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December 7, 2007

360346

Christopher Meyer
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Chula Vista Energy Upgrade Project (07-AFC-4)
Data Request Response to CEC Staff Data Requests 1 through 47 and Workshop Query 1

Dear Mr. Meyer:

Attached please find one original and 12 copies of MMC Energy, Inc. responses to California Energy Commission Staff Data Requests 1 through 47 and Workshop Query 1 for the Application for Certification for the Chula Vista Energy Upgrade Project (07-AFC-04).

If you have any questions about this matter, please contact me at (916) 286-0278 or Sarah Madams at (916) 286-0249.

Sincerely,

CH2M HILL

Douglas M. Davy, Ph.D.
AFC Project Manager

Attachment

cc: S. Madams

Supplemental Filing

Response to CEC Staff Data Requests 1 through 47 and Workshop Query 1

In support of the

Application for Certification

for the

Chula Vista Energy Upgrade Project

Chula Vista, California
(07-AFC-4)

Submitted to the:
California Energy Commission

Submitted by:

MMC

With Technical Assistance by:

CH2MHILL
Sacramento, California

December 2007

Contents

Attachments

Introduction

Attached are MMC Energy Inc.'s (MMC) responses to California Energy Commission (CEC) Staff data requests numbers 1 through 47 and also a workshop query for the Chula Vista Energy Upgrade (CVEUP) (07-AFC-4). The workshop query is an additional information request that was raised during the informational hearing that was held on November 29, 2007. The CEC Staff served the data requests on November 7, 2007, as part of the discovery process for the CVEUP project.

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request numbers (1 through 47). New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 15 would be numbered Table DR15-1. The first figure used in response to Data Request 28 would be Figure DR28-1, and so on.

Additional tables, figures, or documents submitted in response to a data request or workshop query (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of a discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

The workshop query has been given a unique workshop query (WSQ) number. Because the workshop query was not formally transmitted by the Staff in written form, it is listed below. There may be additional workshop queries that arise in future workshops or publicly noticed project meetings. Any future workshop queries will be assigned sequential numbers.

Hazardous Materials Handling

WSQ-1 Please provide a modeling analysis of the off-site consequences of a catastrophic release of ammonia (a) from the CVEUP's on-site ammonia storage tank, and (b) during the ammonia tank loading.

Air Quality

Data Responses 1-29

Air Quality (1-29)

Gas Turbine Operating Basis

1. *Please confirm the final gas turbine operating basis and provide revised annual emission tables for Section 5.1 and Appendix 5.1A and 5.1G, if they do not represent the proposed annual operating basis for the gas turbines.*

Response: The text in Appendix 5.1G on page G-2 is incorrect with regards to operating hours. This does not effect the emission calculations presented in the application (Section 5.1 and Appendix 5.1G), however. The annual operating hours are based on 3,500 hours at base load with 500 hours of evaporating cooling with an estimated 400 hours under startup (200 hours in cold start and 200 hours of hot start) for a total of 4,400 hours of operation for each turbine (see Attachment DR1-1).

FT8 Twinpac Turbine Information

2. a. *Please provide fuel consumption data for the FT8 Twinpac turbines for the years 2004, 2005 and 2006.*

   b. *Please provide emissions data, either from Continuous Emissions Monitors or by source tests for the emissions of NOx, VOC, PM10, PM2.5 and Sox*

   c. *Please provide an average annual emissions summary for the FT8 turbines based upon the fuel consumption data of Data Request 2a and the emissions data of Data Request 2b.*

Response: Fuel use, CEMS, and daily/annual operating hours data will be provided in a separate filing when available. It should be noted that the power plant did not operate between November 2003 and June 2006, a large percentage of its use-life, because it was in receivership. The plant was then purchased and recommissioned by its present owner. Since construction in 2001, the plant has operated for approximately 880 hours. In order to establish a baseline emissions profile, MMC proposes to average the two most complete years of operation, which may be based on 2002 and 2007, along with source test data collected in 2006 during the plant re-commissioning process.

Schedule for Offsets

3. *Please discuss and provide a schedule as to when the applicant will provide a list of potential offsets that would partially or entirely mitigate the project's NOx, PM10, PM2.5, VOC and SO_x emissions identified on p. DA-12*

Response: A list of potential offsets is provided in Attachment DR3-1. The Applicant is proposing to mitigate the increases in NO_x, $PM_{10}/PM_{2.5}$, VOC, and SO_2 at a 1:1 ratio through the establishment of mitigation fee program. The offsets or mitigation fee quantities proposed are calculated starting with an emissions baseline for the existing facility (based on an average of the two most complete years of operation and source test data) and an assumed level of operation for the new facility. For example, while the plant is being permitted at 4,400 hours of operation on a yearly basis, past historical data for peaking power plants indicate that the actual run times are much less. Additionally, peaking power

plant historically have been called upon during the hot summer months during which the area can be in non-attainment for ozone (NO_x and VOC as precursors). Thus, rather than rely on an annual emissions comparison to determine the mitigation requirements, the Applicant proposes to use daily emissions during the non-attainment season to offset the project's emissions. The proposed mitigation will be based on the difference between the existing facility actual emissions based on running time (300 hours of operation and 13 hours per day) and source test data and the potential emissions from the new facility based on an assumed level of 13 hours a day for 1,950 hours (150 days) of annual operation and potential emissions (Table DR3-1). The table summarizes the proposed mitigation quantities on a daily basis (13-hours), which are then multiplied by a total day usage factor to determine the total mitigation quantities.

TABLE DR3-1
Proposed Example of Existing Actual vs. New PTE Comparison (pounds per day)

Pollutant	Current Facility[a]	Proposed Facility[b]	Difference[c]
NO_x	99.0	139.4	40.4
CO	683.2	177.4	-505.8
VOC	14.0	29.2	15.2
SO_x	20.9	26.0	5.1
$PM_{10}/PM_{2.5}$	59.3	78.0	18.7

[a] Based on 13 hours of operation per day without startup emissions.

[b] Based on 13 hours of operation per day which includes one cold start.

[c] Approximate emissions increases and decreases in pounds per day.

San Diego County Air Pollution Control District (SDAPCD) monitoring data over the past six years demonstrates that the maximum (8-hour) ozone background tends to occur during the late spring through early fall seasons. The background $PM_{10}/PM_{2.5}$ maximum appears to occur mostly during the fall season. Using the method proposed above, and assuming the amount mitigated on a daily basis is the difference between the two facilities multiplied by 150 days of operation during the late spring/summer non-attainment months, the mitigation quantities would be:

NO_x	3.0 tons
VOC	1.1 tons
SO_x	0.4 tons
$PM_{10}/PM_{2.5}$	1.4 tons
Total	**5.9 tons**

For $PM_{10}/PM_{2.5}$, using the ozone non-attainment season as the basis for mitigation appears to be conservative since the non-attainment time frame for $PM_{10}/PM_{2.5}$ is during the fall season where peaking power requirements are traditionally very minimal.

Mitigation Fees

4. *Please discuss the amount of mitigation fees the applicant is willing to pay to the SDAPCD and the basis for calculating those fees.*

Response: To mitigate the emissions of non-attainment pollutants and their precursors, the applicant will set aside an air quality fund to add to the SDAPCD Carl Moyer Program that provides incentives for projects that will result in actual emission reductions from combustion sources. Recently accepted CEC mitigation for power projects in San Diego is as follows (note that these projects qualified as major sources and for this reason triggered the SDAPCD requirements to offset the emissions for non attainment pollutants):

- **Otay Mesa – CEC Decision P800-01-014, April 2001.** VOC ERCs used at a 2:1 ratio to offset NO_x, total NO_x required was 120 tons per year. PM_{10} and SO_x mitigation was fulfilled a payment to the SDAPCD for a bus program. The project also used mobile source ERCs (MSERCs) to offset NO_x and VOCs. For PM_{10}, the cost of sponsoring a bus retrofit program amounted to $12,000 per ton.
- **Palomar Energy – CEC Decision P800-03-009, August 2003**. Only NO_x ERCs were required for this project. Project proposed both NO_x and VOC ERCs (2:1 ratio for VOC to NO_x) to fulfill the requirements of the SDAPCD. The PM10 and SO_x mitigation was fulfilled by a payment to the SDAPCD for a diesel source emissions reduction program. For PM_{10}, this amounts to $17,222 per ton.

The Applicant proposes to fund the Carl Moyer program at a rate of $20,000 per ton of pollutant, plus an administration fee. The total funds would then be based on 5.9 tons at $20,000 per ton plus a 20 percent administration fee, totaling $141,600.

SDAPCD use of Mitigation Fees

5. *Please discuss to which SDAPCD programs the fees would be applied*

Response: The fees would be applied to the SDAPCD Carl Moyer Program.

Revised Off-Road Construction Emission Estimate

6. *Please review the emission calculations, in terms of equipment (both type and size) and construction schedule, provided in the air quality appendix for the Niland Gas Turbine Project (06-SPPE-1) case (see page 43 of 134) that can be found at:*
   http://www.energy.ca.gov/sitingcases/niland/documents/applicant_files/afc/vol-2/Appendix_B_Air%20Quality%20Data_FINAL.pdf
   …and provide a revised off road construction emission estimate to include all necessary onsite construction activities and construction equipment.

Response: Please see the revised construction emissions estimates included as Attachment DR6-1. The Niland project site referred to by CEC staff is an undeveloped 26-acre site, while the CVEUP site is an existing power plant site approximately 3.82 acres in size. The Niland site will require extensive grading and cut and fill activities, while the Chula Vista site will not require extensive grading and cut and fill in order to prepare it for erection of the LM6000 turbine units and support systems. Notwithstanding the above, the construction equipment list has been modified to include a single grader, which will be used on site for a maximum of 10 working days. In addition, due to the proposed site area, a

single crane has been added to the construction equipment list. The crane is estimated to be on site for a total of 100 days during the 7-month (154-day) construction period. See the revised construction emissions sheets provided in Attachments DR6-1 through DR6-4.

TABLE DR6-1
Maximum Daily Emissions During Construction (Exhaust Emissions), Pounds Per Day

	NO_x	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$
Onsite and Offsite						
Construction Equipment, Worker Travel, Truck/Rail Deliveries	106.0	90.3	23.9	0.1	7.85	7.24

Note: This table is a revision of AFC Table 5.1E-2

TABLE DR6-2
Annual Emissions During Construction, Tons Per Construction Period (7-8 Months)

	NOx	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$
Onsite and Offsite						
Construction Equipment, Fugitive Dust, Worker Travel, Truck/Rail Deliveries	5.7	5.4	1.33	0.01	0.84	0.35

Note: This table is a revision of AFC Table 5.1E-3

Fugitive Dust Calculations

7. Please provide fugitive dust calculations using current SCAQMD website (http://www.aqmd.gov/ceqa/hdbk.html) or U.S.EPA AP-42 emission factor calculations and emission control factors (http://www.epa.gov/ttn/chief/ap42/index.html).

Response: Please see the revised fugitive dust calculations included Attachments DR7-1 and DR7-2. The SCAQMD CEQA Handbook is currently under revision. The current handbook section dealing with fugitive dust emissions from construction activities is Table A9-9 (*Information for PM10 Emissions from Fugitive Dust Created During Construction and Operation of the Project*). On page A9-93 the primary references for dust emissions from graded surfaces and cut and fill operations is the MRI Report (Improvement of Specific Emissions Factors-BACM Project No. 1-Final Report, March 1996.) The factors and methodologies in this report were used in the application to estimate the fugitive dust emissions from construction-related activities, including cut and fill operations. The current version of the Handbook based upon the link provided by CEC suggests no changes to the above-noted referenced methods. The MRI Level 2 analysis was used to estimate site fugitives from construction including cut-and-fill operations. The control values applied were derived from the CEQA Handbook per Table A11-9-A (page A11-77). The factors chosen represent established and accepted control values. The control factors as applied are additive per the guidance presented in the CEQA Handbook.

In the revised calculations (Attachment DR7-1) the control values have been adjusted per the SCAQMD Mitigation Measure tables dated 4/2007, as follows:

- Watering control has decreased from 70 percent to 61 percent
- Speed control has increased from 20 percent to 30 percent. The speed control factor published by SCAQMD is 57 percent, assuming a linear relationship between PM_{10} emissions and uncontrolled site vehicle speed of 35 mph, reduced to 15 mph. The chosen control value of 30 percent represents a conservative value based upon the uncertainties surrounding actual site speeds, etc.

See the revised construction emissions sheets provided in Attachments DR7-1 and DR7-2.

TABLE DR7-1
Maximum Daily Emissions During Construction (Fugitive Dust), Pounds Per Day

	NO_x	CO	VOC	SO_x	PM_{10}	$PM_{2.5}$
Onsite						
Construction Fugitive Dust	0	0	0	0	6.04	1.27
Offsite						
Worker Travel, Truck/Rail Deliveries	0	0	0	0	4.11	0.09
Total =	**0**	**0**	**0**	**0**	10.15	1.36

Note: This table is a revision of AFC Table 5.1E-1

Off-Road Emission Estimates

8. Please revise the off-road vehicle emission estimates using the latest SCAQMD off-road emission factors, or alternatively provide factors obtained from ARB's OFFROAD model that matches the construction mitigation level found in the Energy Commission's typical conditions of certification. An example can be found in the Starwood Power Plant (06-AFC-10) Preliminary Staff Assessment at: http://www.energy.ca.gov/2007publications/CEC-700-2007-012/CEC-700-2007-012-PSA.PDF. Please note that the SCAQMD off-road emission factors are provided in lbs/hour of operation with load factors already included.

Response: The revised SCAQMD off-road factor emissions file dated 12/06 was obtained. Factors for 2008 have been inserted into the revised calculation sheets (Attachment DR8-1). The SCAQMD factors in terms of lbs/hr were converted to units of lbs/hp-hr for input into the revised calculations. The load factors in the revised calculations have been set to 100 percent to account for inclusion of load factors in the SCAQMD emissions factors. In addition, note the following:

- The calculations have been updated to fix an error which assumed all equipment forecasted for use at the site was on-site for the worst case day. This assumption is not supportable, nor is it reasonable.
- Annual emissions have been calculated for construction equipment exhaust and apportioned based on the number of construction days to arrive at average lbs/day emission values, as well as average monthly emissions values (as presented in numerous other AFC documents).

- Maximum daily emissions have been calculated based upon the developer's best estimate of equipment scheduling during the construction period, types of equipment required, number of each type required, etc.

These revisions and changes resulted in an overall slight decrease in emissions on a construction period basis, as well as a decrease in the maximum daily emissions.

Source for On-Road Emission Factors

9. Please provide a full reference source for the on road emission factors used in the construction emission estimate

Response: The on-road emissions factors have been revised for calendar year 2008. These factors were generated from the San Diego EMFAC-2007 "burden" run for calendar year 2008. Data from the burden output file was input into a calculation spreadsheet which then generated on-road composite emissions factors for the various vehicle types. These revised factors have been included in the revised construction emissions calculations (see Attachment DR9-1).

Construction Emission Dispersion Modeling

10. Please provide a corrected description of the construction modeling to replace the description provided in Section 5.1E4.2 of Appendix 5.1E. In particular, please correct the description of the modeling of the exhaust emissions to portray the actual modeling procedures.

Response: The construction modeling analyses were re-executed with the meteorological data supplied by the SDAPCD (processed with the most recent version of AERMET) and the most recent version of AERMOD. Combustion sources were modeled as 14-point sources concentrated in the northern half of the facility site. Since fugitive particulate emissions are proportional to the area being disturbed, the entire facility property was assumed to be disturbed to maximize the calculated fugitive particulate emissions with a release height of 0.5 meters. Accordingly, the entire facility property was modeled as a single area source.

Construction Modeling Results

11. Please correct the construction modeling results provided in Table 5.1E-4 to correspond to the modeling results provided in the Const.xls file that was included with the air dispersion modeling files.

Response: Results of the revised modeling analyses are shown in Table DR11-1 (revised AFC Table 5.1E-4). Additionally, the CONST.XLS was revised to reflect the updated construction emissions data and is provided as Attachment DR11-1.

TABLE DR11-1
Modeled Maximum Construction Impacts

Pollutant	Averaging Time	Maximum Construction Impacts (µg/m^3)	Background (µg/m^3)	Total Impact (µg/m^3)	State Standard (µg/m^3)	Federal Standard (µg/m^3)
NO_2[a]	1-hour	217	192	409	470	—
	Annual	4.2	34	38.2	56	100
SO_2	1-hour	0.3	110	110.3	650	—
	3-hour	0.1	55	55.1	—	1300
	24-hour	0.04	39	39.04	109	365
	Annual	0.01	11	1.01	—	80
CO	1-hour	179	7,886	8,065	23,000	40,000
	8-hour	55.7	6,000	6,056	10,000	10,000
PM_{10}	24-hour	57	65	122	50	150
	Annual[b]	1.8	27	28.8	20	—
$PM_{2.5}$	24-hour	13	41	54	—	65
	Annual[b]	0.6	14	14.6	12	15

Notes:

This table is a revision of AFC Table 5.1E-4

[a] ARM applied for annual average, using national default 0.75 ratio. OLM applied for 1-hour average, using maximum background ozone concentration of 0.100 ppm.

[b] Annual Arithmetic Mean.

[c] Based on maximum daily emissions.

[d] PM10 impacts will be reduced to a level of insignificance through the implementation of CEC construction mitigation techniques.

Area Source Height

12. Please describe the derivation of the area source height (7.32 meters) used for modeling the construction equipment exhaust emissions.

Response: The release height of 7.32 meters was not used in this analysis. See the response to Data Request #10, above. The point source emissions were set at 10 feet to correspond to a typical mobile source stack height. The area source release height was set to 0.5 meters to account for the turbulent release characteristics of fugitive dust.

Area of Polygon Area Source

13. Please provide the total area of the polygon area source used in the modeling analysis.

Response: The area of the polygon is based on the area within the fenceline and is 12,894 square meters and represents the new construction area in the north and the area in the south where the facilities will be removed.

Gas Turbine SO_x Emissions

14. Please provide calculations showing the basis and assumption for the derivation of the 1.1 lb/hour SO_x emission value given for each gas turbine at full load.

Response: The sulfur emission rate of 1.1 lb/hr (for two units) was derived from an un-referenced source that produced 1.06 lb/hr, which was rounded to 1.1. The Applicant will use 1.0 lb/hr to represent the worst-case short-term emissions of SO_2.

SOx Emissions Using Worst-Case Sulfur Content

15. Please provide annual gas turbine SO_x emissions based on a reasonable worst-case long term fuel sulfur content.

Response: For the annual SO_2 emissions, the Applicant proposes to use a fuel sulfur estimate of 0.29 grs/100 scf, which was derived from the San Diego Gas and Electric Company fuel analysis data for the Moreno and Coastal pipelines for the period 4/1/06 thru 6/30/07. The 0.29 grs/100scf value is the maximum value listed for the period noted above. The SO_2 emission rate based on this value is 0.39 lb/hr per turbine or, based on two turbines operating at 4,400 hours, 1.7 tons per year.

Gas Turbine Screening Modeling Analysis

16. Please provide the additional presentation of the screening level modeling analysis, which was meant to be provided as Appendix 5.1E, if any was meant to be provided beyond that given with the modeling files.

Response: Please see Attachment DR16-1, which summarizes the screening modeling results for turbine load cases of 50 percent, 75 percent, and 100 percent load under ambient temperatures of 30ºF, 59º F, and 93º F.

Operating Load Emissions Choice

17. Please indicate why the 100% operating load emissions were used for the 75% and 50% operating load screening analysis for the gas turbine PM_{10} and SO_x emissions.

Response: Emissions of SO_2 and PM_{10} are based primarily on fuel use, which will vary under different loads. It is understood that these emissions will be less under lower loads than higher loads. Thus, to conservatively model the resulting SO_2 and PM_{10} impacts, the 100 percent load emissions were used for both the 50 percent and 75 percent load stack parameters. This will result in the highest potential for SO_2 and PM_{10} impacts.

Blackstart Engine SO_x Emissions

18. Please confirm that the blackstart engine will use ultra low sulfur (15 ppm sulfur) diesel fuel as required by California Diesel Fuel Regulations.

Response: The diesel engine is no longer being proposed for installation.

Gas Turbine PM_{10} Hourly Emissions

19. Please confirm the gas turbine PM10 hourly emissions limit.

Response: The PM_{10} emissions will be 3 lb/hr per turbine. The application that was submitted previously to the SDAPCD was based on a 5 lb/hr limit. This has been revised in the SDAPCD application.

Revisions of PM_{10} Emission Calculations

20. Please revise PM10 emission calculations if the gas turbine PM10 emission limit should be 5.0 lbs/hour, or revise the modeling and modeling results if the gas turbine emission limit should be 3.0 lbs/hour.

Response: See response to Data Request #29, below.

Gas Turbine Annual Emissions

21. Please confirm the gas turbines' annual emissions of NO_x, PM_{10}, and SO_x.

Response: The annual emissions of NO_x, PM_{10}, and SO_x are as presented in AFC Tables 5.1-5, 5.1-7, and 5.1-9. These quantities are 23.2, 13.2, and 4.8 tons per year (tpy), respectively. We are not able to find the annual emissions quantities of 21.0 tpy NO_x, 11.8 tpy PM_{10}, and 4.2 tpy SO_x that are referenced in the Data Request.

Revised Gas Turbine Annual Emissions

22. Please revise NO_x, PM_{10}, and SO_x emission calculations if the annual emission levels in the AFC are incorrect and/or revise the modeling and modeling results if the modeled annual emissions are incorrect.

Response: The annual emissions estimates for NO_x, PM_{10}, and SO_x are correct as referenced in the AFC. Specifically, the annual emissions are based upon 4,400 hours of operation. See the response to Data Request #29 for the annual impacts based upon 4,400 hours of operation.

Blackstart Engine Testing

23. Please confirm if the blackstart engine testing will be for one hour or one half hour per week, 52 weeks per year.

Response: The diesel engine is no longer being proposed for installation.

Blackstart Engine Emissions

24. Please revise the blackstart engine emission levels presented in the AFC if the engine is proposed to be tested for no more than one half hour per week. Alternately, revise the modeling and modeling results if the testing of the blackstart engine is proposed for no more than one hour per week.

Response: The diesel engine is no longer being proposed for installation.

Cumulative Project List

25. Please provide a copy of the cumulative project list to be provided by SDAPCD as noted on Page DA-17 of the Data Adequacy Supplement.

Response: Based on recent contact with the SDAPCD, a cumulative source list will be provided by December 14, 2007. The SDAPCD has told the Applicant that no stack parameter data will be provided, only potential emissions. The Applicant will work with the CEC to establish the appropriate stack parameters for the background cumulative sources.

Cumulative Modeling Analysis

26. Please provide a copy of the cumulative modeling analysis, as proposed in the cumulative modeling protocol provided in the Data Adequacy Supplement, including electronic copies of the modeling files.

Response: Once the cumulative modeling is completed, a copy of the report as well as the modeling files will be provided to the CEC. Prior to the beginning the modeling analysis, the Applicant will consult CEC Staff regarding the cumulative source list.

Air Quality Permit Application

27. Please provide copies of any permit application materials, other than AFC materials, submitted to the District.

Response: The air section of the AFC was taken directly from the SDAPCD permit application and is identical except as follows:

- The annual emissions were reduced to 4,400 hours from 5,000 hours.
- The PM_{10} emission rate was reduced from 5 lb/hr/turbine to 3 lb/hr/turbine.
- Permit forms were included with the SDAPCD application.

The SDAPCD forms are included as Attachment DR27-1.

Additional Submittals to the Air District

28. Please provide copies of any subsequent submittals to the District within 5 days of their submittal to the District.

Response: The applicant will provide copies of subsequent SDAPCD submittals to the CEC within 5 days of submittal to the SDAPCD.

Revised Air Dispersion Modeling

29. Please perform all revised air dispersion modeling runs using input and outputs derived from the latest versions of AERMOD (07026), AERMET (06341), and AERMAP (06341), or provide a point by point analysis of why the model revisions would not impact the output results and provide at least one comparison each for the operation and construction modeling analysis of the original and updated model version files (all input and output files) to demonstrate their equivalence.

Response: The AERMOD modeling analyses for the CVEUP were re-analyzed with the following changes:

- Meteorological data re-processed by the SDAPCD with the most recent version of AERMET (V06341)
- Receptor grids re-processed with the most recent version of AERMAP (V06341)
- Impacts re-evaluated with the revised meteorological and the most recent version of AERMOD (V07026)
- Emergency generator deleted from facility design
- Turbine PM emissions revised to 3.0 lbs/hr/turbine
- Annual emissions revised to 3,500 hours/year normal operations (fogger off), 500 hours/year with fogger on; 200 hours/year cold starts, and 200 hours/year warm starts

With the deletion of the emergency generator, the proposed facility now consists of two identical stacks. Therefore, the revised modeling analyses were performed as screening analyses with each stack modeled at 1.0 g/s (i.e., no refined modeling analyses with the emergency generator were required). The resulting unitized concentrations from the revised screening analysis were multiplied by the turbine emission rate (g/s/turbine) to determine maximum facility impacts. The changes to the modeling results are shown in Tables DR29-1 through DR29-3.

In addition to the revised impacts shown on the following tables, revised commissioning impacts (not shown in tables previously) were 99.2, 87.5, and 52.4 $\mu g/m^3$ for 1-hour NO_2, 1-hour CO, and 8-hour CO impacts, respectively, nearly identical to the impacts reported previously.

TABLE DR29-1
Stack Parameters and Emission Rates for Worst-Case Source Conditions from Screening AERMOD Modeling

	Stack Height (m)	Stack Diam (m)	Stack Temp (deg K)	Exhaust Velocity (m/s)	Emission Rates (g/s)			
					NO_X	SO_2	CO	$PM_{10/2.5}$
Averaging Period: 1-hour for Normal Operating Conditions for CO and NO_x Emissions								
Turbines (each)	21.336	3.9624	684.8	22.75	0.533	N/A	0.780	N/A
Averaging Period: 1-hour for Normal Operating Conditions for SO_2 Emissions								
Turbines (each)	21.336	3.9624	681.5	14.92	N/A	0.139	N/A	N/A
Averaging Period: 3-hours for Normal Operating Conditions								
Turbines (each)	21.336	3.9624	681.5	14.92	N/A	0.139	N/A	N/A
Averaging Period: 8-hours for Normal Operating Conditions								
Turbines (each)	21.336	3.9624	684.8	22.75	N/A	N/A	0.780	N/A
Averaging Period: 24 hours for Normal Operating Conditions								
Turbines (each)	21.336	3.9624	681.5	14.92	N/A	0.139	N/A	0.378
Averaging Period: Annual for Normal Operating Conditions*								

TABLE DR29-1
Stack Parameters and Emission Rates for Worst-Case Source Conditions from Screening AERMOD Modeling

	Stack Height (m)	Stack Diam (m)	Stack Temp (deg K)	Exhaust Velocity (m/s)	Emission Rates (g/s)			
					NO_X	SO_2	CO	$PM_{10/2.5}$
Turbines (each)	21.336	3.9624	707.6	22.32	0.332	0.070	N/A	0.190
Averaging Period: 1-hour for Turbine Start-up/Shutdown Conditions								
Turbines (each)	21.336	3.9624	684.8	22.75	2.432	N/A	1.802	N/A
Averaging Period: 8-hours for Turbine Start-up/Shutdown Conditions								
Turbines (each)	21.336	3.9624	684.8	22.75	N/A	N/A	0.951	N/A

Notes:

This table is a revision of AFC Table 5.1-21

* Annual averaging periods include start-up/shutdown emissions, where applicable.

