APPENDIX B

PEAK CONSTRUCTION EMISSION CALCULATIONS

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TESORO RELIABILITY IMPROVEMENT AND REGULATORY COMPLIANCE PROJECT

APPENDIX B
PEAK CONSTRUCTION EMISSION CALCULATIONS

Table B-1
TESORO RELIABILITY IMPROVEMENT AND REGULATORY COMPLIANCE PROJECT
CONSTRUCTION SUMMARY

Construction Period		Estimated Emissions (lb/day) - Month 8					
		VOC	CO	NOx	SOx	PM10	PM2.5[(1)]
Construction Equipment		37.98	134.92	277.30	0.30	17.09	15.73
Vehicle Emissions		25.84	204.30	154.90	0.26	6.10	5.66
Fugitive Construction		0.00	0.00	0.00	0.00	14.02	2.92
Fugitive Road Dust		0.00	0.00	0.00	0.00	20.97	3.54
Architectural Coatings		0.00	0.00	0.00	0.00	0.00	0.00
TOTAL EMISSIONS		63.82	339.22	432.20	0.56	58.19	27.85
SCAQMD Thresholds		75	550	100	150	150	55
Significant		No	No	Yes	No	No	No

(1) PM2.5 is calculated using the SCAQMD Methodology to Calculate Particulate Matter (PM2.5) and PM2.5 CEQA Significance Thresholds, Appendix B , October 2006,

Table B-2
Construction Equipment Emissions
TESORO RELIABILITY IMPROVEMENT AND REGULATORY COMPLIANCE PROJECT
Construction Equipment Emissions - Month 8

Equipment Type	Total Hours Per Day[1]	2009 Emission Factors lb/hr[1]					2009 Emission lb/day[3]				
		VOC	CO	NOx	SOx	PM10	VOC	CO	NOx	SOx	PM10
BACKHOE CASE	25	0.1109	0.3993	0.7227	0.0008	0.0559	2.77	9.98	18.07	0.02	1.40
BOBCAT MOD	20	0.1109	0.3993	0.7227	0.0008	0.0559	2.22	7.99	14.45	0.02	1.12
COMPRESSOR	34.5	0.1180	0.3699	0.7664	0.0007	0.0547	4.07	12.76	26.44	0.02	1.89
CONCRETE SAW	20	0.1363	0.4340	0.6906	0.0007	0.0581	2.73	8.68	13.81	0.01	1.16
CRANE (RT)	9	0.1276	0.4905	0.9849	0.0009	0.0564	1.15	4.41	8.86	0.01	0.51
CRANE (MEDIUM)	0	0.1314	0.3664	1.3105	0.0013	0.0501	0.00	0.00	0.00	0.00	0.00
CRANE (LARGE)	20	0.1913	0.7157	1.8770	0.0018	0.0726	3.83	14.31	37.54	0.04	1.45
DRILL RIG (LARGE)	25	0.1162	0.5200	1.2287	0.0017	0.0541	2.90	13.00	30.72	0.04	1.35
EXCAVATOR	27	0.1584	0.5697	1.2340	0.0013	0.0681	4.28	15.38	33.32	0.04	1.84
FORKLIFT	39.5	0.0741	0.2366	0.5560	0.0006	0.0302	2.93	9.35	21.96	0.02	1.19
FRONT END LOADER	59	0.1109	0.3993	0.7227	0.0008	0.0559	6.54	23.56	42.64	0.05	3.30
GENERATOR	31	0.1020	0.3378	0.6718	0.0007	0.0414	3.16	10.47	20.83	0.02	1.28
MANLIFT	2.5	0.0710	0.2149	0.3748	0.0004	0.0259	0.18	0.54	0.94	0.00	0.06
LIGHT PLANT	20	0.0234	0.0959	0.1678	0.0002	0.0096	0.47	1.92	3.36	0.00	0.19
TRACTOR (40 FT FLOAT)	5	0.1109	0.3993	0.7227	0.0008	0.0559	0.55	2.00	3.61	0.00	0.28
WELDER	2.5	0.0847	0.2281	0.3015	0.0003	0.0280	0.21	0.57	0.75	0.00	0.07
Emission Totals							37.98	134.92	277.30	0.30	17.09

(1) Total hours of multiple pieces of equipment concurrently operating in various Project Units.

