LIST OF TABLES

Table ES-1.	Health Risk Assessment Summary Form
Table 1.	Summary of Health Risk Results
Table 2.	Emission Rate By Substance and Source
Table 3a.	Toxicity Data By Substance – Exposure Pathways
Table 3b.	Toxicity Data By Substance – Target Organs
Table 4.	Emission Source Parameters
Table 5.	Cancer Burden
Table 6a.	Building Dimensions
Table 6b.	Sensitive Receptors
Table 6c.	Census Tract Receptors
Table 7a.	PMI Cancer Risk By Substance and Exposure Pathway
Table 7b.	PMI Cancer Risk By Source and Exposure Pathway
Table 8a.	MEIR Cancer Risk By Substance and Exposure Pathway
Table 8b.	MEIR Cancer Risk By Source and Exposure Pathway
Table 9a.	MEIW Cancer Risk By Substance and Exposure Pathway
Table 9b.	MEIW Cancer Risk By Source and Exposure Pathway
Table 10a.	PMI Chronic Hazard By Substance
Table 10b.	PMI Chronic Hazard By Source
Table 11a.	MEIR Chronic Hazard By Substance
Table 11b.	MEIR Chronic Hazard By Source
Table 12a.	MEIW Chronic Hazard By Substance
Table 12b.	MEIW Chronic Hazard By Source
Table 13a.	PMI Acute Hazard By Substance

Table 13b.	PMI Acute Hazard By Source
Table 14a.	MEIR Acute Hazard By Substance
Table 14b.	MEIR Acute Hazard By Source
Table 15a.	MEIW Acute Hazard By Substance
Table 15b.	MEIW Acute Hazard By Source

LIST OF FIGURES

Figure 1.	Location Map
Figure 2.	Vicinity Map
Figure 3a.	Site Plot Plan
Figure 3b.	Model Plan
Figure 4.	Emission Sources
Figure 5a.	Zoning Map
Figure 5b.	Surrounding Land Use
Figure 6.	Cancer Risk Isopleths & PMI, MEIR and MEIW - Residential
Figure 7.	Chronic Hazard Isopleths & PMI, MEIR and MEIW - Residential
Figure 8.	8 Hr Chronic Hazard Isopleths - Residential
Figure 9.	Cancer Risk Isopleths – Worker
Figure 10.	8 Hr Chronic Hazard Isopleths - Worker
Figure 11.	Acute Hazards Isopleths and PMI, MEIR and MEIW
Figure 12.	Census Tract Map - ZOI
Figure 13.	Census Tract Map

LIST OF APPENDICES

Appendix A - SCAQMD's Notice to prepare an updated HRA
Appendix B - ATIR Summary Table and Form A
Appendix C - Copy of the facility permit
Appendix D - Residential, Cancer, Chronic, Acute Risk by Receptor
Appendix E – Worker, Cancer, Chronic, Acute Risk by Receptor
Appendix F - Compact disk (CD)

LIST OF ABBREVIATIONS / ACRONYMS

AB2588	Air Toxics "Hot Spots" Information and Assessment Act
AERMOD	American Meteorological Society Regulatory Model
AMS	American Meteorological Society
AER	Annual Emissions Report
BPIPPRIME	Building Profile Input Program PRIME
CARB	California Air Resources Board
CAS	Chemical Abstract System
CPF	Cancer Potency Factors
DTSC	Department of Toxic Substances Control
GIS	Geographic Information System
HARP	Hot Spots Analysis and Reporting Program

HI	Hazard Index
HIA	Acute Hazard Index
HIC	Chronic Hazard Index
HRA	Health Risk Assessment
NED	National Elevation Datasets
MEIR	Maximally Exposed Individual Resident
MEIW	Maximally Exposed Individual Worker
MICR	Maximum Individual Cancer Risk
OEHHA	Office of Environmental Health Hazard Assessment
PM	Particulate Matter
PMI	Point of Maximum Impact
REL	Reference Exposure Level
RfD	Reference Dose
SCAQMD	South Coast Air Quality Management District
TAC	Toxic Air Contaminants
URF	Unit Risk Factor
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
ZOI	Zone of Impact

LIST OF KEY DEFINITIONS

- **Acute Health Impacts** - An effect caused by initial exposure of a hazardous chemical on the body. The effects are generally severe, but are often reversible after exposure stops.
- **Cancer burden** - Cancer burden is the estimated number of theoretical cancer cases in a defined population resulting from lifetime exposure to pollutants emitted from a facility.
- **Chronic Health Impacts** - An effect caused by prolonged or repeated exposures over time. Symptoms may not be apparent immediately but develop over time and are often irreversible.
- **Cancer Health Impacts** - An exposure to a carcinogenic substance that causes an increase in the likelihood for cancer in the exposed individual.
- **Dose-Response Assessment** - The process of characterizing the relationship between the exposure to an agent and the incidence of an adverse health effect in exposed populations.
- **Multipathway Substances** - A substance or chemical that once airborne from an emission source can, under environmental conditions, be taken into a human receptor by inhalation and by other non-inhalation exposure routes, such as deposition on skin or ingestion of soil contaminated by the emission.

1. EXECUTIVE SUMMARY

GS II, Inc. (CertainTeed) owns and operates an asphalt roofing products plant at 1431 West E Street, Wilmington, CA, 90744. Air emissions from the facility are regulated under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD has assigned a Facility ID No. 57094 (New ID 183567) to this facility.

In 2007, SCAQMD required an updated Health Risk Assessment (HRA) pursuant to California Air Toxics “Hot Spots” Act (AB2588) based on emissions in fiscal year 2003-2004. CertainTeed submitted an updated HRA as required within 150 days of receiving the letter from SCAQMD in 2008. The 2008 HRA has been under review by SCAQMD and has not been either approved or disapproved since the submittal. Since that time, CertainTeed has routinely filed its SCAQMD Annual Emissions Reports (AER) providing estimates of facility emissions. Due to the recent changes in the health risk assessment guidelines by Office of Environmental Health Hazard Assessment (OEHHA), release of the latest version of California Air Resources Board (ARB)’s Hot Spot Analysis Program (HARP) risk assessment tool and amendment to SCAQMD Rule 1402, SCAQMD has requested CertainTeed to submit an HRA based on Calendar Year (CY) 2012 emissions.¹ Additionally, in March 2017, CertainTeed submitted the detailed Air Toxic Inventory Report (ATIR) as a response to SCAQMD’s notice dated October 28, 2016.² The ATIR was prepared in ARB’s HARP 2.0.

TACs are identified using SCAQMD Supplemental Guidelines for preparing HRA for the AB2588 Act (SCAQMD Supplemental Guidelines).³ Toxics emitted from the facility are summarized in the ATIR summary Table and is provided in the Appendix B. This report provides a comprehensive risk assessment meeting the AB2588 requirements and includes a dispersion analysis of hazardous substances into the environment, the potential for human exposure, and a quantitative assessment of both individual and population-wide cancer and non-cancer (acute and chronic) risks associated with those levels of exposure. This report includes the following appendices.

- Appendix A - SCAQMD’s Notice to prepare an updated HRA
- Appendix B - ATIR Summary Table and Form A
- Appendix C - Copy of the facility permit
- Appendix D - Residential, Cancer, Chronic, Acute Risk by Receptor
- Appendix E - Worker, Cancer, Chronic, Acute Risk by Receptor
- Appendix F - Compact disk (CD)

In response to SCAQMD’s November 1, 2017 notice regarding preparation of an updated HRA, CertainTeed is submitting this report containing a comprehensive HRA reflecting current operations and emission levels using the 2012 ATIR data. Trinity Consultants, on behalf of CertainTeed, is submitting this updated HRA to fulfill the requirements of SCAQMD request letter dated November 1, 2017. Please note that GS does not have and does

¹ A notice sent South Coast Air Quality Management District to update the existing HRA was sent to Mario A. Sanchez, GS, on November 1, 2017.

² A notice sent by South Coast Air Quality Management District submit a detailed Air Toxic Inventory Report was sent to Mario Sanchez, GS, in October 28, 2016.

³ South Coast Air Quality Management District, “*Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics “Hot Spots “Information and Assessment Act (AB2588)”* November 4, 2016, <http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-supplemental-guidelines.pdf?sfvrsn=9>

not anticipate having any diesel fired sources onsite and therefore no diesel combustion activity was included in the current HRA.

As required, this updated HRA reflects current facility operations (and air pollution controls) for all regulated AB 2588 toxic air contaminants (TACs) listed on OEHHA Appendix A-I. Note that CertainTeed is expecting some equipment changes in 2017. Per OEHHA and SCAQMD guidelines, this updated HRA provides a comprehensive risk assessment meeting AB2588 requirements and includes a dispersion analysis of released TACs into the environment, the potential for human exposure, and a quantitative assessment of both individual and population-wide cancer and non-cancer health risks associated with those levels of exposure. The facility information is summarized in Table 1-1 below.

Table 1-1 Facility Information

Facility Name	GS II, Inc./ CertainTeed
Address	1431 West E St. Wilmington, CA 90744
SIC	2952
County	Los Angeles
Air Basin	South Coast
Air District	South Coast AQMD (SCAQMD)
Contact Person	Bill Woysner
Contact Phone Number	(714) 238-2329

CertainTeed operates a close to 10 acres industrial plant located alongside of the Highway 110 in Wilmington, California (refer to Figure 1 – Location Map). In general, the local topography around the plant is flat terrain within an urban environmental setting. As shown by Figure 2 – Vicinity Map, CertainTeed’s facility boundary is located on 1431th West E Street. A site plot of the facility including, facility boundary, building heights and emission sources are identified on Figure 3 and 4. Industrial/commercial land uses and sources are primarily located south and east of the facility. As shown on Figure 5a and 5b, per Los Angeles County Department of Regional Planning, the immediate areas surrounding the facility’s west and south boundary is heavy industrial. East boundary is surrounded by commercial and followed by residential zones. North boundary is primarily surrounded by residential zones.

1.1. HEALTH RISK MODELING

The HRA analysis included in this report is prepared according to OEHHA developed *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* (OEHHA HRA Guidance Manual)⁴ and SCAQMD Supplemental Guidelines. HARP, a software tool that assists with the programmatic requirements of AB 2588, is utilized in conducting this HRA. This HRA analysis uses HARP Version 2.0 (the most recent version

⁴ Office of Environmental Health Hazard Assessment (OEHHA), *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015, California Environmental Protection Agency.

based on air dispersion modeling output from U.S. EPA's AERMOD software) to perform the dispersion modeling and exposure/risk assessment.

The results obtained from HARP provide the necessary information to generate the zones of impact, and identify the potentially exposed populations. In addition, potential health effects were evaluated for the maximum exposed individual resident (MEIR) and the maximum exposed individual worker (MEIW) for both noncancer and carcinogenic health impacts. Data projections were based on WGS 1984 Datum.

In this HRA, there were nine (9) AB 2588 chemicals that were modeled based on the facility's reported emissions and submitted to SCAMQD on March 23, 2017. These chemicals are emitted from manufacturing of asphalt roofing shingles (copies of facility permits provided in Appendix C). The manufacturing process involves coating of a fiberglass roofing mat with variety of asphalt blends and subsequent surfacing with mineral materials. The primary exposure pathways for affected populations is inhalation for all receptors. Table 3a identifies other exposure pathways modeled for residential receptors, which are home grown produce, dermal absorption, soil ingestion and mother's milk. For worker receptors, non-inhalation exposure pathways included dermal absorption and soil ingestion. For those receptors that are impacted by noncancer health hazards, these chemicals may potentially affect certain human target organs, including, respiratory system, reproductive system, developmental and others, as identified in Table 3b.

1.2. SUMMARY OF RESULTS

1.2.1. Potential Carcinogenic Risks

Table 1 summarizes the results of this HRA for cancer risk. The PMI (Receptor #5275, UTM E 381461 N 3737772) for carcinogenic health effects is located on the facility fence line (southeast side of property) with a predicted excess cancer risk of 2.09×10^{-05} . The MEIR (Receptor #1517, UTM E 381625 N 3737732) for carcinogenic health risk is located towards the southeast of the facility in the residential land use with a predicted excess cancer risk of 6.84×10^{-06} . The MEIW (Receptor #5304, UTM E 381313 N 3737742) carcinogenic health effects is located on the southwest side of the facility boundary with an estimated excess cancer risk of 5.46×10^{-06} . Figure 6 through Figure 11, identifies the location of the PMI, MEIR and MEIW for cancer and noncancer risks. Predicted off-site concentrations decrease rapidly with distance from the facility. For the MEIW and MEIR, emissions of benzene and formaldehyde makes up for more than 75% of the contribution to excess cancer risk. Cancer risk isopleths for residential and worker are shown on Figures 6 and 9, respectively.

Both the MEIR and MEIW value is below the level (1×10^{-5} or ten-in-one million), at which the SCAQMD requires the distribution of public notices pursuant Rule 1402. However, the area of isopleth exceeding 1 HI encompasses a small portion of next door refinery located at the west boundary of the facility (see Figure 11). Census tracts were included in the zone of impact (ZOI), e.g., boundary in which the lifetime cancer risk is greater than 1×10^{-6} . Census maps are shown on Figures 12 and 13. In areas where carcinogenic risk is above 1 in 1 million, cancer burden for affected populations was estimated to be 0.04. All the sensitive receptors were modeled, however these locations were located outside of the cancer ZOI.

1.2.2. Chronic Noncarcinogenic Health Hazards

Table 1 summarizes the results of this HRA for chronic noncancer health hazards. The location for PMI (Receptor #5275, UTM E 381461 N 3737772) for chronic noncancer health effects, coincides with the MEIR cancer risk receptor, and is located on the facility fence line (southeast side of property) with a predicted excess chronic hazard of 2.34×10^{-01} . The location for MEIR (Receptor #1517, UTM E 381625 N 3737732) for chronic noncancer health effects, also coincides with the MEIR cancer risk receptor, and is located towards the southeast of the facility in the residential land use with a predicted excess chronic hazard of 7.22×10^{-02} . The MEIW (Receptor #5304, UTM E 381313 N 3737742) chronic noncancer health effects is located on the southwest side of the facility boundary with a predicted excess chronic risk of 1.83×10^{-01} . Figure 7 identifies the location of the

PMI, MEIW and MEIR. Predicted off-site concentrations decrease rapidly with distance from the facility. For the MEIW and MEIR, hydrogen sulfide and acrolein makes up 80%+ of the total contribution to the hazard index for target organs. Chronic risk isopleths for residential and worker are shown on Figures 7, 8 and 10, respectively.

The values for the MEIW and MEIR do not exceed the level (1.0) for which the SCAQMD requires individuals in the area to be notified. With respect to the MEIW, the land is zoned for commercial/industrial use and is currently occupied. The MEIR land area is zoned for residential followed by commercial use and is also currently occupied. The HIC for MEIW and MEIR are both below 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). No sensitive receptors exist in the zone of impact for chronic noncancer risks.

1.2.3. Acute Noncarcinogenic Health Hazards

Table 1 summarizes the results of this HRA for acute noncancer health hazards. The PMI (Receptor #5303, UTM UTM E 381311 N 3737762) for acute noncancer health effects is located on the west side of the facility boundary with a predicted excess acute hazard risk of 1.84. The MEIR (Receptor #1777, UTM E 381374 N 3737982) for acute noncancer health effects is located north of the facility boundary line with a predicted excess acute hazard risk of 7.6×10^{-01} . The location for MEIW (Receptor #5303, UTM E 381311 N 3737762) acute noncancer health effects receptor coincides with PMI and is located on the west side of the facility with a predicted excess acute hazard risk of 1.84. Figure 11 identifies the locations of the PMI, MEIW and MEIR. Predicted off-site concentrations decrease rapidly with distance from the facility. For the MEIW and MEIR, hydrogen sulfide and acrolein are the risk drivers for the hazard index for target organs. Acute risk isopleths for residential and worker are shown on Figures 11.

The values for the MEIW exceed the level (1.0) for which the SCAQMD requires individuals in the area to be notified. CertainTeed will notify the ConocoPhillips refinery located in the ZOI for acute HI as per SCAQMD's guidelines. With respect to the MEIW, the land is zoned for industrial use and is currently occupied by a refinery. The MEIR land area is zoned for residential use and is also currently occupied. The HIA for MEIW and MEIR are both below 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). No sensitive receptors exist in the zone of impact for acute noncancer risks.

2. INTRODUCTION

Trinity Consultants was retained to prepare an HRA for the facility referenced below. As required, this HRA was prepared pursuant to California Air Resources Board' Air Toxics Hot Spots Program (Hot Spots Program), which is implemented per the requirements of California Assembly Bill 2588 (AB 2588). Guidelines used in the preparation of this HRA included OEHHA's "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (February 2015)", and SCAQMD's "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act (November 4, 2016)".

The objectives of this HRA are to: (1) estimate off-site air concentrations of the substances identified in AB2588 and emitted from the facility, (2) evaluate potential exposures to the surrounding community, (3) characterize the potential health risks to individuals and the exposed population associated with those levels of exposure, and (4) determine if additional actions are required per Rule 1402. This report presents the results of the HRA analysis utilizing refined air dispersion modeling based on guidance provided by the SCAQMD and OEHHA.

2.1. FACILITY IDENTIFICATION

Facility Name	GS Roofing Company, Inc./ CertainTeed
Address	1431 West E St. Wilmington, CA 90744
SIC	2952
County	Los Angeles
Air Basin	South Coast
Air District	South Coast AQMD (SCAQMD)
Contact Person	Bill Woysner
Contact Phone Number	(714) 238-2329

2.2. APPLICABLE REGULATIONS

SCAQMD Rule 1402 implements AB 2588 for facilities within its jurisdiction, which requires health risk assessment, public notification and risk reduction measures for facilities which exceed applicable risk levels. Rule 1402 identifies public notification and action risk levels for carcinogenic impacts, as well as non-cancer acute and chronic hazard impacts. The following key requirements are provided per SCAQMD Rule 1402:

- **Public Notification** - The SCAQMD requires public notification to affected populations which equal or exceed the following health risk levels: MICR = 10 in 1 million, HIC = 1.0 or HIA = 1.0
- **Action Risk Levels** - The SCAQMD requires facilities to implement risk reduction measures if affected populations are exposed to health risk levels that equal or exceed the following: MICR = 25 in 1 million, HIC = 3.0 or HIA = 3.0
- **Significant Risk Levels** - The SCAQMD considers the following health risk impacts of affected populations to be significant: MICR = 100 in 1 million, HIC = 5.0 or HIA = 5.0

2.3. BACKGROUND

In 2007, SCAQMD required an updated Health Risk Assessment (HRA) pursuant to California Air Toxics “Hot Spots” Act (AB2588) based on emissions in fiscal year 2003-2004. CertainTeed submitted an updated HRA as required within 150 days of receiving the letter from SCAQMD in 2008. The 2008 HRA has been under review by SCAQMD and has not been either approved or disapproved since the submittal. Since that time, CertainTeed has routinely filed its SCAQMD Annual Emissions Reports (AER) providing estimates of facility emissions. Due to the recent changes in the health risk assessment guidelines by Office of Environmental Health Hazard Assessment (OEHHA), release of the latest version of California Air Resources Board (ARB)’s Hot Spot Analysis Program (HARP) risk assessment tool and amendment to SCAQMD Rule 1402, SCAQMD has requested CertainTeed to submit an HRA based on Calendar Year CY 2012 emissions as base year.⁵ In March 2017, CertainTeed submitted the detailed Air Toxic Inventory Report (ATIR) as a response to SCAQMD’s notice dated October 28, 2016.⁶ The ATIR was prepared in ARB’s HARP 2.0.

As a consequence, CertainTeed has prepared this updated HRA based on emissions and throughputs for CY 2012. As required, this updated HRA reflects current facility operations (and air pollution controls) for all regulated AB 2588 toxic air contaminants (TACs) listed on Appendix A-I except for the changes which were implemented in CY 2016 or 2017. CertainTeed does not anticipate any changes to toxic emission levels and these changes will likely result in reduction of emissions as detailed in the letter submitted to SCAQMD on November 14, 2016. Per OEHHA and SCAQMD guidelines, this updated HRA provides a comprehensive risk assessment meeting AB2588 requirements and includes a dispersion analysis of released TACs into the environment, the potential for human exposure, and a quantitative assessment of both individual and population-wide cancer and non-cancer health risks associated with those levels of exposure.

2.4. REPORT FORMAT

The report format for this HRA is consistent with SCAQMD requirements, and based on guidance by the Office of Environmental Health Hazard Assessment (OEHHA), as well as the Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics “Hot Spots” Information and Assessment Act, provided by the SCAQMD, and revised November 4, 2016.

- Section 1.0 Executive Summary -This section summarizes facility information, emission sources, modeling parameters and key findings of this HRA.
- Section 2.0 Introduction -This section discusses applicable regulatory requirements, project background and report format.
- Section 3.0 Hazard Identification -This section identifies the reported substances emitted from the CertainTeed facility. The substances evaluated for cancer and noncancer endpoints are identified for Appendix A-I substances.
- Section 4.0 Exposure Assessment -This section describes the estimated emissions for the chemicals of interest, the air dispersion modeling for determining airborne concentrations, the exposure pathways evaluated, and off-site receptors evaluated.

⁵ A notice sent South Coast Air Quality Management District to update the existing HRA was sent to Mario A. Sanchez, GS, on November 1, 2017.

⁶ A notice sent by South Coast Air Quality Management District submit a detailed Air Toxic Inventory Report was sent to Mario Sanchez, GS, in October 28, 2016.

Section 5.0 Risk Characterization -This section presents the results of the risk assessment for the exposure scenarios evaluated. An evaluation of the zone of impact (ZOI), sensitive receptors, and population health risks are presented where appropriate.

Section 6.0 References -This section identifies the various publications, sources and other references used to prepare this HRA.

In addition to this HRA report, an accompanying CD-ROM has been submitted which includes required and supplemental electronic files, including, modeling input and output files.

Electronic files included in the CD-ROM are as follows:

- AERMOD Input File
- AERMOD File
- AERMOD Text File
- AERMAP Input and Output Text Files
- BPIP Input and Output Text Files
- AERMOD Plot Files by 1 Hour and Period by Source (.plt)
- USGS Terrain File
- SCAQMD Met File
- HARP Files
- HARP Excel Risk Files (Cancer, Chronic, and Acute for Residential)
- HARP Excel Risk Files (Cancer, Chronic, and Acute for Worker)
- HARP Generated KML Files
- HARP Risk Reports Text Files

3. HAZARD IDENTIFICATION

In this initial step of HRA development, hazard identification involves identifying if a hazard exists, and if so, what are the pollutant(s) of concern and whether a pollutant has potential human carcinogen and/or other adverse health effects. In general, OEHHA guidelines require health risk assessment for chemicals identified as Appendix A-I Substances per AB 2588 regulations. This section provides descriptions of the facility, applicable plant processes, pollutants of concern, and emission estimates.

3.1. FACILITY DESCRIPTION

CertainTeed owns and operates asphalt roofing products plant in Wilmington, CA. Emissions of air pollutants from the facility are regulated under the jurisdiction of SCAQMD. The facility is located at 1431 West E street in Wilmington, an industrial and residential suburb in the southern harbor area of the Los Angeles County. The facility is immediately bounded to the east by the interstate 110 (Harbor Freeway), the refinery on west and south sides and a residential neighborhood on north eastern side and east of Interstate 110. Industrial and commercial neighborhoods in the area include the ConocoPhillips refinery to the west and south and several small manufacturing and industrial facilities located approximately 1 – 1.5 miles to the east, past Interstate 110 on “B” and “C” street. A large residential neighborhood extends to the north and east past Interstate 110. The remainder of the area to the west, south and southeast of the facility consists of U.S. Naval Reservations and the Harbor.

3.2. PROCESS DESCRIPTION

CertainTeed’s Wilmington facility manufactures asphalt roofing shingles. The manufacturing process involves coating of a fiberglass roofing mat with variety of asphalt blends and subsequent surfacing with mineral materials. Rolls of fiberglass mat are passed through the asphalt coating line. A blend of asphalt and limestone filler is applied to both sides of the fiberglass in a roll coater. Following the coating process colored granules are applied to the top and backing (sand) to the back surface. The coated fiberglass mat is then processed through the Windseal asphalt applicators and finally through laminant asphalt applicators. The sheet is then cut into shingles and packaged. The wrapped bundles of shingles are palletized in an automatic palletizer. The pallets of bundled shingles are then removed by fork lift and transported to the finished goods storage area. Below is the detailed description of main processes involved in asphalt roofing shingles production.

3.2.1. Asphalt Coating & Granule Processing

Limestone Filler (Ca CO₃) is unloaded pneumatically from a delivery truck into a 400-ton silo for use in the manufacturing process. Exhaust from the transfer operation is vented through a baghouse. The limestone filler is typically transferred pneumatically in batch loads to a 20-ton filler bin. A baghouse is connected to the 20-ton filler bin to vent the transfer air. From the filler bin the limestone is heated to 335 ° F in a filler heater. Heat is supplied by heat transfer oil. A baghouse is connected to the filler heater to collect and remove particulate matter (PM) dust.