TABLE DR29-2
Air Quality Impact Summary for Normal Operating Conditions

Pollutant	Avg. Period	Maximum Concentration ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	Class II Significance Level ($\mu g/m^3$)	SIL ($\mu g/ m^3$)	Ambient Air Quality CAAQS/NAAQS ($\mu g/m^3$)	Ambient Air Quality CAAQS/NAAQS ($\mu g/m^3$)
NO_2	1-hour	8.2	192	200	-	19	470	-
	Annual	0.23	34	34.2	1	1	-	100
PM_{10}	24-hour	1.71	65	66.7	5	5	50	150
	Annual	0.13	27	27.1	1	1	20	50
$PM_{2.5}$	24-hour	1.71	41	42.7	5	5	-	65
	Annual	0.13	14	14.1	1	1	12	15
CO	1-hour	12.04	7886	7898	2000	2000	23,000	40,000
	8-hour	7.21	6000	6007	500	500	10,000	10,000
SO_2	1-hour	2.84	110	113	-	-	655	-
	3-hour	1.93	55	56.9	25	25	1300	1,300
	24-hour	0.63	39	39.6	5	5	105	365
	Annual	0.04	11	11.04	1	1	-	80

Note: This table is a revision of AFC Table 5.1-22

TABLE DR29-3
Startup and Shutdown Modeling Results

Pollutant	Avg. Period	Maximum Concentration (µg/ m^3)	Background (µg/ m^3)	Total (µg/ m^3)	Class II Significance Level (µg/ m^3)	Ambient Air Quality CAAQS/NAAQS (µg/ m^3)	Ambient Air Quality CAAQS/NAAQS (µg/ m^3)
NO_2	1-hour	37.54	192	230	-	470	-
CO	1-hour	27.81	7886	7914	2000	23,000	40,000
	8-hour	8.79	6000	6009	500	10,000	10,000

Note: This table is a revision of AFC Table 5.1-24

Attachment DR1-1

Detailed Calculations for Maximum Hourly, Daily, and Annual Criteria Pollutant Emissions

DR1-1

Detailed Calculations for Maximum Hourly, Daily and Annual Criteria Pollutant Emissions

Maximum Hourly, Daily and Annual Emissions								NOx			SO2	CO			VOC			PM10
	Base Load			Cold Start		Hot Start		Base Load	Cold Start	Warm Start		Base Load	Cold Start	Hot Start	Base Load	Cold Start	Hot Start	
	max. hour	hrs/day	hrs/yr	hrs/day	hrs/yr	hrs/day	hrs/yr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Turbine 1	1	20	3500	1	200	1	200	4.2	19.3	12.2	0.39	6.2	14.3	10.8	1.1	1.4	1.4	3.0
Turbine 2	1	20	3500	1	200	1	200	4.2	19.3	12.2	0.39	6.2	14.3	10.8	1.1	1.4	1.4	3.0
Turbine 1, w/ fogging	0	2	500	0	0	0	0	4.2	0	0	0.39	6.2	0	0	1.2	0.0	0.0	3.0
Turbine 2, w/ fogging	0	2	500	0	0	0	0	4.2	0	0	0.39	6.2	0	0	1.2	0.0	0.0	3.0

	NOx			SO2			CO			VOC			PM10		
	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total
	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy
Turbine 1	19.3	115.5	10.5	0.4	8.6	0.8	14.3	149.1	13.4	1.4	24.8	2.2	3.0	66.0	5.9
Turbine 2	19.3	115.5	10.5	0.4	8.6	0.8	14.3	149.1	13.4	1.4	24.8	2.2	3.0	66.0	5.9
Turbine 1, w/ fogging	0.0	8.4	1.1	0.0	0.8	0.1	0.0	12.4	1.6	0.0	2.4	0.3	0.0	6.0	0.8
Turbine 2, w/ fogging	0.0	8.4	1.1	0.0	0.8	0.1	0.0	12.4	1.6	0.0	2.4	0.3	0.0	6.0	0.8
Total	38.6	247.8	23.1	0.8	18.7	1.7	28.6	323.0	29.8	2.8	54.4	5.0	6.0	144.0	13.2
	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy	lb/hr	lb/day	tpy

Assumptions:

Two turbines startup during the same hour
NOx 2.5 ppm
CO 6 ppm
VOC 2.0 ppm

Attachment DR3-1

List of Potential Offsets

San Diego APCD ERC Banking Registry Summary

last update: October 31, 2007
"Subject to Verification"

CLASS A - ACTIVE ERC's (TPY)					Cumulative Totals		
Company Name	Certificate No.	PM10	CO	SOx	PM10	CO	SOx
Cabrillo Power II, LLC	978938-02		15.2		0.00	15.20	0.00
	978938-03	2.8			2.80	15.20	0.00
	978938-04			8.1	2.80	15.20	8.10
City of San Diego, Metropolitan Wastewater De	950766-02		1.88		2.80	17.08	8.10
	950766-04	0.63			3.43	17.08	8.10
Element Markets	070823-04			0.30	3.43	17.08	8.40
	070823-05	0.30			3.73	17.08	8.40
	070823-06		1.30		3.73	18.38	8.40
General Dynamics, Convair	951022-01		64.80		3.73	83.18	8.40
	951022-04			0.10	3.73	83.18	8.50
	951022-07	1.50			5.23	83.18	8.50
General Dynamics Properties, Inc.	970809-01		1.17		5.23	84.35	8.50
	970809-03	0.46			5.69	84.35	8.50
	970809-04			0.02	5.69	84.35	8.52
Grey K Environmental Fund, LP	060328-10		0.70		5.69	85.05	8.52
	060328-08	0.20			5.89	85.05	8.52
	060328-09		2.00		5.89	87.05	8.52
	060328-07	0.40			6.29	87.05	8.52
Hanson Aggregates, Pacific SW Region	980772-02		2.20		6.29	89.25	8.52
	980772-04	0.09			6.38	89.25	8.52
H. G. Fenton Material Co.	41106-03	#####			135.48	89.25	8.52
	930902-02		3.85		135.48	93.10	8.52

CLASS A - ACTIVE ERC's (TPY)					Cumulative Totals		
Company Name	Certificate No.	PM10	CO	SOx	PM10	CO	SOx
	930902-04	1.06			136.54	93.10	8.52
	930902-05			1.00	136.54	93.10	9.52
	975070-01		1.10		136.54	94.20	9.52
	975070-03	0.10			136.64	94.20	9.52
	975070-04			0.10	136.64	94.20	9.62
	975733-01		1.60		136.64	95.80	9.62
	975733-03	0.20			136.84	95.80	9.62
Jack Brunton	973039-02		24.20		136.84	120.00	9.62
National Steel & Shipbuilding	40994-01	0.10			136.94	120.00	9.62
	40995-01	0.09			137.03	120.00	9.62
	40995-05			0.27	137.03	120.00	9.89
	40995-06		3.40		137.03	123.40	9.89
	40996-01	0.01			137.04	123.40	9.89
	40996-03		0.02		137.04	123.42	9.89
	40996-04			0.35	137.04	123.42	10.24
	40997-01	0.45			137.49	123.42	10.24
	40997-04		0.06		137.49	123.48	10.24
	40997-05			0.04	137.49	123.48	10.28
0.03 tpy of Lead (Pb)	40997-06				137.49	123.48	10.28
Naval Station, San Diego	950949-02		0.75		137.49	124.23	10.28
	950949-03	1.09			138.58	124.23	10.28
	940206-02	0.04			138.62	124.23	10.28
	940206-04		0.12		138.62	124.35	10.28
	940206-05			0.04	138.62	124.35	10.32
NAVERUS, Inc.	040203-01		0.60		138.62	124.95	10.32
	040203-02	0.10			138.72	124.95	10.32
	978227-01		0.90		138.72	125.85	10.32

CLASS A - ACTIVE ERC's (TPY)					Cumulative Totals		
Company Name	Certificate No.	PM10	CO	SOx	PM10	CO	SOx
	978227-03	0.10			138.82	125.85	10.32
	981024-02	0.17			138.99	125.85	10.32
	981024-04		0.37		138.99	126.22	10.32
	981024-05			0.09	138.99	126.22	10.41
	981954-01		4.52		138.99	130.74	10.41
	981954-03			0.28	138.99	130.74	10.69
	981954-04	0.61			139.60	130.74	10.69
Olduvai Gorge LLC	071004-03		50.30		139.60	181.04	10.69
	071004-04	0.85			140.45	181.04	10.69
	071004-05			0.10	140.45	181.04	10.79
Ralston Purina	50055-01	0.50			140.95	181.04	10.79
	50055-02			4.60	140.95	181.04	15.39
	50055-05		3.40		140.95	184.44	15.39
SDG&E	921291-03		55.30		140.95	239.74	15.39
	921291-04	2.90			143.85	239.74	15.39
	979298-02		13.83		143.85	253.57	15.39
South Coast Materials Company	940101-01	10.80			154.65	253.57	15.39
Southern California Edison Company	950171-02		0.11		154.65	253.68	15.39
	950171-04	0.01			154.66	253.68	15.39
	950171-05			0.10	154.66	253.68	15.49
STMicroelectronics, Inc.	978887-01		1.50		154.66	255.18	15.49
	978887-04	0.10			154.76	255.18	15.49
SW Division, Naval Facilities Engineering Cmd	970312-01	2.00			156.76	255.18	15.49
US Foam	974375-02		1.10		156.76	256.28	15.49
	974375-05	0.10			156.86	256.28	15.49
USN Communications Station	940560-02			0.49	156.86	256.28	15.98
	940560-03	0.34			157.20	256.28	15.98

CLASS A - ACTIVE ERC's (TPY)					Cumulative Totals		
Company Name	**Certificate No.**	**PM10**	**CO**	**SOx**	**PM10**	**CO**	**SOx**
	940560-05		1.05		157.20	257.33	15.98
	940561-02		0.03		157.20	257.36	15.98
	940561-04			0.01	157.20	257.36	15.99
	940561-05	0.00			157.20	257.36	15.99
	940562-02		0.03		157.20	257.39	15.99
	940562-04			0.01	157.20	257.39	16.01
	940562-05	0.00			157.21	257.39	16.01
					PM10	**CO**	**Sox**
	TOTALS (tons/year)=				**157.21**	**257.39**	**16.01**

Attachment DR6-1

Construction Emission Totals

DR6-1 Construction Emission Totals

DR6-1

Construction Activity		lbs/day NOx	CO	VOC	SOx	PM10	PM2.5		tons per const period NOx	CO	VOC	SOx	PM10	PM2.5		tons per year NOx	CO	VOC	SOx	PM10	PM2.5
Main Site																					
Construction Equipment		103.2	65.2	23.0	0.1	7.37	6.78		6.1	4.1	1.50	0.01	0.45	0.42		10.5	7.0	2.6	0.0	0.8	0.7
Construction Dust		0.000	0.000	0.000	0.000	6.04	1.27		0.000	0.000	0.000	0.000	0.10	0.02		0.0	0.0	0.0	0.0	0.2	0.0
Site Delivery		2.54	0.73	0.18	0.003	0.11	0.10		0.20	0.06	0.01	0.001	0.008	0.008		0.3	0.1	0.0	0.0	0.0	0.0
Site Support		0.742	6.530	0.628	0.006	0.061	0.056		0.057	0.503	0.048	0.001	0.005	0.004							
Worker Travel		2.11	21.6	2.23	0.021	0.19	0.18		0.16	1.66	0.17	0.002	0.015	0.014		0.3	2.8	0.3	0.0	0.0	0.0
Paved Roads		0.000	0.000	0.000	0.000	4.11	0.090		0.000	0.000	0.000	0.000	0.32	0.05		0.0	0.0	0.0	0.0	0.5	0.1
Laydown Area(s)		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
Unpaved Roads		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
Wind Blown Dust		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
Linears																					
Gas Line		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
Sewer Line		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
Water Line		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
Transmission Line		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.0	0.0	0.0	0.0	0.0	0.0
TOTALS		**108.6**	**94.0**	**26.0**	**0.1**	**17.9**	**8.5**		**6.5**	**6.3**	**1.73**	**0.01**	**0.89**	**0.51**		**11.1**	**10.0**	**2.89**	**0.02**	**1.52**	**0.87**

Total Const Months: 7
Total Const Years: 0.58

Attachment DR6-2

Construction Phase Emissions

DR6-2 CONSTRUCTION PHASE EMISSIONS

Equipment Exhaust

Project: MMC

Projected Construction Year(s): 2008

Equip. Type	Avg # on Site	Avg. HP (a)	Fuel Type (b)	Avg. Load Factor % (c)	Load Adj HP	Avg. Daily Equip. Op. Hours (d)	Equipment Category Daily Hrs. (e)	Estimated Avg Days on Site (f)	Load Adjusted Construction Hourly HP/Hrs	Daily HP/Hrs	Period HP/HRs
Bore/Drill Rigs/Pile Drivers	0	209	D	100.0	209	0	0.00	0	0	0	0
Cement Mixers	0	11	D	100.0	11	0	0.00	0	0	0	0
Industrial/Concrete Saws	0	56	D	100.0	56	0	0.00	0	0	0	0
Cranes	1	194	D	100.0	194	6	6.00	100	194	1164	116400
Crawler Tractors/Dozers	1	103	D	100.0	103	8	8.00	88	103	824	72512
Crushing/Processing Eq.	0	127	D	100.0	127	0	0.00	0	0	0	0
Dump and Tender Trucks	1	150	D	100.0	150	5	5.00	132	150	750	99000
Excavators	2.3	152	D	100.0	152	8	18.40	110	350	2797	307648
Forklifts/Aerial Lifts/Booms	4.14	83	D	100.0	83	8	33.12	154	344	2749	423340
Generators/Compressors	4	50	D	100.0	50	10	40.00	154	200	2000	308000
Graders	1	157	D	100.0	157	6	6.00	10	157	942	9420
Off Highway Tractors	0	69	D	100.0	69	0	0.00	0	0	0	0
Off Highway Trucks	1.71	489	D	100.0	489	5	8.55	132	836	4181	551885
Other Const. Eq.	0	161	D	100.0	161	0	0.00	0	0	0	0
Pavers	0.26	99	D	100.0	99	6	1.56	44	26	154	6795
Paving Eq./Surfacing Eq.	0	91	D	100.0	91	0	0.00	0	0	0	0
Plate Compactors	4.7	8	D	100.0	8	6	28.20	132	38	226	29779
Rollers/Compactors	1	99	D	100.0	99	8	8.00	132	99	792	104544
Rough Terrain Forklifts	1.86	93	D	100.0	93	0	0.00	154	173	0	0
Rubber Tired Dozers	0	356	D	100.0	356	0	0.00	0	0	0	0
Rubber Tired Loaders	0	147	D	100.0	147	0	0.00	0	0	0	0
Scrapers	0	267	D	100.0	267	0	0.00	0	0	0	0
Signal Boards/Light Sets	0	15	D	100.0	15	0	0.00	0	0	0	0
Skid Steer Loaders	0	40	D	100.0	40	0	0.00	0	0	0	0
Tractors/Loaders/Backhoes	0	79	D	100.0	79	0	0.00	0	0	0	0
Trenchers	0	60	D	100.0	60	0	0.00	0	0	0	0
Welders	3.43	50	D	100.0	50	8	27.44	154	172	1372	211288
Utility Trucks (gas or diesel)	see site delivery and support sheet calcs										

Fuel Use Rates: 0.055 gal/hp-hr

Ref: SCAQMD, PR XXI, Staff Report, 3-15-95

(a) Ref: South Coast AQMD-CEQA Handbook, Table A9-8-C.
(b) D=diesel, G=gasoline
(c) SCAQMD Efs include load factor adjustments, therefore all LF adjustments are 1.0.
(d) Per construction engineering estimate.
(e) Estimated daily hours for this equipment/operation category.
(f) Total estimated days on site from construction schedule for this equipment category.

Estimated Project Equip Fuel Use Rates

	Gals	mGals
Hr:	156	0.156
Day:	987	0.987
Period:	123234	123.234

EMISSIONS FACTORS (g) — Composite Emissions Factors (h)

Equip. Type	HP	lbs/hp-hr CO	g/hp-hr	lbs/hp-hr VOC	g/hp-hr	lbs/hp-hr NOx	g/hp-hr	lbs/hp-hr SOx	g/hp-hr	lbs/hp-hr PM10	g/hp-hr
Bore/Drill Rigs/Pile Drivers	209	0.0014	0.6	0.0003	0.1	0.0042	1.9	0.000004	0.0	0.000134	0.1
Cement Mixers	11	0.0026	1.2	0.0006	0.3	0.0037	1.7	0.000007	0.0	0.000248	0.1
Industrial/Concrete Saws	56	0.0068	3.1	0.0028	1.3	0.0064	2.9	0.000008	0.0	0.00067	0.3
Cranes	194	0.0028	1.3	0.0008	0.4	0.006	2.7	0.000005	0.0	0.000337	0.2
Crawler Tractors/Dozers	103	0.0043	0.0	0.0015	0.7	0.0083	3.8	0.000006	0.0	0.000751	0.3
Crushing/Processing Eq.	127	0.005	2.3	0.0016	0.7	0.0095	4.3	0.000008	0.0	0.000859	0.4
Dump and Tender Trucks	150	0.0014	0.6	0.0005	0.2	0.0027	1.2	0.000004	0.0	0.000172	0.1
Excavators	152	0.0038	1.7	0.001	0.5	0.0074	3.4	0.000007	0.0	0.000428	0.2
Forklifts/Aerial Lifts/Booms	83	0.004	1.8	0.0017	0.8	0.0032	1.5	0.000004	0.0	0.000385	0.2
Generators/Compressors	50	0.006	2.7	0.0025	1.1	0.0063	2.9	0.000008	0.0	0.000615	0.3
Graders	157	0.0043	2.0	0.0011	0.5	0.0087	3.9	0.000008	0.0	0.000494	0.2
Off Highway Tractors	69	0.0064	2.9	0.0023	1.0	0.0129	5.9	0.000009	0.0	0.001129	0.5
Off Highway Trucks	489	0.0017	0.8	0.0005	0.2	0.0053	2.4	0.000005	0.0	0.000197	0.1
Other Const. Eq.	161	0.0034	1.5	0.0008	0.4	0.0065	2.9	0.000007	0.0	0.000346	0.2
Pavers	99	0.0045	2.0	0.0015	0.7	0.0089	4.0	0.000007	0.0	0.00077	0.3
Paving Eq./Surfacing Eq.	91	0.0035	1.6	0.0012	0.5	0.007	3.2	0.000005	0.0	0.000601	0.3

Plate Compactors	8	0.0018	0.8	0.0003	0.1	0.0022	1.0	0.000004	0.0	0.000138	0.1
Rollers/Compactors	99	0.0036	1.6	0.0011	0.5	0.0068	3.1	0.000006	0.0	0.000586	0.3
Rough Terrain Forklifts	93	0.0038	1.7	0.0012	0.5	0.0069	3.1	0.000006	0.0	0.000631	0.3
Rubber Tired Dozers	356	0.0034	1.5	0.0012	0.5	0.0107	4.9	0.000008	0.0	0.000472	0.2
Rubber Tired Loaders	147	0.0036	1.6	0.0012	0.5	0.0068	3.1	0.000006	0.0	0.000615	0.3
Scrapers	267	0.0033	1.5	0.0012	0.5	0.011	5.0	0.000009	0.0	0.000451	0.2
Signal Boards/Light Sets	15	0.0025	1.1	0.0005	0.2	0.003	1.4	0.000006	0.0	0.000167	0.1
Skid Steer Loaders	40	0.0054	2.4	0.002	0.9	0.0051	2.3	0.000007	0.0	0.000519	0.2
Tractors/Loaders/Backhoes	79	0.0077	3.5	0.0009	0.4	0.0054	2.4	0.000005	0.0	0.000495	0.2
Trenchers	60	0.0091	4.1	0.004	1.8	0.0074	3.4	0.000009	0.0	0.000875	0.4
Welders	50	0.0063	2.9	0.0027	1.2	0.0056	2.5	0.000007	0.0	0.000616	0.3

(g) SCAQMD off-road emissions factor database, website, October 2006.
(h) EFs are for inventory year 2008.

Construction Equipment Exhaust Emissions

Equip. Type	CO lbs/hr	CO lbs/day	CO tons*	VOC lbs/hr	VOC lbs/day	VOC tons*	NOx lbs/hr	NOx lbs/day	NOx tons*	SOx lbs/hr	SOx lbs/day	SOx tons*	PM10 lbs/hr	PM10 lbs/day	PM10 tons*
Bore/Drill Rigs/Pile Drivers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cement Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial/Concrete Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cranes	0.54	3.26	0.16	0.16	0.93	0.05	1.16	6.98	0.35	0.00	0.01	0.00	0.07	0.39	0.02
Crawler Tractors/Dozers	0.44	3.54	0.16	0.15	1.24	0.05	0.85	6.84	0.30	0.00	0.00	0.00	0.08	0.62	0.03
Crushing/Processing Eq.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump and Tender Trucks	0.21	1.05	0.07	0.08	0.38	0.02	0.41	2.03	0.13	0.00	0.00	0.00	0.03	0.13	0.01
Excavators	1.33	10.63	0.58	0.35	2.80	0.15	2.59	20.70	1.14	0.00	0.02	0.00	0.15	1.20	0.07
Forklifts/Aerial Lifts/Booms	1.37	11.00	0.85	0.58	4.67	0.36	1.10	8.80	0.68	0.00	0.01	0.00	0.13	1.06	0.08
Generators/Compressors	1.20	12.00	0.92	0.50	5.00	0.39	1.26	12.60	0.97	0.00	0.02	0.00	0.12	1.23	0.09
Graders	0.68	4.05	0.02	0.17	1.04	0.01	1.37	8.20	0.04	0.00	0.01	0.00	0.08	0.47	0.00
Off Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Highway Trucks	1.42	7.11	0.47	0.42	2.09	0.14	4.43	22.16	1.46	0.00	0.02	0.00	0.16	0.82	0.05
Other Const. Eq.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavers	0.12	0.69	0.02	0.04	0.23	0.01	0.23	1.37	0.03	0.00	0.00	0.00	0.02	0.12	0.00
Paving Eq./Surfacing Eq.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plate Compactors	0.07	0.41	0.03	0.01	0.07	0.00	0.08	0.50	0.03	0.00	0.00	0.00	0.01	0.03	0.00
Rollers/Compactors	0.36	2.85	0.19	0.11	0.87	0.06	0.67	5.39	0.36	0.00	0.00	0.00	0.06	0.46	0.03
Rough Terrain Forklifts	0.66	0.00	0.00	0.21	0.00	0.00	1.19	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Signal Boards/Light Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Welders	1.08	8.64	0.67	0.46	3.70	0.29	0.96	7.68	0.59	0.00	0.01	0.00	0.11	0.85	0.07
		CO			VOC			NOx			SOx			PM10	
Totals	**9.5**	**65.2**	**4.1**	**3.2**	**23.0**	**1.5**	**16.3**	**103.2**	**6.1**	**0.0**	**0.1**	**0.0**	**1.1**	**7.37**	**0.45**
	lbs/hr	**lbs/day**	**tons***	lbs/hr	lbs/day	tons*	**lbs/hr**	**lbs/day**	**tons***	lbs/hr	lbs/day	tons*	**lbs/hr**	**lbs/day**	**tons***
													PM2.5 =	**6.78**	**0.42**

*tons = tons emitted during construction phase
CARB-CEIDARS, Summmary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 92% of PM10 : Diesel Vehicle Exhaust
CO2 EF: CCAR General Protocol, June 2006, for CA-Low Sulfur Diesel combustion.

CO2 **1353** **tons per const period**

Attachment DR6-3

Construction Phase Truck Delivery and
Site Support Vehicle Emissions

DR6-3 CONSTRUCTION PHASE - Truck Delivery and Site Support Vehicle Emissions

Avg # deliveries/day:	4.0				Emissions Factors (lbs/vmt)						
Avg Haul Distance (miles)	20	see note below		NOx	CO	VOC	SOx	PM10			
VMT/Day:	80.0			0.031711	0.009133	0.002193	0.000038	0.001341	Ref: SDAPCD, Emfac 2007, V2.3, Nov 2006		
Work days/yr:	264					Daily Emissions (lbs)			On-Road Heavy Duty Diesels (1965-2008)		
Total Const Work Days:	154			**NOx**	**CO**	**VOC**	**SOx**	**PM10**	**PM2.5**		
Total # of Deliveries:	616			**2.537**	**0.731**	**0.175**	**0.003**	**0.107**	**0.099**		
						Tons per Const Period					
				0.195	0.056	0.014	0.000	0.008	0.008		

Site Support Vehicle Emissions											
Total # of vehicles:	12		**NOx**	**CO**	**VOC**	**SOx**	**PM10**			**PM2.5**
# of Pickups (gas):	12		0.001236	0.01089	0.001046	0.00001	0.000101	lbs/vmt*	gasoline	
# of Pickups (diesel):	0		0.000049	0.000019	0.000003	0	0.000002	lbs/vmt*	diesel	
Avg. pickup daily vmt:	50		**0.7416**	**6.5340**	**0.6276**	**0.0060**	**0.0606**	**lbs/day**	**gasoline**	**0.056358**
Total Gas VMT:	600		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**lbs/day**	**diesel**	**0.0000**
Total Diesel VMT:	0									
			0.0571	0.5031	0.0483	0.0005	0.0047	**tons/period**	**gasoline**	0.0043
			0.0000	0.0000	0.0000	0.0000	0.0000	**tons/period**	**diesel**	0.0000

Avg haul distance: one way distance from site to San Diego port area.
These trucks will not be dedicated to the site, so backhaul distances are not included.
Total deliveries for construction period = 616, from construction schedule data.

CARB EMFAC 2007 Summaries
Ref: SDAPCD, Emfac 2007, V2.3, Nov 2006
On Road Vehicles (1965-2008)

CARB-CEIDARS, Summmary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 92% of PM10 for Diesel Exhaust, and 93% for Gasoline Vehicles.

It should be noted that these emissions are not necessarily new emissions to the regional air shed. A significant portion of the truck services will be derived from the existing regional truck services vehicle pool, and as such these truck emissions would most likely be involved in deliveries in the area regardless of whether or not the proposed facility is constructed. As such, a major portion of the above estimated emissions would not be considered as additions to the air shed.

Attachment DR6-4

Construction Phase Worker Travel Emissions

DR6-4 CONSTRUCTION PHASE - Worker Travel - Emissions

Max # of Workers/Day:	160	Month 5
Avg # of Workers/Day:	120	
Avg Occupancy/Vehicle:	1.15	
Round Trips/Day:	104	
Avg Roundtrip Distance:	20	miles
VMT/Day:	2087	
VMT/Year:	550957	
VMT/Const Period:	321391	
Total Const Days:	154	

Emissions Factors (lbs/VMT)

NOx	CO	VOC	SOx	PM10
0.00101	0.01033	0.00107	0.00001	0.00009

Ref: SDAPCD, Emfac 2007, V2.3, Nov 2006
On Road Vehicles (1965-2008)
LDP/LDT Weighted Avg Efs

Avg. Daily Emissions (lbs)

NOx	CO	VOC	SOx	PM10	PM2.5
2.108	**21.558**	**2.233**	**0.021**	**0.188**	**0.175**

Tons per Const Period

0.1623	**1.6600**	**0.1719**	**0.0016**	**0.0145**	**0.0135**

It should be noted that these emissions are not necessarily new emissions to the regional air shed. A significant portion of the workers will be derived from the existing work force pool in the urban regional area, and as such these workers would most likely be involved in projects in the area regardless of whether or not the proposed facility is constructed. As such, a major portion of the above estimated emissions would not be considered as additions to the air shed.

Attachment DR7-1

Construction Phase Main Project Site
Fugitive Dust Emissions

DR7-1 CONSTRUCTION PHASE-Main Project Site Fugitive Dust Emissions

MRI Level 2 Analysis

Total Site Acreage:	3.82	Avg Acres Subject to Construction Activity/Month:	3.82				
Emission Factor:	0.0144	tons/acre/month of activity PM10 Uncontrolled (MRI Level 2 Adjusted Analysis Factor)					
	0.055	tons per const month (uncontrolled) PM10					
	0.385	tons per const period (uncontrolled) PM10					
	0.035	**ton per const period Controlled PM10 =**	0.005	tons/month PM10			
	0.007	ton per const period Controlled PM2.5 =	0.001	tons/month PM2.5			
Activity Levels			0.45	lbs/day PM10 controlled			
Hrs/Day:	10		0.09	lbs/day PM2.5 controlled			
Days/Wk:	5						
Day/Month:	22	Cut and Fill Activity:	1	total months			
Worst Case Month:	2	Total Cut and Fill:	20840	cu.yds. Avg month			
Annual Const Hours:	2640		20.84	10^3 cu.yds. Avg month			
Total Construction Hrs:	1540	MRI Ef:	0.059	tons/10^3 cu.yds. uncontrolled			
			1.23	tons PM10 month uncontrolled			
Total Const Period:	7	months	Control Technique:	Watering and speed control			
			Control Factor, %	95			
			Cut/Fill	**0.061**	**tons/month PM10 controlled =**	0.061	tons/const period
				0.013	tons/month PM2.5 controlled =	0.013	tons/const period
				5.59	lbs/day PM10 controlled		
				1.17	lbs/day PM2.5 controlled		

PM10 Control Techniques *	Type	Used	Avg. % PM10 Reduction
	Watering	Yes	61
	Surface Sealant	No	0
	Dust Suppressant	No	0
	Speed Control	Yes	30

% Control: 91

Release Factor: 0.09

* Control techniques are additive.
Per SCAQMD CEQA Manual, 11/93.

Totals	(Activity+Cut/Fill)
0.096	tons/period PM10
0.020	tons/period PM2.5
6.04	lbs/day PM10
1.27	lbs/day PM2.5

Months 1 - 3 will be worst case construction emissions months. After month 3, construction related dust emissions will be well below the max daily and max monthly values calculated above, probably on the order of less than 30% of the maximum values.

Ref: MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.
MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity. For a monthly activity rate of approx 220 hours, the adjusted factor would be 0.0144 tons/acre/month.
SCAQMD CEQA Mitigation Tables dated 4/2007 indicate watering on a 3-4 hour schedule yields a control value of 61%.
Typical watering schedule for MMC activities is 3 times per day.
*** Although not all of the site area will disturbed on any one work day, due to the size of this site, the worst case assumption was made that at least 100% of the construction area would be disturbed over the entire construction period. Acreage does not include access roads which are paved.
CARB-CEIDARS, Statewide Summary of Overall Size Fractions for PM Profiles, 9-26-02: PM2.5 = 21% of PM10 : Construction Dust
Cut and fill value is for the main power block area portion of the site.