Equipment listed with zero hours are not used during the peak month. However, the equipment is used at some time during the project.

(1) Based on SCAQMD emission factors : http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

(2) Carbon Dioxide Equivalents (CO_E) = CO_2 + 23 * CH_4

Table B-3
TESORO RELIABILITY IMPROVEMENT AND
REGULATORY COMPLIANCE PROJECT
Construction Vehicle Emissions for Month 8

Vehicle	Miles/Day/ Vehicle	No. of Vehicles	Miles/Day
Commuters[1]	32.4	248	8035.2
Pickup Trucks	10	4	40
Total Light Vehicle Miles			8075.2
Flatbed Truck	10	3	30
Stakebed Truck	10	0	0
Bin Truck	10	0	0
Concrete Truck	50	0	0
Delivery Truck	50	0	0
Dump Truck	60	100	6000
Fuel Truck	10	0	0
Water Truck	9	7	65.0027
Total Medium Truck Miles			6095.0027
Semi Tractor	50	5	250
Total Heavy-Heavy Duty Truck Miles			250

VOC	Emission Rate (lb/mi)[2]	Emission (lb/day)
Light Duty	0.0009925	8.01
Medium Duty	0.0027890	17.00
Heavy Duty	0.0032932	0.82
Total		25.84

CO	Emission Rate (lb/mi)[2]	Emission (lb/day)
Light Duty	0.0096856	78.21
Medium Duty	0.0201608	122.88
Heavy Duty	0.0128224	3.21
Total		204.30

NOx	Emission Rate (lb/mi)[2]	Emission (lb/day)
Light Duty	0.0010052	8.12
Medium Duty	0.0223664	136.32
Heavy Duty	0.0418459	10.46
Total		154.90

SOx	Emission Rate (lb/mi)[2]	Emission (lb/day)
Light Duty	0.0000107	0.09
Medium Duty	0.0000268	0.16
Heavy Duty	0.0000401	0.01
Total		0.26

PM10	Emission Rate (lb/mi)[2]	Emission (lb/day)
Light Duty Exhaust	0.0000860	0.69
Medium Duty Exhaust	0.0008055	4.91
Heavy Duty Exhaust	0.0019957	0.50
Total Exhaust PM		6.10
Light Duty Fugitive[2]	0.00038589	3.12
Medium Duty Fugitve[3]	0.00210368	12.82
Heavy Duty Fugitive[3]	0.02011945	5.03
Total Fugitive PM		20.97
Total		27.07

(1) The month that has the highest number of construction workers working at the Refinery and SRP is not the month with the highest air emissions. Therefore, the air quality analysis for the peak construction traffic impacts is based on a different number of workers (248) than the traffic analysis for construction emissions (600).

(2) Based on 2007 SCAQMD on-road emission rates. (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html)

(3) Emission Calculations for travel on paved roads from EPA AP-42 Section 13.2.1, December 2003

$E = k(sL/2)^{0.65} \times (W/3)^{1.5} - C$

Where: k = 0.016 lb/VMT for PM10, sL = road silt loading (gms/m2) from CARB Methodology 7.9 for paved roads (0.240 for local roads and 0.037 for major/collector roads), W = weight of vehicles (2.4 tons for light; 5 for medium trucks, and 20 for heavy trucks), and C = emission factor for 1980 vehicle fleet exhaust, brake wear, and tire wear(0.00047 lbs/VMT).

Table B-4
TESORO RELIABILITY IMPROVEMENT AND REGULATORY COMPLIANCE PROJECT
Fugitive PM Construction Emissions for Month 8

Grading Operations[1]	Total Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor	Controlled Peak PM10 Emissions lb/day	Uncontrolled Emissions Peak PM10 Emissions lb/day	SCAQMD Emission Factor Source
Aug-09	25	0.348	0.39	3.39	8.6909	Table A9-9-F

TEMPORARY STOCKPILES[2]	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor	Controlled Peak PM10 Emissions lb/day	Uncontrolled Emissions Peak PM10 Emissions lb/day	SCAQMD Emission Factor Source
Aug-09	773	0.0035	0.39	1.055145	2.7055	Table A9-9-G