From the filler heater, the limestone filler is transferred to a hot filler bin then finally to a horizontal mixer, where it is combined with asphalt. The temperature of the hot filler and asphalt in the horizontal mixer is approximately 450 ° F. Asphalt is pumped from the 30,000 gallon asphalt tank, through a heater and into the horizontal mixer. Note that existing Permit to Operate (PTO) 30,000 gallon Asphalt Laminant Tank (PTO M57990) and existing 30,000 gallon Asphalt Coating Tank (PTO M57993) are replaced with new permits for 30,000 gallon Asphalt Laminant Tank (PTO G45078) and 30,000 gallon Asphalt Coating Tank (PTO G45079), respectively. VOC emissions from this tank replacement is expected to remain at same level due to no changes in the material throughput or possible decrease due to less breathing losses. The new laminant and coating tanks are both electric coil heated.

The asphalt and filler are mixed in the horizontal mixer and then are transferred to a vertical mixer. The temperature of the asphalt-filler mixture is approximately 420 ° F. The filled coating mixture consists of 32% asphalt and 68% of limestone filler. Fiberglass mat is received in rolls that are unwound , pre-heated with a mat pre-heater and delivered to the coater. The asphalt is then pumped to the roll coater where the filled coating is applied to the fiberglass mat. Excess asphalt is re-circulated back to the vertical mixer. Emissions from the horizontal mixer, vertical mixer and coater are all ducted through a fiberglass media mist eliminator (coalescing filter) prior to atmospheric exhaust.

After the coating process granules are applied to the top of the fiberglass mat. Initially blended for color variation are applied and then headlap and overall granules are applied to the sheets. All granules are received by truck and are stored in the above ground bulk storage silos until used. Back surfacing of fine sand takes place to seal the back side of the sheets after granules are applied. Back surfacing (sand) is received by truck and stored in the above ground bulk storage silos.. The Main Baghouse serves the granule processing & surfacing activities and other miscellaneous material handling sources. Particulate matter captured by the baghouse is a combination of mineral dust and organic particulate from heated asphalt.

3.2.2. Cooling of Coated Fiberglass Sheet

After the coating and surfacing processing is done the sheet passes through the press section where two press rolls press the surfacing into the sheet. The sheet is then cooled by spraying atomized water onto the surface and letting it evaporate. The water used in the cooling process is reclaimed and recycled. The emissions from cooling sections are ducted and released into atmosphere through two stacks.

3.2.3. Coating, Windseal & Laminant Asphalt Delivery & Storage

The coating and laminant asphalts are delivered by trucks to the facility. Two bulk asphalt storage tanks of 30,000 gallon capacity are utilized to provide the supply and return of heated asphalt to the manufacturing process. Emissions from these two storage tanks are ducted through a fiberglass media mist eliminator (coalescing filter) prior to atmospheric exhaust.

The Windseal asphalt is also received by trucks. It used to be stored in a 24,000 gallon capacity rail car storage tank where the temperature was maintained below 400 ° F. The rail car storage tank was removed in Decemeber 2016 and facility is currently using 55 gallon drums. The asphalt is pumped as needed into a small recirculation day tank. The Windseal asphalt is then pumped into the application pan for Windseal asphalt application to the sheets. Emissions from these the storage tank are ducted through a fiberglass media mist eliminator (coalescing filter) prior to atmospheric exhaust.

Now that the facility is planning a replacement of the 24,000 gallon Windseal Asphalt Tank (PTO F12571) with a proposed 12,855 gallon Windseal Asphalt Tank (PTO G45090) in second quarter of CY 2018. VOC emissions from this tank replacement is expected to decrease due to reduced breathing losses. An additional 12,855 gallon Asphalt Laminant Tank (permitted as PTO G45088) could be added in future operations. Overall VOC emissions from the new storage tanks are expected to remain relatively close to the 23,150 gallon tank emissions.

3.2.4. Windseal & Laminant Asphalt Application

Windseal asphalt is pumped to a recirculation sealant use tank. From the use tank Windseal is pumped to an application pan where it is applied to the sheet. Windseal is applied by a roll applicator in thin strips onto the sheet surface. The temperature of the Windseal day tank is kept around 335 ° F. Emissions from the use tank and Windseal applicators are released into the in-plant atmosphere.

From the bulk 30,000 gallon bulk storage tank laminant asphalt is pumped into a laminant use tank. The use tank supplies two laminant asphalt applicators. The laminant asphalt is re-circulated from the two applicators pans to use tank. The sheet is split into two sections that feed to the two laminant applicators. The laminant is applied with a roll applicator in thin strips. After application of the laminant asphalt the two sections are

brought together to form a dimensional (laminated) shingle. The emissions from both laminators (upper and lower) are ducted through an exhaust stack directly into the atmosphere.

3.2.5. Oil Heating System

Thermal transfer oil is heated to approximately 570 °F in the natural gas fired asphalt oil heater (rated at 7.07 MMBTU /Hr). The oil is circulated through the shingle production process. Storage and use tanks and process equipment are heated by the circulating oil. The emissions from the natural gas combustions are released into atmosphere through a stack. Note that the previous 40 PPM Low NOx Burner on asphalt oil heater (PTO G43494) is replaced with new 9 PPM Low NOx Burner. The NOx emissions is reduced by approximately 22% and CO emissions is reduced by approximately 13% compared to CY 2012 emission levels.

3.3. EMISSIONS INVENTORY

For purposes of this HRA, Trinity utilized emissions and other information as identified on ATIR submittal in March 2017 for CY 2012. Based on the information provided in ATIR and estimated operating schedules, modeling emission rates were developed for maximum hourly and annual average for each pollutant of concern (refer to Table 2).

3.4. CHEMICALS OF INTEREST

Per OEHHA guidelines, the modeled chemicals in this HRA from the facility emission sources were identified from AB 2588 Appendix A-I list of substances. Collectively, the facility's sources emit 1,2,4 trimethyl benzene, 1,3 butadiene, acetaldehyde, acrolein, benzene, formaldehyde, hydrogen sulfide, ammonia, and crystalline silica, which were identified from the listed Appendix A-I substances. Chemical profile of these air toxics are well established by OEHHA and regulatory authorities, such as physical characteristics, general uses, and toxicity information. As shown by Tables 3a and 3b, of the 9 identified AB 2588 emitted substances, 5 substances have carcinogenic impacts, 9 substances have chronic noncancer hazard impacts, and 7 substances have acute noncancer hazard impacts.

Target organs for the acute and chronic noncancer health effects are as follows: cardiovascular system (CV), central nervous system (CNS), kidney, alimentary liver system (AL), reproductive system (REPRO), respiratory system (RESP), eye, skin, immune system (IMMUN), and hematopoietic system (HEM).

4. EXPOSURE ASSESSMENT

In this step of HRA development, exposure assessment involves estimating the extent of public exposure to each regulated substance for which there exists potential cancer risk and/or noncancer health hazard effects. This involves modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term and long-term exposure levels.

This section describes air dispersion modeling and associated parameters used to estimate the potential for human exposure to the AB2588 emissions from this facility, including: (1) summarize and describe the source information and emission estimates used in the environmental transport models; (2) describe potentially exposed populations; (3) describe the assumptions used in the air dispersion and Assessment of Chemical Exposure (HARP) model; and (4) identify primary methodologies for calculating health risk impacts.

4.1. AIR DISPERSION MODELING

Air dispersion modeling is used to estimate off-site air concentrations of chemicals associated with facility emissions. For this HRA, Trinity used the most recent HARP Version 2.0 – Air Dispersion and Risk Tool (17052). U.S. EPA compiled version of AERMOD is integrated within HARP 2.0 along with its related processors such as AERMAP, AERPLOT, and BPIP PRIME.

4.1.1. Model Options

For this HRA, SCAQMD recommends single and multi-source dispersion modeling in urban or rural areas with "simple terrain" (flat or gently rolling, with ground elevations below the pollutant release heights), which is typical of the area immediately surrounding the facility. The following AERMOD model options were used in the modeling analysis:

- | | |
|--------------|-------------------------------------|
| • HARP | Version 2.0 (17052) |
| • Projection | Universal Transverse Mercator (UTM) |
| • Datum | World Geodetic System 1984 |
| • UTM Zone | 11 |
| • Hemisphere | Northern |
| • Selection | Hourly and Period |

The following default model options were used in accordance with SCAQMD guidelines:

- | | |
|--------------------------------|-------|
| • Use regulatory default? | Yes |
| • Urban or Rural? | Urban |
| • Gradual plume rise? | No |
| • Stack-tip downwash? | Yes |
| • Buoyancy-induced dispersion? | Yes |
| • Calms processing? | No |
| • Missing data processing? | No |
| • Include building downwash? | Yes |
| • Lowbound option? | No |

All the point sources at the facility are identified on various manufacturing buildings (refer to Figure 4). To determine noncarcinogenic acute health hazards, HARP 2.0 dispersion module calculated ground level concentrations for the maximum 1-hour averaging period. To determine noncarcinogenic chronic health

hazards and carcinogenic health impacts, HARP 2.0 dispersion calculated ground level concentrations for the annual average period.

4.1.2. Source Parameters

Based on current facility operations and reported emissions, modeling sources were identified for purposes of this HRA. Modeling sources are generally identified as point, line, volume or area sources. For purposes of this HRA, the majority of the emission sources for this facility are point sources. Table 2 identifies each modeled source, which also provides maximum 1-hour and annual average emission rates by each source and regulated chemical. In addition, Table 4 contains the key parameters that were applied to for applicable emission sources, which includes source ID, source name, UTM coordinates, rain cap, base elevation, heights, stack velocity, stack temperature, operating hours and operating days. For inputted sources, AERMOD calculates ground level concentrations based on inputted source-specific parameters, including the emission rate, stack height, stack inside diameter, stack exit velocity, and stack gas temperature. All relevant emissions source parameters that were applied for this model is presented in the attached tables.

4.1.3. Receptors

According to SCAQMD and OEHHA guidance, HRAs must provide a detailed analysis of the potentially exposed population. This analysis includes identification of the maximum exposed individuals (MEIs) for nearby workers (MEIW) and residences (MEIR), identification of sensitive receptors within the ZOI, identification of fence line receptors, and evaluation of potential population impacts within the ZOI. As required, various receptor locations were inputted into AERMOD, which covered the property fenceline, nearby residences and workers, sensitive receptors and census block receptors. Additional detail for each receptor type is provided as follows:

- **Fenceline** - As required, fence line receptors were defined at 20-meter increments along the property border, in accordance with SCAQMD guidelines. Figure 3 shows the fenceline for this HRA. The fenceline boundary UTM coordinates are located on Table 6a. The fenceline grids are identified as receptors 5263-5309
- **Nearby Residences and Workers (Cartesian Grid)** - The general locations of potential MEIs were determined based on the location of sources and the surrounding land use (Figure 2). The nearest immediate residential receptors are located north and east side of the facility boundary. Worker receptors from nearby commercial and industrial land uses are located immediately east and west of the facility boundary. As required by the SCAQMD, receptor grid points must be spaced at 20 meter increments out to 200 meters and 50 meters spacing from 201 meter to 1000 meters. Figure 5b shows the surrounding land uses within the immediate vicinity of the facility.
- **Sensitive Receptors** - In accordance with SCAQMD and OEHHA guidance, sensitive receptors must be identified within the ZOI, such as K-12 schools, hospitals, nursing/convalescent homes, daycares and senior centers. As applicable, to determine the location of nearby sensitive receptors within the ZOI, Trinity reviewed applicable public sources of information and databases, including, Google and online search. Sensitive receptors are identified as receptors 5211-5262. A breakdown of the sensitive receptors are identified in Table 6b.
- **Census Block Receptors** - AB2588 also requires an estimates of the number of impacted individuals in residences and off-site workplaces within the ZOI. Census data is used to determine affected populations within geographic areas defined by census tracts. A census tract centroid (geographical center) is identified as a receptor location, which represents exposure to the population within that census tract. For this HRA, affected populations were estimated based on census data in built in HARP 2.0. Figure 12 and 13 shows the impacted census tracts for this HRA. Census tract information were obtained directly from HARP dispersion modeling by inputting the facility center and a distance of 1000 meters. The receptors were inputted into

AERMOD and are identified as receptors 5275-5285. A breakdown of the census block receptors are identified in Table 6c

4.1.4. Building Downwash

The purpose of this evaluation is to determine if stack discharge might become caught in the turbulent wakes of structures within close proximity. Wind blowing around a building creates zones of turbulence that are greater than if the building was absent. The USEPA-approved Building Profile Input Program PRIME (BPIP-PRIME) was used to simulate the building downwash, which is the effect of nearby structures on the flow of the plumes from their respective emission sources. U.S. EPA has promulgated stack height regulations that restrict the use of stack heights in excess of “Good Engineering Practice” (GEP) in air dispersion modeling analyses.⁷ Under these regulations, that portion of a stack in excess of the GEP height is generally not creditable when modeling to determine source impacts. This essentially prevents the use of excessively tall stacks to reduce the ground-level pollutant concentrations. The stack height not subject to the effects of downwash, called the GEP stack height, is defined by the following formula:

$$H_{GEP} = H + 1.5L$$

Where:

H_{GEP} = GEP stack height,

H = structure height, and

L = lesser dimension of the structure (height or projected width).

This equation is limited to stacks located within 5L of a structure. Stacks located at a distance greater than 5L are not subject to the wake effects of the structure. If there is more than one stack at a given facility, the above equation must be successively applied to each stack. If more than one structure is involved, the equations must also be successively applied to each structure. To calculate downwash effects, if any, building coordinates and height of nearby structures were inputted into BPIP-PRIME and can be seen on Table 6a. A total of eighteen (18) facility buildings and a total of one (1) external buildings were modeled for building downwash. Figure 3 shows a model plan of the boundary and buildings.

4.1.5. Meteorological and Elevation Data

Six years of pre-processed meteorological data supplied by the SCAQMD was used in this analysis, which consisted of data from a surface station in Long Beach, California (Station #23129)⁸. The Long Beach station includes completeness for years 2006 through 2011. Given the flat terrain of the area and station’s proximity to the facility, data from this monitoring station provides the best available estimate of local facility meteorological conditions. The surface file (lgbh8.sfc) and profile file (lgbh8.pfl) were inputted into HARP 2.0 and processed with all receptors and sources. Terrain data was obtained from the California Air Resources Board’s website with a large extent.⁹ Digital Elevation Model files used for terrain, characterize terrain elevations at evenly spaced geographical intervals that are incorporated into AERMOD to create a three-dimensional image of facility location.

⁷ U.S. Environmental Protection Agency, Good Engineering Practice Stack Height Regulations, October 1988

⁸ <http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/aermod-table-1>

⁹ <https://www.arb.ca.gov/toxics/harp/dems.htm>

4.2. ASSESSMENT OF CHEMICAL EXPOSURE

SCAQMD requires that all AB2588 HRAs be prepared using the HARP model. The most recent version of HARP (version 2.0) was used to prepare this HRA. The health risk module of HARP 2.0 incorporates the current OEHHA guidelines, exposure factors and most recent toxicity values for modeled substances.

4.2.1. Exposure Pathways

Exposure pathways are generally classified as primary pathways and secondary pathways. Inhalation is the primary exposure pathway for all modeled sources and substances. For multipathway substances, there are non-inhalation exposure pathways that should also be evaluated. As applicable, the non-inhalation pathways include dermal exposure, water ingestion, crop ingestion (direct deposition), soil ingestion, ingestion of mother's milk, fish and dairy products or other.

In general, most air toxics assessed under the Hot Spots Program are volatile organic compounds that remain as gases when emitted into the air. These volatile chemicals are not subject to appreciable deposition to soil, surface waters or plants. Therefore, human exposure does not normally occur to any appreciable extent via ingestion or dermal exposure. Rather, the primary exposure pathway to these volatiles occurs through the inhalation pathway. A small subset of regulated substances, i.e. semi-volatile organic and metals, is emitted partially or totally as particles subject to deposition. In these cases, ingestion and dermal pathways as well as the inhalation pathway must be evaluated.

Based on SCAQMD guidelines, in addition to the inhalation pathway, residential cancer risk for multipathway substances evaluated the following exposure pathways: home grown produce (fraction = .052), dermal absorption, soil ingestion (deposition rate = 0.02 m/s), and mother's milk. In addition to the inhalation pathway, worker cancer risks for multipathway substances were modeled with the pathways of dermal absorption and soil ingestion (deposition rate = 0.02 m/s). The water ingestion pathway was not considered since the drinking water supply in the vicinity is not derived from local surface water. The exposure pathways of ingesting fish, dairy, animal, and agricultural product are negligible in the facility's ZOI.

4.2.2. Carcinogenic Health Impacts

In accordance with the SCAQMD and OEHHA guidance, cancer risk estimates based on the theoretical upper-bound excess cancer risk were evaluated for the MEIR, MEIW and PMI. The guidelines also require cancer risk to be evaluated for affected sensitive receptors and populations within the ZOI.

The HARP model computes the total excess cancer risk from both inhalation and noninhalation pathways at each receptor location. For example, the inhalation risk for each pollutant at a receptor location is calculated by multiplying the inhalation dosage by its cancer potency factor. The estimated risks for individual substances emitted by the facility are added to provide the total excess cancer risk for individual receptor locations. For inhalation exposures, the theoretical upper-bound excess cancer risk is estimated assuming that an individual is exposed continuously to the annual average air concentrations over a 30-year lifetime. Once these annual average air concentrations are estimated for each receptor, the excess cancer risk is calculated for the carcinogenic effects in the model.

For residential and sensitive receptors, SCAMQD requires a lifetime exposure of 30 years. At a minimum, the HRA must show the results of cancer risk assuming a 30 year exposure duration for all residential (and sensitive) receptors and exposure duration is 70 years for cancer burden calculations.

In the case of worker receptors, SCAQMD requires exposure durations of a 25-year exposure period. OEHHA guidelines provide adjustment factors for inhalation risks for offsite workers.

4.2.3. Noncarcinogenic Health Impacts

Potential noncarcinogenic health effects (acute HI and chronic HI) associated with exposure to chemical emissions have been evaluated using the HARP model. Acute and chronic health hazards for different substances impact different target human organs (e.g., central nervous system, reproductive system, liver, etc.). For inhalation exposures, the model divides the predicted average air concentrations for each chemical at the receptor locations by the appropriate inhalation RELs provided by the SCAQMD and OEHHA. These ratios are chemical-specific to the chronic or acute hazard quotients.

Noncarcinogenic health effects were also evaluated in terms of their assumed potential additive effect on target organs or systems. For inhalation exposures, the target organ-specific HI is the sum of the individual hazard quotients for each chemical affecting a specific target organ. In the case of a multipathway pollutant (i.e., pollutants with noninhalation exposures), health risk impacts take into account the additional noncancer risks associated with noninhalation routes of exposure from certain pollutants.

5. RISK CHARACTERIZATION

The risk characterization section discusses the results of the modeling, including, noncancer health hazards, carcinogenic health hazards, zones of impact, maximum exposures, cancer burden calculations and affected populations. The following summarizes the key modeling parameters and results from this HRA.

5.1. ZONE OF IMPACT

As required, modeling receptor points were identified to include the property fence line, nearby workers and local residential neighborhoods (see Figure 5). In addition, any sensitive receptors within the ZOI were identified, plus nearby census tract centroid receptors (see Figure 12 for ZOI residential cancer risk). The ZOI is commonly defined as the area surrounding the facility where receptors have a potential cancer risk equal or greater than 1 in 1 million, acute hazards equal or greater than 0.5, or chronic hazards equal or greater than 0.5. Note that chronic hazards are under 0.5, which does not meet the minimum requirement for ZOI. Instead, lower thresholds were shown for the purposes of illustration. Acute hazard is greater than 0.5. The ZOI is defined once the air dispersion modeling process has determined the pollutant concentrations at each designated off-site receptor and a risk analysis has been performed. The results from the HARP model provides the information necessary to identify the ZOI by generating the associated risk isopleths (i.e., a geographical presentation of areas of equal risk). Maps depicting the ZOIs for this HRA are provided in Figures 6 through Figure 12.

5.2. CARCINOGENIC HEALTH EFFECTS

5.2.1. Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 7a and 7b. As shown in Figure 6, the PMI (Receptor #5275, UTM E 381461 N 3737772) for carcinogenic health effects is located on the facility fence line (southeast side of property) with a predicted excess cancer risk of 2.09×10^{-05} . Benzene and formaldehyde are the highest contributing pollutants for cancer risk, which is estimated to be total 82%. The largest contributing source to the PMI are collectively the coating and laminant storage tanks (Sources S007), which is estimated to be 48%.

5.2.2. Maximum Exposed Individual Resident (MEIR)

Estimated excess cancer risks for the MEIR by each pollutant and by each source are presented in Tables 8a and 8b. As shown in Figure 6, the highest cancer risk of 6.84×10^{-06} for residential exposure is located at receptor # 1517, UTM E 381625 N 3737732. Benzene is the highest contributing pollutant to cancer risk, which is estimated to be 60% of the total risk. The primary source contributor are same as PMI, coating and laminant storage tanks (Sources S007) which is estimated to be 46% of the total cancer risk. Based on this HRA, the MEIR is below the action risk level of 25 in 1 million as per SCAQMD Rule 1402. For reference, Figure 6 and Figure 12 presents the cancer risk isopleths identifying the ZOI for residential modeling scenarios.

The MEIR value is also below the level (1×10^{-5} or ten-in-one million) at which the SCAQMD requires the distribution of public notices pursuant Rule 1402. Census maps are shown on Figures 12 and 13. All the sensitive receptors modeled, were located outside of the cancer ZOI.

5.2.3. Maximum Exposed Individual Worker (MEIW)

Estimated excess cancer risks for the MEIW by each pollutant and by each source are presented in Tables 9a and 9b. As shown in Figure 9, the highest cancer risk of 5.46×10^{-06} for worker exposure is located at receptor #5304, UTM E 381313 N 3737742, which is the southwest fenceline. The nearest commercial receptor is

approximately 5 meters west of the facility boundary located in the ConocoPhillips refinery. Benzene is the highest contributing pollutant to cancer risk, which is estimated to be 52% of the total risk. The primary source contributors are same as PMI and MEIR, coating and laminant storage tanks (Sources S007) which is estimated to be 43% of the total cancer risk. Based on this HRA, the MEIW is below the action risk level of 25 in 1 million as per SCAQMD Rule 1402. For reference, Figure 9 and Figure 10 present the cancer risk isopleths identifying the ZOI for worker modeling scenarios.

The MEIW value is below the level (1×10^{-5} or ten-in-one million) at which the SCAQMD requires the distribution of public notices pursuant Rule 1402.

5.2.4. Sensitive Receptors

The closest sensitive receptor to the facility is Hawaiian Ave Children's Center, which is approximately 300 meters east of the facility. 20 meter receptors were placed around the boundary of the school and the highest cancer risk is estimated as 8.71×10^{-07} (see Figure 6). All the sensitive receptors modeled, were located outside of the ZOI.

5.2.5. Population Cancer Burden

Population cancer burdens were calculated for affected populations within the ZOI. Cancer burden is calculated by multiplying residential cancer risk by the estimated affected residential population based on data from the U.S. Census Bureau (refer to Table 5). Census tract receptors were obtained from HARP, however for the purposes of this HRA, the highest cancer risk in each census tract was multiplied by the estimated population within our ZOI. In this case, the total cancer burden for the affected population is estimated to be 0.04, which is below the SCAQMD Rule 1402 action risk level of 0.5.

5.3. NONCANCER CHRONIC HEALTH EFFECTS

5.3.1. Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 10a and 10b. The PMI (Receptor #5275, UTM E 381461 N 3737772) for chronic noncancer health effects is located on the facility fence line (southeast side of property) with a predicted excess chronic hazard of 2.34×10^{-01} . Hydrogen sulfide and acrolein is the highest contributing pollutants. The largest contributing source to the PMI is the Source 17 forklift warehouse.

5.3.2. Maximum Exposed Individual Resident (MEIR)

Noncancer HIC for the MEIR by each pollutant and by each source are presented in Tables 11a and 11b. As shown Figure 7, the highest HIC of 7.22×10^{-02} for residential exposure is located at receptor #1517, UTM E 381625 N 3737732. Hydrogen sulfide and acrolein are the highest contributing pollutants to the HIC, which is estimated to be 77% of the total noncancer HIC. The primary source contributors are the Source 7, the laminant storage tank and source 17 forklift warehouse, which is estimated to be 77% of the total noncancer HIC. Based on this HRA, the MEIR is below the action risk level of 3.0 as per SCAQMD Rule 1402. In addition, there are no residential receptors which require public notice under applicable SCAQMD rules. For reference, Figure 7 presents the HIC isopleths identifying the ZOI for residential modeling scenarios. Note that there are no risk levels that exceed 0.5, however an isopleth was created at the highest risk level for illustration purposes only.