Attachment DR7-2

Construction Phase Paved Road Travel Particulate Emissions including Trackout Emissions

DR7-2 CONSTRUCTION PHASE - Paved Road Travel - Particulate Emissions Including Trackout Emissions

Paved Road Length (miles):	0.038	estimated roundtrip distance				
Daily # of Vehicles:	10					
Avg Vehicle Weight (tons):	35			PM10	PM2.5	
Total Unadjusted VMT/day	0.4			0.351	0.351	
Particle Size Multipliers	PM10	PM2.5		39.849	39.849	
lb/VMT	0.016	0.0024		0.224	0.033	lb/VMT
C factor, lb/VMT	0.00047	0.00036		**0.045**	**0.007**	**tons/month**
Road Sfc Silt Loading (g/m^2):	0.4			**0.316**	**0.047**	**tons/const period**
# of Active Trackout Points:	1			**4.11**	**0.09**	**lbs/day**
Added Trackout Miles:	PM10	PM2.5				
Trackout VMT/day:	60	30				
Final Adjusted VMT/day	60	30				
Final Adjusted VMT/month	1328	668				
Control Applied to Trackout:	Sweeping and Cleaning (Water washing)					
Control Efficiency, %	70	0.7	Release Factor =		0.3	
Total Const Days:	154					

EPA, AP-42, Section 13.2.1, draft dated 3-22-06. Silt load factor from Table 13.2.1-3.
Silt factor reduced to 0.4 due to road data and controls proposed.
Main site access route is Main Street., with trackout affecting 100 ft from site access entrance in each direction.

Attachment DR8-1

SCAB Fleet Average Emission Factors (Diesel)

DR8-1 SCAB Fleet Average Emission Factors (Diesel)

2008

Air Basin	SC

Equipment	MaxHP	(lb/hr) ROG	lb/hp-hr ROG	(lb/hr) CO	lb/hp-hr CO	(lb/hr) NOX	lb/hp-hr Nox	(lb/hr) SOX	lb/hp-hr SOx	(lb/hr) PM	lb/hp-hr PM	(lb/hr) CO2
Aerial Lifts	15	0.0113	0.0008	0.0534	0.0036	0.0736	0.0049	0.0001	0.000009	0.0048	0.000320	8.7
	25	0.0249	0.0010	0.0644	0.0026	0.1073	0.0043	0.0001	0.000006	0.0077	0.000310	11.0
	50	0.0833	0.0017	0.2011	0.0040	0.2037	0.0041	0.0003	0.000005	0.0203	0.000407	19.6
	120	0.0781	0.0007	0.2542	0.0021	0.4910	0.0041	0.0004	0.000004	0.0386	0.000322	38.1
	500	0.1719	0.0003	0.6822	0.0014	2.1178	0.0042	0.0021	0.000004	0.0668	0.000134	212.9
	750	0.3198	0.0004	1.2331	0.0016	3.9213	0.0052	0.0039	0.000005	0.1223	0.000163	384.8
Aerial Lifts Composite		0.0746		0.2200		0.3885		0.0004		0.0269		34.7
Air Compressors	15	0.0157	0.0010	0.0530	0.0035	0.0899	0.0060	0.0001	0.000007	0.0068	0.000452	7.2
	25	0.0359	0.0014	0.0905	0.0036	0.1448	0.0058	0.0002	0.000007	0.0108	0.000433	14.4
	50	0.1265	0.0025	0.2903	0.0058	0.2442	0.0049	0.0003	0.000006	0.0283	0.000565	22.3
	120	0.1112	0.0009	0.3395	0.0028	0.6505	0.0054	0.0006	0.000005	0.0578	0.000481	47.0
	175	0.1383	0.0008	0.5136	0.0029	1.1024	0.0063	0.0010	0.000006	0.0600	0.000343	88.5
	250	0.1381	0.0006	0.3847	0.0015	1.5340	0.0061	0.0015	0.000006	0.0525	0.000210	131.2
	500	0.2172	0.0004	0.8107	0.0016	2.4338	0.0049	0.0023	0.000005	0.0844	0.000169	231.7
	750	0.3420	0.0005	1.2529	0.0017	3.8533	0.0051	0.0036	0.000005	0.1321	0.000176	358.1
	1000	0.5751	0.0006	2.1596	0.0022	6.3733	0.0064	0.0049	0.000005	0.1969	0.000197	486.4
Air Compressors Composite		0.1232		0.3782		0.7980		0.0007		0.0563		63.6
Bore/Drill Rigs	15	0.0122	0.0008	0.0632	0.0042	0.0767	0.0051	0.0002	0.000011	0.0047	0.000312	10.3
	25	0.0210	0.0008	0.0674	0.0027	0.1343	0.0054	0.0002	0.000008	0.0080	0.000319	16.0
	50	0.0813	0.0016	0.2734	0.0055	0.2898	0.0058	0.0004	0.000008	0.0253	0.000506	31.0
	120	0.1021	0.0009	0.4934	0.0041	0.7562	0.0063	0.0009	0.000008	0.0597	0.000497	77.1
	175	0.1203	0.0007	0.7541	0.0043	1.1469	0.0066	0.0016	0.000009	0.0585	0.000334	141.1
	250	0.1055	0.0004	0.3502	0.0014	1.4604	0.0058	0.0021	0.000008	0.0409	0.000164	188.1
	500	0.1566	0.0003	0.5631	0.0011	2.0226	0.0040	0.0031	0.000006	0.0640	0.000128	311.3
	750	0.3207	0.0004	1.1127	0.0015	4.1945	0.0056	0.0062	0.000008	0.1297	0.000173	615.1
	1000	0.6291	0.0006	1.8100	0.0018	9.2766	0.0093	0.0093	0.000009	0.2299	0.000230	928.3
Bore/Drill Rigs Composite		0.1295		0.5281		1.3416		0.0017		0.0591		164.9
Cement and Mortar M	15	0.0087	0.0006	0.0394	0.0026	0.0562	0.0037	0.0001	0.000007	0.0037	0.000248	6.3
	25	0.0402	0.0016	0.1038	0.0042	0.1722	0.0069	0.0002	0.000009	0.0125	0.000499	17.6
Cement and Mortar Mixers Composit		0.0113		0.0447		0.0658	#DIV/0!	0.0001		0.0044		7.2
Concrete/Industrial S	25	0.0206	0.0008	0.0681	0.0027	0.1344	0.0054	0.0002	0.000008	0.0079	0.000318	16.5
	50	0.1418	0.0028	0.3412	0.0068	0.3179	0.0064	0.0004	0.000008	0.0335	0.000670	30.2
	120	0.1545	0.0013	0.5088	0.0042	0.9632	0.0080	0.0009	0.000007	0.0792	0.000660	74.1
	175	0.2192	0.0013	0.8877	0.0051	1.8557	0.0106	0.0018	0.000010	0.0944	0.000540	160.2
Concrete/Industrial Saws Composite		0.1460		0.4411		0.7263		0.0007		0.0610		58.5
Cranes	50	0.1466	0.0029	0.3359	0.0067	0.2624	0.0052	0.0003	0.000006	0.0320	0.000639	23.2
	120	0.1261	0.0011	0.3807	0.0032	0.7275	0.0061	0.0006	0.000005	0.0664	0.000553	50.1
	175	0.1345	0.0008	0.4936	0.0028	1.0417	0.0060	0.0009	0.000005	0.0589	0.000337	80.3
	250	0.1392	0.0006	0.3881	0.0016	1.3867	0.0055	0.0013	0.000005	0.0535	0.000214	112.2
	500	0.2012	0.0004	0.7762	0.0016	1.9878	0.0040	0.0018	0.000004	0.0771	0.000154	180.1
	750	0.3409	0.0005	1.3011	0.0017	3.4224	0.0046	0.0030	0.000004	0.1310	0.000175	303.0
	9999	1.2096	0.0001	4.8072	0.0005	13.0905	0.0013	0.0098	0.000001	0.4143	0.000041	970.6
Cranes Composite		0.1778		0.6011		1.6100		0.0014		0.0715		128.7
Crawler Tractors	50	0.1635	0.0033	0.3714	0.0074	0.2856	0.0057	0.0003	0.000006	0.0352	0.000705	24.9
	120	0.1743	0.0015	0.5147	0.0043	1.0019	0.0083	0.0008	0.000006	0.0901	0.000751	65.8
	175	0.2146	0.0012	0.7734	0.0044	1.6473	0.0094	0.0014	0.000008	0.0937	0.000536	121.2
	250	0.2263	0.0009	0.6360	0.0025	2.1648	0.0087	0.0019	0.000007	0.0880	0.000352	166.1
	500	0.3175	0.0006	1.4050	0.0028	3.0311	0.0061	0.0025	0.000005	0.1222	0.000244	259.2
	750	0.5713	0.0008	2.5044	0.0033	5.5421	0.0074	0.0047	0.000006	0.2205	0.000294	464.7
	1000	0.8802	0.0009	3.9537	0.0040	9.2252	0.0092	0.0066	0.000007	0.3088	0.000309	658.1
Crawler Tractors Composite		0.2068		0.6843		1.5395		0.0013		0.0943		114.0
Crushing/Proc. Equip	50	0.2519	0.0050	0.5828	0.0117	0.4821	0.0096	0.0006	0.000011	0.0563	0.001126	44.0
	120	0.1955	0.0016	0.6048	0.0050	1.1410	0.0095	0.0010	0.000008	0.1031	0.000859	83.1
	175	0.2596	0.0015	0.9790	0.0056	2.0557	0.0117	0.0019	0.000011	0.1141	0.000652	167.3
	250	0.2529	0.0010	0.7004	0.0028	2.8190	0.0113	0.0028	0.000011	0.0959	0.000384	244.5
	500	0.3442	0.0007	1.2591	0.0025	3.8371	0.0077	0.0037	0.000007	0.1336	0.000267	373.6
	750	0.5502	0.0007	1.9179	0.0026	6.2394	0.0083	0.0059	0.000008	0.2117	0.000282	588.8
	9999	1.5285	0.0002	5.5592	0.0006	17.0748	0.0017	0.0131	0.000001	0.5223	0.000052	1,307.8
Crushing/Proc. Equipment Composit		0.2385		0.7620		1.5831		0.0015		0.1012		132.3
Dumpers/Tenders	25	0.0121	0.0005	0.0356	0.0014	0.0681	0.0027	0.0001	0.000004	0.0043	0.000172	7.6
Dumpers/Tenders Composite		0.0121		0.0356		0.0681		0.0001		0.0043		7.6
Excavators	25	0.0201	0.0008	0.0677	0.0027	0.1291	0.0052	0.0002	0.000008	0.0077	0.000307	16.4
	50	0.1381	0.0028	0.3393	0.0068	0.2727	0.0055	0.0003	0.000006	0.0319	0.000638	25.0
	120	0.1649	0.0014	0.5437	0.0045	0.9632	0.0080	0.0009	0.000007	0.0902	0.000752	73.6
	175	0.1674	0.0010	0.6735	0.0038	1.2913	0.0074	0.0013	0.000007	0.0748	0.000428	112.2
	250	0.1620	0.0006	0.4374	0.0017	1.7260	0.0069	0.0018	0.000007	0.0596	0.000238	158.7
	500	0.2175	0.0004	0.7092	0.0014	2.2162	0.0044	0.0023	0.000005	0.0803	0.000161	233.7
	750	0.3637	0.0005	1.1724	0.0016	3.7953	0.0051	0.0039	0.000005	0.1352	0.000180	387.4
Excavators Composite		0.1695		0.5828		1.3249		0.0013		0.0727		119.6
Forklifts	50	0.0846	0.0017	0.2020	0.0040	0.1603	0.0032	0.0002	0.000004	0.0192	0.000385	14.7
	120	0.0724	0.0006	0.2304	0.0019	0.4055	0.0034	0.0004	0.000003	0.0402	0.000335	31.2
	175	0.0867	0.0005	0.3326	0.0019	0.6493	0.0037	0.0006	0.000004	0.0391	0.000224	56.1
	250	0.0716	0.0003	0.1822	0.0007	0.8315	0.0033	0.0009	0.000003	0.0254	0.000102	77.1
	500	0.0937	0.0002	0.2573	0.0005	1.0380	0.0021	0.0011	0.000002	0.0340	0.000068	111.0
Forklifts Composite		0.0799		0.2422		0.5982		0.0006		0.0324		54.4
Generator Sets	15	0.0189	0.0013	0.0749	0.0050	0.1237	0.0082	0.0002	0.000011	0.0077	0.000514	10.2
	25	0.0332	0.0013	0.1105	0.0044	0.1767	0.0071	0.0002	0.000009	0.0118	0.000472	17.6
	50	0.1238	0.0025	0.3024	0.0060	0.3155	0.0063	0.0004	0.000008	0.0307	0.000615	30.6
	120	0.1558	0.0013	0.5141	0.0043	0.9918	0.0083	0.0009	0.000008	0.0767	0.000639	77.9
	175	0.1854	0.0011	0.7531	0.0043	1.6223	0.0093	0.0016	0.000009	0.0771	0.000441	142.0
	250	0.1859	0.0007	0.5644	0.0023	2.2800	0.0091	0.0024	0.000010	0.0697	0.000279	212.5
	500	0.2648	0.0005	1.0375	0.0021	3.3136	0.0066	0.0033	0.000007	0.1028	0.000206	336.9
	750	0.4404	0.0006	1.6748	0.0022	5.4793	0.0073	0.0055	0.000007	0.1680	0.000224	543.8
	9999	1.1329	0.0001	4.1271	0.0004	12.8919	0.0013	0.0105	0.000001	0.3964	0.000040	1,048.6
Generator Sets Composite		0.1075		0.3461		0.6980		0.0007		0.0430		61.0
Graders	50	0.1622	0.0032	0.3813	0.0076	0.3051	0.0061	0.0004	0.000007	0.0362	0.000724	27.5
	120	0.1780	0.0015	0.5585	0.0047	1.0405	0.0087	0.0009	0.000007	0.0948	0.000790	75.0
	175	0.1956	0.0011	0.7486	0.0043	1.5300	0.0087	0.0014	0.000008	0.0864	0.000494	123.9
	250	0.1966	0.0008	0.5482	0.0022	2.0220	0.0081	0.0019	0.000008	0.0751	0.000301	172.1
	500	0.2360	0.0005	0.8828	0.0018	2.3908	0.0048	0.0023	0.000005	0.0904	0.000181	229.5
	750	0.5040	0.0007	1.8609	0.0025	5.1931	0.0069	0.0049	0.000007	0.1935	0.000258	485.7
Graders Composite		0.1936		0.6561		1.6191		0.0015		0.0840		132.7
Off-Highway Tractors	120	0.2703	0.0023	0.7625	0.0064	1.5479	0.0129	0.0011	0.000009	0.1355	0.001129	93.7
	175	0.2532	0.0014	0.8741	0.0050	1.9339	0.0111	0.0015	0.000008	0.1094	0.000625	130.4
	250	0.2053	0.0008	0.5852	0.0023	1.8670	0.0075	0.0015	0.000006	0.0812	0.000325	130.4
	750	0.8003	0.0011	4.0720	0.0054	7.4850	0.0100	0.0057	0.000008	0.3122	0.000416	568.1
	1000	1.2211	0.0012	6.3076	0.0063	12.1964	0.0122	0.0082	0.000008	0.4364	0.000436	814.3
Off-Highway Tractors Composite		0.2578		0.8959		2.1767		0.0017		0.1061		151.5
Off-Highway Trucks	175	0.1962	0.0011	0.7669	0.0044	1.4779	0.0084	0.0014	0.000008	0.0867	0.000495	125.1
	250	0.1822	0.0007	0.4799	0.0019	1.8617	0.0074	0.0019	0.000007	0.0659	0.000264	166.5
	500	0.2727	0.0005	0.8739	0.0017	2.6600	0.0053	0.0027	0.000005	0.0984	0.000197	272.3
	750	0.4454	0.0006	1.4136	0.0019	4.4516	0.0059	0.0044	0.000006	0.1621	0.000216	441.7
	1000	0.7106	0.0007	2.4058	0.0024	7.9819	0.0080	0.0063	0.000006	0.2445	0.000245	624.7
Off-Highway Trucks Composite		0.2730		0.8499		2.7256		0.0027		0.0989		260.1
Other Construction E	15	0.0119	0.0008	0.0617	0.0041	0.0750	0.0050	0.0002	0.000010	0.0046	0.000305	10.1
	25	0.0174	0.0007	0.0557	0.0022	0.1110	0.0044	0.0002	0.000007	0.0066	0.000264	13.2
	50	0.1244	0.0025	0.3144	0.0063	0.2884	0.0058	0.0004	0.000007	0.0303	0.000605	28.0
	120	0.1570	0.0013	0.5538	0.0046	0.9885	0.0082	0.0009	0.000008	0.0842	0.000702	80.9
	175	0.1356	0.0008	0.5932	0.0034	1.1451	0.0065	0.0012	0.000007	0.0606	0.000346	106.5
	500	0.1944	0.0004	0.7066	0.0014	2.2771	0.0046	0.0025	0.000005	0.0770	0.000154	254.2
Other Construction Equipment Comp		0.1215		0.4504		1.1575		0.0013		0.0503		122.8
Other General Indust	15	0.0066	0.0004	0.0391	0.0026	0.0466	0.0031	0.0001	0.000007	0.0026	0.000174	6.4
	25	0.0188	0.0008	0.0632	0.0025	0.1207	0.0048	0.0002	0.000008	0.0072	0.000288	15.3
	50	0.1421	0.0028	0.3211	0.0064	0.2473	0.0049	0.0003	0.000006	0.0308	0.000616	21.7
	120	0.1605	0.0013	0.4723	0.0039	0.8979	0.0075	0.0007	0.000006	0.0854	0.000712	62.0
	175	0.1647	0.0009	0.5860	0.0033	1.2490	0.0071	0.0011	0.000006	0.0726	0.000415	95.9
	250	0.1553	0.0006	0.4131	0.0017	1.6545	0.0066	0.0015	0.000006	0.0579	0.000232	135.6
	500	0.2735	0.0005	0.9583	0.0019	2.8780	0.0058	0.0026	0.000005	0.1032	0.000206	265.4
	750	0.4552	0.0006	1.5794	0.0021	4.8663	0.0065	0.0044	0.000006	0.1724	0.000230	437.4

	1000	0.6979	0.0007	2.5724	0.0026	7.5922	0.0076	0.0056	0.000006	0.2387	0.000239	559.6
Other General Industrial Equipmen		0.2025		0.6617		1.8248		0.0016		0.0815		152.2
Other Material Handl	50	0.1961	0.0039	0.4431	0.0089	0.3438	0.0069	0.0004	0.000008	0.0426	0.000851	30.3
	120	0.1558	0.0013	0.4596	0.0038	0.8749	0.0073	0.0007	0.000006	0.0827	0.000689	60.7
	175	0.2078	0.0012	0.7420	0.0042	1.5840	0.0091	0.0014	0.000008	0.0915	0.000523	122.1
	250	0.1646	0.0007	0.4403	0.0018	1.7636	0.0071	0.0016	0.000007	0.0616	0.000246	145.0
	500	0.1952	0.0004	0.6904	0.0014	2.0733	0.0041	0.0019	0.000004	0.0741	0.000148	191.6
	9999	0.9197	0.0001	3.4021	0.0003	10.0283	0.0010	0.0073	0.000001	0.3143	0.000031	741.3
Other Material Handling Equipment		0.1952		0.6041		1.7655		0.0015		0.0786		141.2
Pavers	25	0.0329	0.0013	0.0930	0.0037	0.1706	0.0068	0.0002	0.000009	0.0112	0.000449	18.7
	50	0.1797	0.0036	0.4041	0.0081	0.3191	0.0064	0.0004	0.000007	0.0386	0.000772	28.0
	120	0.1823	0.0015	0.5356	0.0045	1.0659	0.0089	0.0008	0.000007	0.0924	0.000770	69.2
	175	0.2253	0.0013	0.8121	0.0046	1.7679	0.0101	0.0014	0.000008	0.0977	0.000558	128.3
	250	0.2693	0.0011	0.7767	0.0031	2.5756	0.0103	0.0022	0.000009	0.1066	0.000426	194.4
	500	0.2880	0.0006	1.3755	0.0028	2.7966	0.0056	0.0023	0.000005	0.1134	0.000227	233.2
Pavers Composite		0.1963		0.5874		1.0796		0.0009		0.0769		77.9
Paving Equipment	25	0.0166	0.0007	0.0532	0.0021	0.1061	0.0042	0.0002	0.000006	0.0063	0.000252	12.6
	50	0.1525	0.0030	0.3426	0.0069	0.2722	0.0054	0.0003	0.000006	0.0328	0.000656	23.9
	120	0.1425	0.0012	0.4189	0.0035	0.8352	0.0070	0.0006	0.000005	0.0721	0.000601	54.5
	175	0.1757	0.0010	0.6336	0.0036	1.3860	0.0079	0.0011	0.000006	0.0760	0.000434	101.0
	250	0.1678	0.0007	0.4852	0.0019	1.6129	0.0065	0.0014	0.000006	0.0665	0.000266	122.3
Paving Equipment Composite		0.1479		0.4616		0.9857		0.0008		0.0681		69.0
Plate Compactors	15	0.0052	0.0003	0.0263	0.0018	0.0328	0.0022	0.0001	0.000004	0.0021	0.000138	4.3
Plate Compactors Composite		0.0052		0.0263		0.0328		0.0001		0.0021		4.3
Pressure Washers	15	0.0091	0.0006	0.0359	0.0024	0.0592	0.0039	0.0001	0.000005	0.0037	0.000246	4.9
	25	0.0135	0.0005	0.0448	0.0018	0.0717	0.0029	0.0001	0.000004	0.0048	0.000191	7.1
	50	0.0466	0.0009	0.1197	0.0024	0.1429	0.0029	0.0002	0.000004	0.0126	0.000251	14.3
	120	0.0438	0.0004	0.1514	0.0013	0.2928	0.0024	0.0003	0.000002	0.0209	0.000174	24.1
Pressure Washers Composite		0.0223		0.0692		0.1049		0.0001		0.0077		9.4
Pumps	15	0.0161	0.0011	0.0545	0.0036	0.0924	0.0062	0.0001	0.000008	0.0070	0.000465	7.4
	25	0.0485	0.0019	0.1221	0.0049	0.1954	0.0078	0.0002	0.000010	0.0146	0.000584	19.5
	50	0.1479	0.0030	0.3563	0.0071	0.3574	0.0071	0.0004	0.000009	0.0359	0.000718	34.3
	120	0.1605	0.0013	0.5221	0.0044	1.0065	0.0084	0.0009	0.000008	0.0798	0.000665	77.9
	175	0.1888	0.0011	0.7547	0.0043	1.6251	0.0093	0.0016	0.000009	0.0792	0.000452	140.1
	250	0.1823	0.0007	0.5452	0.0022	2.1931	0.0088	0.0023	0.000009	0.0688	0.000275	201.4
	500	0.2801	0.0006	1.1093	0.0022	3.4347	0.0069	0.0034	0.000007	0.1090	0.000218	345.2
	750	0.4762	0.0006	1.8340	0.0024	5.8162	0.0078	0.0057	0.000008	0.1825	0.000243	570.7
	9999	1.4880	0.0001	5.5294	0.0006	16.8363	0.0017	0.0136	0.000001	0.5197	0.000052	1,354.8
Pumps Composite		0.1040		0.3194		0.5999		0.0006		0.0424		49.6
Rollers	15	0.0074	0.0005	0.0386	0.0026	0.0469	0.0031	0.0001	0.000007	0.0029	0.000191	6.3
	25	0.0175	0.0007	0.0562	0.0022	0.1121	0.0045	0.0002	0.000007	0.0067	0.000267	13.3
	50	0.1438	0.0029	0.3348	0.0067	0.2839	0.0057	0.0003	0.000007	0.0323	0.000645	26.0
	120	0.1363	0.0011	0.4271	0.0036	0.8203	0.0068	0.0007	0.000006	0.0703	0.000586	59.0
	175	0.1653	0.0009	0.6345	0.0036	1.3433	0.0077	0.0012	0.000007	0.0717	0.000410	108.1
	250	0.1750	0.0007	0.5083	0.0020	1.8153	0.0073	0.0017	0.000007	0.0684	0.000274	153.1
	500	0.2235	0.0004	0.9142	0.0018	2.3380	0.0047	0.0022	0.000004	0.0880	0.000176	219.1
Rollers Composite		0.1328		0.4341		0.8607		0.0008		0.0601		67.1
Rough Terrain Forklif	50	0.1873	0.0037	0.4479	0.0090	0.3678	0.0074	0.0004	0.000009	0.0427	0.000853	33.9
	120	0.1404	0.0012	0.4543	0.0038	0.8292	0.0069	0.0007	0.000006	0.0757	0.000631	62.4
	175	0.1859	0.0011	0.7353	0.0042	1.4705	0.0084	0.0014	0.000008	0.0829	0.000474	124.9
	250	0.1745	0.0007	0.4855	0.0019	1.9002	0.0076	0.0019	0.000008	0.0661	0.000264	170.8
	500	0.2357	0.0005	0.8189	0.0016	2.5155	0.0050	0.0025	0.000005	0.0905	0.000181	256.6
Rough Terrain Forklifts Composite		0.1469		0.4869		0.9051		0.0008		0.0759		70.3
Rubber Tired Dozers	175	0.2603	0.0015	0.8866	0.0051	1.9566	0.0112	0.0015	0.000008	0.1120	0.000640	129.5
	250	0.3011	0.0012	0.8463	0.0034	2.6790	0.0107	0.0021	0.000008	0.1179	0.000472	183.5
	500	0.3895	0.0008	1.9869	0.0040	3.5050	0.0070	0.0026	0.000005	0.1495	0.000299	264.9
	750	0.5869	0.0008	2.9735	0.0040	5.3537	0.0071	0.0040	0.000005	0.2260	0.000301	398.8
	1000	0.9153	0.0009	4.7521	0.0048	9.0204	0.0090	0.0060	0.000006	0.3279	0.000328	591.9
Rubber Tired Dozers Composite		0.3644		1.5961		3.2672		0.0025		0.1409		239.1
Rubber Tired Loader	25	0.0212	0.0008	0.0699	0.0028	0.1381	0.0055	0.0002	0.000009	0.0082	0.000326	16.9
	50	0.1812	0.0036	0.4267	0.0085	0.3437	0.0069	0.0004	0.000008	0.0406	0.000811	31.1
	120	0.1384	0.0012	0.4364	0.0036	0.8116	0.0068	0.0007	0.000006	0.0737	0.000615	58.9
	175	0.1659	0.0009	0.6383	0.0036	1.3029	0.0074	0.0012	0.000007	0.0733	0.000419	106.3
	250	0.1674	0.0007	0.4680	0.0019	1.7361	0.0069	0.0017	0.000007	0.0640	0.000256	149.0
	500	0.2394	0.0005	0.8884	0.0018	2.4484	0.0049	0.0023	0.000005	0.0919	0.000184	237.0
	750	0.4955	0.0007	1.8129	0.0024	5.1493	0.0069	0.0049	0.000007	0.1905	0.000254	485.5
	1000	0.6887	0.0007	2.5959	0.0026	7.7048	0.0077	0.0060	0.000006	0.2364	0.000236	593.9
Rubber Tired Loaders Composite		0.1626		0.5369		1.3014		0.0012		0.0728		108.6
Scrapers	120	0.2502	0.0021	0.7352	0.0061	1.4405	0.0120	0.0011	0.000009	0.1289	0.001074	93.9
	175	0.2636	0.0015	0.9463	0.0054	2.0299	0.0116	0.0017	0.000010	0.1150	0.000657	148.1
	250	0.2889	0.0012	0.8161	0.0033	2.7553	0.0110	0.0024	0.000009	0.1128	0.000451	209.5
	500	0.3979	0.0008	1.7915	0.0036	3.8004	0.0076	0.0032	0.000006	0.1538	0.000308	321.4
	750	0.6903	0.0009	3.0787	0.0041	6.6917	0.0089	0.0056	0.000007	0.2675	0.000357	555.3
Scrapers Composite		0.3505		1.4219		3.2269		0.0027		0.1391		262.5
Signal Boards	15	0.0072	0.0005	0.0377	0.0025	0.0450	0.0030	0.0001	0.000006	0.0025	0.000167	6.2
	50	0.1661	0.0033	0.3989	0.0080	0.3791	0.0076	0.0005	0.000009	0.0396	0.000791	36.2
	120	0.1679	0.0014	0.5473	0.0046	1.0392	0.0087	0.0009	0.000008	0.0854	0.000712	80.2
	175	0.2118	0.0012	0.8499	0.0049	1.7913	0.0102	0.0017	0.000010	0.0908	0.000519	154.5
	250	0.2346	0.0009	0.6902	0.0028	2.7794	0.0111	0.0029	0.000011	0.0895	0.000358	255.3
Signal Boards Composite		0.0244		0.0965		0.1739		0.0002		0.0104		16.7
Skid Steer Loaders	25	0.0292	0.0012	0.0774	0.0031	0.1321	0.0053	0.0002	0.000007	0.0093	0.000372	13.8
	50	0.1007	0.0020	0.2724	0.0054	0.2552	0.0051	0.0003	0.000007	0.0259	0.000519	25.5
	120	0.0756	0.0006	0.2886	0.0024	0.4848	0.0040	0.0005	0.000004	0.0421	0.000351	42.8
Skid Steer Loaders Composite		0.0879		0.2647		0.3209		0.0004		0.0300		30.3
Surfacing Equipment	50	0.0668	0.0013	0.1602	0.0032	0.1495	0.0030	0.0002	0.000004	0.0157	0.000314	14.1
	120	0.1362	0.0011	0.4436	0.0037	0.8544	0.0071	0.0007	0.000006	0.0686	0.000572	63.8
	175	0.1206	0.0007	0.4852	0.0028	1.0245	0.0059	0.0010	0.000006	0.0516	0.000295	85.8
	250	0.1424	0.0006	0.4314	0.0017	1.5397	0.0062	0.0015	0.000006	0.0555	0.000222	134.9
	500	0.2091	0.0004	0.9084	0.0018	2.2929	0.0046	0.0022	0.000004	0.0826	0.000165	221.2
	750	0.3341	0.0004	1.4188	0.0019	3.6763	0.0049	0.0035	0.000005	0.1305	0.000174	347.0
Surfacing Equipment Composite		0.1751		0.7086		1.7497		0.0017		0.0674		166.0
Sweepers/Scrubbers	15	0.0124	0.0008	0.0729	0.0049	0.0870	0.0058	0.0002	0.000012	0.0049	0.000324	11.9
	25	0.0245	0.0010	0.0811	0.0032	0.1604	0.0064	0.0002	0.000010	0.0095	0.000379	19.6
	50	0.1831	0.0037	0.4265	0.0085	0.3449	0.0069	0.0004	0.000008	0.0410	0.000820	31.6
	120	0.1758	0.0015	0.5472	0.0046	0.9960	0.0083	0.0009	0.000007	0.0956	0.000797	75.0
	175	0.2154	0.0012	0.8121	0.0046	1.6539	0.0095	0.0016	0.000009	0.0964	0.000551	139.0
	250	0.1512	0.0006	0.3965	0.0016	1.7857	0.0071	0.0018	0.000007	0.0552	0.000221	162.0
Sweepers/Scrubbers Composite		0.1830		0.5575		0.9678		0.0009		0.0778		78.5
Tractors/Loaders/Bac	25	0.0237	0.0009	0.0716	0.0029	0.1396	0.0056	0.0002	0.000008	0.0086	0.000346	15.9
	50	0.1537	0.0031	0.3831	0.0077	0.3222	0.0064	0.0004	0.000008	0.0362	0.000725	30.3
	120	0.1083	0.0009	0.3703	0.0031	0.6510	0.0054	0.0006	0.000005	0.0595	0.000495	51.7
	175	0.1405	0.0008	0.5903	0.0034	1.1212	0.0064	0.0011	0.000007	0.0634	0.000362	101.4
	250	0.1598	0.0006	0.4453	0.0018	1.7937	0.0072	0.0019	0.000008	0.0598	0.000239	171.7
	500	0.2897	0.0006	0.9591	0.0019	3.1387	0.0063	0.0039	0.000008	0.1102	0.000220	344.9
	750	0.4409	0.0006	1.4353	0.0019	4.8706	0.0065	0.0058	0.000008	0.1681	0.000224	517.3
Tractors/Loaders/Backhoes Compos		0.1204		0.4063		0.7746		0.0008		0.0599		66.8
Trenchers	15	0.0099	0.0007	0.0517	0.0034	0.0617	0.0041	0.0001	0.000009	0.0034	0.000229	8.5
	25	0.0412	0.0016	0.1360	0.0054	0.2685	0.0107	0.0004	0.000017	0.0159	0.000634	32.9
	50	0.2019	0.0040	0.4556	0.0091	0.3714	0.0074	0.0004	0.000009	0.0438	0.000875	32.9
	120	0.1678	0.0014	0.4963	0.0041	0.9961	0.0083	0.0008	0.000006	0.0837	0.000698	64.9
	175	0.2480	0.0014	0.9026	0.0052	1.9770	0.0113	0.0016	0.000009	0.1068	0.000610	143.9
	250	0.3077	0.0012	0.9009	0.0036	2.9500	0.0118	0.0025	0.000010	0.1227	0.000491	222.9
	500	0.3821	0.0008	1.9131	0.0038	3.7465	0.0075	0.0031	0.000006	0.1515	0.000303	311.3
	750	0.7263	0.0010	3.5858	0.0048	7.1748	0.0096	0.0059	0.000008	0.2867	0.000382	586.9
Trenchers Composite		0.1851		0.5080		0.8237		0.0007		0.0688		58.7
Welders	15	0.0135	0.0009	0.0456	0.0030	0.0772	0.0051	0.0001	0.000006	0.0058	0.000389	6.2
	25	0.0281	0.0011	0.0707	0.0028	0.1131	0.0045	0.0001	0.000006	0.0085	0.000338	11.3
	50	0.1344	0.0027	0.3128	0.0063	0.2792	0.0056	0.0003	0.000007	0.0308	0.000616	26.0
	120	0.0891	0.0007	0.2778	0.0023	0.5338	0.0044	0.0005	0.000004	0.0456	0.000380	39.5
	175	0.1456	0.0008	0.5548	0.0032	1.1927	0.0068	0.0011	0.000006	0.0625	0.000357	98.2
	250	0.1192	0.0005	0.3403	0.0014	1.3579	0.0054	0.0013	0.000005	0.0454	0.000182	119.1
	500	0.1495	0.0003	0.5771	0.0012	1.7272	0.0035	0.0016	0.000003	0.0583	0.000117	167.6
Welders Composite		0.0882		0.2309		0.3102		0.0003		0.0288		25.6