Assumptions: 1cubic yard trench spoils = 1 ton

WIND EROSION Disturbed Area and Temporary Stockpiles [3]	Days of Construction	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Peak PM10 Emissions lb/day	Peak PM10 Emissions Tons/Month	SCAQMD Emission Factor Source
Aug-09	22	1.61	0.120	0.193	0.002	Table A9-9-E

TRUCK FILLING/DUMPING(4)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor	Controlled Peak PM10 Emissions lb/day	Uncontrolled Emissions Peak PM10 Emissions lb/day	SCAQMD Emission Factor Source
Truck Filling - August 2009	773	0.02205	0.39	6.6474135	17.04465	Table A9-9
Truck Dumping - August 2009	773	0.009075	0.39	2.73584025	7.014975	Table A9-9

TOTAL PM10 lb/day	Mitigated [5]
Aug-09	14.02

(1) Emissions (lbs/hr) = $[0.75 \times (G^{1.5})/(H^{1.4}) \times J$
where G = silt content (7.5%), H = moisture content (2.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = $0.00112 \times [(G/5)^{1.3}/(H/2)^{1.4}] \times I/J$
where G=mean wind speed (12 mph), H=moisture content of surface material (2%); I=lbs of dirt handled per day; and J=2,000 lbs/ton

(3) Emissions (lbs/day/acre) = $1.7 \times [(G/1.5)*(365-H)/235] \times I/15 \times J$
where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = percentage of time wind speed exceeds 12 mph (0.3%) and J= fraction of TSP (0.5). Wind speed data acquired from Wilmington 2001 meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Mitigated Emissions assume that watering 3 times per day controls emissions by 61 percent (Uncontrolled Emissions x 0.39)

Table B-5
TESORO RELIABILITY IMPROVEMENT AND REGULATORY COMPLIANCE PROJECT
GHG Construction Emissions

Month	1	2	3	4	5	6	7	8	9	10	11	12	Total (metric tons)
Year 1	107.42	107.42	325.27	344.38	404.93	402.64	426.00	533.54	399.37	396.34	371.91	396.38	4215.59
Year 2	420.50	398.05	411.37	417.16	441.70	438.37	419.03	421.46	408.46	364.36	287.98	257.01	4685.44
Year 3	217.92	167.03	23.56	129.84	103.74	108.60	112.09	94.70	0.00	0.00	0.00	0.00	957.49
Total													9858.52
30 year amortization													328.62

Based on 22 days of construction per month.

Tesoro Reliability Improvement and Regulatory Compliance Project
SCAQMD Localized Significance Threshold Analysis

August 2008 ***(Edited March 2009)***

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INTRODUCTION

The Tesoro Refining and Marketing Company (Tesoro) which has a Refinery located at 2101 East Pacific Coast Highway in the Wilmington district of the City of Los Angeles and a Sulfur Recovery Plant (SRP) located at 23208 South Alameda Street in the City of Carson (Facilities), is proposing a project to increase the reliability, flexibility and capacity of specific equipment. The Reliability Improvement and Regulatory Compliance Project includes modifications to existing specific process units, and also new infrastructure that supports and links these units to other processes, units, or facilities throughout the Facilities. The proposed project will involve physical changes and additions to multiple process units and operations as well as operational and functional improvements within the confines of the Facilities.

As part of the permitting process, Environmental Audit, Inc. (EAI) has calculated emissions to evaluate the potential localized impacts of criteria pollutants from construction activities as voluntarily required by South Coast Air Quality Management District (SCAQMD) Localized Significance Threshold Methodology. Criteria pollutants evaluated include carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM10), and particulate matter less than 2.5 microns (PM2.5) associated with the project. The results of this evaluation are provided below.

Based on information provided by Tesoro, construction activities by month for the proposed project are calculated to determine the peak construction day. The peak construction day at the Refinery is expected to occur during June 2009 for all pollutants. The peak construction day at the Sulfur Recovery Plant is expected to occur during February 2011 for all criteria pollutants. Construction activities included in this evaluation are the use of construction equipment, vehicle activities on-site (i.e., buses, contractors arriving and leaving the site), and fugitive dust emissions from earth moving activities. Criteria pollutants evaluated include CO, NO_2, PM10, and PM2.5 associated with the construction activities. The Refinery and SRP are not co-located; therefore, the construction impacts are evaluated per facility.