5.3.3. Maximum Exposed Individual Worker (MEIW)

Noncancer HIC for the MEIW by each pollutant and by each source are presented in Tables 12a and 12b. As shown by Figure 10, the highest HIC of 1.83×10^{-01} for worker exposure is located at Receptor #5304, UTM E 381313 N 3737742. Hydrogen sulfide and acrolein are the highest contributing pollutants to the HIC, which is estimated to be 80% of the total noncancer HIC. The primary source contributors are the Source 7, the laminant storage tank and source 17 forklift warehouse, which is estimated to be 86% of the total noncancer HIC. Based on this HRA, the MEIW is below the action risk level of 3.0 as per SCAQMD Rule 1402. In addition, there are no worker receptors which require public notice under applicable SCAQMD rules. For reference, Figure 7 and 8 presents the HIC isopleths identifying the ZOI for worker modeling scenarios. Note that there are no risk levels that exceed 0.5, however an isopleth was created at the highest risk level for illustration purposes only.

5.3.4. Sensitive Receptors

The closest sensitive receptor to the facility is Hawaiian Ave Children's Center, which is approximately 300 meters east of the facility. 20 meter receptors were placed around the boundary of the school. The noncancer chronic ZOI does not impact any sensitive receptors.

5.4. NONCANCER ACUTE HEALTH EFFECTS

5.4.1. Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 13a and 13b. As shown by Figure 11, the HIC at the PMI is estimated to be 1.84. Hydrogen sulfide is the highest contributing pollutant noncancer HIC, which is estimated to be 100%. The largest contributing source to the PMI is the laminant storage (Source 7), which is estimated to be 96%.

5.4.2. Maximum Exposed Individual Resident (MEIR)

Noncancer HIA for the MEIR by each pollutant and by each source are presented in Tables 14a and 14b. As shown in Figure 11, the highest HIA of 7.6×10^{-01} for residential exposure is located at Receptor #1777, UTM E 381374 N 3737982. Acrolein is the highest contributing pollutant to the HIA, which is estimated to be 65% of the total noncancer HIA. The primary source contributor is the forklift warehouse (Source 17), which is estimated to be 57% of the total noncancer HIA. Based on this HRA, the MEIR is below the action risk level of 3.0 as per SCAQMD Rule 1402. In addition, there are no residential receptors which require public notice under applicable SCAQMD rules. For reference, Figure 11 presents the HIC isopleths identifying the ZOI for residential modeling scenarios.

5.4.3. Maximum Exposed Individual Worker (MEIW)

Noncancer HIA for the MEIW by each pollutant and by each source are presented in Tables 15a and 15b. As shown in Figure 11, the highest HIA of 1.84 for worker exposure is located at Receptor #5303, UTM E 381311 N 3737762. Hydrogen sulfide is the highest contributing pollutant to the HIA, which is estimated to be 100% of the total noncancer HIA. The primary source contributor is the laminant storage tank (source S007), which is estimated to be 96% of the total noncancer HIA. Based on this HRA, the MEIW is below the action risk level of 3.0 as per SCAQMD Rule 1402. There are worker receptors which require public notice under applicable SCAQMD rules for the refinery located immediately west of the facility. For reference, Figure 11 presents the HIA isopleths identifying the ZOI for worker modeling scenarios.

5.4.4. Sensitive Receptors

The closest sensitive receptor to the facility is Hawaiian Ave Children's Center, which is approximately 300 meters east of the facility. 20 meter receptors were placed around the boundary of the school. The noncancer acute ZOI does not impact any sensitive receptors.

6. REFERENCES

- (1) Office of Environmental Health Hazard Assessment (OEHHA), California Environmental Protection Agency, Toxicity Criteria Database, <http://www.oehha.ca.gov/risk>
- (2) Office of Environmental Health Hazard Assessment (OEHHA), The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015
- (3) South Coast Air Quality Management District (SCAQMD), Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588): Stationary Source Compliance, November 4, 2016 Diamond Bar, CA
- (3) California Environmental Protection Agency, Air Resources Board, March 17, 2015, USER MANUAL FOR THE HOTSPOTS ANALYSIS AND REPORTING PROGRAM AIR DISPERSION MODELING AND RISK ASSESSMENT TOOL VERSION 2
- (5) United States Census Bureau, the 2010 Census, <http://www.factfinder.census.gov>
- (6) Google Earth, <http://www.earth.google.com>

TABLE ES-1

HEALTH RISK ASSESSMENT SUMMARY FORM

Facility Name : GS Roofing Products Company, Inc./ CertainTeed

Facility Address: 1431 W E Street
Wilmington, CA 90744

Type of Business: Asphalt Felts and Coatings

SCAQMD ID No.: 57094

A. Cancer Risk*

(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over 70 years)

1. Inventory Reporting Year : 2012
2. Maximum Cancer Risk to Receptors :
- | | | | |
|--------------|--------------|--------------|---|
| a. Offsite | <u>20.90</u> | in a million | Location: <u>381461E ; 3737772N (Fenceline)</u> |
| b. Residence | <u>6.84</u> | in a million | Location: <u>381625E ; 3737732N</u> |
| c. Worker | <u>5.46</u> | in a million | Location: <u>381313E ; 3737742N (Fenceline)</u> |
3. Substances Accounting for 90% of Cancer Risk: Benzene, Formaldehyde, Acetaldehyde, 1,3-Butadiene
Processes Accounting for 90% of Cancer Risk: Asphalt Storage / Coating / Fuel Combustion
4. Estimated Population Exposed to Specific Risk Levels (including worker population)
- | | |
|------------------------------|-------------|
| a. 1 to <10 in a million | <u>1815</u> |
| b. 10 to <100 in a million | <u>0</u> |
| c. 100 to <1000 in a million | <u>0</u> |
| d. >=1000 in a million | <u>0</u> |
| e. Total >= 1 in a million | <u>1815</u> |
5. Cancer Burden: 0.04079 (including worker population)
Cancer Burden = (cancer risk) x (no. of people exposed to specific cancer risk)
6. Maximum Distance to Edge of 1×10^{-6} Cancer Risk Isopleth (meters) 1000
7. Screening Cancer Risk to Most Exposed Individual
- | | |
|-------------------------------|-----------------------------|
| a. Residence (without silica) | <u> </u> |
| b. Residence (silica only) | <u> </u> |

B. Hazard Indices*

*[Long Term Effects(chronic) and Short Term Effects (acute)]
(non-carcinogenic impacts are estimated by comparing calculated concentration to identified reference exposure levels, and expressing this comparison in terms of a "Hazard Index")*

1. Maximum Chronic Hazard Indices:
- | | | | | |
|------------------|-----------------|---|-----------------|--------------------|
| a. Residence HI: | <u>7.22E-02</u> | Location: <u>381625E ; 3737732N</u> | Health Effects: | <u>See Table 3</u> |
| b. Worker HI : | <u>1.83E-01</u> | Location: <u>381313E ; 3737742N (Fenceline)</u> | Health Effects: | <u>See Table 3</u> |
2. Substances Accounting for 90% of Chronic Hazard Index: Benzene, Formaldehyde, H2S, NH3
3. Maximum Acute Hazard Indices:
- | | | | | |
|------------------|-----------------|--|-----------------|--------------------|
| a. Residence HI: | <u>7.60E-01</u> | Location: <u>381310.9E : 3737762N</u> | Health Effects: | <u>See Table 3</u> |
| b. Worker HI : | <u>1.84E+00</u> | Location: <u>381311E, 3737762N (Fenceline)</u> | Health Effects: | <u>See Table 3</u> |
4. Substances Accounting for 90% of Acute Hazard Index: Benzene, Formaldehyde, H2S, Acrolein

*Provide Tables listing contribution of each substance to Cancer Risk, Acute HI, and Chronic HI.

TABLE 1. SUMMARY OF HEALTH RISK RESULTS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor Description	Grid ID	Cancer Risk	Grid ID	Chronic Hazard Index	Grid ID	Acute Hazard Index
PMI (Point of Max Impact)	5275	2.09E-05	5275	2.34E-01	5303	1.84E+00
MEIR (Residence)	1517	6.84E-06	1517	7.22E-02	1777	7.60E-01
MEIW (Worker)	5304	5.46E-06	5304	1.83E-01	5303	1.84E+00

Notes:

¹ Chronic hazard index is presented for the respiratory system. Hazard indices for all other target organ systems evaluated were significantly lower.

² Acute hazard index is presented for the respiratory system. Hazard indices for all other target organ systems evaluated were significantly lower.

TABLE 2. EMISSION RATE BY SUBSTANCE AND SOURCE

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
S0001	Coater, Vertical Mixer and Horizontal Mixer	1,2,4TriMeBenze	95636	9.84E-04	1.24E-04	2.70E+00	9.91E-05
		Acetaldehyde	75070	5.49E-04	6.91E-05	1.51E+00	5.53E-05
		Benzene	71432	2.68E-03	3.37E-04	7.34E+00	2.70E-04
		Formaldehyde	50000	2.90E-04	3.66E-05	7.97E-01	2.93E-05
S0001	Coater Fugitive VOCs	1,2,4TriMeBenze	95636	3.46E-04	4.36E-05	9.48E-01	3.48E-05
		Acetaldehyde	75070	1.94E-04	2.44E-05	5.32E-01	1.96E-05
		Benzene	71432	9.47E-04	1.19E-04	2.60E+00	9.54E-05
		Formaldehyde	50000	1.03E-04	1.30E-05	2.82E-01	1.04E-05
		H2S	7783064	4.12E-03	5.19E-04	2.78E+01	5.19E-04
S0002	Surfacing Section	1,2,4TriMeBenze	95636	2.31E-04	2.91E-05	6.33E-01	2.33E-05
		Acetaldehyde	75070	1.29E-04	1.62E-05	3.53E-01	1.30E-05
		Benzene	71432	6.29E-04	7.92E-05	1.72E+00	6.34E-05
		Formaldehyde	50000	6.84E-05	8.62E-06	1.88E-01	6.89E-06
		Silica, Crystln	1175	2.54E-03	3.20E-04	6.96E+00	2.56E-04
S0003	Cooling Section	1,2,4TriMeBenze	95636	2.31E-04	2.91E-05	6.33E-01	2.33E-05
		Acetaldehyde	75070	1.29E-04	1.62E-05	3.53E-01	1.30E-05
		Benzene	71432	6.29E-04	7.92E-05	1.72E+00	6.34E-05
		Formaldehyde	50000	6.84E-05	8.62E-06	1.88E-01	6.89E-06
S0005	Sealant Applicator	1,2,4TriMeBenze	95636	4.01E-05	5.05E-06	1.10E-01	4.04E-06
		Acetaldehyde	75070	2.24E-05	2.82E-06	6.13E-02	2.25E-06
		Benzene	71432	1.09E-04	1.38E-05	3.00E-01	1.10E-05
		Formaldehyde	50000	1.19E-05	1.50E-06	3.26E-02	1.20E-06
		H2S	7783064	9.74E-04	1.23E-04	2.67E+00	9.82E-05
S0006	Laminant Applicator Stack	1,2,4TriMeBenze	95636	1.04E-04	1.31E-05	2.84E-01	1.04E-05
		Acetaldehyde	75070	5.78E-05	7.28E-06	1.59E-01	5.83E-06
		Benzene	71432	2.82E-04	3.56E-05	7.74E-01	2.85E-05
		Formaldehyde	50000	3.07E-05	3.87E-06	8.42E-02	3.10E-06
		H2S	7783064	2.52E-03	3.17E-04	6.91E+00	2.54E-04

TABLE 2. EMISSION RATE BY SUBSTANCE AND SOURCE

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
S0007	Coating & Laminant Storage Tank Stack	1,2,4TriMeBenze	95636	3.80E-03	4.79E-04	1.04E+01	3.83E-04
		Acetaldehyde	75070	2.65E-03	3.34E-04	7.27E+00	2.67E-04
		Benzene	71432	1.03E-02	1.29E-03	2.82E+01	1.04E-03
		Formaldehyde	50000	1.54E-03	1.94E-04	4.21E+00	1.55E-04
		H2S	7783064	6.76E-02	8.52E-03	1.85E+02	6.82E-03
S0009	Sealant Storage Tank	1,2,4TriMeBenze	95636	6.32E-05	7.97E-06	1.73E-01	6.37E-06
		Acetaldehyde	75070	4.41E-05	5.55E-06	1.21E-01	4.44E-06
		Benzene	71432	1.71E-04	2.15E-05	4.69E-01	1.72E-05
		Formaldehyde	50000	2.56E-05	3.22E-06	7.01E-02	2.58E-06
		H2S	7783064	1.12E-03	1.42E-04	3.08E+00	1.13E-04
S0011	Asphalt Heater Stack	Acetaldehyde	75070	5.33E-05	6.72E-06	1.46E-01	5.37E-06
		Acrolein	107028	3.35E-05	4.22E-06	9.18E-02	3.37E-06
		Benzene	71432	9.92E-05	1.25E-05	2.72E-01	1.00E-05
		Formaldehyde	50000	2.11E-04	2.66E-05	5.78E-01	2.12E-05
		Naphthalene	91203	3.72E-06	4.69E-07	1.02E-02	3.75E-07
		NH3	7664417	2.23E-01	2.81E-02	6.12E+02	2.25E-02
S0012	Mat Preheater	Acetaldehyde	75070	4.30E-06	5.42E-07	1.16E-02	4.33E-07
		Acrolein	107028	2.70E-06	3.40E-07	7.29E-03	2.72E-07
		Benzene	71432	8.00E-06	1.01E-06	2.16E-02	8.06E-07
		Formaldehyde	50000	1.70E-05	2.14E-06	4.59E-02	1.71E-06
		Formaldehyde (Mat)	50000	2.58E-02	3.24E-03	7.06E+01	2.60E-03
		Naphthalene	91203	3.00E-07	3.78E-08	8.10E-04	3.02E-08
		NH3	7664417	1.80E-02	2.27E-03	4.86E+01	1.81E-03
S0013	400 Ton Filler Silo Baghouse	Silica, Crystln	1175	3.83E-04	4.83E-05	1.05E+00	3.86E-05
S0015	20 Ton Silo Filtered Vent Baghouse	Silica, Crystln	1175	3.83E-04	4.83E-05	1.05E+00	3.86E-05
S0016	Truck Offloading	1,2,4TriMeBenze	95636	1.13E-05	1.42E-06	3.10E-02	1.14E-06
		Acetaldehyde	75070	6.34E-06	7.99E-07	1.74E-02	6.39E-07
		Benzene	71432	3.09E-05	3.89E-06	8.47E-02	3.11E-06
		Formaldehyde	50000	3.36E-06	4.24E-07	9.23E-03	3.39E-07
		H2S	7783064	2.76E-04	3.47E-05	7.56E-01	2.78E-05

TABLE 2. EMISSION RATE BY SUBSTANCE AND SOURCE

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
S0017	Forklifts Warehouse	1,3-Butadiene	106990	3.18E-04	4.01E-05	8.74E-01	3.21E-05
		Acetaldehyde	75070	1.34E-03	1.68E-04	3.67E+00	1.35E-04
		Acrolein	107028	1.26E-03	1.59E-04	3.47E+00	1.27E-04
		Benzene	71432	7.58E-04	9.55E-05	2.08E+00	7.64E-05
		Formaldehyde	50000	9.86E-03	1.24E-03	2.71E+01	9.94E-04
		Naphthalene	91203	4.66E-05	5.87E-06	1.28E-01	4.70E-06
		NH3	7664417	1.59E-03	2.00E-04	4.37E+00	1.60E-04
S0018	Forklifts Truck Delivery	1,3-Butadiene	106990	1.08E-04	1.36E-05	2.91E-01	1.09E-05
		Acetaldehyde	75070	4.54E-04	5.72E-05	1.22E+00	4.57E-05
		Acrolein	107028	4.28E-04	5.40E-05	1.15E+00	4.32E-05
		Benzene	71432	2.57E-04	3.24E-05	6.94E-01	2.59E-05
		Formaldehyde	50000	3.35E-03	4.22E-04	9.02E+00	3.37E-04
		Naphthalene	91203	1.58E-05	1.99E-06	4.26E-02	1.59E-06
		NH3	7664417	5.40E-04	6.80E-05	1.46E+00	5.44E-05
S0019	Forklifts Track	1,3-Butadiene	106990	6.00E-06	7.56E-07	1.20E-02	6.05E-07
		Acetaldehyde	75070	2.52E-05	3.18E-06	5.04E-02	2.54E-06
		Acrolein	107028	2.38E-05	3.00E-06	4.76E-02	2.40E-06
		Benzene	71432	1.43E-05	1.80E-06	2.86E-02	1.44E-06
		Formaldehyde	50000	1.86E-04	2.34E-05	3.72E-01	1.87E-05
		Naphthalene	91203	8.79E-07	1.11E-07	1.76E-03	8.86E-08
		NH3	7664417	3.00E-05	3.78E-06	6.00E-02	3.02E-06

TABLE 3a. TOXICITY DATA BY SUBSTANCE- EXPOSURE PATHWAYS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Substance Name	CAS No.	Cancer	Chronic	Acute	8-hr	Modeled Exposure Pathways							
						Multipathway Substance	Inhalation	Dermal	Soil Ingestion	Home Grown Produce	Mother's Milk	Water	Dairy
1,3-Butadiene	106990	X	X	X	X	N	W,R	W,R	W,R	R	R		
Acetaldehyde	75070	X	X	X	X	N	W,R	W,R	W,R	R	R		
Acrolein	107028		X	X	X	N	W,R	W,R	W,R	R	R		
Benzene	71432	X	X	X	X	N	W,R	W,R	W,R	R	R		
Formaldehyde	50000	X	X	X	X	N	W,R	W,R	W,R	R	R		
Hydrogen Sulfide	7783064		X	X		N	W,R	W,R	W,R	R	R		
Naphthalene	91203	X	X			N	W,R	W,R	W,R	R	R		
Ammonia	7664417		X	X		N	W,R	W,R	W,R	R	R		
Cyrstalline Silica	1175		X			N	W,R	W,R	W,R	R	R		

Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" AB2588. Table 10 - Summary of SCAQMD Health Risk Assessment Guidance

W: Modeled for worker receptors

R: Modeled for residential receptors

TABLE 3b. TOXICITY DATA BY SUBSTANCE - TARGET ORGANS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Substance Name	CAS No.	Acute Target Organs									Chronic Target Organs											
		CV	CNS	IMMUN	GILV	REPRO	RESP	EYE	DEVEL	HEM	CV	CNS	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	ENDO	DEVEL	HEM	
1,3-Butadiene	106990					X									X							
Acetaldehyde	75070						X	X							X							
Acrolein	107028						X	X							X							
Benzene	71432			X		X				X	X	X			X	X	X					
Formaldehyde	50000							X							X							
Hydrogen Sulfide	7783064		X												X							
Naphthalene	91203														X							
Ammonia	7664417						X	X							X							
Cyrstalline Silica	1175														X							

OEHHA "Air Toxics Hot Spots Program Risk Assessment Guidelines" Table 6.1 page 6-4. Table 6.2 page 6-6. and HARP output results.

- GILV: Alimentary System (Liver)
- CNS: Central Nervous System
- CV: Cardiovascular System
- DEVEL: Developmental
- ENDO: Endocrine System
- EYE: Eye
- HEM: Hematologic System
- IMMUN: Immune System
- KIDNEY: Kidney
- REPRO: Reproductive System
- RESP: Respiratory System
- SKIN: Skin

TABLE 4. EMISSION SOURCE PARAMETERS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Stack ID	Stack Name	*	UTM (km) Easting	UTM (km) Northing	Release Type	Orientation	Release Height (ft)	Diameter (ft)	X (ft)	Y (ft)	Sz	Sy	Angle (deg)	Temp (F)	Flow Rate (ACFM)	Avg (hr/dy)	Avg (dy/yr)	Max (hr/dy)	Max (dy/yr)
1	Coater Stack, Vertical Mixer, Horizontal Mixer	a	381.4076	3737.759	Point	Vertical	15	1.45	--	--	--	--	--	130.9	3,430	16	312	24	312
2	Surfacing Section Stack	a	381.4154	3737.779	Point	Horizontal	35	1.84	--	--	--	--	--	200	7,000	16	312	24	312
3	Cooling Section Stack1	a	381.4129	3737.785	Point	Vertical	38	4	--	--	--	--	--	90	35,365	16	312	24	312
4	Cooling Section Stack 2	a	381.4115	3737.781	Point	Vertical	38	4	--	--	--	--	--	90	35,365	16	312	24	312
5	Sealant Applicator	a	381.4357	3737.832	Volume	--	18	--	3.1	3.3	3.13	1.57	24	--	--	16	312	24	312
6	Laminant Applicator Stack	a	381.4488	3737.855	Point	Vertical	23	0.67	--	--	--	--	--	85	1,580	16	312	24	312
7	Coating & Laminant Storage Tank Stack	a	381.3709	3737.77	Point	Vertical	8	0.5	--	--	--	--	--	117	575	16	312	24	312
8	Laminant Use Tank	a	381.4488	3737.855	Volume	--	3	--	4	2	6.24	3.12	24	--	--	16	312	24	312
9	Sealant Storage Tank	a	381.4398	3737.814	Point	Vertical	12.5	0.5	--	--	--	--	--	145.7	400	16	312	24	312
10	Sealant Use Tank	a	381.4358	3737.831	Volume	--	4.5	--	10	3	3.13	1.57	24	--	--	16	312	24	312
11	Asphalt Heater Stack	a	381.3865	3737.778	Point	Vertical	9	2	--	--	--	--	--	680	1,365	16	312	24	312
12	Mat Preheater	a	381.398	3737.766	Point	Vertical	17	1.22	--	--	--	--	--	131.3	3,637	16	312	24	312
13	400 Ton Filler Silo Baghouse	a	381.4375	3737.766	Point	Horizontal	65	0.56	--	--	--	--	--	77	1,900.0	16	312	24	312
14	Filler Heater & 20 Ton Silo	a	381.403	3737.773	Point	Horizontal	77.1	1.44	--	--	--	--	--	225	1,840.0	16	312	24	312
15	20 Ton Silo Filtered Vent Baghouse	a	381.3998	3737.777	Point	Horizontal	110.4	1.32	--	--	--	--	--	77	210.0	16	312	24	312
16	Truck Offloading	a,b	381.3633	3737.77	Point	Horizontal	10	0.15	--	--	--	--	--	405	0	16	312	24	312
17	Forklifts - Warehouse	a	381.3576	3737.723	Area	--	2.5245	--	106	85	2.35	--	24	--	--	16	312	24	312
18	Forklifts - Truck Delivery	a	381.3298	3737.847	Area	--	2.5245	--	95	60	2.35	--	24	--	--	16	312	24	312
19	Forklifts - Railtracks	a	381.3882	3737.71	Area	--	2.5245	--	355	5	2.35	--	4	--	--	16	312	24	312

a. Dimensions, temperature, flow, velocity is based on prior Health Risk Assessment or updated with information provided by Certainteed.
 b. Calculated using Universal Gas Law and Emission Flux.