Attachment DR9-1

EMFAC Composite Emissions Factor Conversion

DR9-1 EMFAC Composite Emissions Factor Conversion EMFAC 2007, V2.3, Nov 2006

County: San Diego APCD
Year: 2008
Model Years: 1965-2008

EMFAC Burden Output

		LDP	LDT(gas)	LDT(diesel)	MDT	HDGT	HDDT	Buses	Motorcycles
Daily VMT/1000		42190	28824	422	11400	626	2654	121	786
Daily VMT		42190000	28824000	422000	11400000	626000	2654000	121000	786000
TOG, tpd		22.99	15.07	0.04	8.25	2.06	2.91	0.14	4.74
CO, tpd		209.83	156.94	0.28	80.42	25.97	12.12	0.9	44.74
NOx, tpd		18.18	17.82	0.71	15.14	3.35	42.08	2.09	1.16
CO2, tpd	(x 1000) >	18.59	15.67	0.16	8.93	0.48	5.05	0.31	0.12
PM10, tpd		1.59	1.45	0.03	0.62	0.03	1.78	0.04	0.05
SOx, tpd		0.18	0.15	0.001	0.09	0.01	0.05	0.001	0.001

Composite Efs

	LDP g/VMT	LDT(gas) g/VMT	LDT(diesel) g/VMT	MDT g/VMT	HDGT g/VMT	HDDT g/VMT	Buses g/VMT	Motorcycles g/VMT
TOG	0.49	0.47	0.0013	0.66	2.99	0.99	1.05	5.47
CO	4.51	4.94	0.0088	6.40	37.63	4.14	6.75	51.64
NOx	0.39	0.56	0.0223	1.20	4.85	14.38	15.67	1.34
CO2	0.40	0.49	0.0050	0.71	0.70	1.73	2.32	0.14
PM10	0.03	0.05	0.0009	0.05	0.04	0.61	0.30	0.06
SOx	0.0039	0.0047	0.0000	0.0072	0.0145	0.0171	0.0075	0.0012

Composite Efs

	LDP lb/VMT	LDT(gas) lb/VMT	LDT(diesel) lb/VMT	MDT lb/VMT	HDGT lb/VMT	HDDT lb/VMT	Buses lb/VMT	Motorcycles lb/VMT
TOG	0.001090	0.001046	0.000003	0.001447	0.006581	0.002193	0.002314	0.012061
CO	0.009947	0.010890	0.000019	0.014109	0.082971	0.009133	0.014876	0.113842
NOx	0.000862	0.001236	0.000049	0.002656	0.010703	0.031711	0.034545	0.002952
CO2	0.000881	0.001087	0.000011	0.001567	0.001534	0.003806	0.005124	0.000305
PM10	0.000075	0.000101	0.000002	0.000109	0.000096	0.001341	0.000661	0.000127
SOx	0.000009	0.000010	0.000000	0.000016	0.000032	0.000038	0.000017	0.000003

Weighted Avg LDP/LDT Gasoline

	g/VMT	lb/VMT	Calc 1	0.406
TOG	0.486	0.00107	Calc 2	0.594
CO	4.685	0.01033		
NOx	0.460	0.00101		
CO2	0.4	0.00096		
PM10	0.039	0.00009		
SOx	0.004	0.00001		

	LDP	LDT(gas)	LDT(diesel)	MDT	HDGT	HDDT	Buses	Motorcycles
Annual VMT	1.54E+10	1.05E+10	1.54E+08	4.16E+09	2.28E+08	9.69E+08	4.42E+07	2.87E+08
Daily Fuel Use, 10^3 gal	1940	1631	14.5	923	54	454	28.6	20.6
Daily Fuel Use, gals	1940000	1631000	14500	923000	54000	454000	28600	20600
Annual Fuel Use, gals	708100000	595315000	5292500	336895000	19710000	165710000	10439000	7519000
Average Miles/gallon	21.7	17.7	29.1	12.4	11.6	5.8	4.2	38.2

Attachment DR11-1

Modeling Inputs/Results for MMC Chula Vista
Construction Impacts

DR11-1 Modeling Inputs/Results for MMC-Chula Vista Construction Impacts (Combustion Sources as 14 Point Sources)

Short Term Impacts (24 hrs and less)						Long Term Impacts (annual)					
	NOx	CO	SOx	PM10	PM2.5		NOx	CO	SOx	PM10	PM2.5
Combustion (lbs/day)	100.7	61.5	0.1	7.54	6.94	Combustion (tons/period)	5.3	3.2	0.01	0.36	0.33
						Combustion (days/period)	154	154	154	154	154
Combustion (hrs/day)	10	10	10	10	10	Combustion (hrs/day)	10	10	10	10	10
Combustion (lbs/hr)	10.07	6.15	0.01	0.75	0.69	Combustion (lbs/hr)**	2.904	1.753	0.005	0.197	0.181
Combustion (g/sec)	1.27E+00	7.75E-01	1.26E-03	9.50E-02	8.74E-02	Combustion (g/sec)	3.66E-01	2.21E-01	6.90E-04	2.49E-02	2.28E-02
Construction Dust (lbs/day)				6.04	1.27	Construction Dust (tons/yr)				0.10	0.02
						Construction Dust (days/yr)				154	154
Construction Dust (hrs/day)				10	10	Construction Dust (hrs/day)				10	10
Construction Dust (lbs/hr)				0.60	0.13	Construction Dust (lbs/hr)				0.055	0.011
Construction Dust (g/sec)				7.61E-02	1.60E-02	Construction Dust (g/sec)				6.90E-03	1.38E-03
AERMOD Inputs	12894 m2			14 Pt.Srcs							
Combustion (g/s/src)	9.063E-02	5.535E-02	9.000E-05	6.786E-03	6.246E-03	Combustion (g/s/src)	2.614E-02	1.578E-02	4.932E-05	1.775E-03	1.627E-03
Construction Dust (g/s/m2)				5.902E-06	1.241E-06	Construction Dust (g/s/m2)				5.355E-07	1.071E-07
AERMOD Results (ug/m3)											
Combustion Only						Combustion Only					
1-hour Max	293.350	179.156	0.291	21.96482							
3-hour Max			0.108	8.12116							
8-hour Max		55.698		6.82869							
24-hour Max			0.043	3.24214	2.98414	Annual	5.617		0.011	0.38151	0.34972
All Particulate Sources						All Particulate Sources					
24-hour Max				56.76058	12.57449	Annual				1.77507	0.59775
1-hour NO2 w/ OLM	217.435		Max 1-Hr O3(ppm)	0.100		Annual NO2 w/ ARM	4.213	based on ARM Ratio of:		75%	
Background						Background					
1-hour Max	192	7886	110								
3-hour Max			55								
8-hour Max		6000									
24-hour Max			39	65	41	Annual	34		11	27	14
Total + Background						Total + Background					
1-hour Max	409.4	8065	110.3								
3-hour Max			55.1								
8-hour Max		6056									
24-hour Max			39.0	122	54	Annual	38.2		11.0	28.8	14.6

**For long-term (annual) lb/hour construction emissions for construction projects taking less than 12-months, the hourly emissions for modeling are based on total tons (which occur over 7 months for this project) divided by 365 days since all days in the meteorological dataset (i.e., 12 months or 365 days) are modeled.

Attachment DR16-1

Screen Modeling Results

DR16-1 Screening Modeling Results

				Annual#1				Annual#2			
Case	**Case01**	**Case02**	**Case03**	**Case11**	**Case12**	**Case13**	**Case14**	**Case21**	**Case22**	**Case23**	**Case24**
Fogger	**Off**	**Off**	**Off**	**Off**	**Off**	**Off**	**On**	**Off**	**Off**	**Off**	**On**
Load	**Base**	**75%**	**50%**	**Base**	**75%**	**50%**	**Base**	**Base**	**75%**	**50%**	**Base**
Comp Inlet Temp, °F	30.0	30.0	30.0	59.0	59.0	59.0	59.0	93.0	93.0	93.0	93.0
Stack Exit Temp (deg.K)	684.8	652.0	624.3	707.6	671.5	654.3	707.0	707.1	689.9	681.5	707.0
Stack Exit Velocity (m/s)	22.75	19.78	16.69	22.32	19.37	16.28	22.56	20.10	17.62	14.92	21.70
Stack Inside Diameter (m)	3.9624	3.9624	3.9624	3.9624	3.9624	3.9624	3.9624	3.9624	3.9624	3.9624	3.9624
1-Hr Unitized Conc (ug/m3)	15.43447	17.46308	19.85439	15.44376	17.49599	19.77691	15.32624	16.69368	18.43780	20.49483	15.78323
X(m)	494650.0	494650.0	494650.0	494650.0	494650.0	494650.0	494650.0	494650.0	494650.0	494650.0	494650.0
Y(m)	3605830.0	3605830.0	3605830.0	3605830.0	3605830.0	3605830.0	3605820.0	3605830.0	3605830.0	3605830.0	3605830.0
YYMMDDHH	01081511	01081511	01081511	01081511	01081511	01081511	01081511	01081511	01081511	01081511	01081511
3-Hr Unitized Conc (ug/m3)	10.82412	11.73242	13.45363	10.82924	11.75473	13.38736	10.77212	11.43953	12.38236	13.93371	11.02174
X(m)	494660.0	494680.0	494680.0	494660.0	494680.0	494680.0	494660.0	494670.0	494680.0	494680.0	494660.0
Y(m)	3605790.0	3605880.0	3605880.0	3605790.0	3605880.0	3605880.0	3605790.0	3605800.0	3605880.0	3605880.0	3605790.0
YYMMDDHH	01092315	01080912	01080912	01092315	01080912	01080912	01092315	01092315	01080912	01080912	01092315
8-Hr Unitized Conc (ug/m3)	9.24697	10.58443	11.45754	9.23468	10.60293	11.45482	9.13645	10.15534	10.99334	11.63877	9.50650
X(m)	494690.0	494690.0	494690.0	494690.0	494690.0	494690.0	494690.0	494690.0	494690.0	494690.0	494690.0
Y(m)	3605840.0	3605850.0	3605840.0	3605840.0	3605850.0	3605840.0	3605840.0	3605850.0	3605850.0	3605840.0	3605840.0
YYMMDDHH	01071316	01071316	01071316	01071316	01071316	01071316	01071316	01071316	01071316	01071316	01071316
24-Hr Unitized Conc (ug/m3)	3.39554	3.79681	4.38672	3.39690	3.79847	4.35576	3.37721	3.60888	4.01617	4.53547	3.45242
X(m)	494700.0	494690.0	494690.0	494700.0	494690.0	494690.0	494700.0	494690.0	494690.0	494690.0	494700.0
Y(m)	3605830.0	3605820.0	3605820.0	3605830.0	3605820.0	3605820.0	3605830.0	3605810.0	3605820.0	3605820.0	3605830.0
YYMMDDHH	01072624	00080524	00080524	01072624	00080524	00080524	01072624	00080524	00080524	00080524	01072624
NOx(lb/hr) at 2.5 ppm	4.228	3.368	2.562	4.187	3.328	2.564	4.242	3.569	2.917	2.294	4.002
CO(lb/hr) at 6 ppm	6.192	4.882	3.762	6.164	4.832	3.749	6.166	5.255	4.286	3.357	5.874
SO2(lb/hr)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PM10(lb/hr)	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
NOx(g/s/turb) at 2.5 ppm	0.533	0.424	0.323	0.528	0.419	0.323	0.534	0.450	0.368	0.289	0.504
CO(g/s/turb) at 6 ppm	0.780	0.615	0.474	0.777	0.609	0.472	0.777	0.662	0.540	0.423	0.740
SO2(g/s/turb)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
PM10(g/s/turb)	0.378	0.378	0.378	0.378	0.378	0.378	0.378	0.378	0.378	0.378	0.378
1-Hr NOx(ug/m3)	8.222	7.411	6.409	8.148	7.337	6.389	8.192	7.507	6.777	5.924	7.959
1-Hr CO(ug/m3)	12.042	10.742	9.411	11.995	10.652	9.342	11.907	11.053	9.957	8.669	11.682
8-Hr CO(ug/m3)	7.214	6.511	5.431	7.172	6.455	5.411	7.098	6.724	5.937	4.923	7.036
1-Hr SO2(ug/m3)	1.945	2.200	2.502	1.946	2.204	2.492	1.931	2.103	2.323	2.582	1.989
3-Hr SO2(ug/m3)	1.364	1.478	1.695	1.364	1.481	1.687	1.357	1.441	1.560	1.756	1.389
24-Hr SO2(ug/m3)	0.428	0.478	0.553	0.428	0.479	0.549	0.426	0.455	0.506	0.571	0.435
24-Hr PM10(ug/m3)	1.284	1.435	1.658	1.284	1.436	1.646	1.277	1.364	1.518	1.714	1.305

Attachment DR27-1

SDAPCD Permit/Registration Application

APCD 116 (Rev. 09/05)

SAN DIEGO AIR POLLUTION CONTROL DISTRICT
10124 OLD GROVE ROAD, SAN DIEGO CA 92131-1649
PHONE (858) 586-2600 • FAX (858) 586-2601

DR 27-1 (12 pages total)

PERMIT / REGISTRATION APPLICATION

FILING THIS APPLICATION DOES NOT GRANT PERMISSION TO CONSTRUCT OR TO OPERATE EQUIPMENT

IMPORTANT REMINDERS: Read instructions on the reverse side of this form prior to completing this application. Please ensure that all of the following are included before you submit the application:
☒ Appropriate Permit Fee ☒ Completed Supplemental Form(s) ☒ Signature on Application

REASON FOR SUBMITTAL OF APPLICATION: (check the appropriate item and enter Application (AP) or Permit to Operate (PO) number if required)

1. ☒ New Installation 2. ☐ Existing Unpermitted Equipment or Rule 11 Change 3. ☐ Modification of Existing Permitted Equipment
4. ☐ Amendment to Existing Authority to Construct or AP 5. ☐ Change of Equipment Location 6. ☐ Change of Equipment Ownership
7. ☐ Change of Permit Conditions 8. ☐ Change Permit to Operate Status to Inactive 9. ☐ Banking Emissions
10. ☐ Registration of Portable Equipment 11. ☒ Other (Specify) Equipment replacement
12. List affected AP/PO#(s): 978119

APPLICANT INFORMATION

13. Name of Business (DBA) MMC Chula Vista, LLC
14. Nature of Business electric power production
15. Does this organization own or operate any other APCD permitted equipment at this or any other adjacent locations in San Diego County? ☒ Yes ☐ No
If yes, list assigned location ID's listed on your PO's 7084 A 3497 Main St. Chula Vista, CA. 91911
16. Type of Ownership ☒ Corporation ☐ Partnership ☐ Individual Owner ☐ Government Agency ☐ Other
17. Name of Legal Owner (if different from DBA) MMC Energy

		A. Equipment Owner	B. Authority to Construct (if different from A)
18.	Name	MMC Chula Vista, LLC	
19.	Mailing Address	3497 Main St.	
20.	City	Chula Vista	
21.	State	CA Zip	Zip
22.	Phone	(619) 420-3291 FAX ( )	( ) FAX ( )
		C. Permit to Operate (if different from A)	**D. Billing Information (if different from A)**
23.	Name		
24.	Mailing Address		
25.	City		
26.	State	Zip	Zip
27.	Phone	( ) FAX ( )	( ) FAX ( )

EQUIPMENT/PROCESS INFORMATION: Type of Equipment: ☒ Stationary ☐ Portable.
If portable, will operation exceed 12 consecutive months at the same location ☐ Yes ☐ No

28. Equipment Location Address 3497 Main St. City Chula Vista Parcel No.
29. State CA Zip 91911 Phone (619) 420-3291 FAX ( )
30. Site Contact Mark Wellard Title Operator Phone (619) 420-3291
31. General Description of Equipment/Process 2-LM6000 combustion turbines electircal power production
32. Application Submitted by ☒ Owner ☐ Operator ☐ Contractor ☐ Consultant Affiliation

EXPEDITED APPLICATION PROCESSING: ☐ **I hereby request Expedited Application Processing and understand that:**

33. a) Expedited processing will incur additional fees and permits will not be issued until the additional fees are paid in full (see Rule 40(d)(8)(iv) for details).
b) Expedited processing is contingent on the availability of qualified staff. c) Once engineering review has begun this request cannot be cancelled.
d) Expedited processing does not guarantee action by any specific date nor does it guarantee permit approval.

I hereby certify that all information provided on this application is true and correct.

34. SIGNATURE Date 2/12/06
35. Print Name DIEGO GAGLIN Title CFO
36. Company MMC ENERGY, INC. Phone (212) 785-5178 E-mail Address dgaglin@mmcenergy.com

APCD USE ONLY

AP # ID # Cust. No. Sector: UTM's X Y SIC
Receipt # Date Amt Rec'd $ Fee Code
Engineering Contact Fee Code AP Fee $ T&M Renewal Fee $
Refund Claim # Date Amt $
Application Generated By NV# NC # Other Date Inspector

SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT **DR 27-1**

APPLICATION FEE ESTIMATE

Applicant: MMC Chula Vista Fee Schedule: 20F

Engineer: Arthur Carbonell Estimate Date: 1/5/2007

Application: To permit two turbines totaling over 50 MW. Assume the turbines are identical. Assume an AQIA, HRA and source testing (includes test witnessing and acid rain monitoring plan) will be required. Assume emissions will be below major source thresholds. Note that the California Energy Commission (CEC) will be the lead agency for this project.

ACTIVITY	FEE CODE	LABOR CODE	CLASSIFICATION	LABOR HOURS	LABOR RATE	COST	SUBTOTAL
A/C		EG3	Associate Engineer	35	$140	$4,900	
		EG4	Senior Engineer	0.5	$174	$87	
P/O		EG3	Associate Engineer	10	$140	$1,400	
		EG4	Senior Engineer	0.5	$174	$87	
							$6,474
NSR	NSR	EG3	Associate Engineer	10	$140	$1,400	
							$1,400
AQIA	NSR	EG3	Associate Engineer		$140		
	AQA	MET3	Associate Meteorologist	20	$82	$1,640	
							$1,640
Health Risk Assessment	TNS	ES3	Associate Specialist		$122		
		EG3	Associate Engineer	20	$140	$2,800	
		EG4	Senior Engineer		$174		
							$2,800
Testing or Test Witness	93A	EG3	Associate Engineer	20	$140	$2,800	
		CH3	Associate Chemist	128	$85	$10,880	
		CH4	Senior Chemist	35	$100	$3,500	
							$17,180
Other Fees	RNP		Renewal Fee	2	$2,493	$4,986	
	NBF		Administrative Fee	2	$95	$190	
	EMF		Emissions Fee		$101		
							$5,176
Deficit		EG3	Associate Engineer		$140		
		CH3	Associate Chemist		$85		

Notes:
1. If actual costs are less than estimated, the difference shall be refunded. If actual costs are greater than estimated, additional fees shall be required. If tests are required, additional fees shall be required but may be deferred until the A/C is issued. Additional emissions fees may also be required. Work records are kept, which may result in a final fee more or less than this estimate.
2. A 2.2% surcharge will be assessed to all credit card payments (American Express and Discover only).
3. This fee estimate is valid until June 30, 2007.
4. Please submit a copy of this fee estimate with your application.

ESTIMATE TOTAL: $34,670

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SUPPLEMENTAL APPLICATION INFORMATION
FEE SCHEDULE 20 D, E, F, G, H

San Diego APCD Use Only
Appl. No.:
ID No.:

GAS TURBINE

COMPANY NAME: MMC Chula Vista, LLC Turbine #1

ADDRESS: 3497 Main St., Chula Vista, CA. 91911

A. EQUIPMENT AND PROCESS DESCRIPTION

ENGINE USE: *(Check all that apply.*

Power Generation: 48600 kw Steam Generation: lbs/hr steam

Other (Specify capacity.):

ENGINE SPECIFICATIONS:

Manufacturer: GE Model No.: LM6000 S/N:

HP Rating: ~68000 Fuel Consumption Rate: 468.8 MM BTU/HR

Type of Liquid Fuel Used*: N/A Fuel Rate(Specify Units): N/A

Maximum %sulfur by wt. in fuel*: N/A %

2. Type of Gaseous Fuel Used*: Natural Gas Fuel Rate: 468800 cfh

Maximum Grains PM/100DSCF @ 12% O_2: unk grains/100dscf

B. EMISSION CONTROL EQUIPMENT *(Check all that apply)*

☐ Low NOx burner ☒ Water injection ☒ SCR w/ Ammonia injection ☐ Hydrogenous ☐ Aqeuous

Describe the control equipment to be installed and submit its technical data:

Turbine will be water injected for primary NOx control

Turbine will be equipped with SCR for secondary NOx control

Turbine will also be equipped with a CO catalyst.

C. EMISSION DATA

Provide the manufacturer's specifications and emission factors (lbs/1,000 lbs of fuel) for oxides of nitrogen (NOx), Carbon monoxide (CO), Hydrocarbons (HC), and particulate matter (PM) for the engine at different power settings with corresponding engine exhaust flow rates and temperatures.

D. EXHAUST STACK AND BLDG. DIMENSIONS *(if air quality modeling is required).*

Stack location: ground (i.e., roof top, wall, ground), direction: ☒ vertical ☐ horizontal

Stack dimensions: internal 13 ft. diameter, or ft. wide x ft. long

Stack dimensions: external ft. diameter, or ft. wide x ft. long

(If other shape, then supply sketch of stack cross section)

Use an attached page to provide this information for each engine at each power setting.

Stack height: Above roof: ft. Above ground level: 70 ft.

Site elevation above mean sea level (MSL) ~58 ft.

Building dimensions: length 35 ft.; width 35 ft.; height 14 ft.

(Supply sketch w/position of exhaust stack)

Supply a plot plan showing the test cell/stand location with respect to nearby streets, property lines, and buildings.

E. OTHER EMISSION PRODUCING EQUIPMENT AT THE SITE

APCD permitted	☒ Yes	☐ No
Non permitted	☐ Yes	☐ No

F. ADDITIONAL INFORMATION Existing site is permitted by APCD, Title V permit #978119. Existing equipment will be removed, and replaced by the new turbines. A new emergency generator will also be located on the revised site.

G. OPERATING SCHEDULE:* Hours/day: see appl. Days/yr: see appl.

* Emission calculations will be performed using these values and permit conditions may result to comply with applicable rules.

Name of Preparer: Greg Darvin **Title:** Sr. Consultant

Phone Number: (805) 569-6555 **Date:**

NOTE TO APPLICANT:

Before acting on an application for Authority to Construct or Permit to Operate, the District may require further information, plans, or specifications. Forms with insufficient information may be returned to the applicant for completion, which will cause a delay in application processing and may increase processing fees. The applicant should correspond with equipment and material manufacturers to obtain the information requested on this supplemental form.

DR 27-1

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SUPPLEMENTAL APPLICATION INFORMATION
FEE SCHEDULE 20 D, E, F, G, H

San Diego APCD Use Only
Appl. No.:
ID No.:

GAS TURBINE

COMPANY NAME: MMC Chula Vista, LLC Turbine #2

ADDRESS: 3497 Main St., Chula Vista, CA. 91911

A. EQUIPMENT AND PROCESS DESCRIPTION

ENGINE USE: *(Check all that apply.)*

Power Generation: 48600 kw Steam Generation: lbs/hr steam

Other (Specify capacity.):

ENGINE SPECIFICATIONS:

Manufacturer: GE Model No.: LM6000 S/N:

HP Rating: ~68000 Fuel Consumption Rate: 468.8 MM BTU/HR

Type of Liquid Fuel Used*: N/A Fuel Rate(Specify Units): N/A

Maximum %sulfur by wt. in fuel*: N/A %

2. Type of Gaseous Fuel Used*: Natural Gas Fuel Rate: 468800 cfh

Maximum Grains PM/100DSCF @ 12% O_2: unk grains/100dscf

B. EMISSION CONTROL EQUIPMENT *(Check all that apply)*

☐ Low NOx burner ☒ Water injection ☒ SCR w/ Ammonia injection ☐ Hydrogenous ☐ Aqeuous

Describe the control equipment to be installed and submit its technical data:

Turbine will be water injected for primary NOx control

Turbine will be equipped with SCR for secondary NOx control

Turbine will also be equipped with a CO catalyst

C. EMISSION DATA

Provide the manufacturer's specifications and emission factors (lbs/1,000 lbs of fuel) for oxides of nitrogen (NOx), Carbon monoxide (CO), Hydrocarbons (HC), and particulate matter (PM) for the engine at different power settings with corresponding engine exhaust flow rates and temperatures.