EMISSION ESTIMATES

Construction emission estimates for the peak day are calculated by each portion of the project that will be under construction during that period (see Table B-6 and Table B-11). Construction emissions vary based on activities and the worst-case scenario has been evaluated. It is expected that the calculated peak day emissions estimates will occur infrequently during the proposed project construction activities and, most of the time, construction emissions will be less.

REFINERY IMPACT EVALUATION

CRITERIA POLLUTANT IMPACT MODELING

In order to determine the groundlevel concentrations, the U.S. EPA ISCST3 (Version 02035) air dispersion model is used to calculate the annual average and maximum 1-hour, 8-hour, and 24-hour

concentrations. Various construction areas for the Refinery are modeled as area sources with dimensions presented in Table B-6. The release height for all sources is 6 feet above the ground.

The location of the source is identified based on data provided by Tesoro and the Long Beach and Torrance USGS Quadrangles (see Figure B-1). The emissions for each pollutant are run in separate modeling runs using the emissions for each source in grams per second per square meter in the ISCST3 model. The ISCST3 model is run using the ~~Wilmington~~ *Long Beach* meteorological data available from the SCAQMD. The following settings are used in running the ISCST3 dispersion model:

- Use stack-tip downwash;
- Use buoyancy-induced dispersion;
- Do not use gradual plume rise;
- Do not use calm wind processing routine;
- Do not use missing data processing routine;
- Use default wind profile exponents;
- Use default vertical potential temperature gradients; and
- Use urban mode dispersion.

ISCST3 is not set to include algorithms to model the effects of building downwash on emissions since area sources are not influenced by building downwash in ISCST3.

Terrain elevations are taken into account even though the facility and the vicinity are in a relatively flat area.

The ISCST3 model is run using a receptor grid of 100 meters, and extends at least 1,000 meters in every cardinal direction from the boundaries of the refinery (see Figure B-1).

The maximum impact location is determined for the applicable averaging periods from the ISCST3 model output. The maximum groundlevel concentration and the Universal Tranverse Mercator (NAD 27) coordinates for each maximum impact point are presented in Table B-7 and B-8.

CRITERIA POLLUTANT IMPACT ANALYSIS

The construction maximum groundlevel concentrations are compared to the significance thresholds established in SCAQMD Rule 1303, Appendix A, Table A-2 for CO and NO_2 to demonstrate that construction emissions will not cause a violation of any state or national ambient air quality standard. The ambient air quality data for South Coastal Los Angeles County (Source No. 4) is used to establish background levels of CO and NO_2. Table B-9 identifies the ambient air quality data for CO and NO_2 published by the SCAQMD in the last three years (2005, 2006, and 2007). PM10 and PM2.5 are compared to 10.4 micrograms per cubic meter ($\mu g/m^3$), which is comparable to the requirement in Rule 403. PM10 and PM2.5 are evaluated differently than CO and NO_2 because PM10 in nearly the entire district exceeds the state or federal PM10 and PM2.5 standards.

The CO 1-hour, CO 8-hour, NO_2 1-hour, and NO_2 annual average concentrations are combined with the maximum ambient concentrations and compared to the Most Stringent Air Quality Standard.

The maximum CO impact concentrations for 1-hour and 8-hour averages are 4,963.5 and 4,102.0 $\mu g/m^3$, respectively. The maximum NO_2 impact concentrations for 1-hour and annual averages are 451.1 and 47.5 $\mu g/m^3$, respectively because NO_2 formation from nitrogen oxides (NOx) is a function of distance from the source (see *SCAQMD Localized Significance Threshold Methodology* (SCAQMD, June 2003), page 2-8 for further discussion). Therefore, the maximum NO_2 1-hour and annual impact concentrations have been adjusted by a factor of 0.258 to account for the distance from the source to the receptor. The maximum PM10 impact concentration for 24-hour average is 9.2 $\mu g/m^3$. PM2.5 is a fraction of PM2.5. Therefore, the PM2.5 impact concentration for 24-hour average will be less than 10.0 $\mu g/m^3$. The results are presented in Table B-10.

