Office of Environmental Health Hazard Assessment
P.O. Box 4010
Sacramento, CA 95812-4010

Health Risk Assessment Summary Form

I. Checklist of Required Information	Provided
1. Updated Health Risk Assessment Evaluation Form	☐
2. Screening Health Risk Assessment Evaluation Form	☐
3. Facility name, location (address and Universal Transverse Mercator (UTM) reference point coordinates), county, ID #, and land use type	☐
4. Local topography	☐
5. Facility plot plans identifying 1) emission sources and locations, 2) property line, 3) horizontal scale, and 4) building heights	☐
6. For each release location, 1) name, UTM coordinates, and ID #, 2) release type, 3) release parameters by release type, and 4) source ID #s associated with the release location	☐
7. For each source, tables showing 1) source names and ID #s, 2) number of operating hrs/day and hrs/yr, 3) number of operating days/wk, 4) number of operating days or wks/yr, and 5) release location ID # associated with the source	☐
8. Emission control equipment and efficiency by source and substance	☐
9. Tables showing emission rates for each toxic substance, grouped by source. Tables should include 1) source name and ID #, 2) substance name and chemical abstracts service (CAS) #, and 3) annual average and hourly max emissions for each substance (lbs/yr)	☐
10. Emissions data grouped by substance. Report total emission rate for each emitted substance listed in the Air Toxics “Hot Spots” Program and include 1) substance name and CAS #, and 2) annual average and hourly max emissions for each substance (lbs/yr)	☐
11. Emission estimation/measurement methods. Indicate any emission data not reflected in the previously submitted emission inventory report	☐
12. Tables listing all “Hot Spots” and non-“Hot Spots” Program substances required by the District and indicating which substances were evaluated for cancer risks and non-cancer health impacts	☐
13. 70-year lifetime cancer risk, chronic hazard index (HI), and acute HI by substance for actual and point-of-maximum-impact (PMI) receptors. Include associated substances, exposure pathways that drive cancer risk, CAS #s, chronic Reference Exposure Levels (RELs), target organs/systems (for HIs only), and total hazard by target organ/system. Estimate population cancer burden and/or population-wide risk (i.e. # of individuals within each risk isopleth) using a lifetime 70-yr exposure duration.	☐
14. For the PMI, maximally-exposed individual resident (MEIR), and maximally-exposed individual worker (MEIW), provide maximum 1) estimated residential 30-yr exposure cancer risk, 2) occupational 25-yr exposure cancer risk, 3) estimated non-cancer chronic, 8-hr chronic, and acute HIs. Specify locations for each of these receptors. Report cancer risk, non-cancer HIs, and locations for sensitive receptors. Include estimates of inhalation and multi-pathway non-inhalation risks.	☐

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15. Description of zone of impact (ZOI) including a true map, drawn to scale, showing the location of the facility, ZOI boundaries, census tracts, emission sources, sites of maximum exposure, and the location of all appropriate receptors. If significant development has occurred since the user's survey, this should be indicated. ☐
16. Separate maps for the cancer risk ZOI and the hazard index (HI) ZOIs. The cancer ZOI should include isopleths down to ≤ 1/1,000,000 risk level. Three separate maps (for chronic, 8-hour, and acute HI) should be created to define the ZOI for the HI from inhalation and non-inhalation pathways greater than or equal to 0.5. The point of maximum impact (PMI), maximally-exposed individual at a residential receptor (MEIR), maximally-exposed individual worker (MEIW), and any other locations of interest for cancer and non-cancer risks should be located on the maps. ☐
17. Tables showing population units and sensitive receptors including UTM coordinates, receptor ID #s, and street addresses of specified receptors ☐
18. Heights or elevations of the receptor points
19. For each receptor type (e.g., PMI, MEIR, MEIW, and any other locations of interest) that will utilize spatial averaging, the domain size and grid resolution must be clearly identified. Care should be taken to determine the proper domain size and grid resolution if something other than a 20 m x 20 m domain with 5-m grid is used for a receptor. The use or spatial averaging is subject to approval by the reviewing authority. This includes the size of the domain and grid resolution that is used for spatial averaging of a worksite or multi-pathway deposition area. ☐
20. If meteorological data were not obtained directly from the District then 1) the HRA must clearly indicate the data source and time period used; and 2) meteorological data must be submitted in electronic form along with justification for their use. Indicate whether the District required the use of a specified meteorological data set. All memos indicating the District's approval of meteorological data should be attached in an appendix. ☐
21. Explanation of the air dispersion model chosen to perform the analysis and any other decisions made during the modeling process. Clearly indicate 1) names of the models used, 2) level of detail (screening or refined analysis), 3) rationale behind model selection. For each air dispersion model, report 1) version number, 2) a table of options and parameters performed, 3) modeling domains and spacing of receptor grids. Grid spacing should be sufficient in number and detail to capture the concentration at all receptors of interest. ☐