TABLE 5. CANCER BURDEN

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
Facility ID #57094

Maximum Cancer Risk	Receptor	Census Tract Population ¹	Cancer Burden ²	Cumulative
0.000020867	5275	194	4.05E-03	0.004
1.99E-05	5274	651	1.30E-02	0.017
0.000017163	5273	82	1.41E-03	0.018
1.60E-05	5304	0	0.00E+00	0.018
1.49E-05	5303	0	0.00E+00	0.018
1.46E-05	5305	0	0.00E+00	0.018
1.16E-05	5302	0	0.00E+00	0.018
1.09E-05	5306	0	0.00E+00	0.018
1.08E-05	5276	136	1.47E-03	0.020
9.59E-06	5301	0	0.00E+00	0.020
9.39E-06	5300	103	9.67E-04	0.021
9.13E-06	5272	123	1.12E-03	0.022
8.83E-06	5307	0	0.00E+00	0.022
8.49E-06	5299	150	1.27E-03	0.023
7.82E-06	5271	280	2.19E-03	0.025
7.24E-06	5308	0	0.00E+00	0.025
6.97E-06	5277	284	1.98E-03	0.027
6.37E-06	5298	262	1.67E-03	0.029
6.27E-06	5270	348	2.18E-03	0.031
6.17E-06	5266	44	2.71E-04	0.032
6.09E-06	5265	75	4.57E-04	0.032
5.90E-06	5267	36	2.12E-04	0.032

5.83E-06	5264	149	8.68E-04	0.033
5.82E-06	5309	208	1.21E-03	0.034
5.55E-06	5269	0	0.00E+00	0.034
5.53E-06	5268	20	1.11E-04	0.034
5.46E-06	5278	0	0.00E+00	0.034
5.39E-06	5263	350	1.89E-03	0.036
4.90E-06	5297	241	1.18E-03	0.037
4.26E-06	5279	0	0.00E+00	0.037
3.97E-06	5296	222	8.82E-04	0.038
3.52E-06	5293	82	2.88E-04	0.039
3.39E-06	5292	63	2.14E-04	0.039
3.38E-06	5294	0	0.00E+00	0.039
3.25E-06	5280	0	0.00E+00	0.039
3.25E-06	5295	359	1.17E-03	0.040
2.72E-06	5291	0	0.00E+00	0.040
2.69E-06	5290	0	0.00E+00	0.040
2.58E-06	5289	0	0.00E+00	0.040
2.48E-06	5281	0	0.00E+00	0.040
2.41E-06	5288	44	1.06E-04	0.040
2.30E-06	5282	41	9.44E-05	0.040
2.1843E-06	5287	72	1.57E-04	0.040
2.0946E-06	5283	68	1.42E-04	0.041
1.9427E-06	5286	67	1.30E-04	0.041
1.8242E-06	5284	75	1.37E-04	0.041
1.6547E-06	5285	0	0.00E+00	0.041
			Total:	4.08E-02

¹ Population from 2010 Census data using HARP Database

² Cancer Burden = (Maximum Cancer Risk) x (Zone of Impact Population)

TABLE 6a. BUILDING DIMENSIONS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

	Receptor	Height (ft)	East UTM	North UTM	Rel East	Rel North
Facility Origin	--	--	381324.66	3737632.22	0	0
Building						
Boundary	5263	--	381323.4	3737635	-1.26	2.78
	5264	--	381338.2	3737649	13.54	16.78
	5265	--	381352.9	3737662	28.24	29.78
	5266	--	381367.7	3737676	43.04	43.78
	5267	--	381382.5	3737689	57.84	56.78
	5268	--	381397.2	3737703	72.54	70.78
	5269	--	381403.3	3737708	78.64	75.78
	5270	--	381421.2	3737717	96.54	84.78
	5271	--	381439	3737726	114.34	93.78
	5272	--	381444.8	3737729	120.14	96.78
	5273	--	381456.5	3737745	131.84	112.78
	5274	--	381461.3	3737752	136.64	119.78
	5275	--	381461.2	3737772	136.54	139.78
	5276	--	381461.1	3737792	136.44	159.78
	5277	--	381461	3737812	136.34	179.78
	5278	--	381460.9	3737832	136.24	199.78
	5279	--	381460.8	3737852	136.14	219.78
	5280	--	381460.7	3737872	136.04	239.78
	5281	--	381460.6	3737892	135.94	259.78
	5282	--	381460.6	3737898	135.94	265.78
	5283	--	381452.8	3737914	128.14	281.78
	5284	--	381450.1	3737934	125.44	301.78
	5285	--	381447.4	3737953	122.74	320.78
	5286	--	381427.4	3737952	102.74	319.78
	5287	--	381407.5	3737950	82.84	317.78
	5288	--	381387.5	3737949	62.84	316.78
	5289	--	381367.6	3737948	42.94	315.78
	5290	--	381347.6	3737946	22.94	313.78
	5291	--	381328.3	3737945	3.64	312.78
	5292	--	381329	3737925	4.34	292.78
	5293	--	381329.1	3737922	4.44	289.78
	5294	--	381309.1	3737922	-15.56	289.78
	5295	--	381295.2	3737921	-29.46	288.78
	5296	--	381297.2	3737901	-27.46	268.78
5297	--	381299.1	3737881	-25.56	248.78	
5298	--	381301.1	3737861	-23.56	228.78	
5299	--	381303.1	3737842	-21.56	209.78	
5300	--	381305	3737822	-19.66	189.78	
5301	--	381307	3737802	-17.66	169.78	
5302	--	381308.9	3737782	-15.76	149.78	
5303	--	381310.9	3737762	-13.76	129.78	
5304	--	381312.9	3737742	-11.76	109.78	
5305	--	381314.8	3737722	-9.86	89.78	
5306	--	381316.8	3737702	-7.86	69.78	
5307	--	381318.8	3737682	-5.86	49.78	
5308	--	381320.7	3737662	-3.96	29.78	
5309	--	381322.7	3737642	-1.96	9.78	

TABLE 6a. BUILDING DIMENSIONS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

	Receptor	Height (ft)	East UTM	North UTM	Rel East	Rel North
Building 1 - Ware House 5, a	1	21	381407.34	3737872.08	82.68	239.86
	2	21	381447.95	3737853.13	123.29	220.91
	3	21	381453.84	3737877.32	129.18	245.1
	4	21	381417.56	3737894.28	92.9	262.06
Building 2 - Ware House 5, b	1	21	381407.34	3737872.08	82.68	239.86
	2	21	381413.43	3737884.92	88.77	252.7
	3	21	381385.96	3737897.72	61.3	265.5
	4	21	381379.9	3737885.05	55.24	252.83
Building 3 - WareH 1+WareH 2	1	31	381372.27	3737887.82	47.61	255.6
	2	31	381351.1	3737843.84	26.44	211.62
	3	31	381438.4	3737856.58	113.74	224.36
	4	31	381418.19	3737812.66	93.53	180.44
Building 4 - Mnfg Building, a	1	28	381418.97	3737812.15	94.31	179.93
	2	28	381439.54	3737856.35	114.88	224.13
	3	28	381447.03	3737852.86	122.37	220.64
	4	28	381426.4	3737808.55	101.74	176.33
Building 5 - Mnfg Building, b	1	28	381385.95	3737739.74	61.29	107.52
	2	28	381418.99	3737812.15	94.33	179.93
	3	28	381426.27	3737808.61	101.61	176.39
	4	28	381394.12	3737736.02	69.46	103.8
Building 6 - Filler Tower	1	77	381393.55	3737775.26	68.89	143.04
	2	77	381396.96	3737781.89	72.3	149.67
	3	77	381403.48	3737778.94	78.82	146.72
	4	77	381400.46	3737772.33	75.8	140.11
Building 7 - Warehouse 3	1	31	381386.83	3737711.89	62.17	79.67
	2	31	381397.87	3737733.71	73.21	101.49
	3	31	381370.22	3737746.73	45.56	114.51
	4	31	381359.38	3737724.81	34.72	92.59
Building 8 - Warehouse 4	1	27	381352.94	3737707.6	28.28	75.38
	2	27	381360.46	3737723.51	35.8	91.29
	3	27	381384.76	3737711.97	60.1	79.75
	4	27	381377.41	3737696.12	52.75	63.9
Building 9 - Granul Bin Tier 1	1	55	381408.38	3737765.71	83.72	133.49
	2	55	381416.71	3737783.97	92.05	151.75
	3	55	381420.48	3737782.03	95.82	149.81
	4	55	381412.28	3737763.83	87.62	131.61
Building 10 - Head Tower Tier 2	1	82	381413	3737775.56	88.34	143.34
	2	82	381414.59	3737779.28	89.93	147.06
	3	82	381418.46	3737777.33	93.8	145.11
	4	82	381416.85	3737773.65	92.19	141.43

TABLE 6a. BUILDING DIMENSIONS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

	Receptor	Height (ft)	East UTM	North UTM	Rel East	Rel North
Building 11 - Haz. Waste/Paint Store	1	15	381416.98	3737736.33	92.32	104.11
	2	15	381426.92	3737759.78	102.26	127.56
	3	15	381435.61	3737755.54	110.95	123.32
	4	15	381425.06	3737732.17	100.4	99.95
Building 12 - Machine Shop	1	15	381417.7	3737788.53	93.04	156.31
	2	15	381435.13	3737826.85	110.47	194.63
	3	15	381440.58	3737824.17	115.92	191.95
	4	15	381423.12	3737786.23	98.46	154.01
Building 13 - 400T Silo	1	65	381430.82	3737759.34	106.16	127.12
	2	65	381431.24	3737763.25	106.58	131.03
	3	65	381435.01	3737762.98	110.35	130.76
	4	65	381434.6	3737759.03	109.94	126.81
Building 14 - Lift Truck Services	1	15	381431.76	3737770.31	107.1	138.09
	2	15	381436.16	3737779.35	111.5	147.13
	3	15	381444.17	3737775.5	119.51	143.28
	4	15	381440.01	3737766.34	115.35	134.12
Building 15 - Lift Truck Services	1	15	381434.49	3737785.05	109.83	152.83
	2	15	381438.31	3737792.48	113.65	160.26
	3	15	381443.68	3737789.69	119.02	157.47
	4	15	381439.98	3737782.31	115.32	150.09
Building 16 - Steel Storage	1	15	381440.15	3737782.2	115.49	149.98
	2	15	381442.77	3737787.44	118.11	155.22
	3	15	381448.17	3737784.8	123.51	152.58
	4	15	381445.54	3737779.46	120.88	147.24
Building 17 - Main Office	1	12	381417.36	3737915.43	92.7	283.21
	2	12	381416.75	3737927	92.09	294.78
	3	12	381434.35	3737927.93	109.69	295.71
	4	12	381434.05	3737934.69	109.39	302.47
	5	12	381444.3	3737935.24	119.64	303.02
	6	12	381445.24	3737916.92	120.58	284.7
Building 18 - APCO	1	15	381363.94	3737925.84	39.28	293.62
	2	15	381375.73	3737924.69	51.07	292.47
	3	15	381375.42	3737919.63	50.76	287.41
	4	15	381363.43	3737920.9	38.77	288.68
Building Downwash						
Building 19 - COP Tank	1	80	381247.19	3737760.04	-77.47	127.82
	2	80	381304.72	3737759.61	-19.94	127.39
	3	80	381304.32	3737704.36	-20.34	72.14
	4	80	381246.21	3737704.22	-78.45	72

Notes:

UTM coordinates based on WGS 84.

Heights for facility buildings are based on information supplied by client.

Heights for building downwash are estimated using Google Earth.

TABLE 6b. SENSITIVE RECEPTORS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

	Receptor	East UTM	North UTM	Rel East	Rel North
Facility Center		381324.66	3737632.22	0	0
Sensitive Receptors					
Hawaiian Ave Elementary School	5211	381821.08	3737925.68	496.42	293.46
	5212	381928.31	3737931.2	603.65	298.98
	5213	381809.67	3738079.05	485.01	446.83
	5214	381922.63	3738084.26	597.97	452.04
Hawaiian Children Center	5215	381750.2	3737930.81	425.54	298.59
	5216	381799.71	3737933.35	475.05	301.13
	5217	381750.7	3737995.34	426.04	363.12
	5218	381800.03	3737997.9	475.37	365.68
St Paul & St Peter School	5219	382405.19	3738289.19	1080.53	656.97
	5220	382506.86	3738292.55	1182.20	660.33
	5221	382395.9	3738427	1071.24	794.78
	5222	382498.2	3738432.85	1173.54	800.63
Gulf Ave Elementary School	5223	382123.74	3738992.85	799.08	1360.63
	5224	382219.09	3738997.02	894.43	1364.80
	5225	382112.81	3739201.88	788.15	1569.66
	5226	382206.95	3739207.39	882.29	1575.17
Taper Ave Elementary School	5227	379715.09	3736472.65	-1609.57	-1159.57
	5228	379835.81	3736493.77	-1488.85	-1138.45
	5229	379674.94	3736685.05	-1649.72	-947.17
	5230	379816.68	3736676.72	-1507.98	-955.50
William J Johnston Community Day School	5231	379689.16	3736876.32	-1635.50	-755.90
	5232	379799.18	3736874.6	-1525.48	-757.62
	5233	379686.66	3736941.71	-1638.00	-690.51
	5234	379798.9	3736940.87	-1525.76	-691.35

TABLE 6b. SENSITIVE RECEPTORS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

	Receptor	East UTM	North UTM	Rel East	Rel North
Mary Star of the Sea High School	5235	379251.48	3737036.85	-2073.18	-595.37
	5236	379607.58	3737028.17	-1717.08	-604.05
	5237	379258.13	3737156.32	-2066.53	-475.90
	5238	379592.43	3737099.62	-1732.23	-532.60
Rolling Hills Preparatory School	5239	379304.39	3738326.81	-2020.27	694.59
	5240	379641.17	3738364.97	-1683.49	732.75
	5241	379364.82	3738469.02	-1959.84	836.80
Harbor Teacher Prep Academy	5242	379611.91	3738484.94	-1712.75	852.72
	5243	381004.91	3738690.48	-319.75	1058.26
	5244	381346.96	3738645.99	22.30	1013.77
	5245	380869.72	3739169.52	-454.94	1537.30
Harbor City Elementary School	5246	381326.23	3739153.66	1.57	1521.44
	5247	379263.93	3739918.91	-2060.73	2286.69
	5248	379390.75	3739917.16	-1933.91	2284.94
	5249	379265.17	3740049.23	-2059.49	2417.01
Fries Avenue Elementary School	5250	379394.18	3740044.78	-1930.48	2412.56
	5251	382746.25	3739364.35	1421.59	1732.13
	5252	382832.95	3739366.13	1508.29	1733.91
	5253	382724.42	3739533.45	1399.76	1901.23
Kaiser Permanente South Bay Medical Center	5254	382821.4	3739539.17	1496.74	1906.95
	5255	379961.53	3739348.84	-1363.13	1716.62
	5256	380142.44	3739521.48	-1182.22	1889.26
	5257	379937.91	3739457.53	-1386.75	1825.31
Wilmington Health Center	5258	380041.93	3739645.07	-1282.73	2012.85
	5259	383157.97	3739555	1833.31	1922.78
	5260	383195.4	3739556.42	1870.74	1924.20
	5261	383155.62	3739586.77	1830.96	1954.55
	5262	383191.81	3739586.15	1867.15	1953.93

TABLE 6c. CENSUS TRACT RECEPTORS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor	Description	East UTM	North UTM	Rel East	Rel North
Facility Center		381324.66	3737632.22	0	0
Census Tract					
5275	1	381461.00	3737772.00	136.34	139.78
5274	2	381461.00	3737752.00	136.34	119.78
5273	3	381457.00	3737745.00	132.34	112.78
5304	4	381313.00	3737742.00	-11.66	109.78
5303	5	381311.00	3737762.00	-13.66	129.78
5305	6	381315.00	3737722.00	-9.66	89.78
5302	7	381309.00	3737782.00	-15.66	149.78
5306	8	381317.00	3737702.00	-7.66	69.78
5276	9	381461.00	3737792.00	136.34	159.78
5301	10	381307.00	3737802.00	-17.66	169.78
5300	11	381305.00	3737822.00	-19.66	189.78
5272	12	381445.00	3737729.00	120.34	96.78
5307	13	381319.00	3737682.00	-5.66	49.78
5299	14	381303.00	3737842.00	-21.66	209.78
5271	15	381439.00	3737726.00	114.34	93.78
5308	16	381321.00	3737662.00	-3.66	29.78
5277	17	381461.00	3737812.00	136.34	179.78
5298	18	381301.00	3737861.00	-23.66	228.78
5270	19	381421.00	3737717.00	96.34	84.78

TABLE 6c. CENSUS TRACT RECEPTORS

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor	Description	East UTM	North UTM	Rel East	Rel North
5266	20	381368.00	3737676.00	43.34	43.78
5265	21	381353.00	3737662.00	28.34	29.78
5267	22	381383.00	3737689.00	58.34	56.78
5264	23	381338.00	3737649.00	13.34	16.78
5309	24	381323.00	3737642.00	-1.66	9.78
5269	25	381403.00	3737708.00	78.34	75.78
5268	26	381397.00	3737703.00	72.34	70.78
5278	27	381461.00	3737832.00	136.34	199.78
5263	28	381323.00	3737635.00	-1.66	2.78
5297	29	381299.00	3737881.00	-25.66	248.78
5279	30	381461.00	3737852.00	136.34	219.78
5296	31	381297.00	3737901.00	-27.66	268.78
5293	32	381329.00	3737922.00	4.34	289.78
5292	33	381329.00	3737925.00	4.34	292.78
5294	34	381309.00	3737922.00	-15.66	289.78
5280	35	381461.00	3737872.00	136.34	239.78
5295	36	381295.00	3737921.00	-29.66	288.78
5291	37	381328.00	3737945.00	3.34	312.78
5290	38	381348.00	3737946.00	23.34	313.78
5289	39	381368.00	3737948.00	43.34	315.78
5281	40	381461.00	3737892.00	136.34	259.78
5288	41	381388.00	3737949.00	63.34	316.78
5282	42	381461.00	3737898.00	136.34	265.78
5287	43	381408.00	3737950.00	83.34	317.78
5283	44	381453.00	3737914.00	128.34	281.78
5286	45	381427.00	3737952.00	102.34	319.78
5284	46	381450.00	3737934.00	125.34	301.78
5285	47	381447.00	3737953.00	122.34	320.78

Table 7a. PMI Cancer Risk By Substance and Exposure Pathway

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA

Facility ID #57094

Receptor 5275 | UTME 381461 | UTMN 3737772

Chemical Name	CAS #	Inhalation	Dermal	Soil	Mother's Milk	Plants	Oral Subtotal	Total	Contribution
1,3-Butadiene	106990	3.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.19E-06	15.30%
Acetaldehyde	75070	4.93E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.93E-07	2.36%
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Benzene	71432	1.19E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E-05	56.84%
Formaldehyde	50000	5.23E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.23E-06	25.04%
Hydrogen Sulfide	7783064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Naphthalene	91203	9.59E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.59E-08	0.46%
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Crystalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Total		2.09E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-05	100.00%

Table 7b. PMI Cancer Risk By Source and Exposure Pathway

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5275 | UTME 381461 | UTMN 3737772

Source ID	Source Name	Inhalation	Dermal	Soil	Mother's Milk	Plants	Oral Subtotal	Total	Contribution
S0001	Coater, Vertical Mixer and Horizontal Mixer (& Coater Fugitivies)	8.28E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.28E-07	3.97%
S0002	Surfacing Section	7.14E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.14E-08	0.34%
S0003	Cooling Section	3.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-08	0.17%
S0005	Sealant Applicator	4.81E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.81E-08	0.23%
S0006	Laminant Applicator Stack	2.51E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-08	0.12%
S0007	Coating & Laminant Storage Tank Stack	1.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-05	48.14%
S0009	Sealant Storage Tank	2.82E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.82E-08	0.14%
S0011	Asphalt Heater Stack	7.57E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.57E-08	0.36%
S0012	Mat Preheater	1.42E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-06	6.80%
S0013	400 Ton Filler Silo Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
S0015	20 Ton Silo Filtered Vent Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
S0016	Truck Offloading	4.58E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.58E-08	0.22%
S0017	Forklifts Warehouse	7.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.57E-06	36.27%
S0018	Forklifts Truck Delivery	6.56E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.56E-07	3.14%
S0019	Forklifts Track	1.86E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E-08	0.09%
Total		2.09E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-05	100.00%

Table 8a. MEIR Cancer Risk By Substance and Exposure Pathway

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA

Facility ID #57094

Receptor 1517 | UTME 381625 | UTMN 3737732

Chemical Name	CAS #	Inhalation	Dermal	Soil	Mother's Milk	Plants	Oral Subtotal	Total	Contribution
1,3-Butadiene	106990	7.90E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.90E-07	11.55%
Acetaldehyde	75070	1.50E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-07	2.19%
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Benzene	71432	4.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.10E-06	59.90%
Formaldehyde	50000	1.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	26.02%
Hydrogen Sulfide	7783064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Naphthalene	91203	2.41E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-08	0.35%
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Cyrstalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Total		6.84E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.84E-06	100.00%

Table 8b. MEIR Cancer Risk By Source and Exposure Pathway

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094
 Receptor 1517 | UTME 381625 | UTMN 3737732

Source ID	Source Name	Inhalation	Dermal	Soil	Mother's Milk	Plants	Oral Subtotal	Total	Contribution
S0001	Coater, Vertical Mixer and Horizontal Mixer (& Coater Fugitivities)	6.74E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.74E-07	9.84%
S0002	Surfacing Section	4.73E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.73E-08	0.69%
S0003	Cooling Section	3.03E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.03E-08	0.44%
S0005	Sealant Applicator	1.98E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-08	0.29%
S0006	Laminant Applicator Stack	9.10E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.10E-09	0.13%
S0007	Coating & Laminant Storage Tank Stack	3.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-06	46.00%
S0009	Sealant Storage Tank	2.97E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.97E-08	0.43%
S0011	Asphalt Heater Stack	3.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-08	0.47%
S0012	Mat Preheater	8.04E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.04E-07	11.75%
S0013	400 Ton Filler Silo Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
S0015	20 Ton Silo Filtered Vent Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
S0016	Truck Offloading	1.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-08	0.15%
S0017	Forklifts Warehouse	1.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.70E-06	24.88%
S0018	Forklifts Truck Delivery	3.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.21E-07	4.69%
S0019	Forklifts Track	1.58E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-08	0.23%
Total		6.84E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.84E-06	100.00%

Table 9a. MEIW Cancer Risk By Substance and Exposure Pathway

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA

Facility ID #57094

Receptor 5304 | UTME 381313 | UTMN 3737742

Chemical Name	CAS #	Inhalation	Dermal	Soil	Mother's Milk	Plants	Oral Subtotal	Total	Contribution
1,3-Butadiene	106990	1.02E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-06	18.73%
Acetaldehyde	75070	1.34E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.34E-07	2.45%
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Benzene	71432	2.86E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.86E-06	52.32%
Formaldehyde	50000	1.42E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-06	25.95%
Hydrogen Sulfide	7783064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Naphthalene	91203	3.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.02E-08	0.55%
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Cyrstalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Total		5.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.46E-06	100.00%

Table 9b. MEIW Cancer Risk By Source and Exposure Pathway

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5304 | UTME 381313 | UTMN 3737742

Source ID	Source Name	Inhalation	Dermal	Soil	Mother's Milk	Plants	Oral Subtotal	Total	Contribution
S0001	Coater, Vertical Mixer and Horizontal Mixer (& Coater Fugitivies)	1.43E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-07	2.61%
S0002	Surfacing Section	8.96E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.96E-09	0.16%
S0003	Cooling Section	3.90E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-09	0.07%
S0005	Sealant Applicator	1.01E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-08	0.18%
S0006	Laminant Applicator Stack	8.89E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.89E-09	0.16%
S0007	Coating & Laminant Storage Tank Stack	2.38E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.38E-06	43.52%
S0009	Sealant Storage Tank	1.23E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-08	0.23%
S0011	Asphalt Heater Stack	5.33E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.33E-09	0.10%
S0012	Mat Preheater	2.31E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.31E-07	4.22%
S0013	400 Ton Filler Silo Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
S0015	20 Ton Silo Filtered Vent Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
S0016	Truck Offloading	2.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-08	0.39%
S0017	Forklifts Warehouse	2.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.30E-06	42.01%
S0018	Forklifts Truck Delivery	3.41E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.41E-07	6.24%
S0019	Forklifts Track	5.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.74E-09	0.11%
Total		5.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.46E-06	100.00%

Table 10a. PMI Chronic Hazard By Substance

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5275 | UTME 381461 | UTMN 3737772

Chemical Name	CAS #	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1,3-Butadiene	106990	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-03
Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-04
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.81E-02
Benzene	71432	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-02	0.00E+00	5.73E-02
Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.01E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.01E-02
Hydrogen Sulfide	7783064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.55E-02
Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-04
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-03
Cyrstalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03
Total		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-03	2.34E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-02	0.00E+00	2.34E-01

Table 10b. PMI Chronic Hazard By Source

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094
 Receptor 5275 | UTME 381461 | UTMN 3737772

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
S0001	Coater, Vertical Mixer and Horizontal Mixer (& Coater Fugitives)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.38E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.83E-03	0.00E+00	3.83E-03
S0002	Surfacing Section	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-04	0.00E+00	1.35E-03
S0003	Cooling Section	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-04	0.00E+00	1.67E-04
S0005	Sealant Applicator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-04	0.00E+00	6.05E-04
S0006	Laminant Applicator Stack	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-04	0.00E+00	3.16E-04
S0007	Coating & Laminant Storage Tank Stack	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.59E-02	0.00E+00	9.31E-02
S0009	Sealant Storage Tank	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-04	0.00E+00	2.61E-04
S0011	Asphalt Heater Stack	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-04	0.00E+00	8.84E-03
S0012	Mat Preheater	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.96E-06	0.00E+00	1.12E-02
S0013	400 Ton Filler Silo Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-06
S0015	20 Ton Silo Filtered Vent Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E-06
S0016	Truck Offloading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-04	0.00E+00	5.76E-04
S0017	Forklifts Warehouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.54E-03	1.05E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.63E-03	0.00E+00	1.05E-01
S0018	Forklifts Truck Delivery	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-04	9.11E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.87E-04	0.00E+00	9.11E-03
S0019	Forklifts Track	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.70E-06	2.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-05	0.00E+00	2.58E-04
	Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-03	2.34E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-02	0.00E+00	2.34E-01

Table 11a. MEIR Chronic Hazard By Substance

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 1517 | UTME 381625 | UTMN 3737732

Chemical Name	CAS #	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DE VEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1,3-Butadiene	106990	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-04
Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-04
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-02
Benzene	71432	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-02	0.00E+00	1.98E-02
Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-02
Hydrogen Sulfide	7783064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E-02
Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.24E-05
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-03
Crystalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.98E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.98E-04
Total		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-04	7.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-02	0.00E+00	7.22E-02