SRP IMPACT EVALUATION

The estimated criteria pollutant emissions for the SRP are below the screening levels from the *SCAQMD Final Localized Significance Threshold Methodology Appendix C* (SCAQMD, June 2003) and the *SCAQMD Final Methodology to Calculate PM2.5 and PM2.5 Significance Thresholds Appendix B* (SCAQMD, October 2006). The pollutant screening values for the proposed project are expected to be 19.90, 30.58, 2.29, and 2.08 pounds per day for CO, NOx, PM10, and PM2.5, respectively, which are lower than the significance thresholds of 126, 271, 4, and 3 pounds per day for a receptor 25 meters away from a one acre project in the South Coastal Los Angeles area. Therefore, no significant impacts are expected due to construction emissions from the proposed project. The results are presented in Table B-11.

CONCLUSION

The localized significance threshold analysis results in no significant change in air quality from construction activities for NO_2, CO, PM10, or PM2.5. Therefore, the proposed project complies with the localized significance threshold methodology.

MRB:dbs/pe

Attachments

M:\MC\2550 Tesoro - EIR\LST analysis\LST Report(rev1).doc

TABLES

Localized Significance Threshold Evaluation for
Tesoro Reliability Improvement and Regulatory Compliance Project
Refinery Construction Emissions

Table B-6. Peak Day Calculated Construction Emissions and Source Dimensions[1]

Phase	Source Description	Source Name	Emissions (lb/day)			Emissions (g/s)			Area of Source (m^2)	Emissions (g/s-m^2)		
			CO	NOx	PM10[2][3]	CO	NOx	PM10		CO	NOx	PM10
Month 8 - Peak CO/NOx/PM	LPG Recovery - FCCU	FCCU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8027	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	FCCU - PRD	PRV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8027	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	Cogen/Boilers	COGEN	7.63E+01	1.51E+02	1.88E+01	9.61E-01	1.90E+00	2.37E-01	27871	3.45E-05	6.81E-05	8.51E-06
Month 8 - Peak CO/NOx/PM	Fuel Gas Hydrotreater	FGHYDRO	1.40E+01	2.76E+01	4.04E+00	1.76E-01	3.47E-01	5.09E-02	27871	6.31E-06	1.25E-05	1.83E-06
Month 8 - Peak CO/NOx/PM	Merichem	MERICHEM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1895	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	DCU Asset Integrity	DCUASSET	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	12263	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	LPG Recovery - DCU	LPGDCU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	12263	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	Heater 101	H101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	12263	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	Amine Flash Drum	AMINE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5574	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	HTU-2 Revamp	HTU2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4106	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	LPG Recovery - HCU	LPGHCU	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5463	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	Coke Barn	COKEBARN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	22297	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	Crude Tank	CRUTANK	3.00E+01	5.93E+01	8.12E+00	3.78E-01	7.48E-01	1.02E-01	22297	1.70E-05	3.35E-05	4.59E-06
Month 8 - Peak CO/NOx/PM	Coker Blowdown	BLOWDWN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	12263	0.00E+00	0.00E+00	0.00E+00
Month 8 - Peak CO/NOx/PM	Outside Boundary Limits	OSBL1	1.30E+00	2.22E+00	1.67E-01	1.64E-02	2.80E-02	2.10E-03	1858	8.84E-06	1.51E-05	1.13E-06
Month 8 - Peak CO/NOx/PM	Outside Boundary Limits	OSBL2	1.30E+00	2.22E+00	1.67E-01	1.64E-02	2.80E-02	2.10E-03	1858	8.84E-06	1.51E-05	1.13E-06

(1) Emissions were allocated to each source by engineering estimates.

(2) PM10 emissions adjusted to remove off-site on-road fugitive dust emissions.

(3) The PM2.5 and PM10 significance thresholds are the same, since PM10 is not significant for LST, PM2.5 is also not significant.