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22. Air dispersion modeling results including 1) list of annual average, maximum one-hour, and 30-day average (lead only) concentrations of chemicals at appropriate receptors (e.g. MEIR and MEIW) referenced to computer printouts of model outputs; 2) associated model printouts (numbered); 3) disk with input/output files for air dispersion program; and 4) tables summarizing annual average concentrations that are calculated for all the substances at each site. Use of tables that present the relative contribution of each emission point to the receptor concentration is recommended. (These tables should have clear reference to the computer model that generated the data. State how data from the computer output were transferred to these tables.) [As an alternative, the above tables could contain just the values for sites of maximum impact (i.e. PMI, MEIR and MEIW), and sensitive receptors, if required. All the values would be found in the Appendices.] ☐

OEHHA Reviewer Notes: _____

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I. Background Information

Facility Name	
Facility Address	
UTM (m E, m N)	
Land Use Type	
Facility ID #	
Reporting Year	

II. Offsite Cancer Risk*

Cancer Risk Category	Impact	UTM (m E, m N)	Receptor #
PMI			
MEIR			
MEIW			

*Cancer risks should be presented using a 30-year duration for the PMI and MEIR, and a 25-year duration for the MEIW. The District may also request risk estimates at the MEIR using a 9- or 70-year duration.

Cancer Risk Category	Primary Chemical Drivers & Impact (%)*	Primary Sources & Impact (%)*
PMI		
MEIR		
MEIW		

*Include chemical drivers that account for ≥90% of cancer risk.

Cancer Burden for a 70-year exposure: _____

Population within the Carcinogenic Zone of Impact: _____

III. Offsite Chronic Non-Cancer Hazard Indices (HIs)

Chronic Risk Category	Impact	UTM (m E, m N)	Receptor #	Target Organ/System
PMI				
MEIR				
MEIW				

Chronic Risk Category	Primary Chemical Drivers & Impact (%)	Primary Sources & Impact (%)
PMI		
MEIR		
MEIW		

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IV. Offsite 8-Hour Chronic Non-Cancer HIs

8-hr Chronic Risk Category	Impact	UTM (m E, m N)	Receptor #	Target Organ/System
PMI				
MEIW				

8-hr Chronic Risk Category	Primary Chemical Drivers & Impact (%)	Primary Sources & Impact (%)
PMI		
MEIW		

V. Offsite Acute Non-Cancer HIs

Acute Risk Category	Impact	UTM (m E, m N)	Receptor #	Target Organ/System
PMI				
MEIR				
MEIW				

Acute Risk Category	Primary Chemical Drivers & Impact (%)	Primary Sources & Impact (%)
PMI		
MEIR		
MEIW		

VI. Sensitive Receptors

Risk Category	Impact	UTM (m E, m N)	Receptor #
Cancer			
Chronic HI			
Acute HI			

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VII. Public Notification and Risk Reduction

Public notification required? _____

Risk reduction required? _____

Additional notes: _____

_____

_____

_____

VIII. Reviewer Information

OEHHA Staff Member Name: _____

Staff Member Job Title: _____

Review Completion Date: _____