D. EXHAUST STACK AND BLDG. DIMENSIONS *(if air quality modeling is required).*

Stack location: ground (i.e., roof top, wall, ground), direction: ☒ vertical ☐ horizontal

Stack dimensions: internal 13 ft. diameter, or ft. wide x ft. long

Stack dimensions: external ft. diameter, or ft. wide x ft. long

(If other shape, then supply sketch of stack cross section)

Use an attached page to provide this information for each engine at each power setting.

Stack height: Above roof: ft. Above ground level: 70 ft.

Site elevation above mean sea level (MSL) ~58 ft.

Building dimensions: length 35 ft.; width 35 ft.; height 14 ft.

(Supply sketch w/position of exhaust stack)

Supply a plot plan showing the test cell/stand location with respect to nearby streets, property lines, and buildings.

E. OTHER EMISSION PRODUCING EQUIPMENT AT THE SITE

APCD permitted	☒ Yes	☐ No
Non permitted	☐ Yes	☐ No

F. ADDITIONAL INFORMATION Existing site is permitted by APCD, Title V permit #978119. Existing equipment will be removed, and replaced by the new turbines. A new emergency generator will also be located on the revised site.

G. OPERATING SCHEDULE:* Hours/day: see appl. Days/yr: see appl.

* Emission calculations will be performed using these values and permit conditions may result to comply with applicable rules.

Name of Preparer: Greg Darvin **Title:** Sr. Consultant

Phone Number: (805) 569-6555 **Date:**

NOTE TO APPLICANT:

Before acting on an application for Authority to Construct or Permit to Operate, the District may require further information, plans, or specifications. Forms with insufficient information may be returned to the applicant for completion, which will cause a delay in application processing and may increase processing fees. The applicant should correspond with equipment and material manufacturers to obtain the information requested on this supplemental form.

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SUPPLEMENTAL APPLICATION INFORMATION
FEE SCHEDULE 34A-J

San Diego APCD Use Only
Appl. No.:
ID No.:

INTERNAL COMBUSTION ENGINES

Company Name: MMC Chula Vista, LLC

Equipment Address: 3497 Main St., Chula Vista, CA. 91911

Reason for submitting application:

- ☐ Existing Unit, Date of Installation
- ☐ Replacement of Existing Unit;
- ☐ Compliance with 2004 Diesel Engine ATCM
- ☒ New or Additional Unit

A. EQUIPMENT DESCRIPTION

Engine Mfr.: Caterpillar Model: 3412C TA S/N: _____

Engine hp Rating: 851 Fuel Type: ☒ diesel* ☐ natural gas ☐ gasoline

Combination of fuels (specify) diesel fuel only

Engine Equipment:

- ☐ turbocharger
- ☐ aftercooler
- ☐ 4-degree retard of fuel injection
- ☐ exhaust gas recirculation
- ☐ lean burn
- ☐ pre-chamber combustion
- ☐ air/fuel controller
- ☐ diesel particulate filter (attach manufacturer's specification for efficiency, and/or ARB verification.)
- ☐ other add-on control technology (attach manufacturer's specification for efficiency, and/or ARB verification.)

(Specify) _____

- ☐ crankcase (blow-by) emission control equipment

(Specify) Model

Describe any in stack emission control and/or monitoring devices. (i.e., catalytic converter)

_____

* Diesel fuel must be Certified California Diesel (CARB Diesel).

B PROCESS DESCRIPTION

Engine Drives:

- ☐ compressor _____ cfm
- ☒ generator 550 kw
- ☐ pump _____ gpm
- ☐ other (specify) _____

Equipment is:

- ☐ portable
- ☒ stationary
- ☐ continuous service
- ☐ peak shaving electrical supply
- ☐ cogeneration
- ☒ emergency electrical supply
- ☐ used at any time

C. OPERATING SCHEDULE (typical)

	Hours/day	Days/week	Weeks/year
Average	1	1	52
Maximum	1	1	52

Equipped with a non-resettable hour meter? ☒ yes ☐ no

D. FUEL CONSUMPTION AND EMISSIONS (@100% Load)

Liquid Fuel: 48 gal/hr _____ gal/wk _____ gal/yr

Gaseous Fuel _____ gal/hr _____ gal/wk _____ gal/yr

/hr /wk _____ ___/yr

Exhaust Emission*:	LB/HR	g/HP-HR	g/HR	PPM
Carbon Monoxides (CO)		2.6		
Nitrogen Oxides (NOx)		2.75		
Hydrocarbons (HC) (Non CH4)		0.25		
Sulfur Oxides (SOx) @ 12% CO2	0.33			
Particulate Matter (PM)		0.15		

*Please attach manufacturer's specifications or source of exhaust emission data.

Exhaust Temperature 958 °F

Fuel Supplier: any CARB diesel supplier

Fuel Sulfur Content: >0.05 % Sulfur (% wt. as S. (Liquid Fuel))

Fuel Sulfur Content: _____ % Sulfur (% vol. as H2S (Gaseous Fuel))

Engine year of manufacture: 2007-2008

CARB Certification No.:

EPA Certification No.:

E. RULE 1200 TOXICS EVALUATION:

FACILITY SITE MAP Please provide a copy of a **Thomas Bros. Map** showing the geographic location of your facility. This helps by making it possible for the District to use a Geographic Information System to identify community residents and workers who may be impacted by emissions from your facility.

PLOT PLAN Please also provide a **facility plot plan or diagram** (need not be to scale as long as distances of key features from reference points are shown) showing the **location of emission point(s)** at the facility, property lines, and the **location** and **dimensions of buildings** (estimated height, width, and length) that are closer than 100 ft. from the emission point. This diagram helps by making it possible for the District to efficiently set-up the inputs for a health risk evaluation. Inaccurate information may adversely affect the outcome of the evaluation.

EMISSION POINT DATA Determine if your emission source(s) are ducted sources or if they are unducted/fugitive sources and provide the necessary data below. (**Examples** of commonly encountered emission points: **Ducted or Stack Emissions** - an exhaust pipe or stack, a roof ventilation duct; **Unducted Emissions** - anything not emitted through a duct, pipe, or stack, for instance, an open window or an outdoor area or volume.)

1. **Ducted or Stack Emissions** (For 1 or more emission points). Estimate values if you are unsure.

Parameter	Point #1	Point #2	Point #3	Point #4	Point #5	Point #6
Height of Exhaust above ground (ft)	15					
Stack Diameter (or length/width) (ft)	0.83					
Exhaust Gas Temperature* (°F)	958					
Exhaust Gas Flow (actual cfm or fps)	6459					
Is Exhaust Vertical (Yes or No)	Yes					
Raincap? (None, Flapper Valve, Raincap)	No					
Distance to Property Line (+/- 10 ft)	28					

* Use "70 °F" or "Ambient" if unknown

2. **Unducted Emissions** (For 1 or more emission points). Estimate if you are unsure.

Describe how unducted gases, vapors, and/or particles get into the outside air. Provide a brief description of the process or operation for each unducted emission point. If unducted emissions come out of building openings such as doors or windows, estimate the **size of the opening** (example – 3 ft x 4 ft window).

If unducted emissions originate outside your buildings, estimate the **size of the emission zone** (example - paint spraying 2' x 2' x 2' bread boxes).

RECEPTOR DATA A receptor is a residence or business whose occupants could be exposed to toxic emissions from your facility. In order to estimate the risk to nearby receptors, please provide the distance from the emission point to the nearest residence and to the nearest business.

Distance to nearest residence 1080 ft

Distance to nearest business 1280 ft

Distance to nearest school 2290 ft

Name of Preparer: Greg Darvin **Title:** Sr. Consultant

Phone No.: (805) 569-6555 E-mail **Date:**

NOTE TO APPLICANT:

Before acting on an application for Authority to Construct or Permit to Operate, the District may require further information, plans, or specifications. Forms with insufficient information may be returned to the applicant for completion, which will cause a delay in application processing and may increase processing fees. The applicant should correspond with equipment and material manufacturers to obtain the information requested on this supplemental form.

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SUPPLEMENTAL APPLICATION INFORMATION
RULE 1200 TOXICS EVALUATION

San Diego APCD Use Only
Appl. No.:
ID No.:

(ALL REQUESTED INFORMATION IS IMPORTANT - PLEASE COMPLETE FULLY)

FACILITY NAME: MMC Chula Vista, LLC Turbine #1

RELEASE POINT DATA (Examples of commonly encountered release points: the tip of an exhaust stack, a roof vent, an open window, an outdoor area or volume)

How are the emissions from this device released into the outdoor air? Check One

☒ Exhaust Stack or Duct ☐ Unducted Vent ☐ Released Through Windows or Doors

☐ Undirected Emissions (Anything other than the above categories)

If emissions are from a stack or a duct, check off the direction of flow. ☒ Vertical (Up)

☐ Horizontal ☐ Other (**Describe**):

If there is an obstruction to vertical flow, is the obstruction a: ☐ Rain Cap

☐ Flapper-Type Valve (Open when there is flow) ☒ Other (**Describe**): none

Volume Source: If emissions are from a volume source, describe how the emitted gases, vapors, and/or particles get into the air and either the size of the opening (example - 3 ft x 4 ft window) that results in release or the approximate size of the release zone (example - paint spraying, 2' x 2' x 2' bread boxes):

Lateral dimension (ft): _____ Vertical dimension (ft): _____

Please provide the following **STACK** or **RELEASE POINT** information (where applicable):

Parameter	Emission Point #1	Emission Point #2	Emission Point #3
Height of release above ground (ft)	70		
Stack Diameter (ft)	13		
Exhaust Gas Temperature* (°F)	814		
Exhaust Gas Flow (acfm or fps)	583226		
Distance to Property Line (+/- 10 ft)	70		

* Use "70 °F" or "Ambient" if unknown

FACILITY SITE MAP, PLOT PLAN, and RELEASE POINT INFORMATION

Please provide a copy of a **Thomas Bros. Map** showing the location of your facility.

Please also provide a **facility plot plan** showing the location of emission release point(s) at the facility, property lines, and the location (include approximate distance) and dimensions of buildings (estimated height, width, and length) closer than 100 ft from the release point.

Where is the subject release point located with respect to onsite buildings? Check Any Applicable

☐ On top of a building: Building Height _____ ft Width _____ ft Length _____ ft

☐ On the side of a building: Diameter of Opening _____ ft or Size of Opening _____ ft X _____ ft

☒ Adjacent to a building: Building Height 14 ft Width 35 ft Length 35 ft

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SUPPLEMENTAL APPLICATION INFORMATION
RULE 1200 TOXICS EVALUATION

San Diego APCD Use Only
Appl. No.:
ID No.:

(ALL REQUESTED INFORMATION IS IMPORTANT - PLEASE COMPLETE FULLY)

FACILITY NAME: MMC Chula Vista, LLC Turbine #2

RELEASE POINT DATA (Examples of commonly encountered release points: the tip of an exhaust stack, a roof vent, an open window, an outdoor area or volume)

How are the emissions from this device released into the outdoor air? Check One

☒ Exhaust Stack or Duct ☐ Unducted Vent ☐ Released Through Windows or Doors

☐ Undirected Emissions (Anything other than the above categories)

If emissions are from a stack or a duct, check off the direction of flow. ☒ Vertical (Up)

☐ Horizontal ☐ Other (**Describe**):

If there is an obstruction to vertical flow, is the obstruction a: ☐ Rain Cap

☐ Flapper-Type Valve (Open when there is flow) ☒ Other (**Describe**): none

Volume Source: If emissions are from a volume source, describe how the emitted gases, vapors, and/or particles get into the air and either the size of the opening (example - 3 ft x 4 ft window) that results in release or the approximate size of the release zone (example - paint spraying, 2' x 2' x 2' bread boxes):

Lateral dimension (ft): _____ Vertical dimension (ft): _____

Please provide the following **STACK** or **RELEASE POINT** information (where applicable):

Parameter	Emission Point #1	Emission Point #2	Emission Point #3
Height of release above ground (ft)	70		
Stack Diameter (ft)	13		
Exhaust Gas Temperature* (°F)	814		
Exhaust Gas Flow (acfm or fps)	583226		
Distance to Property Line (+/- 10 ft)	70		

* Use "70 °F" or "Ambient" if unknown

FACILITY SITE MAP, PLOT PLAN, and RELEASE POINT INFORMATION

Please provide a copy of a **Thomas Bros. Map** showing the location of your facility.

Please also provide a **facility plot plan** showing the location of emission release point(s) at the facility, property lines, and the location (include approximate distance) and dimensions of buildings (estimated height, width, and length) closer than 100 ft from the release point.

Where is the subject release point located with respect to onsite buildings? Check Any Applicable

☐ On top of a building: Building Height _____ ft Width _____ ft Length _____ ft

☐ On the side of a building: Diameter of Opening _____ ft or Size of Opening _____ ft X _____ ft

☒ Adjacent to a building: Building Height 14 ft Width 35 ft Length 35 ft

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

SUPPLEMENTAL APPLICATION INFORMATION
RULE 1200
TOXICS EVALUATION

San Diego APCD Use Only
Appl. No.:
ID No.:

(ALL REQUESTED INFORMATION IS IMPORTANT - PLEASE COMPLETE FULLY)

FACILITY NAME: MMC Chula Vista, LLC EGS

RELEASE POINT DATA (Examples of commonly encountered release points: the tip of an exhaust stack, a roof vent, an open window, an outdoor area or volume)

4 How are the emissions from this device released into the outdoor air? Check One

☒ Exhaust Stack or Duct ☐ Unducted Vent ☐ Released Through Windows or Doors
☐ Undirected Emissions (Anything other than the above categories)

If emissions are from a stack or a duct, check off the direction of flow. ☒ Vertical (Up)
☐ Horizontal ☐ Other (**Describe**):

9 If there is an obstruction to vertical flow, is the obstruction a: ☐ Rain Cap
☐ Flapper-Type Valve (Open when there is flow) ☒ Other (**Describe**): none

11 **Volume Source:** If emissions are from a volume source, describe how the emitted gases, vapors, and/or
12 particles get into the air and either the size of the opening (example - 3 ft x 4 ft window) that results in release or
13 the approximate size of the release zone (example - paint spraying, 2' x 2' x 2' bread boxes): _____

Lateral dimension (ft): _____ Vertical dimension (ft): _____

Please provide the following **STACK** or **RELEASE POINT** information (where applicable):

Parameter	Emission Point #1	Emission Point #2	Emission Point #3
Height of release above ground (ft)	15		
Stack Diameter (ft)	0.83		
Exhaust Gas Temperature* (°F)	958		
Exhaust Gas Flow (acfm or fps)	6459		
Distance to Property Line (+/- 10 ft)	28		

* Use "70 °F" or "Ambient" if unknown

FACILITY SITE MAP, PLOT PLAN, and RELEASE POINT INFORMATION

19 Please provide a copy of a **Thomas Bros. Map** showing the location of your facility.

20 Please also provide a **facility plot plan** showing the location of emission release point(s) at the facility, property
21 lines, and the location (include approximate distance) and dimensions of buildings (estimated height, width, and
22 length) closer than 100 ft from the release point.

23 Where is the subject release point located with respect to onsite buildings? Check Any Applicable

24 ☐ On top of a building: Building Height _____ ft Width _____ ft Length _____ ft

☐ On the side of a building: Diameter of Opening _____ ft or Size of Opening _____ ft X _____ ft

☒ Adjacent to a building: Building Height 16 ft Width 31 ft Length 61 ft

Cultural Resources

Data Responses 30-37

Cultural Resources (30-37)

Records of Conversation

30. Please provide copies of correspondence or summaries of telephone conversations with local historical and/or archaeological societies that might have knowledge of historical or archaeological resources in the area of the project.

Response: A summary of contacts with local historical societies that were made for preparation of the AFC was inadvertently omitted from AFC appendix 5.3A. It is included here as Attachment DR30-1.

Maximum Depth of Disturbance

31. Please provide a discussion of the anticipated maximum depth of disturbance at the project site and laydown areas.

Response: Per the geotechnical report prepared for the project in late 2006 (AFC Appendix 5.4A), the soil at the project site will need to be removed and recompacted to a depth of 3 feet below the bottom of each foundation. The deepest foundation is expected to be about 5 feet below finished grade. Finished grade is expected to vary across the site (due to varying degrees of grading required). However, from present site grade (undisturbed), it is expected that the deepest disturbance will not exceed 10 feet (2 feet of grading plus 5 feet of foundation plus 3 feet of fill). Most foundations will be much less than this as they are not 5 feet deep.

Ground disturbance at the laydown area will be restricted to clearance of existing rubbish or ruderal vegetation.

Level of Fill

32. Please provide a discussion of the level of fill at both laydown areas.

Response: The depth of existing fill material at the laydown site adjacent to the CVEUP project site is unknown, because a geotechnical report was not prepared for the sites. This area, however, is clearly an extension of the filled areas further north. Additional fill may be required during construction only to create a more level surface. In addition, a layer of gravel will be added to the laydown area to improve drainage.

Although the alternative laydown area is not known to be constructed on landfill, the site has been used for gravel storage and is currently partly graveled.

Ground Disturbance at Laydown Areas

33. Please provide a discussion of anticipated construction and ground disturbance, if any, at the laydown areas. For example, please discuss whether lighting will be installed, fences constructed, or trenches excavated.

Response: Temporary fences will be constructed at each laydown area for safety and security purposes. There will be little or no ground disturbance taking place at the laydown areas, unless there is a need for minor trenching due to requirements of the stormwater drainage plan for to enhance drainage or stormwater retention. Lighting will be installed, but it will be temporary and only for security purposes. No other ground disturbance is expected.

Historic Properties Identified by CHRIS

34. *Please provide a discussion of the historic properties identified by the CHRIS, and explain whether the project will affect the setting of the following addresses:*
    a. *1427 Hermosa Avenue*
    b. *3060 Coronado Avenue*
    c. *330 Orange Avenue*
    d. *35 Tamarindo Way*

Response*:* All of these properties are located well outside the area of potential effect of the CVEUP ranging from 0.5 to 1.0 mile. Additionally, the site of the CVEUP is screened with vegetation and fencing which serves as a visual barrier to surrounding properties. For this reason, the CVEUP project will have no effect on these properties.

1427 Hermosa Ave—The property is located almost one mile northwest of CVEUP. It is not visible from the CVEUP site and there will be no effect to the property. Documentation from the California Historical Resources Information System record search does not provide any additional detail regarding this property.

3060 Coronado Ave— This property is the site where John Joseph Montgomery made the first flight of a heavier than air craft in 1883, 20 years before the Wright Brothers. It is listed as a California Historic Landmark called the Montgomery Memorial. The property is located almost one mile northwest of CVEUP. It is not visible from the CVEUP site and there will be no effect to the property.

339 Orange Ave—The property is located almost one mile northwest of CVEUP. It is not visible from the CVEUP site and there will be no effect to the property. Documentation from the California Historical Resources Information System record search does not provide any additional detail regarding this property.

35 Tamarindo Way—This property is located 0.5 miles to the northwest of CVEUP. The property has a Primary Number assigned (P-37-028140). It is a ranch style single family home built in 1949. No additional information was provided by SCIC for this property. The property is not visible from the CVEUP site due to the vegetation, fencing, and existing structures surrounding the site, and is located well outside the CVEUP APE. There will be no effect to the property.

Adjacent Buildings

35. a. *Please provide a discussion of buildings that are located within one adjacent parcel to the proposed project.*
    b. *Please explain how information regarding the age of any properties located adjacent to the proposed project and laydown areas was obtained.*

Response: Field visits confirmed that the buildings on adjacent parcels appear to be new construction. A review of historical aerial photographs also confirms that the existing buildings are not historical. Aerial photographs from 1953, 1963, and 1974 are attached as Attachment DR35-1.

Cultural Resource Reports

36. *Please provide copies of the following reports:*

- *Cheever, Dayle 1980. "Cultural Resources Survey of the H.G. Fenton Materials Company Property City of Chula Vista, CA." NADB #: 1120585 (Cheever89+36) and*
- *Advanced Sciences 1991, Inc. "An Archaeological Impact Evaluation for the Otay River Valley Resource Enhancement Plan." NADB #: 1122252 (ASI91+7).*

Response: These documents are labeled as Attachment DR36-1. The report cited as Cheever 1980, should be cited as Cheever 1989. The reports contain sensitive information including the locations of archeological sites and will be filed separately under a request for confidentiality.

Historical Maps

37. *Please provide copies of any historic maps received from the CHRIS that were not included in the previously submitted confidential fil*ing.

Response: Historical maps provided by the CHRIS are attached as Attachment DR37-1.

Attachment DR30-1

Records of Contacts with Historical Societies

Chula Vista Energy Efficiency Upgrade Project	Contacts by Aaron Ferguson, CH2M HILL	
Historical Society	**Date & Time**	**Comments Summary**
Chula Vista Historical Society P.O. Box 1222 Chula Vista, CA 92012 619-427-8092	7/2/2007 11:47 am	Left message. No Response.
San Diego Historical Society and Museum PO Box 81825 San Diego, CA 92138 (619) 232-6203	7/2/2007 11:50 am	Left message. No Response.
National City Historical Society P.O. Box 1251 National City, CA 92050 619-477-3451	7/2/2007 11:52 am	Left message. No Response.
Coronado Historical Association P.O. Box 1811303 Coronado, CA 22178-0393 619-435-7242	7/2/2007 11:54 am	Left message. No Response.

Attachment DR35-1

Historical Aerial Photographs


INQUIRY #: 2085612.6
YEAR: 1953
= 555'
N


INQUIRY #: 2085612.6
YEAR: 1963
= 555'
N
EDR Environmental Data Resources Inc


INQUIRY #: 2085612.6
YEAR: 1974
= 600'
N
EDR Environmental Data Resources Inc

Attachment DR36-1

Cultural Resources Reports

Attachment DR36-1 Cultural Resources Reports

These reports contain sensitive information and will be filed separately under a request for confidentiality.

Attachment DR37-1

Historical Maps

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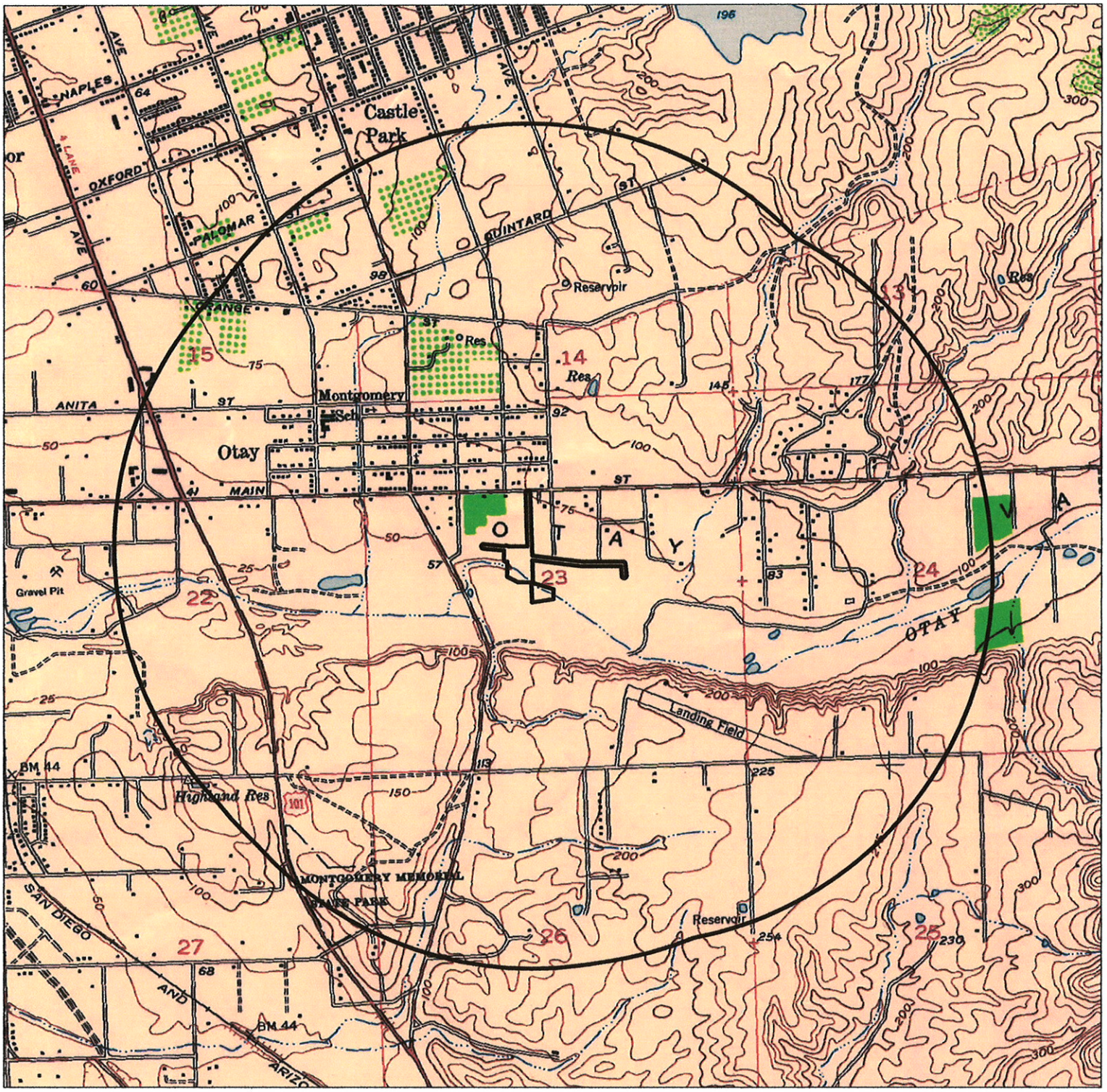
5283 El Cajon Boulevard, Suite 250
San Diego CA, 92105-1254
(619) 594-5682
scic_gis@mail.sdsu.edu

DR1-1



Imperial Beach 1953, culture and drainage revised 1950

1:24,000

0 1 Miles

USGS 7.5 Minute Series Topographic Map
Imperial Beach Quadrangle

N

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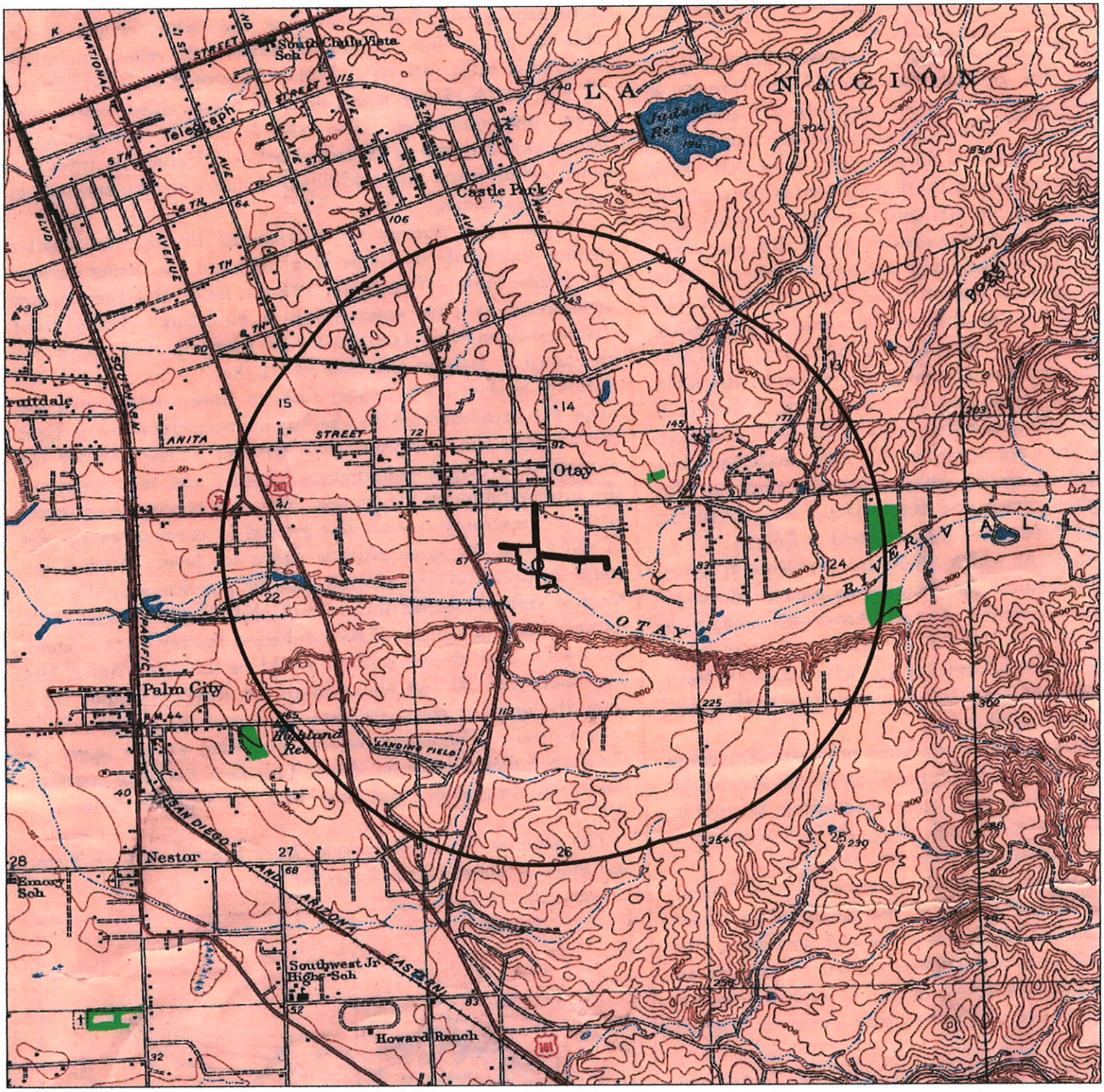