Table B-7. ISCST3 Modeling Result Validation for Peak Day Construction Emissions

Compound	Period	Rank	UTME	UTMN	Concentration ($\mu g/m^3$)	Receptor Type	Valid Receptor?
CO	1-HR	1	385500	3739100	366.94183	Grid	YES
CO	8-HR	1	385500	3739100	79.11905	Grid	YES
NOx	1-HR	1	385500	3739100	723.84503	Grid	YES
NOx	ANNUAL	1	386433.3	3740830	9.98836	Fenceline	No
NOx	ANNUAL	2	385500	3739100	7.73805	Grid	YES
PM10	24-HR	1	385500	3739100	9.20359	Grid	YES

Localized Significance Threshold Evaluation for
Tesoro Reliability Improvement and Regulatory Compliance Project
Refinery Construction Emissions

Table B-8. ISCST3 Modeling Results for Peak Day Construction Emissions

Criteria Pollutant	Averaging Period	March 2009 Peak PM10 Max Conc. ($\mu g/m^3$)	June 2009 Peak CO/NOx Max Conc. ($\mu g/m^3$)	Absolute Max Conc. ($\mu g/m^3$)	UTM Coordinates	
					Easting	Northing
CO	1-hr	N/A	366.94	366.94	385400	3739400
	8-hr	N/A	79.12	79.12	385400	3739400
NO_2 (1)	1-hr	N/A	186.75	186.75	385400	3739400
	Annual	N/A	2.00	2.00	386000	3739100
PM10	24-hr	9.20	N/A	9.20	386200	3740900

(1) Project Construction Emissions adjusted to NO2 from NOx based on distance to receptor of 500 meters for the 1-hour and annual averages. (See Table 2-4 of the SCAQMD Localized Significance Threshold Methodology, June 2003.)

Table B-9. Maximum Ambient Concentration Data[(1)]

Criteria Pollutant	Averaging Period	Concentration (ppm)			Max Conc.	
		2005	2006	2007	(ppm)	($\mu g/m^3$)
CO	1-hr	4	4	3	4	4597.60
	8-hr	3.5	3.4	2.6	3.5	4022.90
NO_2	1-hr	0.14	0.1	0.11	0.14	264.33
	Annual	0.0241	0.0215	0.0207	0.0241	45.50

(1) Data from South Coastal LA County Station (No. 072)

Localized Significance Threshold Evaluation for
Tesoro Reliability Improvement and Regulatory Compliance Project
Refinery Construction Emissions

Table B-10. Localized Significance Threshold Evaluation for Refinery

Criteria Pollutant	Averaging Period	Ambient Background Conc. ($\mu g/m^3$)	Calculated Concentration ($\mu g/m^3$)	Total Conc. ($\mu g/m^3$)	Most Stringent Air Quality Standard ($\mu g/m^3$)	Localized Significance Threshold ($\mu g/m^3$)	Exceeds Threshold? Yes/No
CO	1-hr	4597.6	366.9	4964.5	23000		No
	8-hr	4022.9	79.1	4102.0	10000		No
NO_2	1-hr	264.3	186.8	451.1	500		No
	Annual	45.5	2.0	47.5	100		No
PM10	24-hr		9.2			10.4	No

Localized Significance Threshold Evaluation for Tesoro Reliability Improvement and Regulatory Compliance Project SRP Construction Emissions