Table 11b. MEIR Chronic Hazard By Source

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 1517 | UTME 381625 | UTMN 3737732

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
S0001	Coater, vertical	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.75E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.12E-03	0.00%	3.12E-03
S0002	Surfacing Section	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.92E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-04	0.00%	8.92E-04
S0003	Cooling Section	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-04	0.00%	1.40E-04
S0005	Sealant Applicator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.15E-05	0.00%	2.49E-04
S0006	iniant Applicator S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-05	0.00%	1.14E-04
S0007	Laminant Storage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-02	0.00%	2.92E-02
S0009	Sealant Storage Tan	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-04	0.00%	2.76E-04
S0011	Asphalt Heater Stac	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-04	0.00%	3.77E-03
S0012	Mat Preheater	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.36E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.64E-06	0.00%	6.36E-03
S0013	ton Filler Silo Bagh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.62E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%	9.62E-05
S0015	Silo Filtered Vent B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%	1.91E-05
S0016	Truck Offloading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.74E-05	0.00%	1.29E-04
S0017	forklifts Warehous	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.96E-04	2.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-03	0.00%	2.37E-02
S0018	forklifts Truck Deliv	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-04	4.46E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E-04	0.00%	4.46E-03
S0019	Forklifts Track	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.37E-06	2.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-05	0.00%	2.19E-04
Total		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-04	7.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-02	0.00E+00	7.22E-02

Table 12a. MEIW Chronic Hazard By Substance

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5304 | UTME 381313 | UTMN 3737742

Chemical Name	CAS #	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1,3-Butadiene	106990	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-03
Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.05E-04
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.20E-02
Benzene	71432	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-02	0.00E+00	4.03E-02
Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.17E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.17E-02
Hydrogen Sulfide	7783064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.60E-02
Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-04
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-03
Cyrstalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.23E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.23E-04
Total		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-03	1.83E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.03E-02	0.00E+00	1.83E-01

Table 12b. MEIW Chronic Hazard By Source

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5304 | UTME 381313 | UTMN 3737742

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
S0001	Coater, vertical	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.70E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.93E-03	0.00%	1.93E-03
S0002	Surfacing Section	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.94E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-04	0.00%	4.94E-04
S0003	Cooling Section	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.27E-05	0.00%	5.27E-05
S0005	Sealant Applicator	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.70E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-04	0.00%	3.70E-04
S0006	Pinant Applicator S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.44E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.17E-02	0.00%	6.44E-02
S0007	Laminant Storage	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-04	0.00%	3.33E-04
S0009	Sealant Storage Tan	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%	0.00E+00
S0011	Asphalt Heater Stack	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.86E-05	0.00%	1.82E-03
S0012	Mat Preheater	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.33E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.73E-06	0.00%	5.33E-03
S0013	Con Filler Silo Bagh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.97E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%	1.97E-05
S0015	Silo Filtered Vent B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%	1.39E-05
S0016	Truck Offloading	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.76E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.85E-04	0.00%	7.76E-04
S0017	Forklifts Warehouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.14E-03	9.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.98E-03	0.00%	9.31E-02
S0018	Forklifts Truck Deliv	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.66E-04	1.38E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.40E-04	0.00%	1.38E-02
S0019	Forklifts Track	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.84E-06	2.33E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-05	0.00%	2.33E-04
Total		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-03	1.82E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E-02	0.00E+00	1.82E-01

Table 13a. PMI Acute Hazard By Substance

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5303 | UTME 381311 | UTMN 373762

Chemical Name	CAS #	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DE VEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1,3-Butadiene	106990	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-03
Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-02	0.00E+00	1.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-02
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E+00	0.00E+00	1.13E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E+00
Benzene	71432	0.00E+00	0.00E+00	5.11E-01	0.00E+00	0.00E+00	5.11E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.11E-01	0.00E+00	5.11E-01
Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-01
Hydrogen Sulfide	7783064	0.00E+00	1.84E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E+00
Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-02	0.00E+00	1.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-02
Cyrstalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		0.00E+00	1.84E+00	5.11E-01	0.00E+00	0.00E+00	5.12E-01	1.15E+00	0.00E+00	1.67E+00	0.00E+00	0.00E+00	5.11E-01	0.00E+00	1.84E+00

Table 13b. PMI Acute Hazard By Source

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5303 | UTME 381311 | UTMN 3737762

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
S0001	Coater, Vertical	0.00E+00	1.37E-02	1.87E-02	0.00E+00	0.00E+00	1.87E-02	2.20E-04	0.00E+00	1.22E-03	0.00E+00	0.00E+00	1.87E-02	0.00E+00	1.87E-02
S0002	Surfacing Section	0.00E+00	0.00E+00	9.77E-04	0.00E+00	0.00E+00	9.77E-04	1.15E-05	0.00E+00	6.37E-05	0.00E+00	0.00E+00	9.77E-04	0.00E+00	9.77E-04
S0003	Cooling Section	0.00E+00	0.00E+00	5.40E-04	0.00E+00	0.00E+00	5.40E-04	6.35E-06	0.00E+00	3.52E-05	0.00E+00	0.00E+00	5.40E-04	0.00E+00	5.40E-04
S0005	Sealant Applicator	0.00E+00	3.51E-03	6.13E-04	0.00E+00	0.00E+00	6.13E-04	7.20E-06	0.00E+00	3.99E-05	0.00E+00	0.00E+00	6.13E-04	0.00E+00	3.51E-03
S0006	Pinant Applicator S	0.00E+00	5.86E-03	1.02E-03	0.00E+00	0.00E+00	1.02E-03	1.20E-05	0.00E+00	6.66E-05	0.00E+00	0.00E+00	1.02E-03	0.00E+00	5.86E-03
S0007	Laminant Storage	0.00E+00	1.76E+00	4.17E-01	0.00E+00	0.00E+00	4.17E-01	6.18E-03	0.00E+00	3.68E-02	0.00E+00	0.00E+00	4.17E-01	0.00E+00	1.76E+00
S0009	Sealant Storage Tan	0.00E+00	8.20E-03	1.94E-03	0.00E+00	0.00E+00	1.94E-03	2.87E-05	0.00E+00	1.71E-04	0.00E+00	0.00E+00	1.94E-03	0.00E+00	8.20E-03
S0011	Asphalt Heater Stack	0.00E+00	0.00E+00	7.07E-04	0.00E+00	0.00E+00	7.07E-04	1.60E-02	0.00E+00	1.67E-02	0.00E+00	0.00E+00	7.07E-04	0.00E+00	1.67E-02
S0012	Mat Preheater	0.00E+00	0.00E+00	4.95E-05	0.00E+00	0.00E+00	4.95E-05	1.12E-03	0.00E+00	7.94E-02	0.00E+00	0.00E+00	4.95E-05	0.00E+00	7.94E-02
S0013	Con Filler Silo Bag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0015	Silo Filtered Vent B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0016	Truck Offloading	0.00E+00	4.11E-02	7.16E-03	0.00E+00	0.00E+00	7.16E-03	8.45E-05	0.00E+00	4.68E-04	0.00E+00	0.00E+00	7.16E-03	0.00E+00	4.11E-02
S0017	Forklifts Warehouse	0.00E+00	0.00E+00	4.96E-02	0.00E+00	0.00E+00	5.04E-02	8.97E-01	0.00E+00	1.21E+00	0.00E+00	0.00E+00	4.96E-02	0.00E+00	1.21E+00
S0018	Forklifts Truck Delivery	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00	1.26E-02	2.24E-01	0.00E+00	3.03E-01	0.00E+00	0.00E+00	1.24E-02	0.00E+00	3.03E-01
S0019	Forklifts Track	0.00E+00	0.00E+00	5.71E-04	0.00E+00	0.00E+00	5.81E-04	1.03E-02	0.00E+00	1.40E-02	0.00E+00	0.00E+00	5.71E-04	0.00E+00	1.40E-02
Total		0.00E+00	1.84E+00	5.11E-01	0.00E+00	0.00E+00	5.12E-01	1.15E+00	0.00E+00	1.67E+00	0.00E+00	0.00E+00	5.11E-01	0.00E+00	1.84E+00

Table 14a. MEIR Acute Hazard By Substance

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA

Facility ID #57094

Receptor 1777 | UTME 381374 | UTMN 3737982

Chemical Name	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1,3-Butadiene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-04
Acetaldehyde	0.00E+00	4.02E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E-03
Acrolein	0.00E+00	4.92E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.92E-01
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-01	0.00E+00	1.17E-01
Formaldehyde	0.00E+00	2.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.53E-01
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.98E-01
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ammonia	0.00E+00	1.12E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-02
Cyrstalline Silica	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	7.60E-01	0.00E+00	0.00E+00	1.17E-01	0.00E+00	7.60E-01

Table 14b. MEIR Acute Hazard By Source

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 1777 | UTME 381374 | UTMN 3737982

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
S0001	Coater, vertical mixer and	0.00E+00	1.58E-02	2.17E-02	0.00E+00	0.00E+00	2.17E-02	2.55E-04	0.00E+00	1.41E-03	0.00E+00	0.00E+00	2.17E-02	0.00E+00	2.17E-02
S0002	Surfacing Section	0.00E+00	0.00E+00	9.31E-04	0.00E+00	0.00E+00	9.31E-04	1.09E-05	0.00E+00	6.06E-05	0.00E+00	0.00E+00	9.31E-04	0.00E+00	9.31E-04
S0003	Cooling Section	0.00E+00	0.00E+00	6.26E-04	0.00E+00	0.00E+00	6.26E-04	7.36E-06	0.00E+00	4.08E-05	0.00E+00	0.00E+00	6.26E-04	0.00E+00	6.26E-04
S0005	Sealant Applicator	0.00E+00	3.20E-03	5.57E-04	0.00E+00	0.00E+00	5.57E-04	6.55E-06	0.00E+00	3.63E-05	0.00E+00	0.00E+00	5.57E-04	0.00E+00	3.20E-03
S0006	Laminant Applicator Stack	0.00E+00	5.51E-03	9.61E-04	0.00E+00	0.00E+00	9.61E-04	1.13E-05	0.00E+00	6.26E-05	0.00E+00	0.00E+00	9.61E-04	0.00E+00	5.51E-03
S0007	ng & Laminant Storage Tank	0.00E+00	2.67E-01	6.32E-02	0.00E+00	0.00E+00	6.32E-02	9.37E-04	0.00E+00	5.58E-03	0.00E+00	0.00E+00	6.32E-02	0.00E+00	2.67E-01
S0009	Sealant Storage Tank	0.00E+00	4.73E-03	1.12E-03	0.00E+00	0.00E+00	1.12E-03	1.66E-05	0.00E+00	9.86E-05	0.00E+00	0.00E+00	1.12E-03	0.00E+00	4.73E-03
S0011	Asphalt Heater Stack	0.00E+00	0.00E+00	5.16E-04	0.00E+00	0.00E+00	5.16E-04	1.17E-02	0.00E+00	1.22E-02	0.00E+00	0.00E+00	5.16E-04	0.00E+00	1.22E-02
S0012	Mat Preheater	0.00E+00	0.00E+00	4.58E-05	0.00E+00	0.00E+00	4.58E-05	1.04E-03	0.00E+00	7.34E-02	0.00E+00	0.00E+00	4.58E-05	0.00E+00	7.34E-02
S0013	400 Ton Filler Silo Baghouse	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0015	Ton Silo Filtered Vent Bagho	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0016	Truck Offloading	0.00E+00	1.41E-03	2.46E-04	0.00E+00	0.00E+00	2.46E-04	2.90E-06	0.00E+00	1.60E-05	0.00E+00	0.00E+00	2.46E-04	0.00E+00	1.41E-03
S0017	Forklifts Warehouse	0.00E+00	0.00E+00	1.77E-02	0.00E+00	0.00E+00	1.80E-02	3.20E-01	0.00E+00	4.33E-01	0.00E+00	0.00E+00	1.77E-02	0.00E+00	4.33E-01
S0018	Forklifts Truck Delivery	0.00E+00	0.00E+00	9.38E-03	0.00E+00	0.00E+00	9.54E-03	1.70E-01	0.00E+00	2.30E-01	0.00E+00	0.00E+00	9.38E-03	0.00E+00	2.30E-01
S0019	Forklifts Track	0.00E+00	0.00E+00	1.94E-04	0.00E+00	0.00E+00	1.97E-04	3.50E-03	0.00E+00	4.74E-03	0.00E+00	0.00E+00	1.94E-04	0.00E+00	4.74E-03
Total		0.00E+00	2.98E-01	1.17E-01	0.00E+00	0.00E+00	1.18E-01	5.07E-01	0.00E+00	7.60E-01	0.00E+00	0.00E+00	1.17E-01	0.00E+00	7.60E-01

Table 15a. MEIW Acute Hazard By Substance

GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094

Receptor 5303 | UTM 381311 | UTMN 3737762

Chemical Name	CAS #	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DE VEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1,3-Butadiene	106990	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-03
Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-02	0.00E+00	1.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-02
Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E+00	0.00E+00	1.13E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E+00
Benzene	71432	0.00E+00	0.00E+00	5.11E-01	0.00E+00	0.00E+00	5.11E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.11E-01	0.00E+00	5.11E-01
Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-01
Hydrogen Sulfide	7783064	0.00E+00	1.84E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.84E+00
Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-02	0.00E+00	1.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-02
Cyrstalline Silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		0.00E+00	1.84E+00	5.11E-01	0.00E+00	0.00E+00	5.12E-01	1.15E+00	0.00E+00	1.67E+00	0.00E+00	0.00E+00	5.11E-01	0.00E+00	1.84E+00

Table 15b. MEIW Acute Hazard By Source

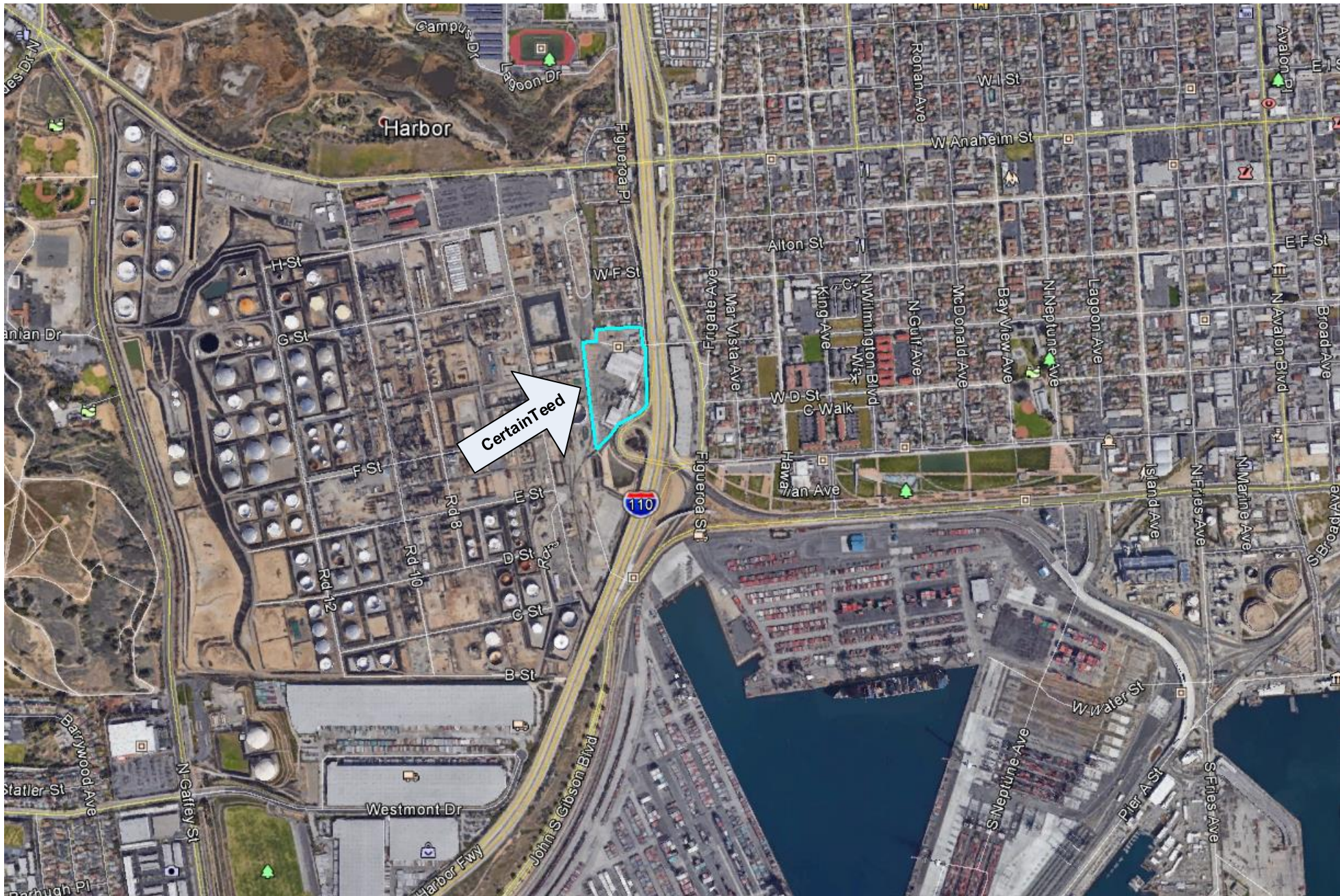
GS Roofing Products Company, Inc./ CertainTeed, Wilmington, CA
 Facility ID #57094
 Receptor 5303 | UTME 381311 | UTMN 3737762

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
S0001	Coater, Vertical	0.00E+00	1.37E-02	1.87E-02	0.00E+00	0.00E+00	1.87E-02	2.20E-04	0.00E+00	1.22E-03	0.00E+00	0.00E+00	1.87E-02	0.00E+00	1.87E-02
S0002	Surfacing Section	0.00E+00	0.00E+00	9.77E-04	0.00E+00	0.00E+00	9.77E-04	1.15E-05	0.00E+00	6.37E-05	0.00E+00	0.00E+00	9.77E-04	0.00E+00	9.77E-04
S0003	Cooling Section	0.00E+00	0.00E+00	5.40E-04	0.00E+00	0.00E+00	5.40E-04	6.35E-06	0.00E+00	3.52E-05	0.00E+00	0.00E+00	5.40E-04	0.00E+00	5.40E-04
S0005	Sealant Applicator	0.00E+00	3.51E-03	6.13E-04	0.00E+00	0.00E+00	6.13E-04	7.20E-06	0.00E+00	3.99E-05	0.00E+00	0.00E+00	6.13E-04	0.00E+00	3.51E-03
S0006	Sealant Applicator S	0.00E+00	5.86E-03	1.02E-03	0.00E+00	0.00E+00	1.02E-03	1.20E-05	0.00E+00	6.66E-05	0.00E+00	0.00E+00	1.02E-03	0.00E+00	5.86E-03
S0007	Laminant Storage	0.00E+00	1.76E+00	4.17E-01	0.00E+00	0.00E+00	4.17E-01	6.18E-03	0.00E+00	3.68E-02	0.00E+00	0.00E+00	4.17E-01	0.00E+00	1.76E+00
S0009	Sealant Storage Tan	0.00E+00	8.20E-03	1.94E-03	0.00E+00	0.00E+00	1.94E-03	2.87E-05	0.00E+00	1.71E-04	0.00E+00	0.00E+00	1.94E-03	0.00E+00	8.20E-03
S0011	Asphalt Heater Stack	0.00E+00	0.00E+00	7.07E-04	0.00E+00	0.00E+00	7.07E-04	1.60E-02	0.00E+00	1.67E-02	0.00E+00	0.00E+00	7.07E-04	0.00E+00	1.67E-02
S0012	Mat Preheater	0.00E+00	0.00E+00	4.95E-05	0.00E+00	0.00E+00	4.95E-05	1.12E-03	0.00E+00	7.94E-02	0.00E+00	0.00E+00	4.95E-05	0.00E+00	7.94E-02
S0013	Top Filler Silo Bag	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0015	Silo Filtered Vent B	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0016	Truck Offloading	0.00E+00	4.11E-02	7.16E-03	0.00E+00	0.00E+00	7.16E-03	8.45E-05	0.00E+00	4.68E-04	0.00E+00	0.00E+00	7.16E-03	0.00E+00	4.11E-02
S0017	Forklifts Warehouse	0.00E+00	0.00E+00	4.96E-02	0.00E+00	0.00E+00	5.04E-02	8.97E-01	0.00E+00	1.21E+00	0.00E+00	0.00E+00	4.96E-02	0.00E+00	1.21E+00
S0018	Forklifts Truck Delivery	0.00E+00	0.00E+00	1.24E-02	0.00E+00	0.00E+00	1.26E-02	2.24E-01	0.00E+00	3.03E-01	0.00E+00	0.00E+00	1.24E-02	0.00E+00	3.03E-01
S0019	Forklifts Track	0.00E+00	0.00E+00	5.71E-04	0.00E+00	0.00E+00	5.81E-04	1.03E-02	0.00E+00	1.40E-02	0.00E+00	0.00E+00	5.71E-04	0.00E+00	1.40E-02
Total		0.00E+00	1.84E+00	5.11E-01	0.00E+00	0.00E+00	5.12E-01	1.15E+00	0.00E+00	1.67E+00	0.00E+00	0.00E+00	5.11E-01	0.00E+00	1.84E+00



CertainTeed, Saint-Gobain
 1431 W E Street,
 Wilmington, CA 90744

Description Location Map		
Scale N/A	Date January 2018	Figure 1







Building Heights:

Building 1	– 6.4 meters
Building 2	– 6.4 meters
Building 3	– 9.45 meters
Building 4	– 8.53 meters
Building 5	– 8.53 meters
Building 6	– 23.47 meters
Building 7	– 9.45 meters
Building 8	– 8.23 meters
Building 9	– 16.76 meters
Building 10	– 25 meters (Tier 2)
Building 11	– 4.57 meters
Building 12	– 4.57 meters
Building 13	– 19.81 meters
Building 14	– 4.57 meters
Building 15	– 4.57 meters
Building 16	– 4.57 meters
Building 17	– 3.66 meters
Building 18	– 4.57 meters
Building 19	– 24.38 meters

Legend:

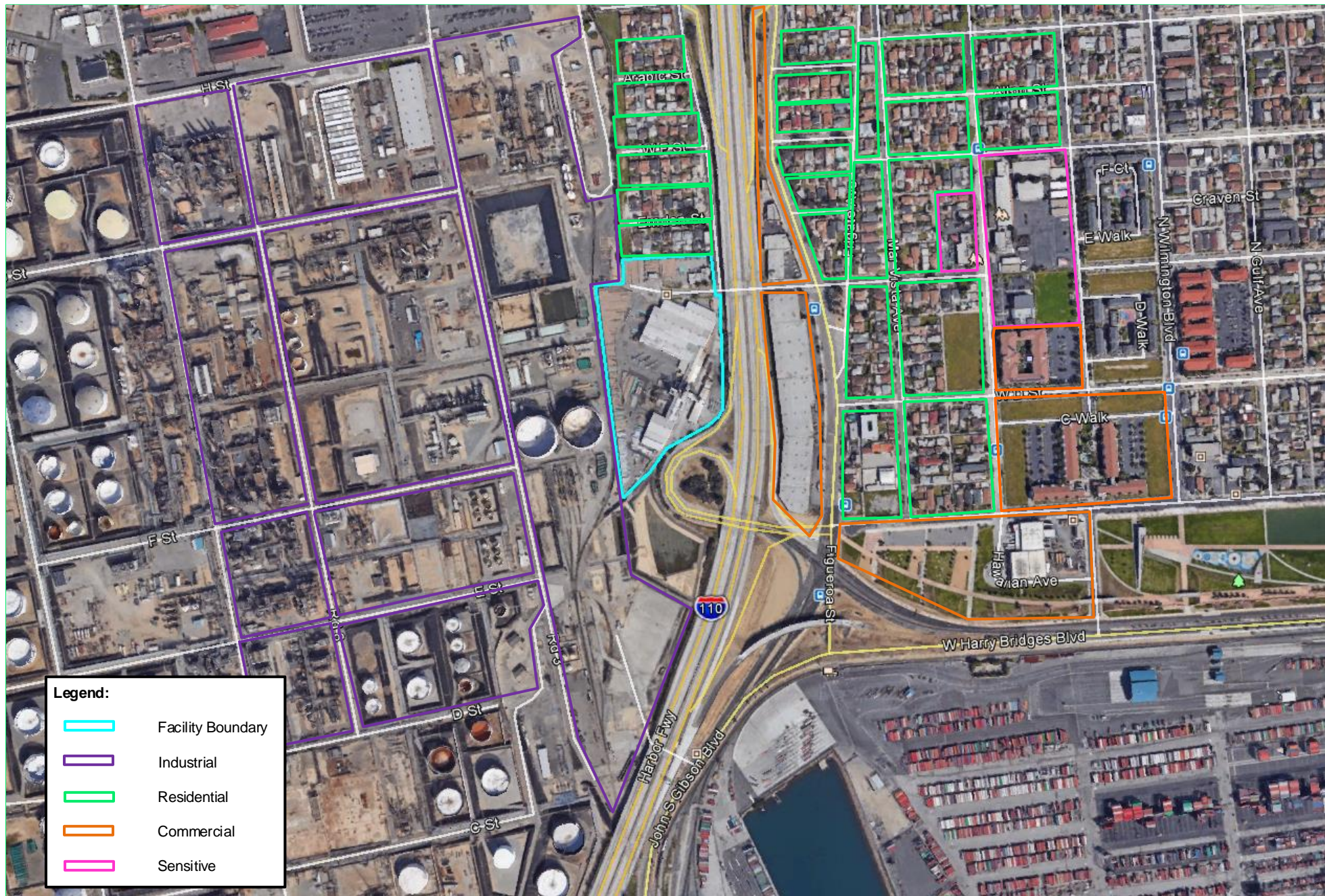
	Facility Boundary
	Building Boundary



- Emission Sources:**
- Source 1 – Coater Stack, Vertical Mixer, Horizontal Mixer
 - Source 2 – Surfacing Section Stack
 - Source 3 – Cooling Section Stack 1
 - Source 4 – Cooling Section Stack 2
(Emissions grouped with source 3)
 - Source 5 – Sealant Applicator
 - Source 6 – Laminant Applicator Stack
 - Source 7 – Coating & Laminant Storage Stack
 - Source 8 – Laminant Use Tank
(Emissions grouped with source 6)
 - Source 9 – Sealant Storage Tank
 - Source 10 – Sealant Use Tank
(Emissions grouped with source 5)
 - Source 11 – Asphalt Heater Stack
 - Source 12 – Mat Preheater
 - Source 13 – 400 Ton Filler Silo Baghouse
 - Source 14 – Filler Heater & 20 Ton Silo
(Emissions grouped with source 15)
 - Source 15 – 20 Ton Silo Filtered Vent Baghouse
 - Source 16 – Truck Offloading
 - Source 17 – Forklifts (Warehouse)
 - Source 18 – Forklifts (Truck Delivery)
 - Source 19 – Forklifts (Track)