San Ysidro 1943

1:31,680

0 1 Miles

USGS 7.5 Minute Series Topographic Map
San Ysidro Quadrangle

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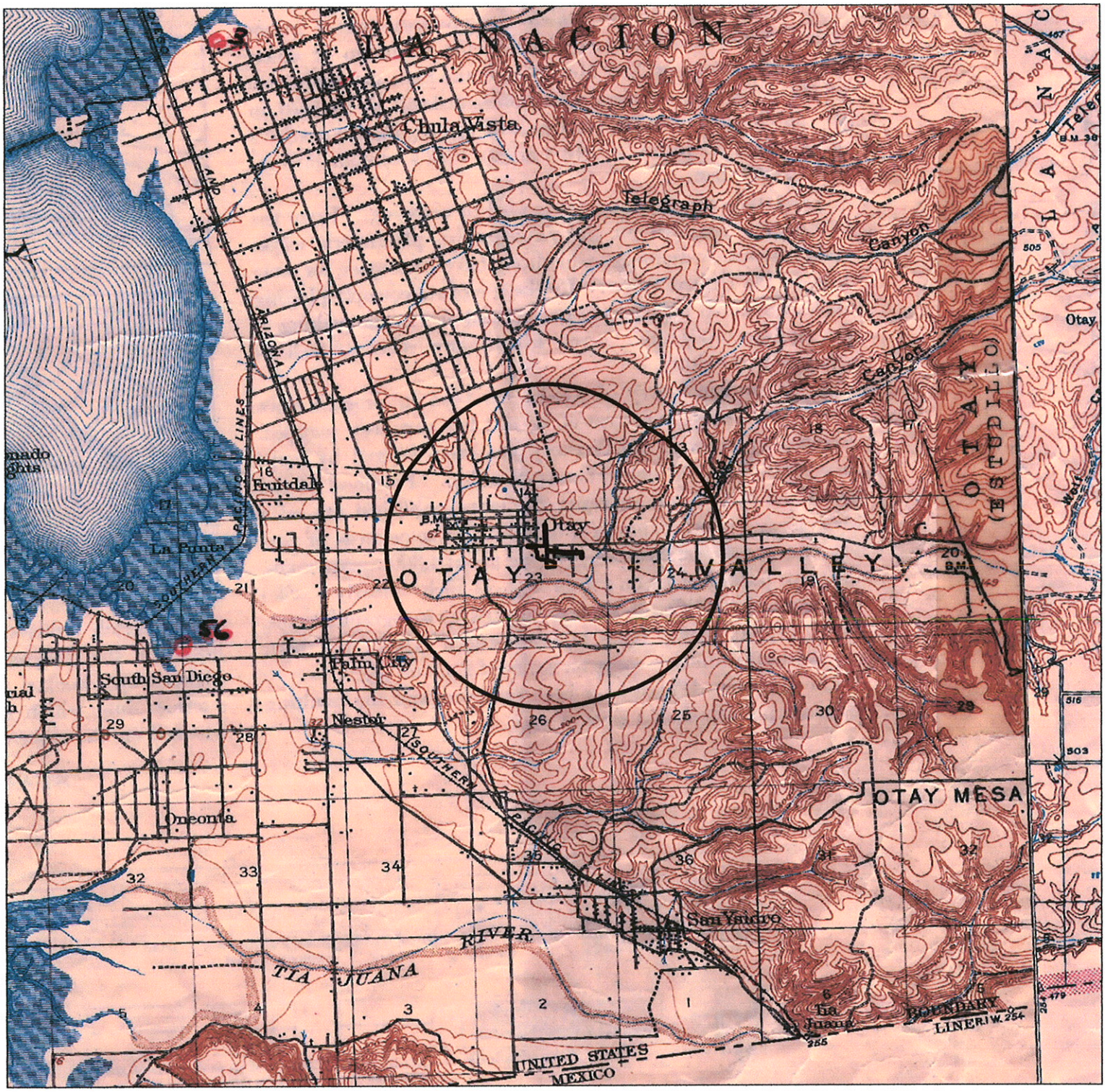

San Diego 1904, culture revised 1930

1:62,500

0 1 Miles

USGS 15 Minute Series Topographic Map
San Diego Quadrangle

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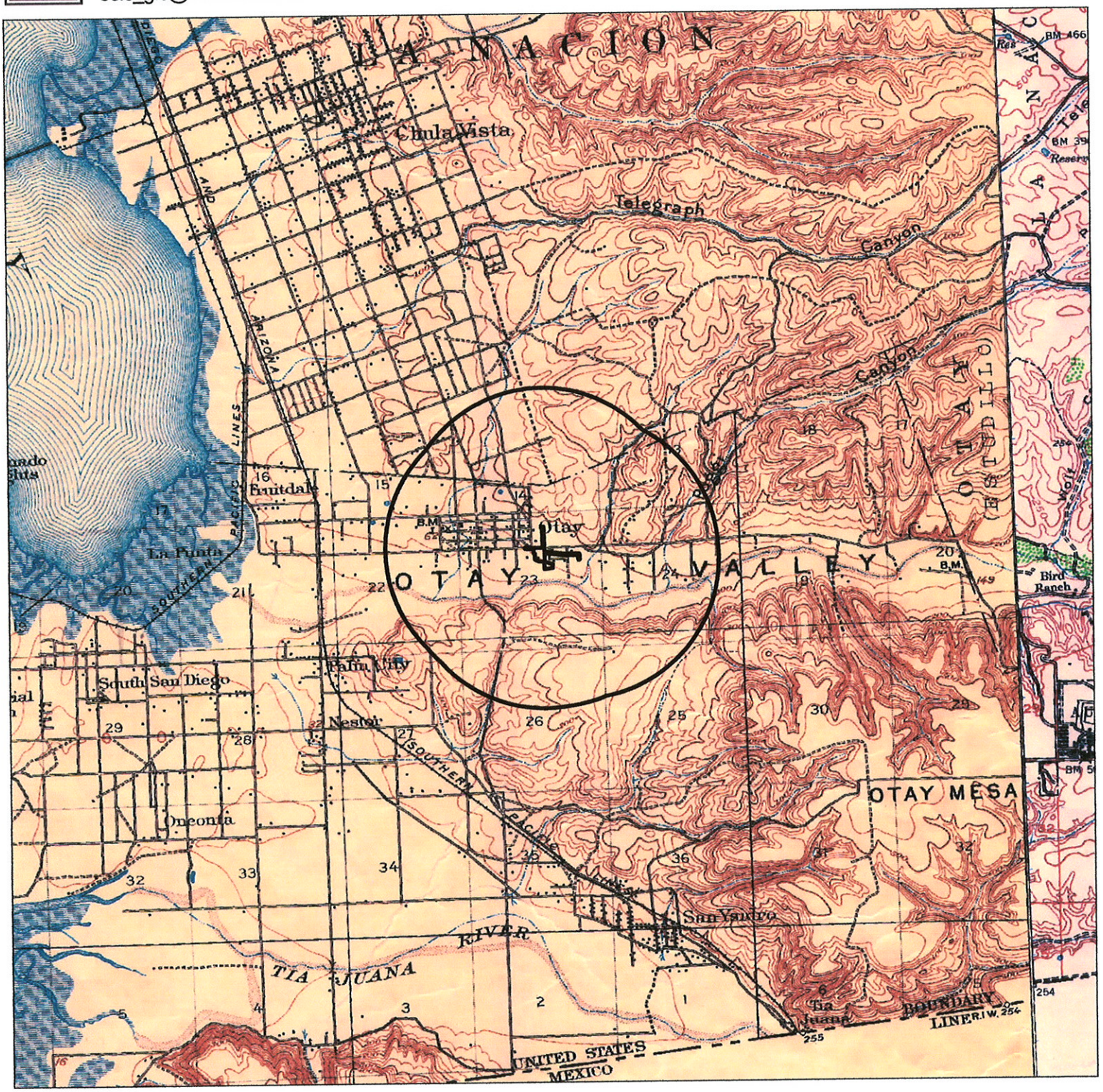

San Diego 1930

1:62,500

0 1 Miles

USGS 15 Minute Series Topographic Map
San Diego Quadrangle

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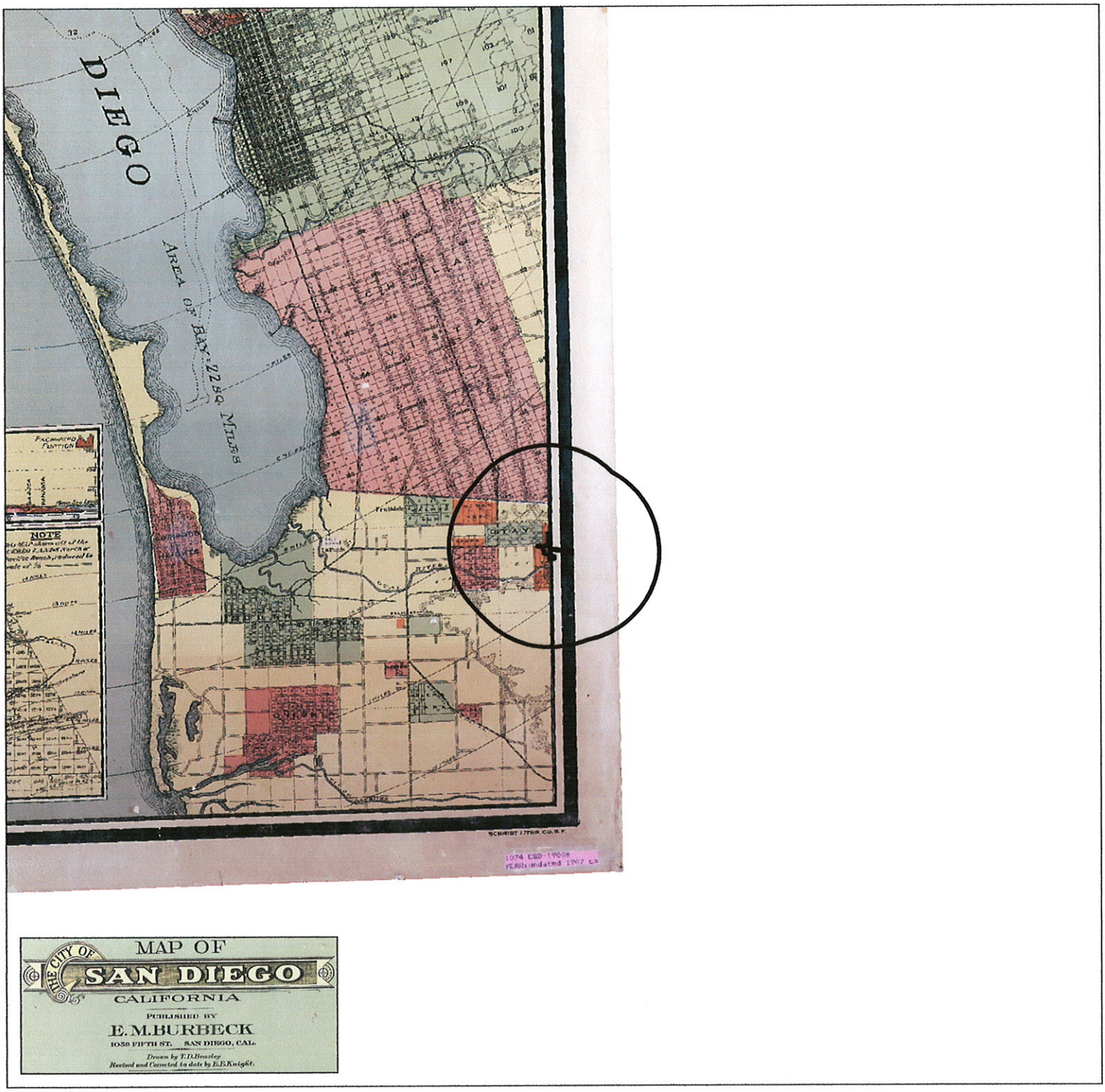

San Diego ca. 1907

1:100,000

0 1 Miles

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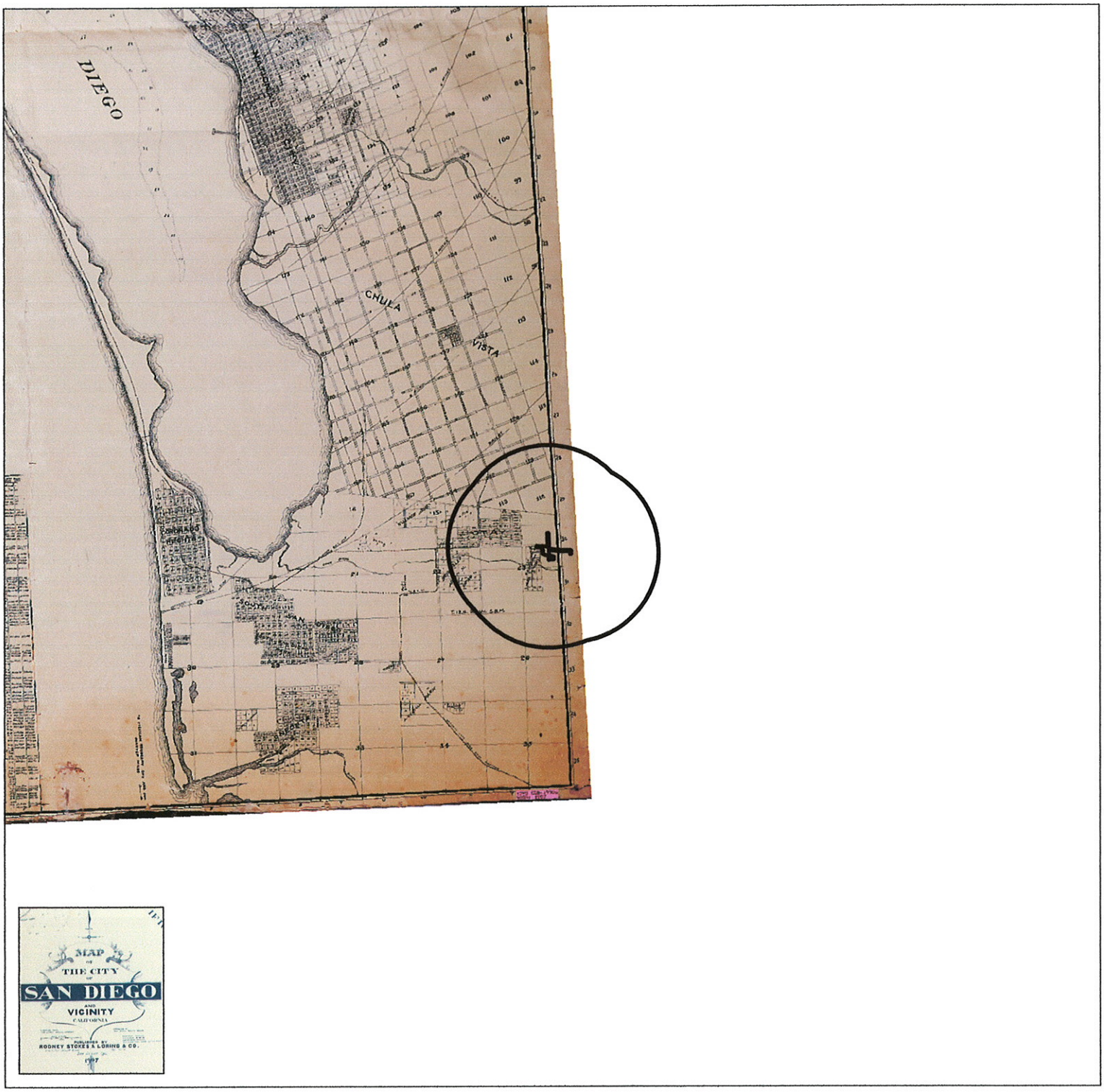

San Diego ca. 1907

1:100,000

0 1 Miles

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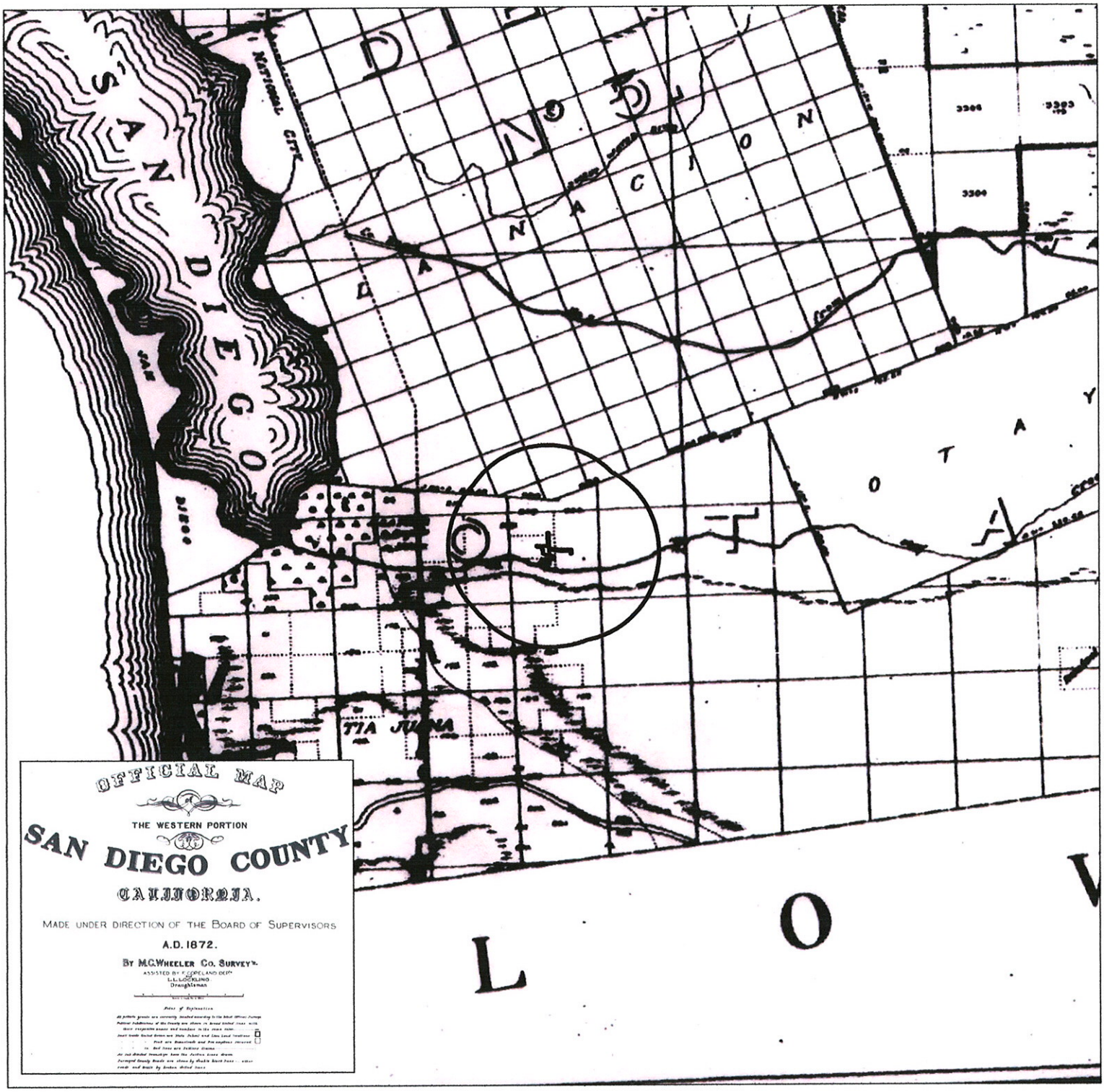

San Diego County: 1872

1:100,000

0 1 Miles

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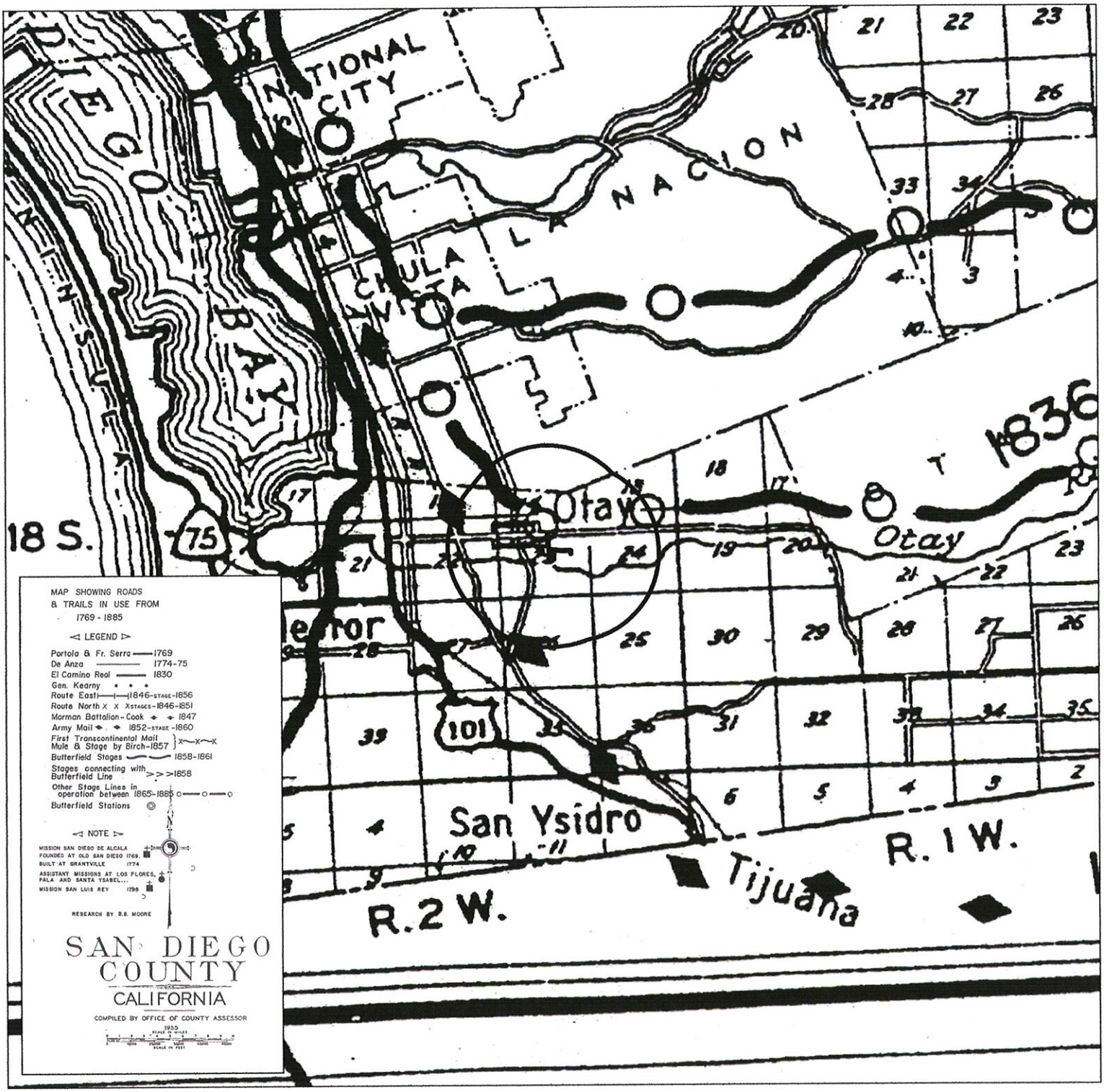

Historic Roads and Trails: 1769-1885

1:100,000

0 1 Miles

N

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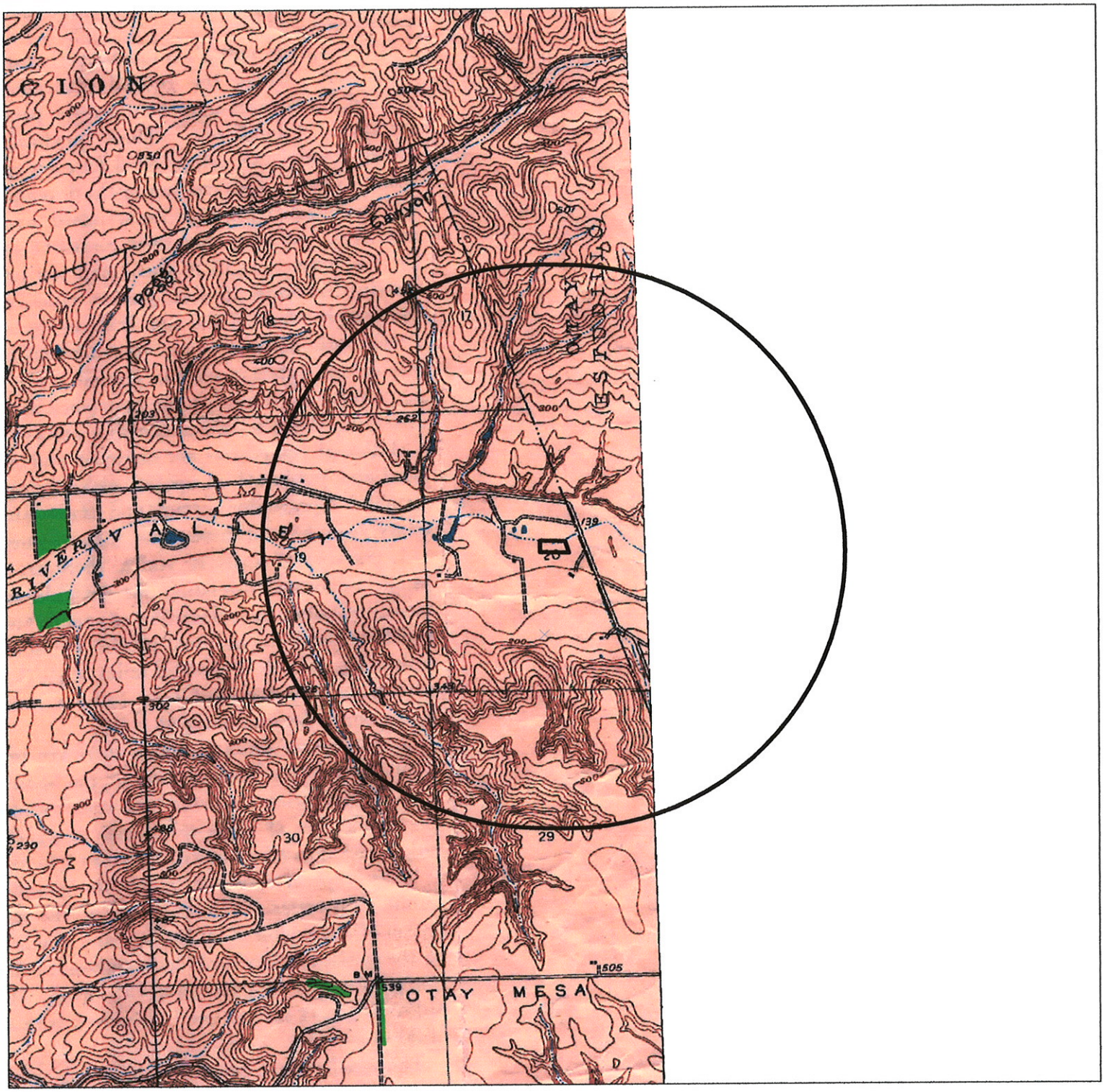