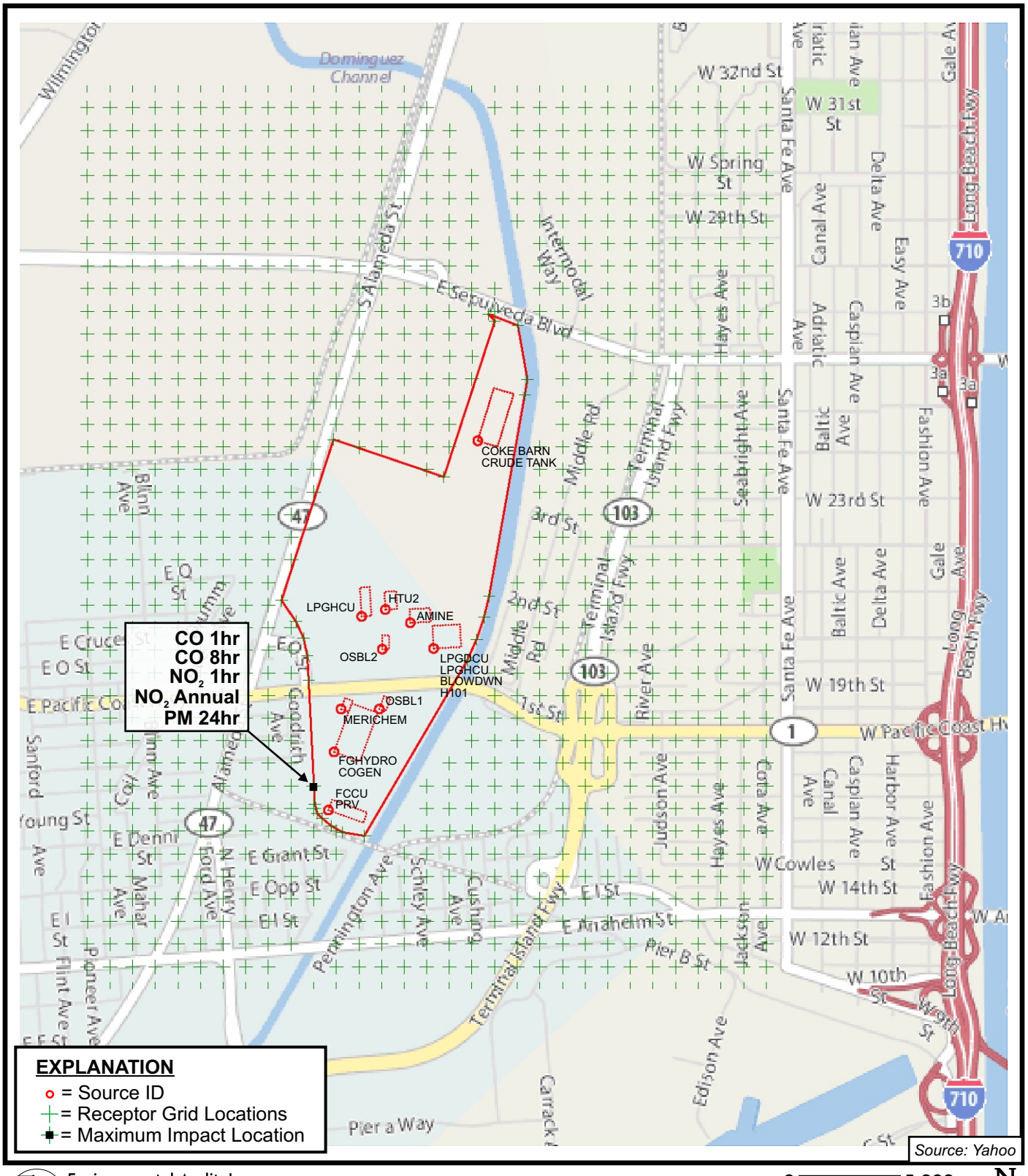
Table B-11. Localized Significance Threshold Screening for SRP

	On-site Source Emissions (lbs/day)					
	CO	**VOC**	**NOx**	**SOx**	**PM10**	**PM2.5**
Off-road Construction Equipment	19.40	5.61	30.36	0.03	2.24	2.06
On-road Construction Equipment	0.50	0.06	0.22	0.00	0.05	0.02
Fugitive Construction Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Total On-site Emissions	**19.90**	**5.67**	**30.58**	**0.03**	**2.29**	**2.08**
Screening Value[1][2]	**126**	**NA**	**271**	**NA**	**4**	**3**
Above Value?	**NO**	**-**	**NO**	**-**	**NO**	**NO**

(1) Screening values for LST analysis from SCAQMD Final Localized Significance Threshold Methodology, Appendix C (June 2003).

(2) Screening Value for PM2.5 from SCAQMD Final Methodology to Calculate PM2.5 and PM2.5 Significance Thresholds, Appendix B (October 2006).

FIGURE



Environmental Audit, Inc.

TESORO LOS ANGELES REFINERY
Localized Significance Threshold Evaluation

Project No. 2550

Figure B-1

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