- Legend:**
- Facility Boundary
 - Emission Source

Description Site Plot Plan		
Scale N/A	Date January 2018	Figure 4



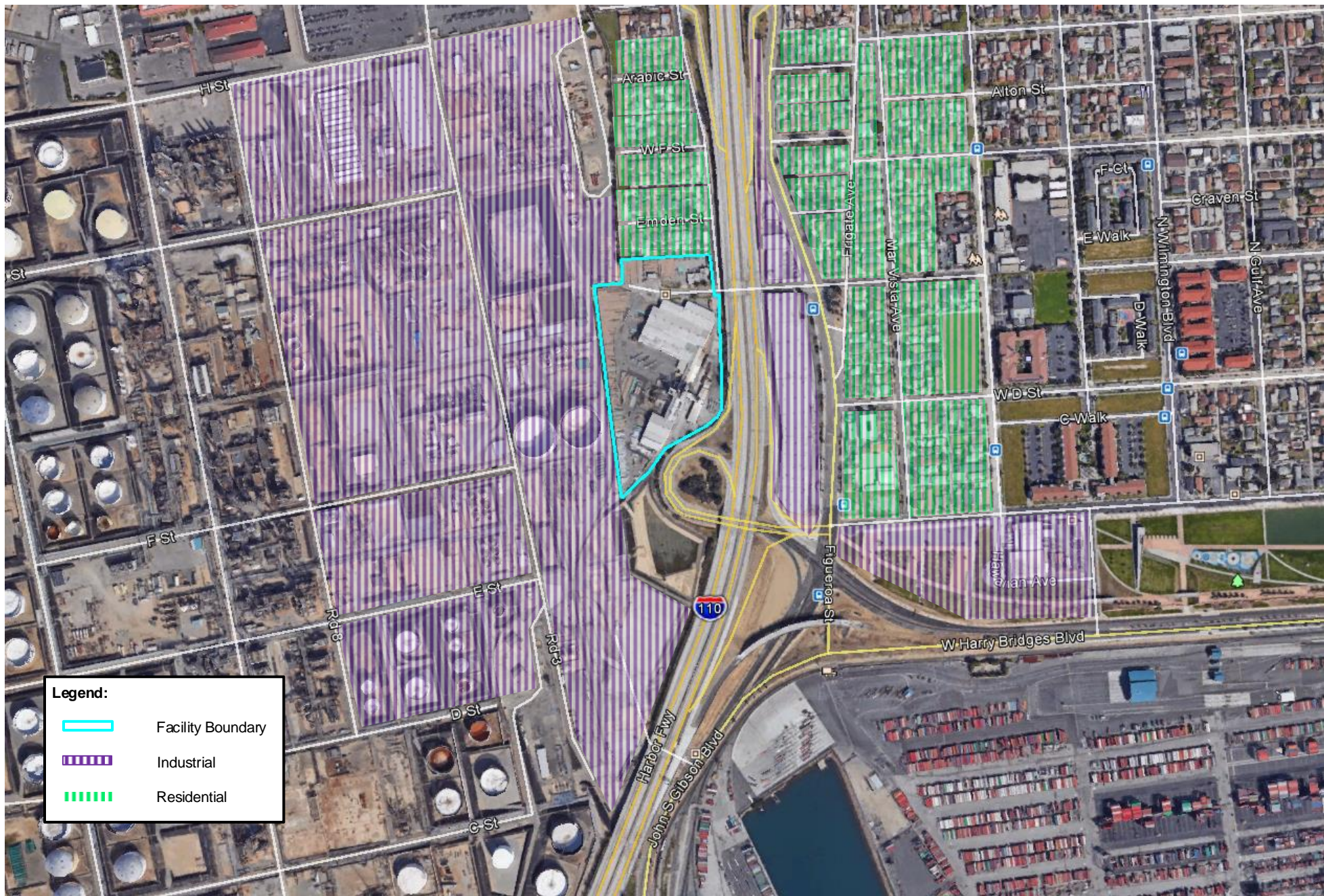
Legend:

- Facility Boundary
- Industrial
- Residential
- Commercial
- Sensitive



CertainTeed, Saint-Gobain
 1431 W E Street,
 Wilmington, CA 90744

Description Zoning Map		
Scale N/A	Date January 2018	Figure 5



Legend:

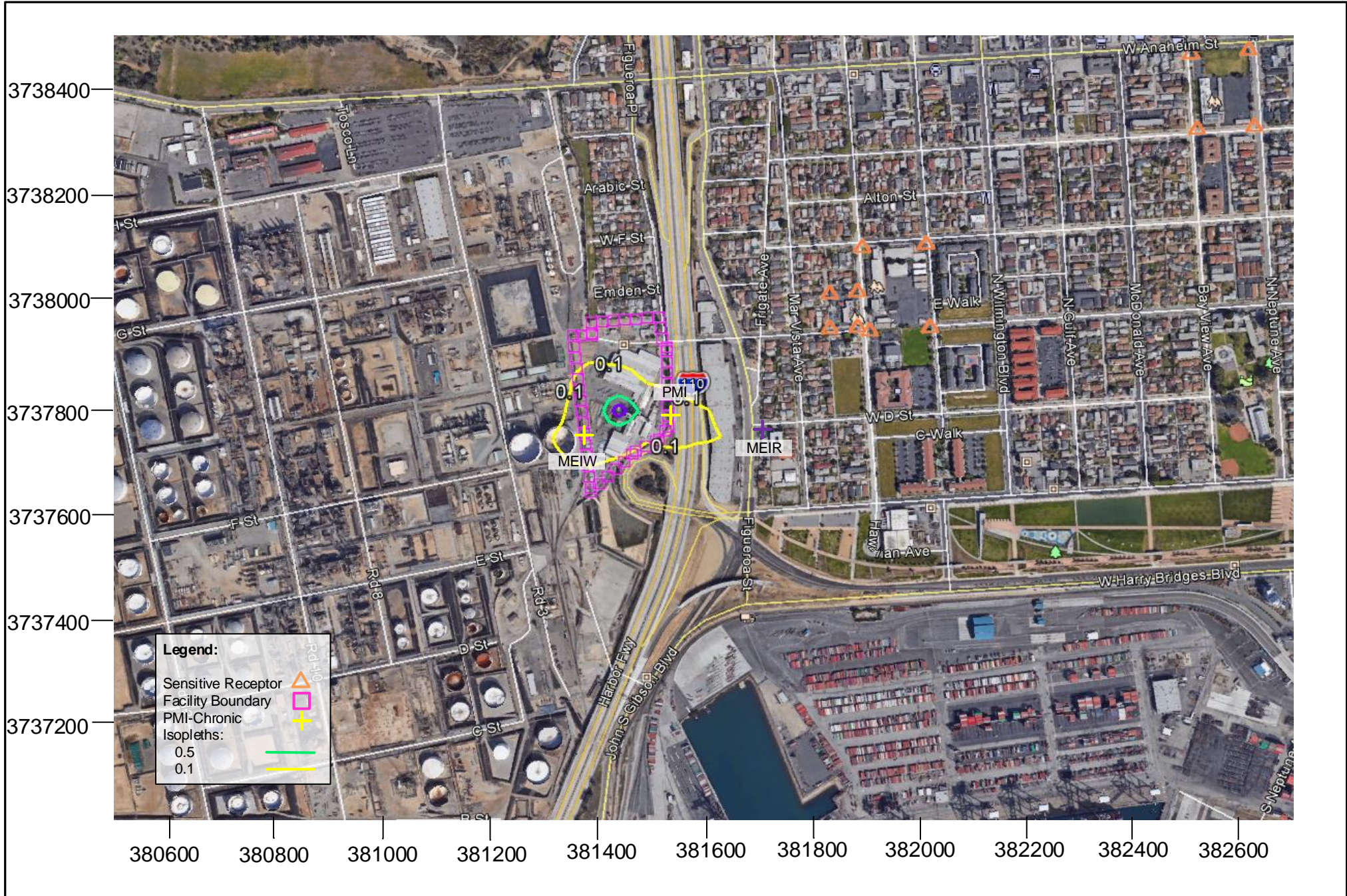
- Facility Boundary
- Industrial
- Residential



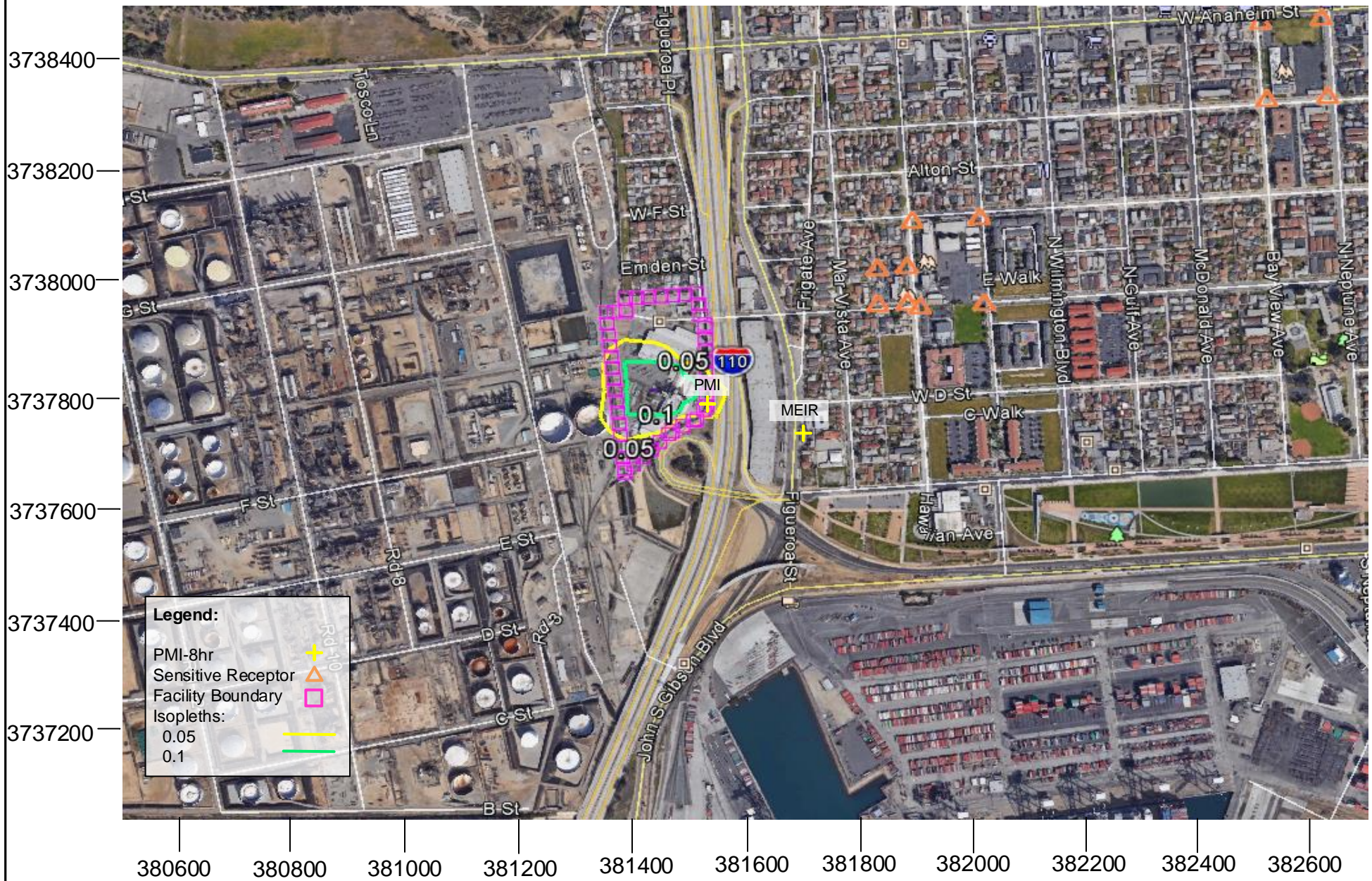
CertainTeed, Saint-Gobain
 1431 W E Street,
 Wilmington, CA 90744

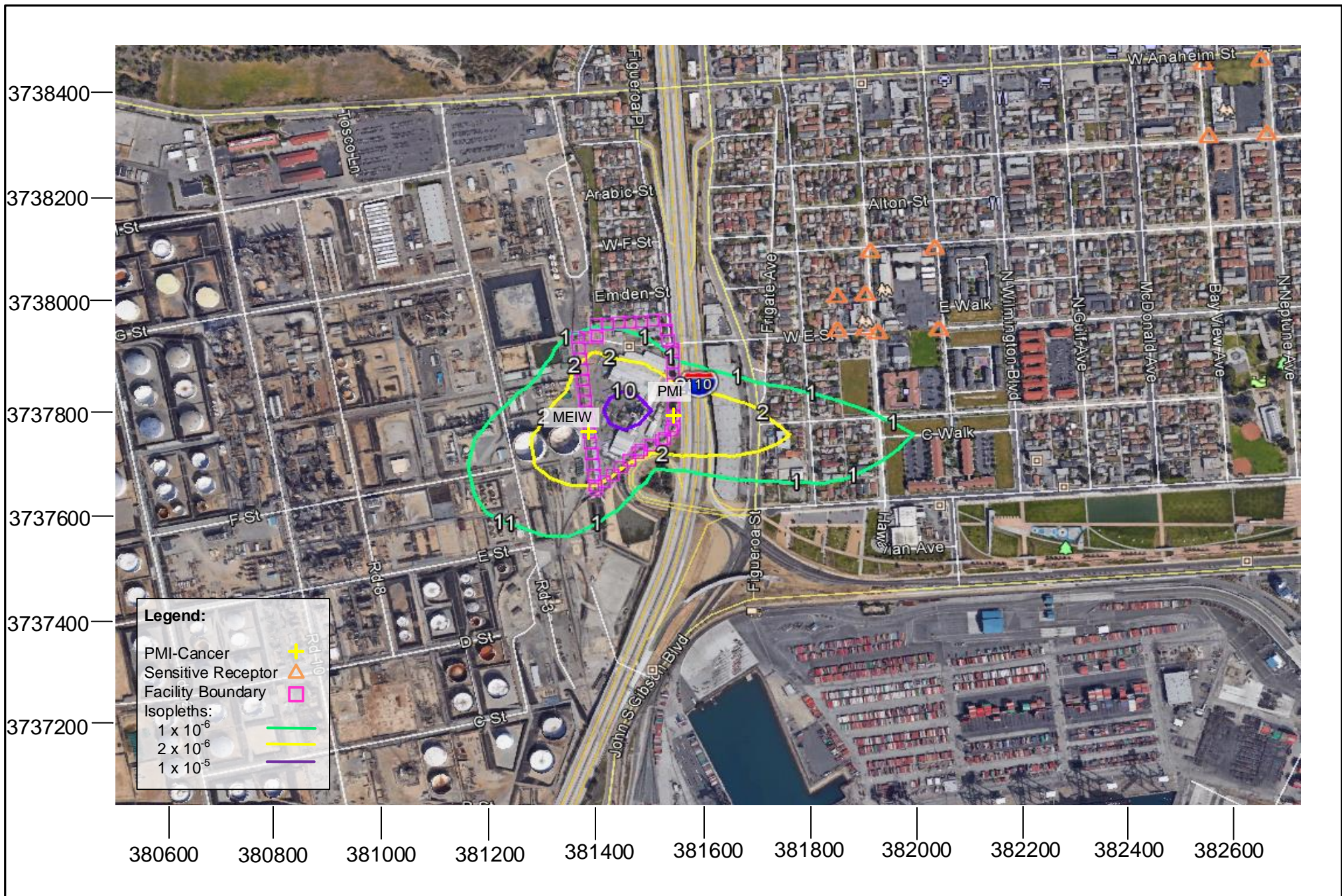
Description Surrounding Land Use Map		
Scale N/A	Date January 2018	Figure 5b