San Ysidro 1943

1:31,680

0 1 Miles

USGS 7.5 Minute Series Topographic Map
San Ysidro Quadrangle

N

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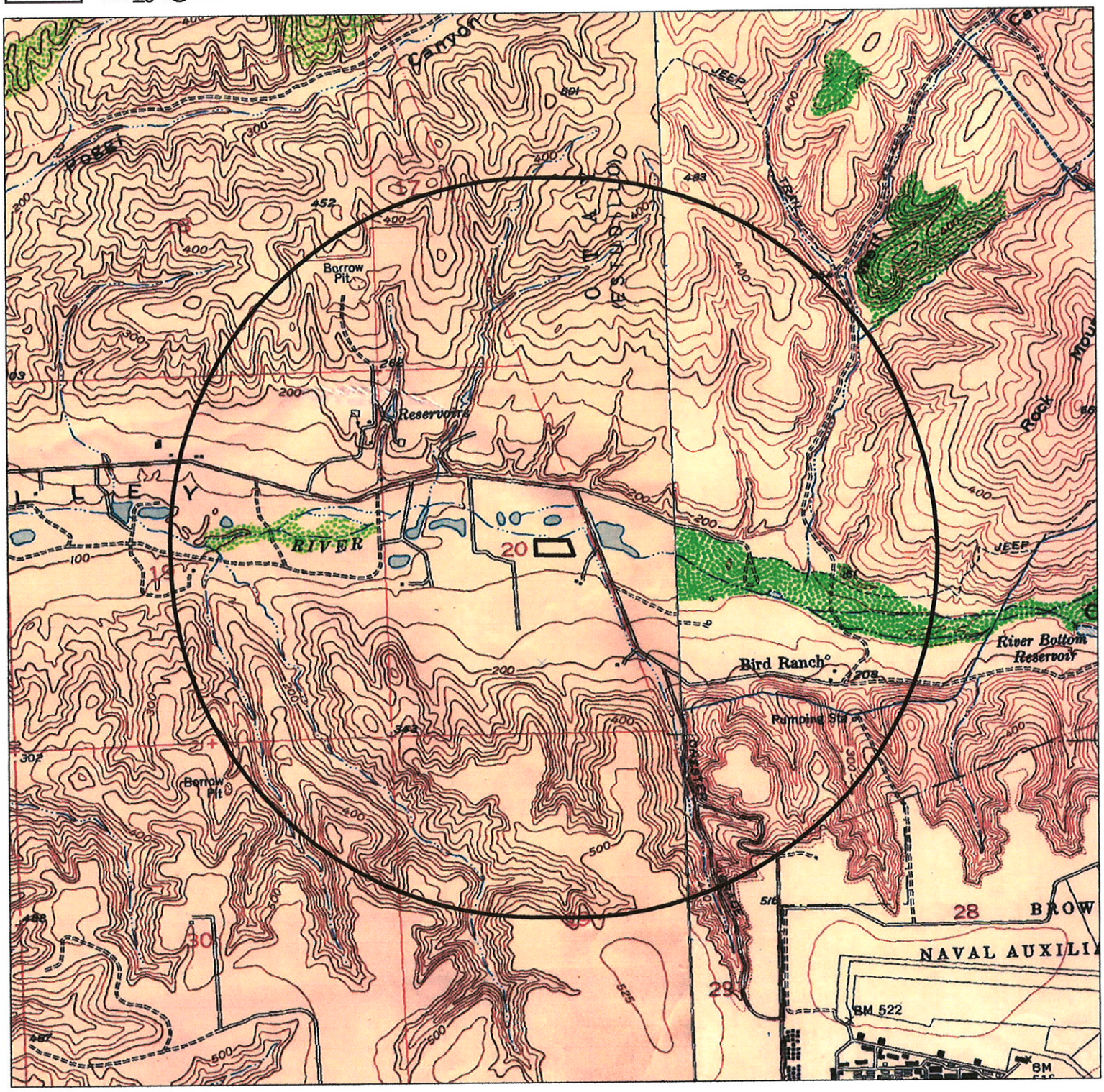

Imperial Beach 1953, culture and drainage revised 1950
Otay Mesa 1955

1:24,000

0 1 Miles

USGS 7.5 Minute Series Topographic Map
Imperial Beach and Otay Mesa Quadrangles

N

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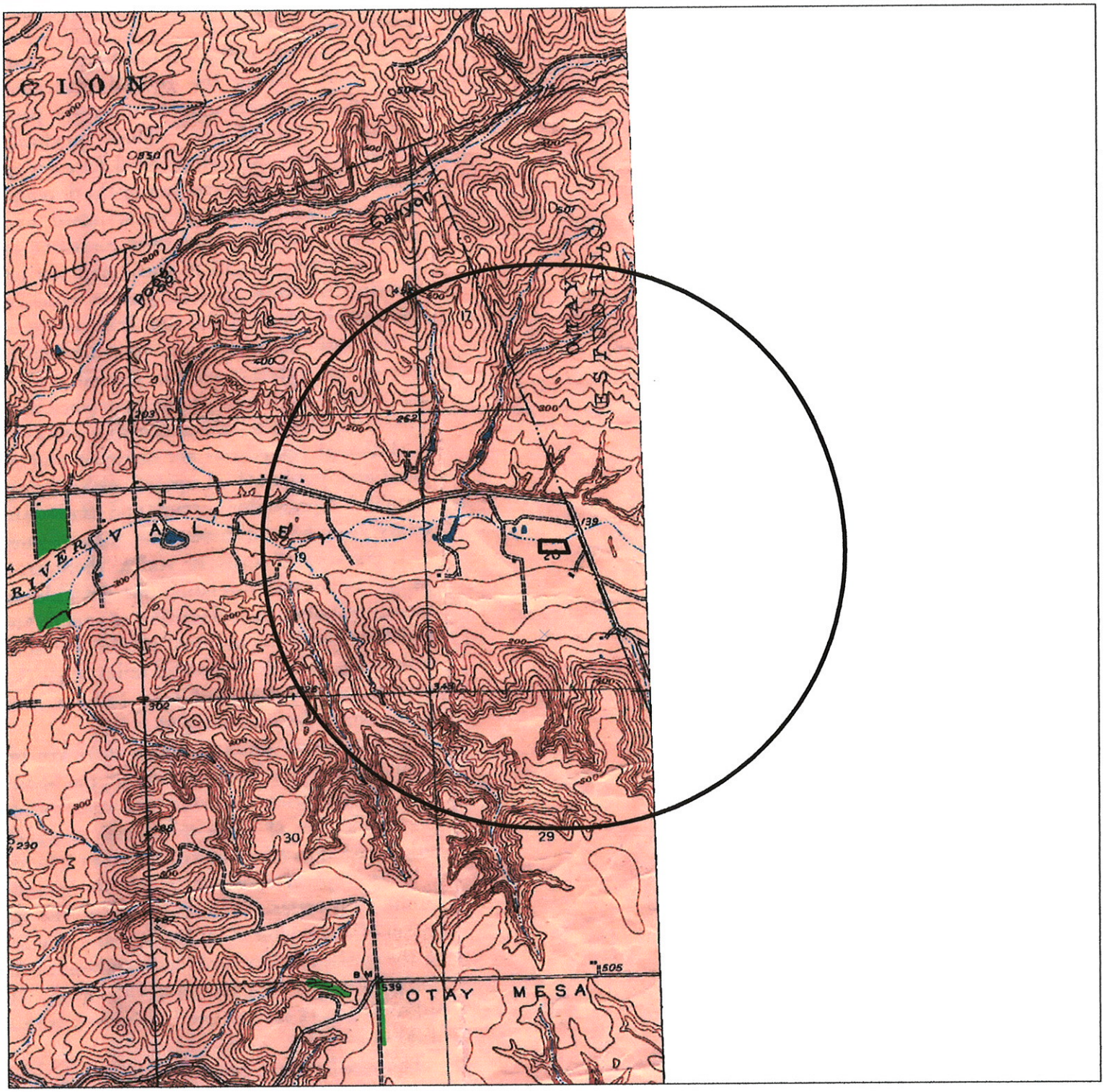

San Ysidro 1943

1:31,680

0 1 Miles

USGS 7.5 Minute Series Topographic Map
San Ysidro Quadrangle

N

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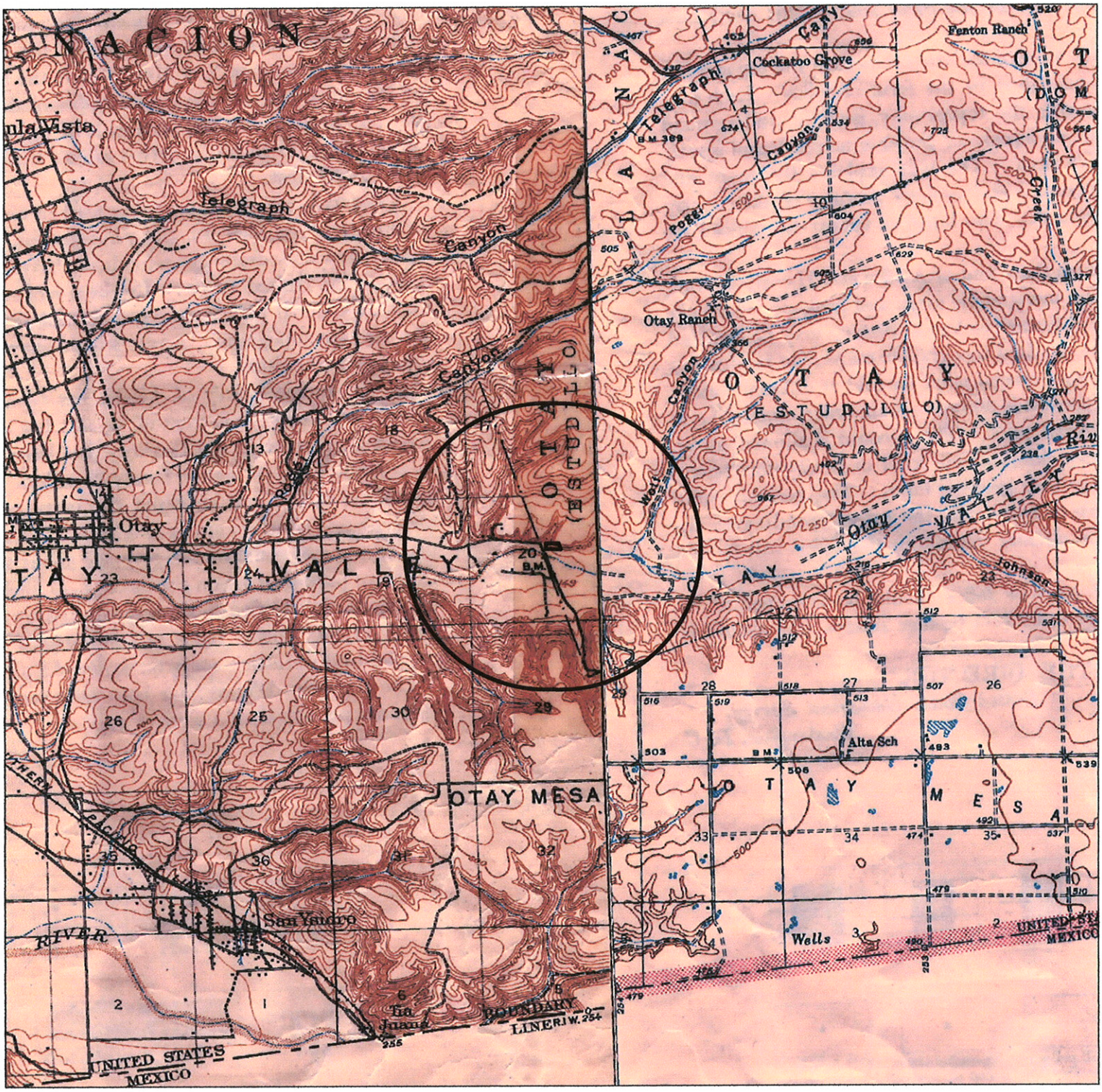

San Diego 1904, culture revised 1930, reprinted 1941
Jamul 1943

1:62,500

0 1 Miles

USGS 15 Minute Series Topographic Map
San Diego and Jamul Quadrangles

N

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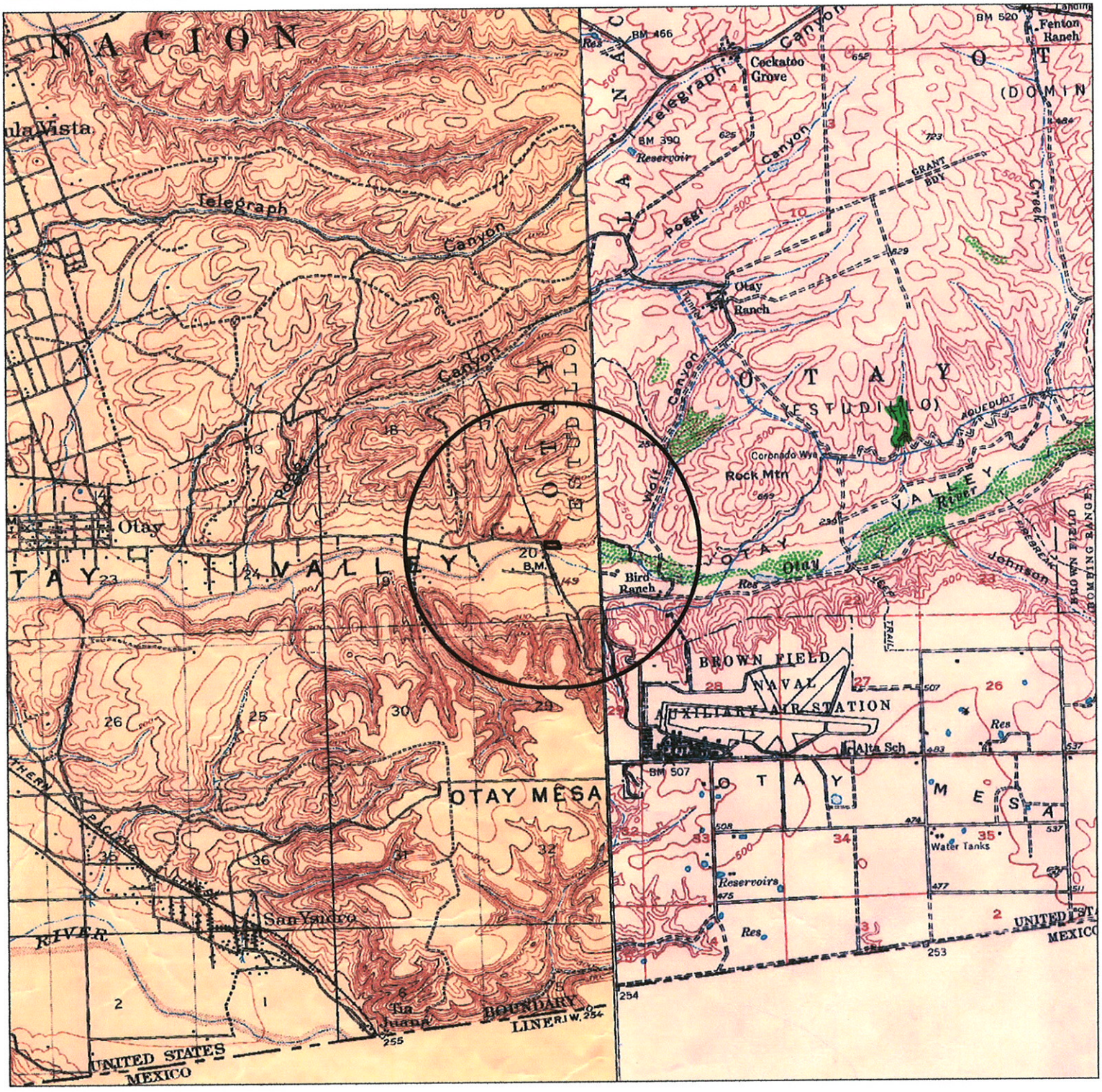

San Diego 1930
Jamul 1955, culture revised 1953

1:62,500

0 1 Miles

USGS 15 Minute Series Topographic Map
San Diego and Jamul Quadrangles

N

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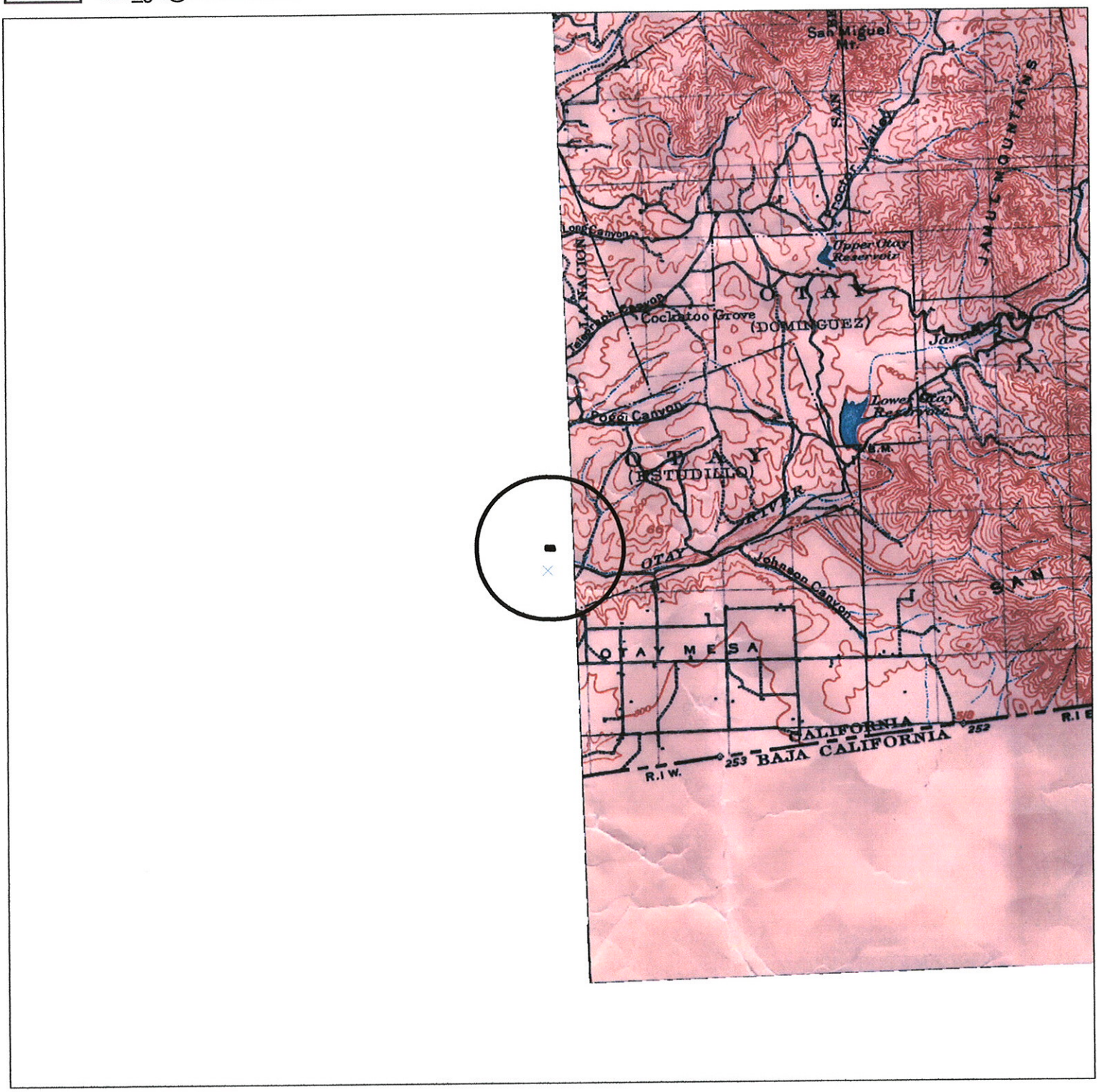

Cuyamaca 1903, reprinted 1942

1:125,000

0 1 Miles

USGS 30 Minute Series Topographic Map
Cuyamaca Quadrangle

N

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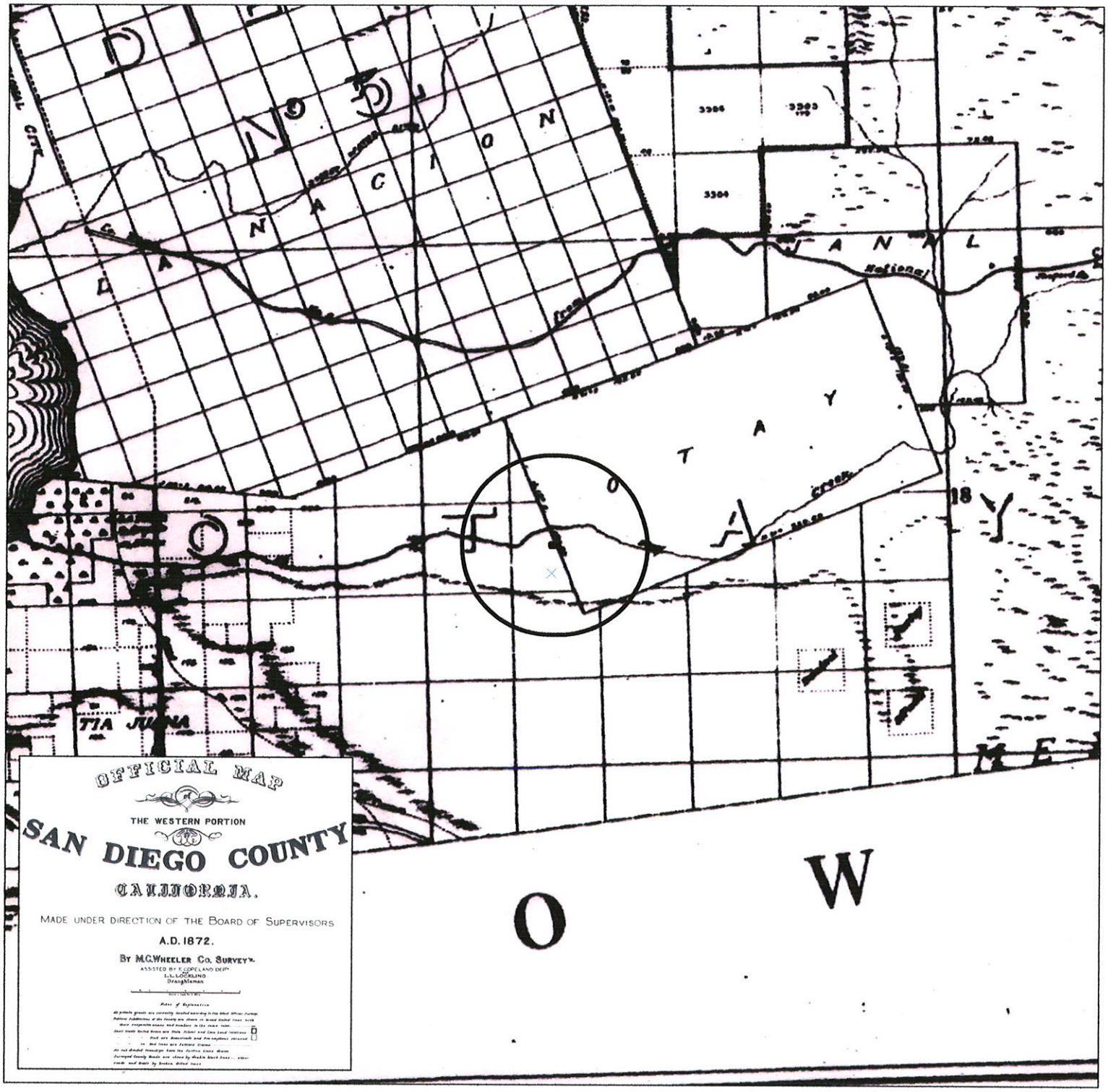

San Diego County: 1872

1:100,000

0 1 Miles

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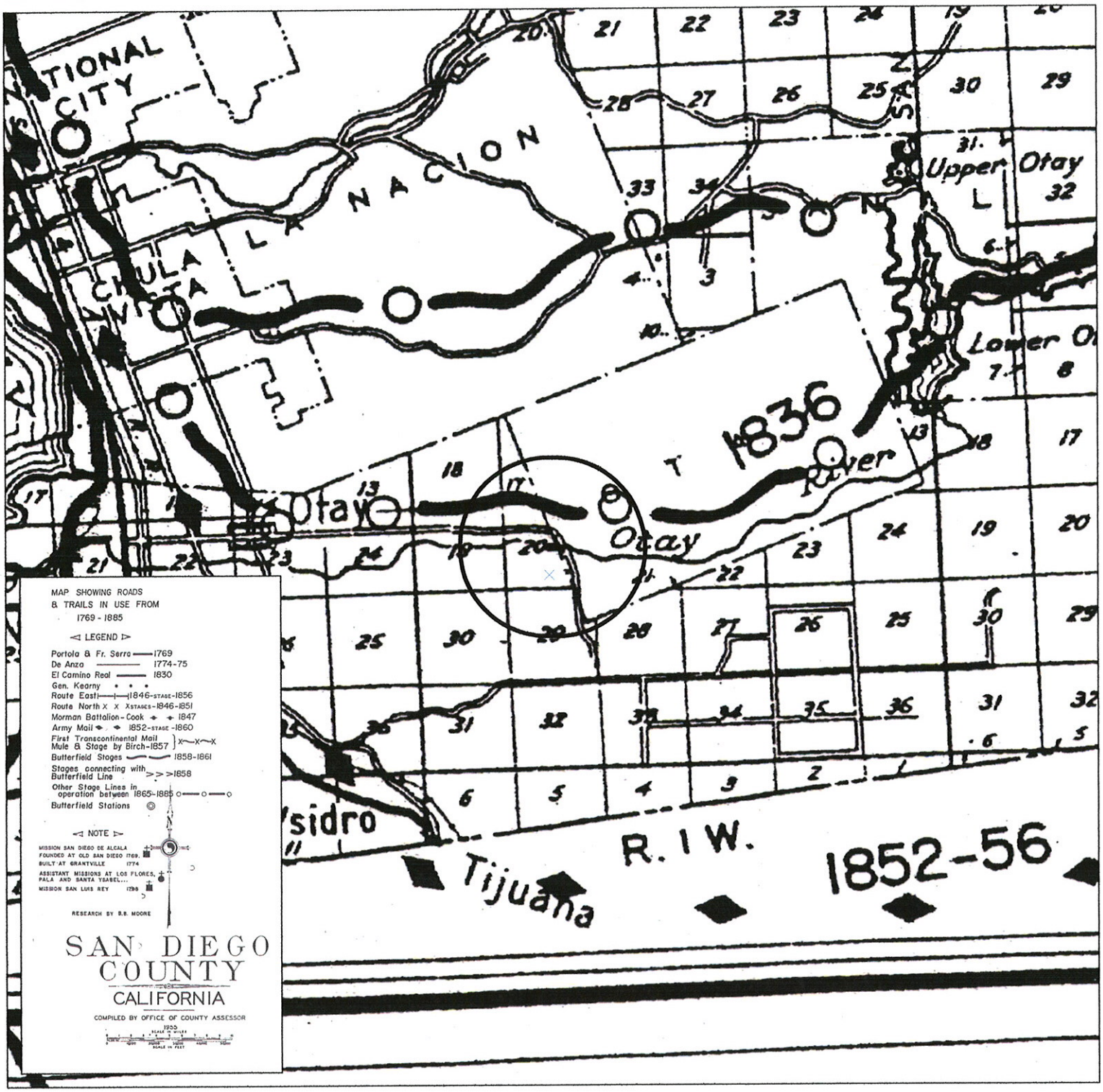

Historic Roads and Trails: 1769-1885

1:100,000

0 1 Miles

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Hazardous Materials

Workshop Question 1

Hazardous Materials (WSQ-1)

Offsite Consequence Analysis

WSQ-1 Please provide a modeling analysis of the off-site consequences of a catastrophic release of ammonia (a) from the CVEUP's on-site ammonia storage tank, and (b) during the ammonia tank loading.

Response: An analysis of a tank failure and subsequent release of aqueous ammonia was prepared using the SLAB numerical dispersion model. The analysis assumed the complete failure of the storage tank, the immediate release of the contents of the tank and the formation of an evaporating pool of aqueous ammonia within the secondary containment structure.

An analysis was also performed for the alternative release scenario, which assumes a break in the aqueous ammonia loading line resulting in a spill volume equal to 30 seconds of flow at 100 gpm plus the capacity of the line. This quantity was determined assuming a line measuring 15 feet in length with a diameter of 2 inches.

The results of the off-site consequence analysis for the worst-case release scenario of ammonia at CVEUP indicate that the concentrations above the most stringent benchmark criteria (CEC's significance value of 75 ppm) would not extend off the project site. The results of the alternative release scenario indicate that the benchmark of 75 ppm, set forth by the CEC, would extend over the property boundary to the east, and slightly to the south and west. The area potentially impacted by ammonia above this benchmark contains no permanent receptors and has a low use and accessibility by the public. Therefore, the risk posed to the public would be less than significant.

Numerous conservative assumptions have been made at each step in this analysis. The conservative nature of these assumptions has resulted in a significant overestimation of the probability of an ammonia release at the CVEUP site, and the predicted distances to toxic endpoints do not pose a threat to the public. Therefore, it is concluded that risk from exposure to aqueous ammonia due to CVEUP is less than significant.

The complete off-site consequence analysis is provided as Attachment WSQ1-1.

Attachment WSQ-1

Off-site Consequence Analysis

TECHNICAL MEMORANDUM CH2MHILL

Off-Site Consequence Analysis
Chula Vista Energy Upgrade Project

PREPARED FOR: Harry Scarborough, Vice-President, MMC Energy, Inc.