Description Chronic Risk Isopleths		
Scale N/A	Date January 2018	Figure 7

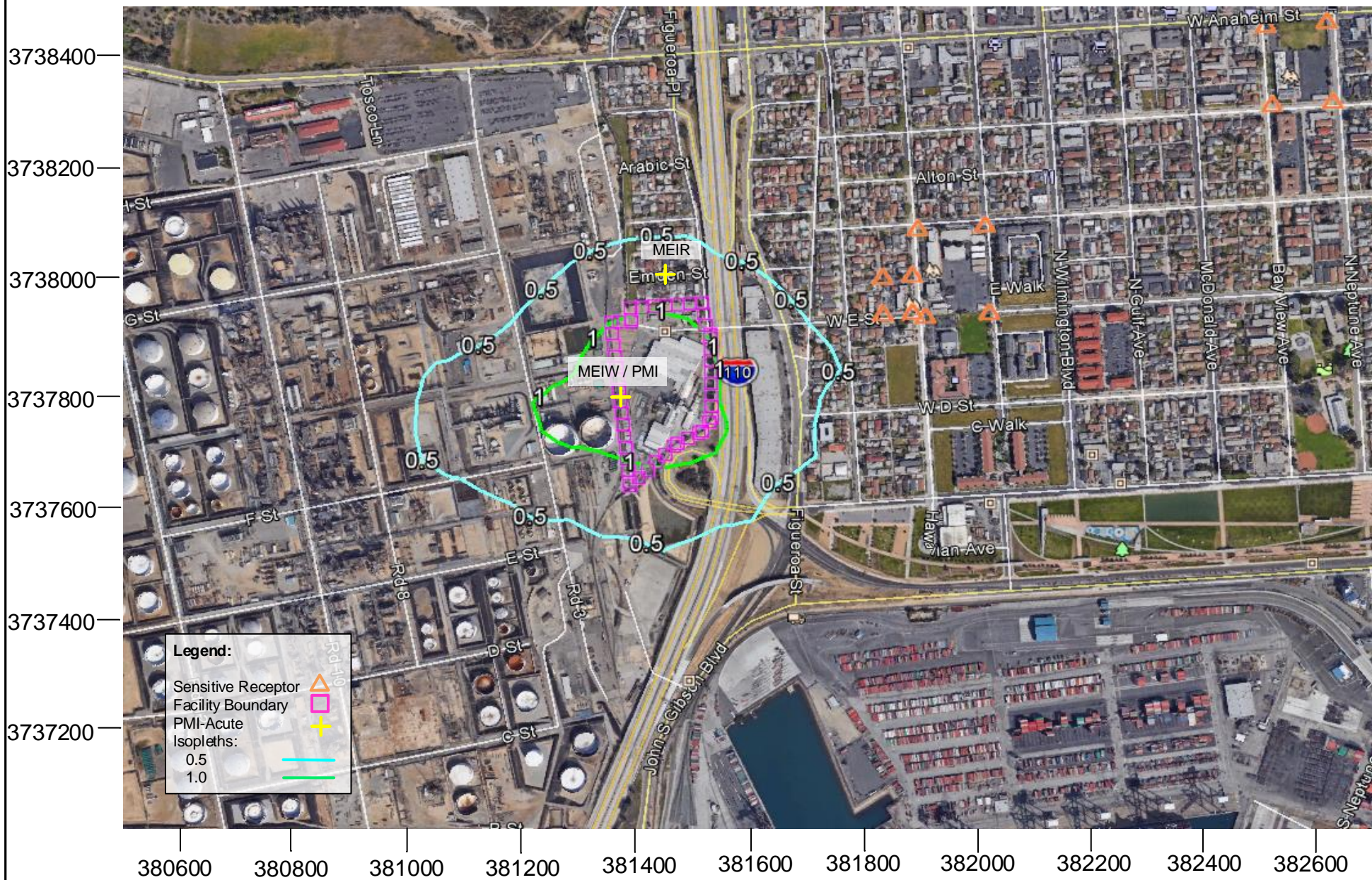


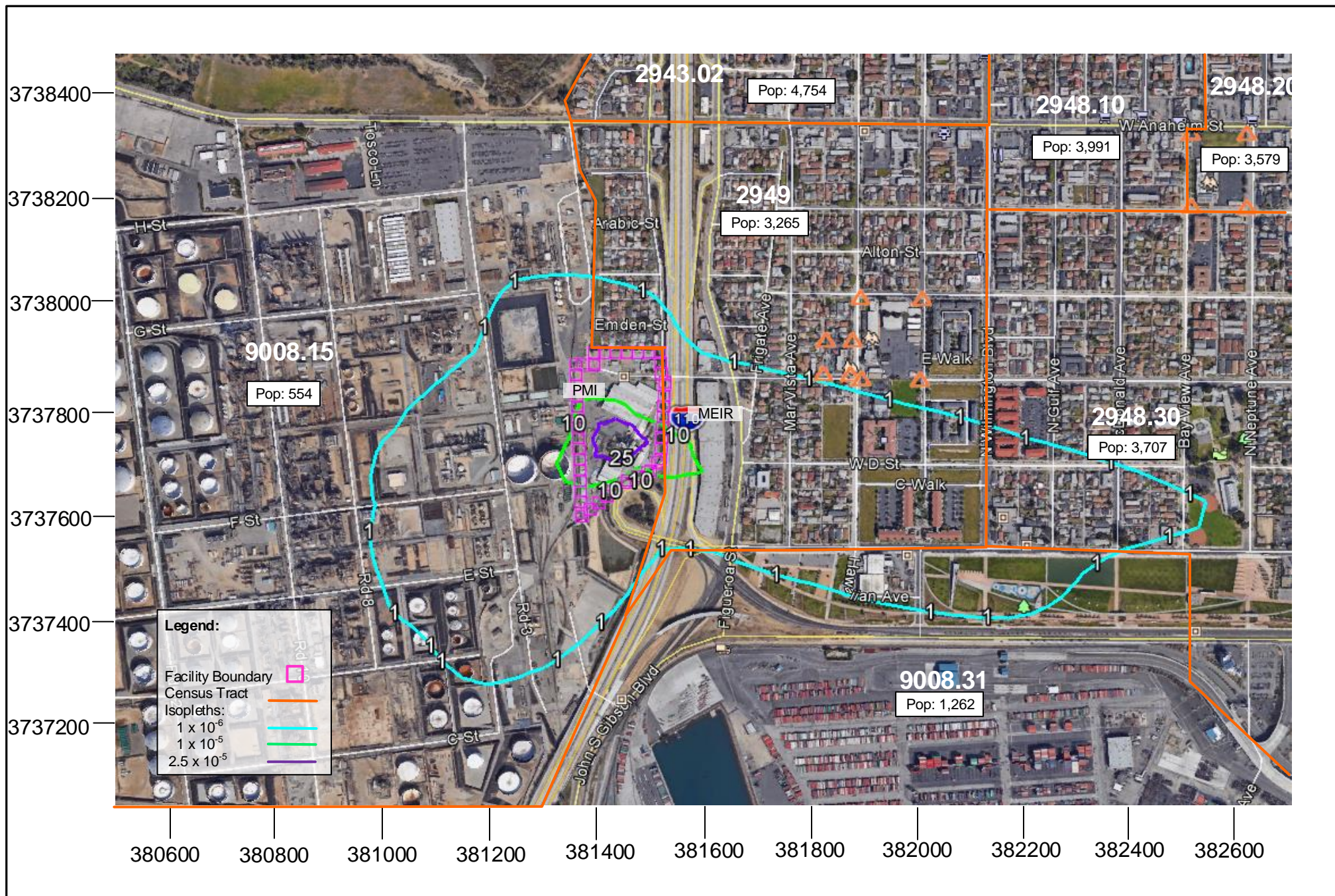


CertainTeed, Saint-Gobain
 1431 W E Street,
 Wilmington, CA 90744

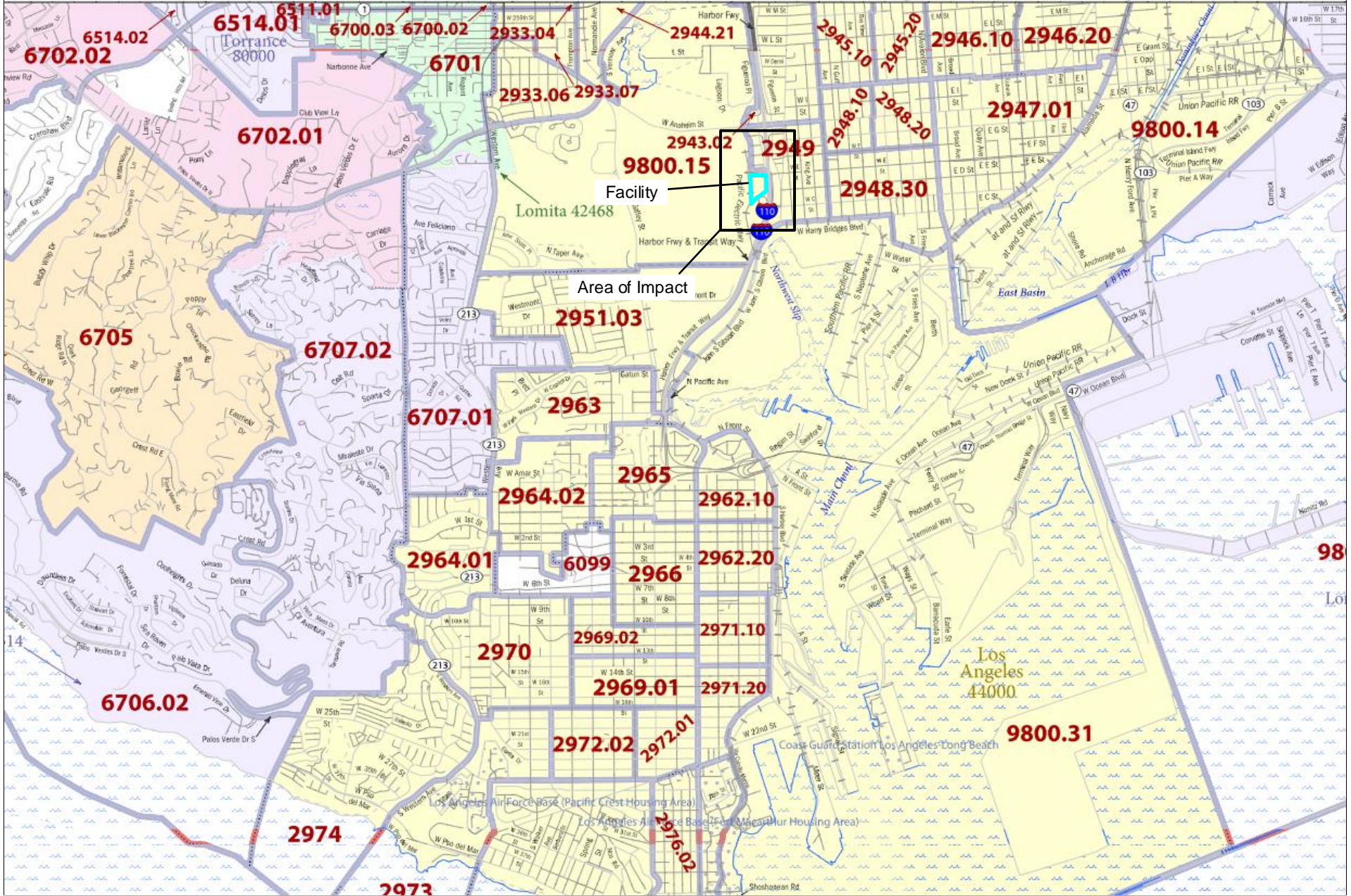
Description Cancer Risk Isopleths – Worker (25 Yr)		
Scale N/A	Date January 2018	Figure 9







SUS - CENSUS TRACT REFERENCE MAP: Los Angeles County, CA



CertainTeed, Saint-Gobain
 1431 W E Street,
 Wilmington, CA 90744

Description Census Tract Map		
Scale N/A	Date January 2018	Figure 13

APPENDIX A: NOTICE TO PREPARE HEALTH RISK ASSESSMENT



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Via Email and Certified Mail with return receipt

November 01, 2017

Mr. Clem Benavente
GS Roofing Products-CertainTeed
1431 West E. Street
Wilmington, CA 90744

Subject: Rejection of **Voluntary Risk Reduction Plan (VRRP)** and
Notice to Prepare **Air Toxics Inventory Report (ATIR)** and
Health Risk Assessment (HRA) for
GS Roofing Products-CertainTeed (SCAQMD Facility ID No.: **057094**)

Dear Mr. Benavente:

In accordance with the State of California's Air Toxics "Hot Spots" Information and Assessment Act (AB2588) and South Coast Air Quality Management District's (SCAQMD) Rule 1402, SCAQMD staff requested that GS Roofing Products (facility) elect to submit either a Voluntary Risk Reduction Plan (VRRP) or an Air Toxic Toxics Inventory Report (ATIR) no later than November 29, 2016. On November 14, 2016, you notified SCAQMD staff of your facility's intention to participate in the VRRP program.

However, after further assessments, you have decided to opt out of the VRRP program. Consequently, your facility's participation in the VRRP program is terminated effective immediately pursuant to Rule 1402(h)(3)(E), and this letter serves as a notification to your facility to prepare an ATIR and Health Risk Assessment (HRA) within (90) days of the date of this letter, or **January 30, 2018**.

The remainder of this letter informs you of the following:

- the guidelines and procedures for preparing the ATIR & HRA;
- the process used to review and approve the HRA; and
- where further assistance is available

Guidelines for Preparing the ATIR

In accordance with AB 2588 and Rule 1402, GS Roofing Products is required to prepare a detailed ATIR for your facility based on the most current quadrennial emission inventory submitted in 2012.

Your facility is required to submit a **detailed ATIR** to SCAQMD within ninety (90) days of the date of this letter, or **January 30, 2018**. In your detailed ATIR, you must include all TAC emissions from your facility that are listed in Appendix A of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (March 2015)*. This document can be obtained at the following link:

<http://oehha.ca.gov/air/crn/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk>

Be aware that diesel exhaust particulate is a carcinogen so any particulate emissions from emergency, portable, and prime compression ignition internal combustion engines must be included in the ATIR. Please also include a signed copy of the AB 2588 Air Toxics Document Certification & Application Form (Attachment A) along with your ATIR submittal.

The California Air Resources Board (CARB) has developed the “Hot Spots” Analysis and Reporting Program (HARP) which includes the emissions inventory and risk assessment requirements of the “Hot Spots” Program into a set of program modules. Your ATIR must include an electronic file in the Emission Inventory Module (EIM) format. You may obtain a free copy of the HARP software from the following link:

<http://www.arb.ca.gov/toxics/harp/harp.htm>.

CARB has provided source testing requirements in Appendix D of their Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program. Any source test that must be conducted as part of this ATIR may be submitted after the **January 30, 2018** due date pursuant to Rule 1402 (d)(2)(B). You may obtain a copy of CARB’s document from the following link:

<https://www.arb.ca.gov/ab2588/2588guid.htm>

You are required to submit your detailed ATIR using the HARP software and in accordance with the SCAQMD’s *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics “Hot Spots” Information and Assessment Act*. This document can be obtained at the following link:

<http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-risk-assessment-guidelines.pdf>

Guidelines for Preparing the HRA

In accordance with AB 2588 and Rule 1402, GS Roofing Products is required to prepare a HRA for your facility based on the most current quadrennial emission inventory submitted in 2012.

Your facility is required to submit a **HRA** to SCAQMD within ninety (90) days of the date of this letter, or **January 30, 2018**. The HRA must be prepared in accordance with *Air Toxics Hot Spots Program - Guidance Manual for Preparation of Health Risk Assessments (February 2015)* developed by the State of California Office of Environmental Health Hazard Assessment (OEHHA). This document can be obtained at the following link:

<https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>

You are required to submit your HRA using the HARP software and in accordance with the SCAQMD’s *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics “Hot Spots” Information and Assessment Act*. This document can be obtained at the following link:

<http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-supplemental-guidelines.pdf>

Under the current AB2588 Air Toxics “Hot Spots” Emission Inventory Criteria and Guidelines Regulation, amended on August 27, 2007, you are required to include health risk impacts of any diesel exhaust particulate emissions from stationary emergency and prime compression ignition internal combustion engines, as well as portable diesel engines. **Please clearly identify emergency diesel internal combustion engines (DICEs) and their corresponding emissions.** This is essential because, on January 5, 2007, the SCAQMD Board adopted separate public notification procedures for emergency DICEs.

Air emissions of any substances listed in Appendix A-I of the OEHHA guidelines must be quantified and evaluated in the HRA. Please follow the detailed outline for the HRA report, which is contained in Appendix C of the SCAQMD supplemental risk assessment guidelines mentioned above. Lastly, please also include a signed copy of the AB 2588 Air Toxics Document Certification & Application Form (Attachment A) along with your HRA submittal.

Process for Reviewing and Approving the HRA

The HRA will be reviewed by SCAQMD and OEHHA. State law provides OEHHA 180 days to complete their review. You will be notified of the status of your HRA within a few weeks after it is returned to SCAQMD from OEHHA. An HRA that is not consistent with state and SCAQMD guidelines will be returned to the facility with a list of necessary corrections, prior to approval.

If the HRA shows that your facility poses a maximum individual lifetime cancer risk of ten in one million or greater, or the non-cancer health effects hazard index exceeds one, you will be required to provide public notice to all individuals exposed above notification levels. The determination of whether your facility is subject to notification will be made upon approval of the HRA. You will receive further information regarding the public notification process at that time.

Further Assistance

If you have questions regarding the OEHHA or SCAQMD guidelines, the HARP software, or need any other assistance, please contact Allen Hoshik Yoo, Senior Air Quality Engineer at (909) 396-2485, or Victoria Moaveni, Program Supervisor at (909) 396-2455.

Sincerely,



Jillian Wong, Ph. D.
Planning & Rules Manager

Attachment

- AB 2588 Air Toxics Document Certification & Application Form

JW:VM:HY

AB2588 AIR TOXICS DOCUMENT CERTIFICATION & SUBMITTAL FORM

Please check the appropriate boxes for purpose of submittal:

<input type="checkbox"/> INITIAL INFORMATION for ATIR <input type="checkbox"/> AIR TOXICS INVENTORY REPORT (ATIR) <input type="checkbox"/> HEALTH RISK ASSESSMENT (HRA) <input type="checkbox"/> RISK REDUCTION PLAN (RRP)	<input type="checkbox"/> EARLY ACTION REDUCTION PLAN (EARP) <input type="checkbox"/> VOLUNTARY RISK REDUCTION PLAN (VRRP) <input type="checkbox"/> IMPLEMENTATION PROGRESS REPORT for VRRP/RRP <input type="checkbox"/> OTHER: _____	<input type="checkbox"/> INITIAL <input type="checkbox"/> REVISION <input type="checkbox"/> FINAL
---	---	---

Does your facility participate or wish to participate in VRRP program pursuant to Rule 1402(h)? YES NO

Please provide the following information:

Facility name	SCAQMD ID	Facility SIC/NAICS CODE
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>

Facility address	Mailing address
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>

Contact Person (Company Official)

Name:	Title:
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>
Telephone:	eMail:
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>

Preparer (if different from above)

Name:	Title:
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>
Company:	
<input style="width:100%;" type="text"/>	
Telephone:	eMail:
<input style="width:100%;" type="text"/>	<input style="width:100%;" type="text"/>

FAILURE TO SUBMIT REQUIRED INFORMATION OR KNOWINGLY SUPPLYING FALSE INFORMATION IS PUNISHABLE TO THE EXTENT DEFINED IN HEALTH AND SAFETY CODE SECTIONS 44381(a) AND 44381(b), WHICH INCLUDES MINIMUM FINES OF NOT LESS THAN FIVE HUNDRED DOLLARS.

Signature Of Responsible Company Official	Date
<input style="width:100%; height: 40px;" type="text"/>	<input style="width:100%; height: 40px;" type="text"/>

Name Of Responsible Company Official	Title
<input style="width:100%; height: 40px;" type="text"/>	<input style="width:100%; height: 40px;" type="text"/>

APPENDIX B: ATIR SUMMARY TABLE & FORM A

183567 GS II, INC.- Emission Summary for Year 2012

Pollutant ID	Pollutant Name	Annual Emissions
1175	Silica, crystalline (respirable)	9.060745
50000	Formaldehyde	113.580261087
71432	Benzene	46.29258973
75070	Acetaldehyde	15.47087696
91203	Naphthalene	0.1833819001
95636	1,2,4-Trimethylbenzene	15.30813805
106990	1,3-Butadiene	1.1766
107028	Acrolein	4.76627
7664417	Ammonia	666.483001
7783064	Hydrogen sulfide	317.982631

Number of Records: 10

FORM A	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AB2588 SECTION, 21865 E. COPLEY DR., DIAMOND BAR CA 91765-0949	INVENTORY YEAR 2012 _____
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AB2588 AIR TOXICS DOCUMENT CERTIFICATION & SUBMITTAL FORM

Please check the appropriate boxes for purpose of submittal:

<input type="checkbox"/> INITIAL INFORMATION for ATIR	<input type="checkbox"/> EARLY ACTION REDUCTION PLAN (EARP)	<input type="checkbox"/> INITIAL
<input type="checkbox"/> AIR TOXICS INVENTORY REPORT (ATIR)	<input type="checkbox"/> VOLUNTARY RISK REDUCTION PLAN (VRRP)	<input type="checkbox"/> REVISION
<input checked="" type="checkbox"/> HEALTH RISK ASSESSMENT (HRA)	<input type="checkbox"/> IMPLEMENTATION PROGRESS REPORT for VRRP/RRP	<input type="checkbox"/> FINAL
<input type="checkbox"/> RISK REDUCTION PLAN (RRP)	<input type="checkbox"/> OTHER: _____	

Does your facility participate or wish to participate in VRRP program pursuant to Rule 1402(h)? YES NO

Please provide the following information:

Facility name <input type="text" value="GS II, Inc."/>	SCAQMD ID <input type="text" value="57094 (New ID 183567)"/>	Facility SIC/NAICS CODE <input type="text" value="2952"/>
Facility address <input type="text" value="1431 West E St."/> <input type="text" value="Wilmington, CA 90744"/>	Mailing address <input type="text" value="1431 West E St."/> <input type="text" value="Wilmington, CA 90744"/>	

Contact Person (Company Official)

Name: Jay Griffith	Title: Plant Manager
Telephone: (310) 952 - 8800, ext. - 8802	eMail: Jay.O.Griffith@saint-gobain.com>

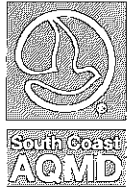
Preparer (if different from above)

Name: Pragya Sharma	Title: Scenior Consultant
Company: Trinity Consultants, Inc.	
Telephone: (949) 567-9880, ext. 105	eMail: psharma@trinityconsultants.com

FAILURE TO SUBMIT REQUIRED INFORMATION OR KNOWINGLY SUPPLYING FALSE INFORMATION IS PUNISHABLE TO THE EXTENT DEFINED IN HEALTH AND SAFETY CODE SECTIONS 44381(a) AND 44381(b), WHICH INCLUDES MINIMUM FINES OF NOT LESS THAN FIVE HUNDRED DOLLARS.

Signature Of Responsible Company Official <input type="text" value="Jay Griffith"/>	Date <input type="text" value="01/29/2018"/>
Name Of Responsible Company Official <input type="text" value="Jay Griffith"/>	Title <input type="text" value="Plant Manager"/>

APPENDIX C: COPY OF SCAQMD OPERATING PERMIT



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

August 1, 2017

Mr. Clem Benavente
Regional Manager
GS II, Inc. (ID 183567)
1431 W. E St.
Wilmington, CA 90744

Dear Mr. Benavente:

SUBJECT: Title V Facility Permit Revision (Facility ID: 183567)

Please find attached the revised Title Page, Table of Contents, and Section D of your Title V Facility Permit for your facility located at 1431 W. E St., Wilmington, CA 90744. The revised sections reflect the approval of the "De Minimis Significant Permit Revision" requested in your Application No. 590419. The proposed permit revision was submitted to EPA for review on June 9, 2017 and EPA had no comments. Pursuant to 40 CFR Part 70, Section 70.8(d) and Rule 3003(l), the 60-day period for the public to petition the Administrator to object to the permit begins the day after the EPA's 45-day review period ends on July 24, 2017. This revision consists of the modification of the asphalt roofing shingle manufacturing line and baghouse as noted below.

Added to Section D

Equipment	Application No.	Permit Type	Permit No.
Baghouse	590420	P/O	G47549
Asphalt roofing shingle manufacturing line	590421	P/O	G47550

Please review the attached sections carefully. Insert the enclosed sections into your Title V Facility Permit and discard the earlier version. Questions concerning changes to your permit should be directed to Michael Solis at (909) 396-3277 or msolis@aqmd.gov.

Sincerely,

Amir Dejbakhsh
Assistant Deputy Executive Officer
Engineering and Permitting Division

AD:SE:DN:MS
Title V Revision Permit

cc: Gerardo Rios, EPA Region 9 – via email (R9AirPermits_sc@epa.gov)



FACILITY PERMIT TO OPERATE


**GS II, INC.
1431 WEST
WILMINGTON, CA 90744**

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Wayne Natri
Executive Officer

For 
By Amin Debrah
Laki Tsopoulos, Ph.D., P.E.
Deputy Executive Officer
Engineering and Permitting



FACILITY PERMIT TO OPERATE GS II, INC.

TABLE OF CONTENTS

Section	Description	Revision #	Date Issued
A	Facility Information	0	02/22/2017
B	RECLAIM Annual Emission Allocation	0	02/22/2017
C	Facility Plot Plan	TO BE DEVELOPED	
D	Facility Description and Equipment Specific Conditions	1	07/26/2017
E	Administrative Conditions	0	02/22/2017
F	RECLAIM Monitoring and Source Testing Requirements	0	02/22/2017
G	Recordkeeping and Reporting Requirements for RECLAIM Sources	0	02/22/2017
H	Permit To Construct and Temporary Permit to Operate	0	02/22/2017
I	Compliance Plans & Schedules	0	02/22/2017
J	Air Toxics	0	02/22/2017
K	Title V Administration	0	02/22/2017
Appendix			
A	NOx and SOx Emitting Equipment Exempt From Written Permit Pursuant to Rule 219	0	02/22/2017
B	Rule Emission Limits	0	02/22/2017



**FACILITY PERMIT TO OPERATE
GS II, INC.**

**Facility Equipment and Requirements
(Section D)**

This section consists of a table listing all permitted equipment at the facility, facility wide requirements, all individual Permits to Construct and Permits to Operate issued to various equipment at the facility, and Rule 219-exempt equipment subject to source-specific requirements. Each permit and Rule 219-exempt equipment will list operating conditions including periodic monitoring requirements, and applicable emission limits and requirements that the equipment is subject to. Also included is the rule origin and authority of each emission limit and permit condition.



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMITTED EQUIPMENT LIST

THE FOLLOWING IS A LIST OF ALL PERMITS TO CONSTRUCT AND PERMITS TO OPERATE AT THIS FACILITY:

Application number	Permit to Operate number	Equipment description
590080	G45078	STORAGE TANK – ASPHALT
590082	G45079	STORAGE TANK – ASPHALT
590083	G45080	BAGHOUSE
590084	G45081	BAGHOUSE
590086	G45082	FILLER UNLOADING AND STORAGE SYSTEM
590087	G45083	ASPHALT FUME ABATEMENT SYSTEM
590420	G47549	BAGHOUSE (> 500 SQ. FT. FILTER AREA)
590090	G45085	ASPHALT FUME ABATEMENT SYSTEM
590091	G45086	MINERAL SURFACING UNLOADING AND STORAGE SYSTEM
590103	G45117	ASPHALT OIL HEATER
590102	G45116	MIST ELIMINATOR
590421	G47550	ASPHALT ROOFING LINE
590095	G45090	STORAGE TANK – WINDSEAL ASPHALT
590094	G45088	STORAGE TANK – LAMINANT ASPHALT
590093	G45087	ASPHALT FUME ABATEMENT SYSTEM

NOTE: EQUIPMENT LISTED ABOVE THAT HAVE NO CORRESPONDING PERMITS TO OPERATE NUMBER ARE ISSUED PERMITS TO CONSTRUCT. THE ISSUANCE OR DENIAL OF THEIR PERMITS TO OPERATE IS SUBJECT TO ENGINEERING FINAL REVIEW. ANY OTHER APPLICATIONS THAT ARE STILL BEING PROCESSED AND HAVE NOT BEEN ISSUED PERMITS TO CONSTRUCT OR PERMITS TO OPERATE WILL NOT BE FOUND IN THIS TITLE V PERMIT.



FACILITY PERMIT TO OPERATE GS II, INC.

FACILITY WIDE CONDITION(S)

Condition(s):

1. EXCEPT FOR OPEN ABRASIVE BLASTING OPERATIONS, THE OPERATOR SHALL NOT DISCHARGE INTO THE ATMOSPHERE FROM ANY SINGLE SOURCE OF EMISSIONS WHATSOEVER ANY AIR CONTAMINANT FOR A PERIOD OR PERIODS AGGREGATING MORE THAN THREE MINUTES IN ANY ONE HOUR WHICH IS:
 - A. AS DARK OR DARKER IN SHADE AS THAT DESIGNATED NO. 1 ON THE RINGELMANN CHART, AS PUBLISHED BY THE UNITED STATES BUREAU OF MINES; OR
 - B. OF SUCH OPACITY AS TO OBSCURE AN OBSERVER'S VIEW TO A DEGREE EQUAL TO OR GREATER THAN DOES SMOKE DESCRIBED IN SUBPARAGRAPH (A) OF THIS CONDITION.
[RULE 401]
2. MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS USED AT THIS FACILITY SHALL BE KEPT CURRENT AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[1303-(b)(2)-OFFSET]
3. ALL RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED AT THE FACILITY FOR 5 YEARS AND SHALL BE MADE AVAILABLE TO ANY DISTRICT REPRESENTATIVE UPON REQUEST.
[RULE 1303(B)(2)-OFFSET]



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G45078
A/N 590080**

Equipment Description:

STORAGE TANK E-3409, ASPHALT LAMINANT, 15'-0" DIA. X 24'-0" H., 30,000 GALLONS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS IT IS VENTED ONLY TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED AN OPERATING PERMIT BY THE AIR POLLUTION CONTROL OFFICER.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

4. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO OPERATE

Permit No. G45079
A/N 590082

Equipment Description:

STORAGE TANK, NO. 1, E-3408, ASPHALT COATING, 15'-0" DIA. X 24'-0" H., 30,000 GALLONS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS IT IS VENTED TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED AN OPERATING PERMIT BY THE AIR POLLUTION CONTROL OFFICER.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

4. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G45080
A/N 590083**

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. BAGHOUSE, FLEX-KLEEN, MODEL 84-WRBS-48II.
2. EXHAUST SYSTEM WITH A 7-1/2 H.P. BLOWER VENTING A 400-TON FILLER STORAGE SILO.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]

Periodic Monitoring:

3. THE OPERATOR SHALL PERFORM AN ANNUAL INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
 - A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
 - B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
 - C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.[RULE 3004 (a)(4)]
4. THE OPERATOR SHALL DISCHARGE DUST COLLECTED IN THIS EQUIPMENT ONLY INTO CLOSED CONTAINERS.
[RULE 3004 (a)(4)]



FACILITY PERMIT TO OPERATE GS II, INC.

5. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON A SEMI-ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE SEMI-ANNUAL PERIOD. THE ROUTINE SEMI-ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED, THE OPERATOR SHALL TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT. THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:
- A. STACK OR EMISSION POINT IDENTIFICATION;
 - B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS; AND
 - C. DATE AND TIME VISIBLE EMISSION WAS ABATED.
- [RULE 3004 (a)(4)]

Emissions And Requirements:

6. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:
- PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G45081
A/N 590084**

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. BAGHOUSE, FILLER, MODEL 64-DS-8, 4'-6" W. X 5'-5" L. X 14'-0" H.
2. EXHAUST SYSTEM WITH A 15 H.P. BLOWER VENTING A 20 TON FILLER STORAGE SILO AND A FLUIDIZED BED FILLER HEATER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. DUSTS COLLECTED IN THE BAGHOUSE SHALL BE DISCHARGED ONLY INTO CLOSED CONTAINERS.
[RULE 1303(a)(1)-BACT]

Periodic Monitoring:

4. THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE DIFFERENTIAL PRESSURE ACROSS THE BAGS DOES NOT EXCEED 7.0 INCHES WATER COLUMN. TO COMPLY WITH THIS CONDITION THE OPERATOR SHALL INSTALL AND MAINTAIN A PRESSURE GAUGE TO ACCURATELY INDICATE THE DIFFERENTIAL PRESSURE ACROSS THE BAGS. THE OPERATOR SHALL DETERMINE AND RECORD THE PARAMETER BEING MONITORED ONCE EVERY WEEK.
[RULE 3004 (a)(4)]
5. THE OPERATOR SHALL PERFORM AN ANNUAL INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
 - A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
 - B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
 - C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.



FACILITY PERMIT TO OPERATE GS II, INC.

[RULE 3004 (a)(4)]

6. THE OPERATOR SHALL DISCHARGE DUST COLLECTED IN THIS EQUIPMENT ONLY INTO CLOSED CONTAINERS.

[RULE 3004 (a)(4)]

7. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON A QUARTERLY BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE QUARTERLY PERIOD. THE ROUTINE QUARTERLY INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED, THE OPERATOR SHALL TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

- A. STACK OR EMISSION POINT IDENTIFICATION;
- B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS; AND
- C. DATE AND TIME VISIBLE EMISSION WAS ABATED.

[RULE 3004 (a)(4)]

Emissions And Requirements:

8. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G45082
A/N 590086**

Equipment Description:

FILLER UNLOADING AND STORAGE SYSTEM CONSISTING OF:

1. TRUCK UNLOADING STATION.
2. STORAGE SILO, 18'-5" DIA. X 64'-0" H., 400 TON CAPACITY, WITH A 7.5 H.P. AERATING BLOWER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE FILLER SILO (400-TON) IS VENTED TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AT ALL TIMES AND WHICH HAS BEEN ISSUED A PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

4. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO OPERATE

Permit No. G45083
A/N 590087

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. ASPHALT FUME ABATEMENT, CECO TWIN-PAK, WITH DUAL FILTER SYSTEM, PARALLEL FLOW, EACH 3'-6" DIA. X 12'-0" L.
2. EXHAUST SYSTEM WITH A 40 H.P. BLOWER VENTING A COATER, A HORIZONTAL MIXING TANK, AND A VERTICAL MIXING TANK OF THE ASPHALT ROOFING LINE.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE FILTER ELEMENTS SHALL BE CHANGED WHENEVER VISIBLE EMISSIONS ARE OBSERVED.
[RULE 401]
4. THE OPERATOR SHALL OPERATE AND MAINTAIN A MECHANICAL GAUGE TO INDICATE, IN INCHES OF WATER COLUMN, THE STATIC PRESSURE DIFFERENTIAL ACROSS THE FILTERS PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL HAVE AN ACCURACY OF WITHIN +/- .25 INCHES OF WATER COLUMN AND SHALL BE INSPECTED, MAINTAINED, AND CHECKED FOR ACCURACY ON AN ANNUAL BASIS WITH THE DATE RECORDED, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

FOR THE PURPOSE OF THIS CONDITION, AN EXCURSION SHALL BE DEFINED AS PRESSURE READINGS GREATER THAN 1.5 INCHES WATER COLUMN FOR THE PRE-FILTERS. AN EXCURSION IS ALSO DEFINED AS PRESSURE READINGS GREATER THAN 10 INCHES WATER COLUMN FOR THE FINAL FILTERS.

WHENEVER AN EXCURSION OCCURS, THE OPERATOR SHALL INSPECT THIS EQUIPMENT TO IDENTIFY THE CAUSE OF SUCH A EXCURSION, TAKE IMMEDIATE CORRECTIVE ACTION TO MAINTAIN THE PRESSURE DIFFERENTIAL DROP WITHIN THE ACCEPTABLE INDICATOR RANGES, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE EXCURSION AND THE CORRECTIVE ACTION TAKEN.

ALL EXCURSIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT. THE SEMI-ANNUAL MONITORING REPORT SHALL INCLUDE THE



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TOTAL OPERATING TIME OF THIS EQUIPMENT AND THE TOTAL ACCUMULATED DURATION OF ALL EXCURSIONS FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF EXCURSIONS EXCEEDS 2 IN ANY 30 DAY PERIOD FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS.
[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; 40CFR Part 64, 10-22-1997]

Emissions And Requirements:

5. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:
 - PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
 - PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G47549
A/N 590420**

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. BAGHOUSE, AMERICAN AIR FILTER, PULSE JET TYPE, MODEL NO. 10-32-420, WITH 32 PLEATED FILTER BAGS, EACH 0'-5" DIA. X 10'-0" L., TOTAL FILTER AREA OF 1,248 SQ. FT.
2. EXHAUST SYSTEM WITH A 20 H.P. BLOWER VENTING THE FOLLOWING:
 - A. BUCKET ELEVATOR, GRANULES.
 - B. BUCKET ELEVATOR, BLENDED GRANULES.
 - C. BUCKET ELEVATOR, GRANULE.
 - D. BUCKET ELEVATOR, RECYCLED GRANULES AND BACKING.
 - E. STORAGE SILO, GRANULES.
 - F. GRANULE AND BACKING APPLICATION AREA.
 - G. THREE SCREW FEEDERS, COPPER COATED GRANULES.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. A MECHANICAL GAUGE SHALL BE INSTALLED SO AS TO INDICATE, IN INCHES OF WATER COLUMN, THE STATIC PRESSURE DIFFERENTIAL ACROSS THE BAGS.
[RULE 1303(a)(1)-BACT]
4. DUST COLLECTED IN THE BAGHOUSE SHALL BE DISCHARGED INTO CLOSED CONTAINERS OR RETURNED TO THE PROCESS AND SHALL NOT BE HANDLED IN A MANNER THAT MAY RESULT IN THE RE-RELEASE OF COLLECTED MATERIALS TO THE ATMOSPHERE.
[RULE 1303(a)(1)-BACT]



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Periodic Monitoring:

5. THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE DIFFERENTIAL PRESSURE ACROSS THE BAGS DOES NOT EXCEED 7 INCHES WATER COLUMN. TO COMPLY WITH THIS CONDITION THE OPERATOR SHALL INSTALL AND MAINTAIN A PRESSURE GAUGE TO ACCURATELY INDICATE THE DIFFERENTIAL PRESSURE ACROSS THE BAGS. THE OPERATOR SHALL DETERMINE AND RECORD THE PARAMETER BEING MONITORED ONCE EVERY WEEK.
[RULE 3004 (a)(4)]
6. THE OPERATOR SHALL PERFORM AN ANNUAL INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
 - A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
 - B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
 - C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.[RULE 3004 (a)(4)]
7. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON A SEMI-ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE SEMI-ANNUAL PERIOD. THE ROUTINE SEMI-ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED, THE OPERATOR SHALL TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT. THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:
 - A. STACK OR EMISSION POINT IDENTIFICATION;
 - B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS; AND
 - C. DATE AND TIME VISIBLE EMISSION WAS ABATED.[RULE 3004 (a)(4)]
8. THE OWNER OR OPERATOR OF THIS DUST COLLECTOR SHALL HAVE A TRAINED PERSON CONDUCT A CONTINUOUS FIVE-MINUTE VISIBLE EMISSIONS OBSERVATION USING EPA METHOD 22 ONCE A WEEK AND SHALL MAINTAIN RECORDS FOR EACH OBSERVATION AND ANY NECESSARY SUBSEQUENT ACTION(S) TAKEN TO ELIMINATE VISIBLE EMISSIONS PURSUANT TO SCAQMD RULE 1155 SUBDIVISION (F).
[RULE 1155]



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Emissions And Requirements:

9. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 1155

VISIBLE EMISSIONS: 0 PERCENT OPACITY, RULE 1155



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO OPERATE

Permit No. G45085
A/N 590090

Equipment Description:

AIR POLLUTION CONTROL EQUIPMENT CONSISTING OF:

1. ASPHALT FUME ABATEMENT SYSTEM, CUSTOM BUILT, 1'-6" W. X 3'-6" L. X 10'-0" H. (OUTSIDE DIMENSIONS), WITH A FIBERBED DIFFUSION FILTER.
2. EXHAUST SYSTEM WITH A 1.5 H.P. BLOWER VENTING TWO ASPHALT STORAGE TANKS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. A GAUGE SHALL BE INSTALLED SO AS TO INDICATE, IN INCHES OF WATER COLUMN, THE STATIC PRESSURE DIFFERENTIAL ACROSS THE FILTER.
[RULE 1303(a)(1)-BACT; RULE 3004(a)(4)-PERIODIC MONITORING]
4. THE FILTERS IN THE CONTROL SYSTEM SHALL BE CHANGED WHENEVER VISIBLE EMISSIONS ARE OBSERVED.
[RULE 1303(a)(1)-BACT; RULE 3004(a)(4)-PERIODIC MONITORING]

Emissions And Requirements:

5. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO OPERATE

Permit No. G47550
A/N 590421

Equipment Description:

ASPHALT ROOFING SHINGLE MANUFACTURING SYSTEM CONSISTING OF:

1. UNWINDING STAND.
2. DRYER, MARSDEN, CUSTOM BUILT, 6'W x 9' 3" L. x 3' H, RATED AT 1,273,650 BTU/HR TOTAL, NATURAL GAS FIRED/INFRARED SYSTEM, WITH FOUR ROWS OF MARSDEN NATURAL GAS-INFRARED BURNERS.
3. DRY FELT FLOATING LOOPER, 13'-4" L. x 22'-6" H.
4. COATER, TWO-DRUM, 5'-0" W. x 5'-9" L. x 3'-9" H., WITH TWO 5 H.P. CIRCULATING PUMPS.
5. SLATING UNIT, 10'-0" W. x 16'-3" L. x 8'-0" H.
6. COOLING SECTION, 23'-9" L. x 8'-0" H.
7. COOLING LOOPER, 150'-0" L. x 16'-6" H.
8. CARRY OVER UNIT, 13'-7" L. x 17'-10" H.
9. LAY LINE APPLICATOR.
10. WINDSEAL APPLICATOR, WITH AN APPLICATION PAN AND DAY-USE TANK.
11. SHINGLE CUTTER (1).
12. COMBINING MACHINE (ARCH. 80) CONSISTING OF UPPER AND LOWER LAMINATING APPLICATORS, APPLICATION PAN AND A DAY-USE TANK.
13. WRAPPING MACHINE.
14. PALLETIZER.
15. COATING ASPHALT MIXING SUBSYSTEM CONSISTING OF:
 - A. MIXING TANKS, HORIZONTAL, 3'-0" DIA. x 10'-0" L., 600 GALLONS CAPACITY, WITH A 40 H.P. AGITATOR.
 - B. MIXING TANK, VERTICAL, 6'-0" DIA. x 6'-6" L., 800 GALLONS CAPACITY.
16. GRANULES AND BACKING SAND SUBSYSTEM CONSISTING OF:
 - A. SURGE BIN, BLENDED GRANULES, 20 COMPARTMENTS, 12'-0" W. x 12'-0" L. x 11'-6" H.
 - B. THREE BELT CONVEYORS (TWO BLENDED GRANULES, ONE RECYCLE).



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- C. TWO BUCKET ELEVATORS (BLENDED GRANULES & BACK FINISH).
 - D. SALVAGE SHAKER SCREEN.
17. HOT FILLER SUBSYSTEM CONSISTING OF:
- A. HOLDING SILO, 20 TONS CAPACITY, WITH A FILTER VENT.
 - B. HEATER, FLUIDIZED BED FILLER, OIL HEATED, WITH A 30 H.P. BLOWER.
 - C. TWO SCREW CONVEYORS, 7.5 H.P. EACH.
 - D. BIN, HOT FILLER, 4'-0" DIA. x 8'-2" H., 4.5 TONS CAPACITY.
18. THREE SCREW FEEDERS, COPPER COATED GRANULES, ACRISON, MODEL 105-FF, EACH WITH A ½ HP MOTOR AND A HOPPER, 1 CU. FT. CAPACITY

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THE DRYER SHALL BE FIRED ON NATURAL GAS ONLY.
[RULE 1303(a)(1)-BACT]
4. THE DRYER SHALL NOT EMIT MORE THAN 30 PPM OF OXIDES OF NITROGEN (NOX), CALCULATED AS NO₂, MEASURED BY VOLUME ON A DRY BASIS AT 3% O₂ AVERAGED OVER A PERIOD OF 15 CONSECUTIVE MINUTES.
[RULE 1303(a)(1)-BACT, RULE 1147]
5. THREE SCREW FEEDERS SHALL NOT PROCESS MORE THAN 583 TONS PER MONTH TOTAL OF COPPER COATED GRANULES.
[RULE 1303(a)(2) – OFFSETS]
6. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE ASPHALT COATER, FLUIDIZED BED FILLER HEATER, ASPHALT MIXING TANKS, UPPER AND LOWER LAMINATING APPLICATORS, LAMINANT DAY/USE TANK, AND THREE SCREW FEEDERS, ARE VENTED TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AT ALL TIMES AND WHICH HAS BEEN ISSUED A PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.
[RULE 1303(a)(1)-BACT]
7. MATERIALS PROCESSED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I, WITH AN EFFECTIVE DATE OF OCTOBER 7, 2016, EXCEPT FOR COPPER AND COPPER COMPOUNDS (CAS NO. 7440-50-8).
[RULE 1401]



FACILITY PERMIT TO OPERATE GS II, INC.

Periodic Monitoring:

8. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON AN ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE ANNUAL PERIOD. THE ROUTINE ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE-HOUR THE OPERATOR SHALL EITHER:
- A. VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST;
 - B. TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR
 - C. HAVE A CARB-CERTIFIED SMOKE READER DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

- A. STACK OR EMISSION POINT IDENTIFICATION;
- B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;
- C. DATE AND TIME VISIBLE EMISSION WAS ABATED; AND
- D. VISIBLE EMISSION OBSERVATION RECORDED BY A CERTIFIED SMOKE READER;
- E. MONTHLY TONNAGE OF COPPER-COATED GRANULES PROCESSED THROUGH THE THREE ACRISON SCREW FEEDERS.

[RULE 3004 (a)(4)]

Emissions and Requirements:

9. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

CO: RULE 407, 2000 PPMV
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 409, 0.1 GR/SCF
NOx: RULE 1147



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G45086
A/N 590091**

Equipment Description:

MINERAL SURFACING UNLOADING AND STORAGE SYSTEM CONSISTING OF:

1. TRUCK UNLOADING STATION.
2. BELT CONVEYOR, GRANULES, 1'-0" W. X 20'-0" L., 5 H.P.
3. SCREW CONVEYOR, GRANULES, 0'-9" DIA. X 10'-0" L., 7.5 H.P.
4. BUCKET ELEVATOR, GRANULES.
5. BUCKET ELEVATOR, GRANULES.
6. TWO STORAGE BINS, GRANULES, EACH WITH 10 COMPARTMENTS, EACH 12'-0" W. X 24'-0" L. X 16'-0" H.
7. STORAGE SILO, GRANULES, 8'-0" DIA. X 21'-0" H.
8. STORAGE SILO, BACKING/SLAG FINES, 70 TONS CAPACITY WITH TWO FILTERED VENTS.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE BUCKET ELEVATOR (BACKING) AND SILO (BACKING) ARE VENTED TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AT ALL TIMES AND WHICH HAS BEEN ISSUED A PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.
[RULE 1303(a)(1)-BACT]



**FACILITY PERMIT TO OPERATE
GS II, INC.**

Emissions And Requirements:

4. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO OPERATE

Permit No. G45087
A/N 590093

Equipment Description:

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. ASPHALT FUME ABATEMENT SYSTEM, ADVANCED ENVIRONMENTAL SYSTEMS, MODEL 3341, WITH TWO FIBERGLASS MESH FILTERS, 1'- 3" DIA. X 8'- 2 $\frac{9}{16}$ " H.
2. EXHAUST SYSTEM WITH A 1.5 H.P. BLOWER VENTING TWO STORAGE TANKS (TANK NO. 4 AND NO. 5).

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. A GAUGE SHALL BE INSTALLED SO AS TO INDICATE, IN INCHES OF WATER COLUMN, THE STATIC PRESSURE DIFFERENTIAL ACROSS THE FILTER.
[RULE 1303(a)(1)-BACT; RULE 3004(a)(4)-PERIODIC MONITORING]
4. THE FILTERS IN THE CONTROL SYSTEM SHALL BE CHANGED WHENEVER VISIBLE EMISSIONS ARE OBSERVED.
[RULE 1303(a)(1)-BACT; RULE 3004(a)(4)-PERIODIC MONITORING]

Emissions And Requirements:

5. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO OPERATE

Permit No. G45117
A/N 590103

Equipment Description:

ASPHALT OIL HEATER, MAXON, MODEL NO. EBC-66SP, WITH ONE ULTRA LOW NOX BURNER, POWER FLAME INCORPORATED, MODEL NO. NP2-G-840, 7,070,000 BTU PER HOUR, NATURAL GAS FIRED, WITH A 10 H.P. COMBUSTION AIR BLOWER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS EQUIPMENT SHALL BE FIRED ON NATURAL GAS ONLY.
[RULE 1303(a)(1)-BACT]
4. THIS EQUIPMENT SHALL EMIT NO MORE THAN 9 PPM OF NITROGEN OXIDES (NOX), CALCULATED AS NO₂, AND 50 PPM OF CARBON MONOXIDE (CO), ALL MEASURED BY VOLUME ON A DRY BASIS AT 3 PERCENT OXYGEN.
[RULE 1303(a)(1)-BACT]
5. THIS EQUIPMENT SHALL COMPLY WITH THE REQUIREMENTS OF RULE 1146.
[RULE 1146]

Periodic Monitoring:

6. THE OPERATOR SHALL DETERMINE COMPLIANCE WITH THE NOX EMISSION LIMIT(S) BY: (a) CONDUCTING A SOURCE TEST AT LEAST ONCE EVERY FIVE YEARS USING AQMD METHOD 100.1 OR 7.1; AND (b) CONDUCTING A TEST AT LEAST QUARTERLY USING A PORTABLE ANALYZER AND AQMD-APPROVED TEST METHOD. THE TEST SHALL BE CONDUCTED WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS TO DEMONSTRATE COMPLIANCE WITH RULE 1303(a)(1) CONCENTRATION LIMIT. THE OPERATOR SHALL COMPLY WITH ALL GENERAL TESTING, REPORTING, AND RECORDKEEPING REQUIREMENTS IN SECTIONS E AND K OF THIS PERMIT.

FOR THE PURPOSE OF DETERMINING COMPLIANCE WITH RULE 1303(a)(1) CONCENTRATION LIMIT, THE EMISSIONS SHALL BE MEASURED AND AVERAGED OVER A 60 MINUTE TIME PERIOD.

[RULE 3004(a)(4)]

7. THE OPERATOR SHALL DETERMINE COMPLIANCE WITH THE CO EMISSION LIMIT(S)



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EITHER BY: (a) CONDUCTING A SOURCE TEST AT LEAST ONCE EVERY FIVE YEARS USING AQMD METHOD 100.1 OR 10.1; OR (b) CONDUCTING A TEST AT LEAST ANNUALLY USING A PORTABLE ANALYZER AND AQMD-APPROVED TEST METHOD. THE TEST SHALL BE CONDUCTED WHEN THE EQUIPMENT IS OPERATING UNDER NORMAL CONDITIONS TO DEMONSTRATE COMPLIANCE WITH RULE 1303(a)(1) CONCENTRATION LIMIT. THE OPERATOR SHALL COMPLY WITH ALL GENERAL TESTING, REPORTING, AND RECORDKEEPING REQUIREMENTS IN SECTIONS E AND K OF THIS PERMIT.

[RULE 3004 (a)(4)]

8. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON AN ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE ANNUAL PERIOD. THE ROUTINE ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS. IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE-HOUR, THE OPERATOR SHALL EITHER:
- A. VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST;
 - B. TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR
 - C. HAVE A CARB-CERTIFIED SMOKE READER DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

- A. STACK OR EMISSION POINT IDENTIFICATION;
- B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;
- C. DATE AND TIME VISIBLE EMISSION WAS ABATED; AND
- D. VISIBLE EMISSION OBSERVATION RECORDED BY A CERTIFIED SMOKE READER.

[RULE 3004 (a)(4)]



FACILITY PERMIT TO OPERATE GS II, INC.

Emissions And Requirements:

9. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

CO: 2000 PPMV, RULE 407
CO: 50 PPMV, RULE 1303(a)(1)
CO: 400 PPMV, RULE 1146
PM: 0.1 GR/SCF, RULE 409
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
NOX: 9 PPMV, RULE 1303(a)(1)
NOX: 40 PPMV, RULE 1146



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO OPERATE

**Permit No. G45116
A/N 590102**

Equipment Description:

AIR POLLUTION CONTROL EQUIPMENT CONSISTING OF:

1. MIST ELIMINATOR, CECO, FIBER BED FILTER, MODEL DLM-100c-C-P-F, WITH ONE FIBERGLASS FILTER, 2'- 0" DIA. X 8'- 3" H.
2. EXHAUST SYSTEM WITH A 5 H.P. BLOWER VENTING TWO LAMINANT ASPHALT APPLICATORS, A LAMINANT ASPHALT DAY-USE TANK, AND A SEALANT APPLICATOR.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. A GAUGE SHALL BE INSTALLED SO AS TO INDICATE, IN INCHES OF WATER COLUMN, THE STATIC PRESSURE DIFFERENTIAL ACROSS THE FILTER.
[RULE 1303(a)(1)-BACT; RULE 3004(a)(4)-PERIODIC MONITORING]
4. THE FILTERS IN THE CONTROL SYSTEM SHALL BE CHANGED WHENEVER VISIBLE EMISSIONS ARE OBSERVED.
[RULE 1303(a)(1)-BACT; RULE 3004(a)(4)-PERIODIC MONITORING]

Emissions And Requirements:

5. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



**FACILITY PERMIT TO OPERATE
GS II, INC.**

PERMIT TO CONSTRUCT/OPERATE

**Permit No. G45090
A/N 590095**

Equipment Description:

STORAGE TANK, NO. 4, WINDSEAL ASPHALT, HEATED, 12' - 0" D. X 15' - 0" H., VERTICAL FIXED ROOF, 12,855 GALLONS CAPACITY.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. ASPHALT STORED IN OR PUMPED INTO THIS TANK SHALL NOT EXCEED 400 DEGREES FAHRENHEIT.
[RULE 401]
4. STORAGE TANK NO. 4 (A/N 576146) AND STORAGE TANK NO. 5 (A/N 579760) SHALL NOT PROCESS MORE THAN 234 TONS PER MONTH OF ASPHALT TOTAL.
[RULE 1303(a)(2) - OFFSETS]
5. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS IT IS VENTED ONLY TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED AN OPERATING PERMIT BY THE AIR POLLUTION CONTROL OFFICER.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

6. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



FACILITY PERMIT TO OPERATE GS II, INC.

PERMIT TO CONSTRUCT/OPERATE

Permit No. G45088
A/N 590094

Equipment Description:

STORAGE TANK, NO. 5, LAMINANT ASPHALT, HEATED, 12' - 0" D. X 15' - 0" H., VERTICAL FIXED ROOF, 12,855 GALLONS CAPACITY.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. ASPHALT STORED IN OR PUMPED INTO THIS TANK SHALL NOT EXCEED 400 DEGREES FAHRENHEIT.
[RULE 401]
4. STORAGE TANK NO. 4 (A/N 576146) AND STORAGE TANK NO. 5 (A/N 579760) SHALL NOT PROCESS MORE THAN 234 TONS PER MONTH OF ASPHALT TOTAL.
[RULE 1303(a)(2) - OFFSETS]
5. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS IT IS VENTED ONLY TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED AN OPERATING PERMIT BY THE AIR POLLUTION CONTROL OFFICER.
[RULE 1303(a)(1)-BACT]

Emissions And Requirements:

6. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS



**FACILITY PERMIT TO OPERATE
GS II, INC.**

RULE 219 EQUIPMENT

Equipment Description:

RULE 219 EXEMPT EQUIPMENT, INKJET PRINTERS.

Emissions And Requirements:

1. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:
VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS
VOC: RULE 442, SEE REQUIREMENTS
VOC: RULE 1113, SEE TABLE OF STANDARDS

APPENDIX D: RESIDENTIAL CANCER, CHRONIC AND ACUTE RISK BY RECEPTOR

Included in the compact disc.

APPENDIX E: WORKER CANCER, CHRONIC AND ACUTE RISK BY RECEPTOR

Included in the compact disc.

APPENDIX F: COMPACT DISC/THUMB DRIVE