PREPARED BY: Ben Beattie/CH2M HILL
John J. Putrich/CH2M HILL

DATE: December 6, 2007

The Chula Vista Energy Upgrade Project (CVEUP) will be a nominal net generating capacity of 100 megawatts (MW) baseload power plant consisting of two GE Energy LM6000 combustion turbine units and associated equipment. This project will replace the existing 44.5 MW simple cycle peaking power plant currently onsite. The project will be sited within the boundaries of MMC's Chula Vista Power Plant property. The existing plant is a seven year old natural gas-fired plant using Pratt & Whitney Twinpac™ turbine-generators. The change in combustion turbine units will improve efficiency and provide additional peak electric generation capacity for the City of Chula Vista and San Diego region.
The project will consist of two GE LM6000 combustion turbine generators with the following ancillary equipment:

- Selective catalytic reduction (SCR) system to control NOx air emissions and carbon monoxide (CO) catalyst to control carbon monoxide air emissions (one SCR/CO catalyst per exhaust train)
- Three enclosed gas compressors
- Trailer mounted demineralized water treatment system
- Connection to SDG&E electrical transmission system on the project site. The existing plant connects with to San Diego Gas and Electric's (SDG&E's) electrical transmission system at the Otay Substation, which is approximately 900 feet north of the project site. This connection consists of a 69 kV double-circuit transmission system mounted on wooden poles that runs north from the project parcel along its eastern boundary.
- A connection to SDG&E's existing 8-inch high-pressure natural gas pipeline that is located on the project site and currently serves the existing plant
- A 4-inch-diameter connection to the existing project's water supply system that connects to the Sweetwater Authority water supply system.

The SCR control system proposed for CVEUP uses ammonia as the reduction reagent. Aqueous ammonia (ammonium hydroxide at 19 percent nominal concentration by weight) will be vaporized and injected into the flue gas stream from the turbines, then passed through a catalyst bed. In the presence of the catalyst, the ammonia (NH_3) and NO_X react to form nitrogen (N_2) and water vapor (H_2O) thereby reducing the NOx emissions.

The CVEUP facility will store 19-percent aqueous ammonia solution in a stationary aboveground storage tank capable of storing 12,000 gallons. The tank will be surrounded by a 738 ft^2 secondary containment structure capable of holding the full contents of the tanks, plus rainwater. The bottom of secondary containment structure has been lined with multiple layers of polymer balls which, in the event of a spill, will float on the top of the aqueous ammonia reducing the exposed surface area by 90 percent. The secondary structure is located 103 feet (31 meters) from the nearest point on the property boundary.

Aqueous ammonia will be delivered to the plant by truck transport. The ammonia delivery truck unloading station will be sloped towards a containment structure capable of holding spills that may occur during the unloading of aqueous ammonia. The unloading area is located 123 feet (37.5 meters) from the nearest point on the property boundary.

The ammonia tank will be equipped with a pressure relief valve set at 50 pounds per square inch gage (psig), a vapor equalization system, and a vacuum breaker system. The storage tank will be maintained at ambient temperature and atmospheric pressure.

The California Energy Commission requested an offsite consequence analysis (OCA) be conducted for the accidental release of aqueous ammonia at CVEUP. The analysis consists of two accidental release scenarios. The first scenario involves the failure and complete discharge of the contents of the aqueous ammonia storage tank into the secondary containment structure, and the second or alternative scenario involves a release of aqueous ammonia during the truck unloading process, forming an evaporating pool near the unloading area.

Analysis

An analysis of a tank failure and subsequent release of aqueous ammonia was prepared using a numerical dispersion model. The analysis assumed the complete failure of the storage tank, the immediate release of the contents of the tank and the formation of an evaporating pool of aqueous ammonia within the secondary containment structure. The analysis for the alternative release scenario assumes a break in the aqueous ammonia loading line resulting in a spill volume equal to 30 seconds of flow at 100 gpm plus the capacity of the line. This quantity was determined assuming a line measuring 15 feet in length with a diameter of 2 inches. Evaporative emissions of ammonia would be subsequently released into the atmosphere. Meteorological conditions at the time of the release would control the evaporation rate, dispersion and transport of ammonia released to the atmosphere. For purposes of this analysis, the following meteorological data were used:

- U.S. Environmental Protection Agency (USEPA) default (worst case) meteorological data, supplemented by daily temperature data as defined by 19 CCR 2750.2.
- USEPA default meteorological data for the alternative case release, representing typical site meteorological conditions.

The maximum temperature recorded near the CVEUP in the past 3 years was 108°F or 300.9 Kelvin, measured at the Western Regional Climate Center Station in Chula Vista, California (http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1758). Maximum temperatures combined with low wind speeds and stable atmospheric conditions would be expected to

result in the highest ammonia concentrations at the furthest distance downwind of the release site. Modeled meteorological conditions for the alternative release scenario represent the most likely conditions at the site.

Table 1 displays the meteorological data values used in the modeling analysis.

TABLE 1
Meteorological Input Parameters

Parameter	Worst Case Meteorological Data	Alternative Release Scenario Data
Wind Speed meters/second	1.5	2.86
Stability Class	F	C
Relative Humidity, Percent	50	50
Ambient Temperature, Kelvin (°F)	315.3 (108)	293.9 (69.4)

Model runs were conducted based on an evaporating pool release using the meteorological data presented in Table 1. Modeling was conducted using the SLAB numerical dispersion model. A complete description of the SLAB model is available in *User's Manual for SLAB: An Atmospheric Dispersion Model for Denser-Than-Air Releases, D. E. Ermak, Lawrence Livermore National Laboratory, June 1990*. The SLAB user manual contains a substance database, which includes chemical-specific data for ammonia. These data were used in modeling run without exception or modification.

Emissions of aqueous ammonia were calculated pursuant to the guidance given in *RMP Offsite Consequence Analysis Guidance, EPA, April 1999* and using the emission calculation tool for evaporating solutions provided in the Area locations of Hazardous Atmospheres (ALOHA) model provided by the EPA (http://www.epa.gov/ceppo/cameo/index.htm).

Release rates for ammonia vapor from an evaporating 19-percent solution of aqueous ammonia were calculated assuming mass transfer of ammonia across the liquid surface occurs according to principles of heat transfer by natural convection. The ammonia release rate was calculated using ALOHA, meteorological data displayed in Table 1 and the dimensions of the secondary containment area. For the worst case condition, it was assumed that a complete failure of the storage tank occurred which resulted in an evaporating pool of aqueous ammonia within the secondary containment area. For the alternative case condition, it was assumed that the failure of the loading line would result in an evaporating pool with a depth of 1-cm.

During the worst case scenario, an initial ammonia evaporation rate was calculated and assumed to occur for one hour after the initial release, while the evaporation was assumed to occur for only 10 minutes in the alternative scenario. For concentrated solutions, the initial evaporation rate is substantially higher than the rate averaged over time periods of a few minutes or more since the concentration of the solution immediately begins to decrease as evaporation begins. For the release scenarios, the tank or hose failure would cause the aqueous ammonia to leak into the containment area and the release of ammonia gas would result from evaporation. Since the volume of aqueous ammonia that could potentially spill from a truck unloading scenario would not be enough to spread across the entire

containment area at a sufficient depth to create an evaporating pool that could be sustained over an extended period of time, a conservative emission estimate was calculated assuming the evaporating pool was 1 cm in depth for 10 minutes. Actual conditions would cause the aqueous ammonia to spread laterally and maximum evaporation rates would occur for a very limited period of time.

Although the edge of the tank containment area is raised above ground level, the release heights used in the model were set at 0 m above ground level (AGL) to maintain the conservative nature of the analysis. Downwind concentrations of ammonia were calculated at heights of 0 and 1.6 meters above ground level. Reported distances to specified toxic endpoints are the maximum distances for concentrations at 0 and 1.6 meters above ground level. The California Office of Environmental Health Hazard Assessment (OEHHA) has designated 1.6 meters as the breathing zone height for individuals.

Toxic Effects of Ammonia

With respect to the assessment of potential impacts associated with an accidental release of ammonia, four offsite "bench mark" exposure levels were evaluated, as follows: (1) the lowest concentration posing a risk of lethality, 2,000 ppm; (2) the Occupational Safety and Health Administration's (OSHA) Immediately Dangerous to Life and Health (IDLH) level of 300 ppm; (3) the Emergency Response Planning Guideline (ERPG) level of 150 ppm, which is the American Industrial Hygiene Association's (AIHA) updated ERPG-2 for ammonia; and (4) the level considered by the California Energy Commission (CEC) staff to be without serious adverse effects on the public for a one-time exposure of 75 ppm (*Preliminary Staff Assessment-Otay Mesa Generating Project, 99-AFC-5, May 2000)*.

The odor threshold of ammonia is approximately 5 ppm, and minor irritation of the nose and throat will occur at 30 to 50 ppm. Concentrations greater than 140 ppm will cause detectable effects on lung function even for short-term exposures (0.5 to 2 hours). At higher concentrations of 700 to 1,700 ppm, ammonia gas will cause severe effects; death occurs at concentrations of 2,500 to 7,000 ppm.

The ERPG-2 value is based on a one-hour exposure or averaging time; therefore, the modeled distance to ERPG-2 concentrations are presented in terms of one-hour (or 60 minute) averaging time. The ERPG-2 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action. OSHA's IDLH for ammonia is based on a 30-minute exposure or averaging time; therefore, the IDLH modeling concentrations at all offsite receptors will be given in terms of a 30-minute averaging time.

Modeling Results

Table 2 shows the modeled distance to the four benchmark criteria concentrations: lowest concentration posing a risk of lethality, (2,000 ppm), OSHA's IDLH (300 ppm), AIHA's ERPG-2 (150 ppm), and the CEC significance value (75 ppm).

TABLE 2
Distance to EPA/CalARP and CEC Toxic Endpoints

Scenario	Distance in Meters to 2,000 ppm	Distance in Meters to IDHL (300 ppm)	Distance in Meters to AIHA's ERPG-2 (150 ppm)	Distance in Meters to CEC Significance Value (75 ppm)
Worst Case, 0 m AGL	7.39	11.40	12.98	14.72
Worst Case, 1.6 m AGL	13.12	20.85	23.49	25.86
Alternative Case, 0 m AGL	NA [a]	16.66	28.52	45.38
Alternative Case, 1.6 m AGL	NA [a]	15.57	27.58	44.51

The model input file and the output files are available upon request.
[a] Downwind ammonia concentrations did not reach the 2000 ppm benchmark

The results of the off-site consequence analysis for the worst case release scenario of ammonia at CVEUP indicate that the concentrations above the most stringent benchmark criteria (CEC's significance value of 75 ppm) would not extend off the project site. Results of the alternative case indicate that only the CEC's significance criteria of 75 ppm would extend off the project site (see Figure 1).

Assessment of the Methodology Used

Numerous conservative assumptions were used in the above analysis of the release scenarios. These include the following:

- Modeling & Meteorology
  - Worst case of a constant mass flow, at the highest possible initial evaporation rate for the modeled wind speed and temperature was used, whereas in reality the evaporation rate would decrease with time as the concentration in the solution decreases.
  - In the case of the tank rupture, worst case stability class was used which almost exclusively occurs during nighttime hours, but the maximum ambient temperature of 108°F was used, which would occur during daylight hours.
  - Again worst-case meteorology corresponds to nighttime hours, whereas the worst-case release of a tank failure would most likely occur during daytime activities at the power plant. At night, activity at a power plant is typically minimal.
  - In the alternative release scenario, a sustained pool of aqueous ammonia of at least 1 cm in depth was assumed to occur for at least 10 minutes.

Risk Probability

Accidental releases of aqueous ammonia in industrial use situations are rare. Statistics compiled on the normalized accident rates for RMP chemicals for the years 1994-1999 from *Chemical Accident Risks in U.S. Industry-A Preliminary Analysis of Accident Risk Data from U.S. Hazardous Chemical Facilities, J.C. Belke, Sept 2000*, indicates that ammonia (all forms) averages 0.017 accidental releases per process per year, and 0.018 accidental releases per million pounds stored per year. Data derived from *The Center for Chemical Process Safety, 1989*, indicates the accidental release scenarios and probabilities for ammonia in general shown in Table 3.

TABLE 3
General Accidental Release Scenarios and Probabilities for Ammonia

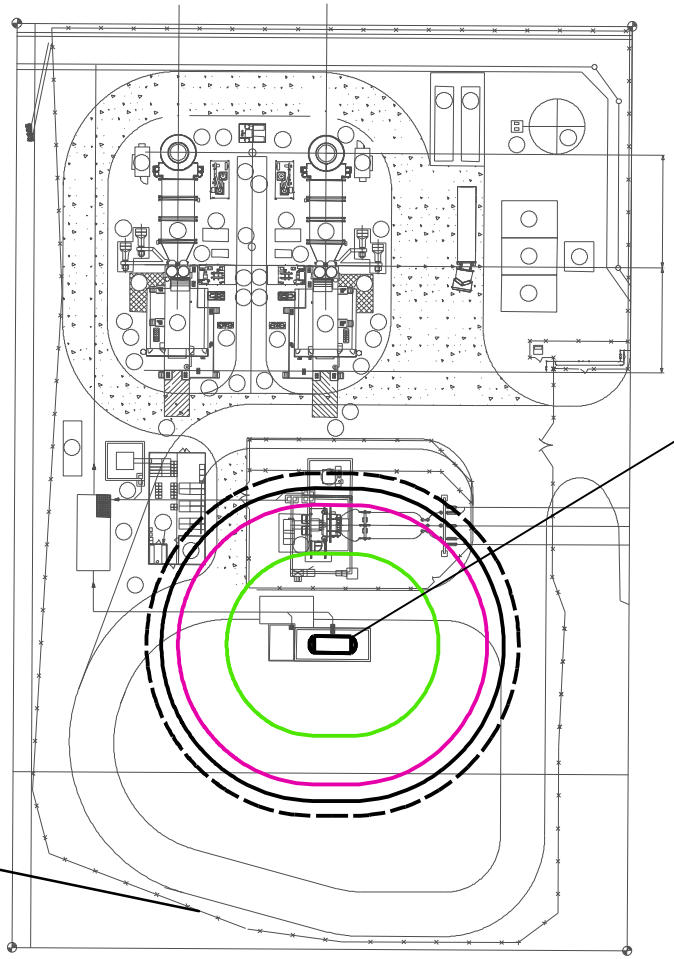
Accident Scenario	Failure Probability
Onsite Truck Release	0.0000022
Loading Line Failure	0.005
Storage Tank Failure	0. 000095
Process Line Failure	0.00053
Evaporator Failure	0.00015

Conclusions

Several factors need to be considered when determining the potential risk from the use and storage of hazardous materials. These factors include the probability of equipment failure, population densities near the project site, meteorological conditions, and the process design. Considering the results of the above analysis, and accounting for the probabilities of a tank failure resulting in the modeled ammonia concentrations at the conditions modeled, the risk posed to the local community from the storage of aqueous ammonia at CVEUP is insignificant.

The results of the alternative release scenario indicate that the benchmark of 75 ppm, set forth by the CEC, would extend over the property boundary to the east, and slightly to the south and west. The area potentially impacted by ammonia above this benchmark contains no permanent receptors and has a low use and accessibility by the public. Therefore, the risk posed to the public would be less than significant. The results of the catastrophic scenario analysis indicate that the probability of a complete storage tank failure in combination with the conservatively modeled meteorological conditions would pose an insignificant threat since ammonia concentrations above the CEC threshold of 75 ppm at both ground level and breathing height would not extend offsite.

As described above, numerous conservative assumptions have been made at each step in this analysis. The conservative nature of these assumptions has resulted in a significant overestimation of the probability of an ammonia release at the CVEUP site, and the predicted distances to toxic endpoints do not pose a threat to the public. Therefore, it is concluded that risk from exposure to aqueous ammonia due to CVEUP is less than significant.



LEGEND

Site Features

Ammonia Tank

19% Ammonia, 1 hour, 12,00 Gallon Storage Tank

75 ppm (25.86119 meters)

150 ppm (23.48784 meters)

300 ppm (20.85185 meters)

2000 ppm (13.12535)

Height on all measurements = 1.60 meters

0 15 30

Meters

1:1,200

N

FIGURE 1
AMMONIA CONCENTRATIONS
CATASTROPHIC RELEASE SCENARIO
CHULA VISTA ENERGY UPGRADE PROJECT
CHULA VISTA, CALIFORINA

CH2MHILL

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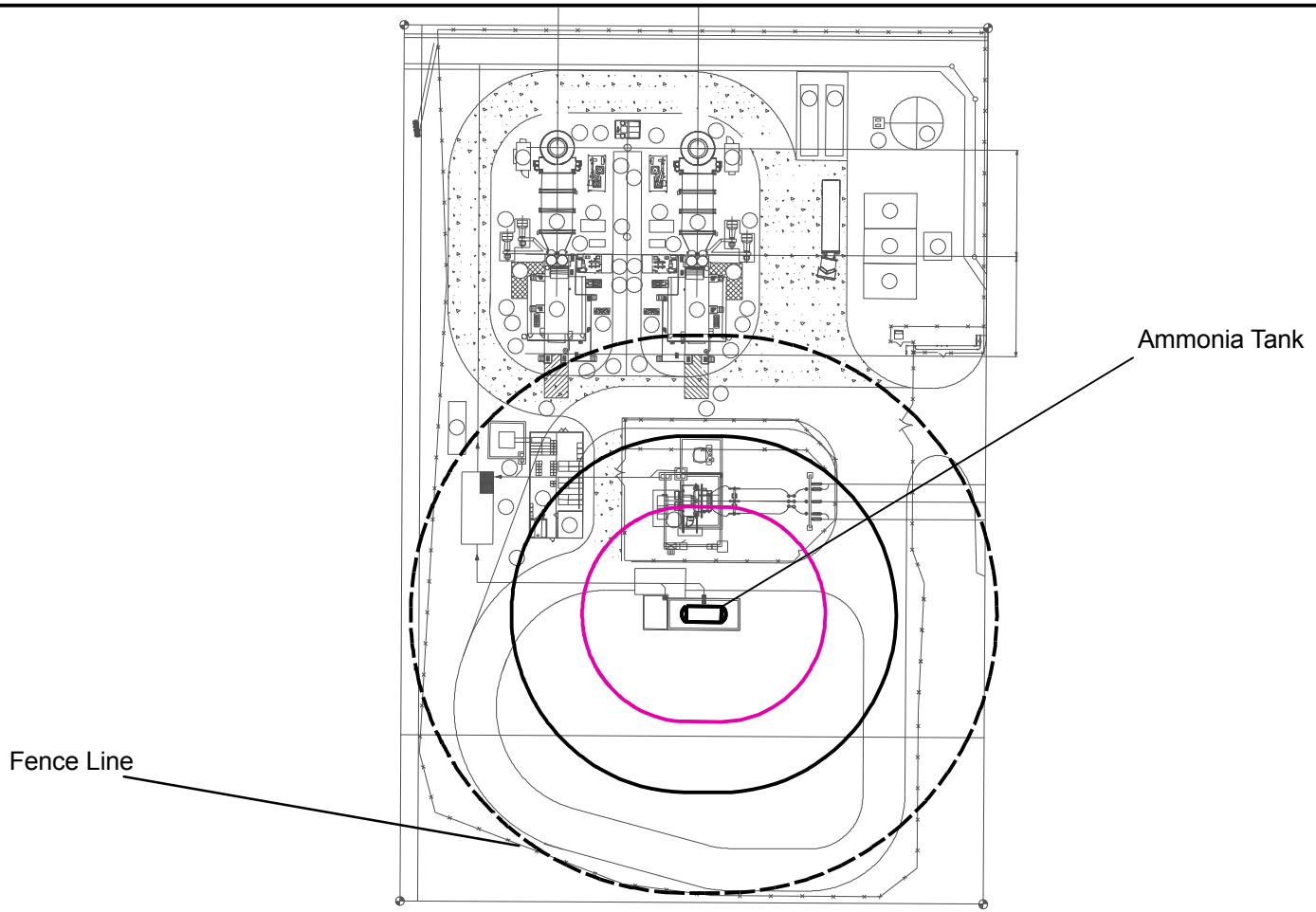

LEGEND

Site Features

Ammonia Tank

19% Ammonia, 30 mins, Alternative Release

75 ppm (45.38 meters)

150 ppm (28.52 meters)

300 ppm (16.66 meters)

2000 ppm NA

Height on all measurements = 1.60 meters

N

0 15 30

Meters

1:1,200

FIGURE 2
AMMONIA CONCENTRATIONS
ALTERNATIVE RELEASE SCENARIO
CHULA VISTA ENERGY UPGRADE PROJECT
CHULA VISTA, CALIFORINA

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Soil and Water Resources

Data Responses 38-41

Soil and Water Resources (38-41)

Drainage and Retention Basins

38. a. Please explain whether the CVEUP intends to use a retention basin.
b. Please clarify how drainage will be handled at the CVEUP site.

Response:

a. The CVEUP will use the existing retention basin that was constructed for the existing peaking plant as a holding basin for runoff from plant process areas.

b. Water from plant process areas will be routed through the retention basin and oil-water separator before being discharged. General site runoff will leave the site through the discharge points at the southwest and southeast corners of the property.

Alternative Water Sources

39. Please provide contact information for the agencies and individuals contacted regarding alternative water sources.

Response: MMC Energy has elected to use potable water from Sweetwater Authority for the project for two principal reasons: (1) reclaimed water is not available from the Sweetwater Authority or any other source that is near enough to the project that constructing a pipeline to serve the project would be economical. It would not be feasible or economical to construct a tertiary treatment facility either on the site or at the nearest wastewater treatment facility. (2) As a simple-cycle power plant, the project's water use will be relatively modest, compared with a large combined-cycle project. In addition, as a peaking power plant, the project will operate only a small percentage of the time, and water use will therefore be modest, compared with a baseload facility. As described in Section 2.0 of the AFC, although the CVEUP would be permitted for a maximum of 28 million gallons per year of water for plant processes, assuming 4,000 hours per year of operation, it is anticipated that the project would use about 4.2 million gallons per year under a more realistic operating scenario of 600 hours per year.

A will-serve letter from the Sweetwater Authority indicating that this amount will be available to the project is included in AFC Appendix 2A. The will-serve letter indicates that there are no reclaimed water services in the Sweetwater Authority Service Area. The nearest facility that provides reclaimed water is the South Bay Reclamation Plant of the Metropolitan Wastewater Department (MWD) located on Dairy Mart Road in San Diego, which is approximately 3.5 miles from the CVEUP site. According to Mr. Ramil Arroyo of the South Bay Reclamation Plant (personal communication, 11/30/07, telephone number 619-583-4259) the South Bay plant's reclaimed water infrastructure currently stops about 1.9 miles from the CVEUP. The MWD currently does not have plans or resources to expand its reclaimed pipeline network further.

Analysis of Air Chillers at Facility

40. Please provide economic and environmental analysis for the proposed use of air chillers instead of water.

Response: MMC Energy filed a formal objection to this Data Request at with the CEC Docket's office on December 3, 2007.

Alternative 2 Laydown Discussion

41. Please provide a thorough description of soils, erosion potential, and flooding potential for the Alternative 2 laydown area.

Response: The Alternative 2 laydown area is located at 2000 Heritage Road in Chula Vista, approximately 3 miles east of the CVEUP site (see AFC Figure 2.1-7). This site would be used to store construction materials and equipment and would provide parking for construction workers who would then be bussed to the project site.

Soils—Soils at this laydown site consist of the Riverwash (Rm) soil type, as defined in *Soil Survey, San Diego Area, California* (National Resources Conservation Service [NRCS], 1973) and detailed below. This soil type is excessively drained. Actual soil conditions in the project area could differ from what is described in the generalized soil descriptions because of the potential for local grading and imported fill in heavily developed, urban areas. Urban development often entails significant mixing of local soils from grading and the import of construction fill soils beneath foundations and roadways. These imported soils would be suitable for compaction to support structures and roadways, and they are expected to consist of a mixture with a wide range of coarse textured particle sizes (from silt to gravel sizes). They would not be expected to contain unsuitable materials such as organic debris or expansive clays and therefore would drain well, greatly decreasing the potential for runoff. Characteristics of the Riverwash soils are as follows:

Formation:	Occurs in intermittent stream channels
Typical profile:	Sandy, gravelly or cobbly throughout, bedded in layers
Shrink-swell capacity:	None
Depth and drainage:	Deep (over 60 inches deep) and excessively-drained
Permeability:	Rapid
Runoff:	Medium to very high
Inherent fertility:	Very low
Capability class:	VIIIw-4, limited by frequent overflow and very coarse, textured material

Erosion Potential—Construction impacts on soil resources can include increased soil erosion and soil compaction. Soil erosion causes the loss of topsoil and can increase the sediment load in surface receiving waters downstream of the construction site. The magnitude, extent, and duration of construction-related impact depends on the erodibility of the soil; the proximity of the construction activity to the receiving water; and the construction methods, duration, and season.

Because the conditions that could lead to excessive soil erosion are not present at the site and laydown area, very little soil erosion is expected during the construction period. In

addition, BMPs will be implemented during construction in accordance with the storm water pollution prevention plan (SWPPP) required for all construction projects over 1 acre by the State Water Resources Control Board. The CEC also requires that project owners develop and implement a drainage, erosion, and sediment control plan (DESCP) to reduce the impact of runoff from the construction site and laydown area. Monitoring will involve inspections to ensure that the BMPs described in the SWPPP/DESCP are properly implemented and effective.

Temporary erosion control measures would be implemented before construction begins, at the site and at the laydown areas and would be evaluated and maintained during construction. These measures typically include revegetation, mulching, physical stabilization, dust suppression, berms, ditches, and sediment barriers. These measures would be removed from the site and laydown area after the completion of construction.

During construction of the project, dust erosion control measures would be implemented to minimize the wind-blown loss of soil from the site and laydown area. Water of a quality equal to or better than existing surface runoff would be sprayed on the soil in construction areas and laydown areas to control dust. Any soil stockpiles, including sediment barriers around the base of the stockpiles, would be stabilized and covered. Therefore, impacts from soil erosion are expected to be less than significant.

Despite the low potential for soil erosion in the CVEUP project area and laydown area, estimates of erosion by water and wind are provided in AFC Section 5.11.2.4. Additional detailed soil information and the finding of negligible soils impacts at the laydown area is found in AFC Section 5.11.

Flooding Potential—The Alternative 2 laydown area will be active only for the duration of construction activities. It currently exists as a staging/laydown area for other construction work and for truck storage. A portion of the laydown area is located in the 100-year flood zone (refer to AFC Figure 5.15-3). Because this area will be used temporarily for construction only, however, and because of the proposed BMPs that will be in place to prevent stormwater quality issues due to stormwater runoff, no potential impacts due to flooding are anticipated that cannot be mitigated by implementation of the SWPPP.

Transmission System Engineering

Data Responses 42-47

Transmission System Engineering (42-47)

Percent Loading Under Normal Conditions

42. *Table 2, Category A: N-0 Thermal Loading Constraints, on page 17 of the System Impact Study indicates that the Otay 69 kV – Otay 93 69 kV transmission line circuit #1 would be loaded at 143% of its capacity. The footnote of the table stated that the "% load column numbers are % loading above emergency ratings". Please provide the % loading under the normal condition.*

Response: The Applicant has requested an answer to this question from the authors of the System Impact Study at San Diego Gas and Electric Company and we will file a the response as soon as we receive it from that agency.

Reconductoring Information

43. *Page 17 of the System Impact Study and page 3-10 of the AFC both states that the Otay - Otay Lake Tap 69 kV transmission line and South Bay to Sweetwater 69 kV transmission lines will require reconductoring.*

    a. *Please provide detailed information on the required transmission line upgrade.*

    b. *Show the exact location of the reconductoring sections, conductor types, conductor ratings, and the required pole structures, size and number of poles required.*

Response: Although the System Impact Study indicates that the Otay-Otay Lake Tap and South Bay to Sweetwater lines may need reconductoring, there has been a significant change in the California Independent System Operator's (CAISO's) Controlled Grid Generation Queue (queue) that has taken place since the AFC was filed. This is the withdrawal of the South Bay Replacement Project from the queue. Because the South Bay project was a major generation project proposed for a location relatively near the CVEUP and formerly held a position in the queue senior to that of CVEUP, it is possible that the reconductoring will no longer be necessary. This will be determined by a new deliverability study that the CAISO has under preparation. This study is expected to be completed sometime before January of 2008. MMC Energy will provide the study to CEC Staff as soon as it becomes available.

Overload Mitigation

44. *Page 23 of the System Impact Study, item number 2 listed five 69 kV transmission circuits that will be overloaded. Please identify the mitigation measures for each of these overloads and the party who will be responsible for the upgrades.*

Response: See the response to Data Request #43. The need to mitigate these overloads is under re-evaluation through the CAISO deliverability study.

Selected Mitigation Alternative

45. *Page 28 of the System Impact Study identifies a mitigation plan and the alternatives. Please indicate which mitigation alternative will be selected.*

Response: See the response to Data Request #43. The need for mitigation is under re-evaluation through the CAISO deliverability study.

Facilities Study

46. Please provide the Facilities Study if it is available.

Response: MMC Energy will provide CEC Staff with the Facilities Study as soon as it becomes available.

Environmental Analysis for Reconductoring

47. Provide an environmental analysis sufficient to meet CEQA requirements for an indirect project impact for any reconductoring impacts that will be required to interconnect the CVEUP.

Response: See the response to Data Request #43. The need for reconductoring is under re-evaluation through the CAISO deliverability study.