

Southern Regional Office \* 2700 M St., Suite 275 \* Bakersfield, CA 93301 (

# FORTHALLAND MRB **Emission Reduction Credit Certificate** S-417-1

**Issued To: Issue Date:**  San Joaquin Facilities Management December 6, 1996

Location of Reduction:

Light Oil Western/Stationary Source SE 1/4 of Section 31, Township 28S, Range 22E

### For VOC Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
52331 lbs.	47077 lbs.	51194 lbs.	56504 lbs.

[X] NOTE: This certificate does not include ethane emissions.

Method Of Reduction

- [ ] Shutdown of Entire Stationary Source
- [ ] Shutdown of Emissions Unit

[X] Other: Installation of vapor recovery on four oil production storage tanks.

David L. Crow, APCO

Seven sadredin **Director of Permit Services** 

12/6/96

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NOTICE OF NOTICE OF FINAL ACTION FOR THE ISSUANCE OF EMISSION REDUCTION CREDIT CERTIFICATES

NOTICE IS HEREBY GIVEN the

NOTICE is HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District has issued emission reduction credit certificates to San Joaquin Facili-ities Management for the installa-tion of a vapor control system located at Cal Canal in Western Kern County (SE 1/4 of Section 31, Township 285, Range 2E5). The amount of emission reductions is 104 tons. Volatile Organic Com-pounds per year. The annifysis of the regulatory basis for Project #50784, and of

The analysis of the regulatory basis for Project #501784, and of the resulting effect on ambient air quality, is available for public inspection at SAN JOAQUIN VAL-LEY UNIFIED AIR POLLUTION CONTROL DISTRICT, SOUTH-ERN REGION, 2700 M STREET, SUITE 275 RAKERSFIELD

SUITE 275, BAKERSFIELD, CALIFORNIA 93301 December 13, 1996 (3562)

#### PROOF OF PUBLICATION

#### STATE OF CALIFORNIA COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS. AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCI PAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN, AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE. OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOL-LOWING DATES, TO WIT:

ALL IN THE YEAR 1996

I CERTIFY ( OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Signature

DATED AT BAKERSFIELD CA

### **PROOF OF PUBLICATION**

BAKERSFIELD CALIFORNIAN

### NOTICE OF FINAL ACTION FOR THE ISSUANCE OF EMISSION REDUCTION CREDIT CERTIFICATES

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The analysis of the regulatory basis for Project #950784, and of the resulting effect on ambient air quality, is available for public inspection at SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, SOUTHERN REGION, 2700 M STREET, SUITE 275, BAKERSFIELD, CALIFORNIA 93301.

ACCT#: 1SAN51

26 LEY UNIFIED AIR POLLUTION

27 CONTROL DISTRICT, SOUTH28 ERN REGION, 2700 M STREET,
29 SUITE 275, BAKERSFIELD,

31 December 13, 1996 (3362)

30 CALIFORNIA 93301

TO 98625201

P001/001

PROOF of Story '#3362' Requested by 10ELAINE (0F302L) on 12/10/96 12:28:22 Ad # #3362 Ad type C Basket LEGAL Holds: Censor H Credit R Entered By 10ELAINE On 12/10/96 at 10:31 For :0ELAINE Class 520 Dis Sales 10 Ins Sales 10 Account 1SAN51 Name EY A.P.C.D. SAN JOAQUIN VALL Phone (805) 8613682 Addr 2700 H STREET STE 275 GB/PO 950784 City BAKERSFIELD State CA Zip 93301 RECEIVE Ad Start 12/13/96 Times 1 Stop 12/13/96 Rate L1 Run Days/Dates 13 30 Billing lines 2.49 Inches DEC 1 0 1996 Total \$39.00 Adcost 39.00 SAN JOAQUIN VALLEY UNIFIED Remarks: APCD-SOUTHERN REGION LN# OUTPUT TEXT 1 2 NOTICE OF **3 FINAL ACTION FOR THE** 4 ISSUANCE OF EMISSION 5 REDUCTION CREDIT 6 CERTIFICATES 7 ATTRI ART TYLER 8 NOTICE IS HEREBY GIVEN that 9 the San Joaquin Valley Unified 10 Air Pollution Control District has 11 issued emission reduction credit 12 certificates to San Joaquin Facili-13 ties Management for the installa-14 tion of a vapor control system 15 located at Cal Canal in Weptern 16 Kern County (SE 1/4 of Section 31, 17 Township 28S, Range 22E). The 18 amount of emission reductions is 19 104 tons Volatile Organic Com-BAMERSFIELD CAMPONEN 20 pounds per year. 21 The analysis of the regulatory LEGAL DESK 22 basis for Project #950784, and of 23 the resulting effect on ambient air 24 quality, is available for public 25 inspection at SAN JOAQUIN VAL-

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8 395-7213

#### PROOF OF PUBLICATION

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ALL IN THE YEAR 1996

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Signature

DATED AT BAKERSFIELD CA

RECEI

SEP 1 2 1996

**PROOF OF PUBLICATION** 

SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION NOTICE OF PRELDINARY DECISION FOR THE PROPOSED ISSUANCE OF EMISSION REDUCTION CREDIT CERTIFICATES IOTICE IS HEREBY GIVEN the

MPF

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified AIr Pollution Control District sylicits public comment on the proposed Issuance of emission reduction credit certificates to San Joaquin Facilities Management for the installation of a field storage tanks located at Cal Canal in Western Rern County Southeast quarter of Section 31, Township 225, Range 22E). The amount of emission reductions proposed is 277,168 pounds of Volatile Organic Compounds per year. The annipysis of the regulatory the address below. Written comments on Project e950704 must be submitted within 30 days of the publication date of this notice to SAN JOAQUIN VALLEY UNI-FIED AIR POLLUTION CON-TROL DISTRICT, SOUTHERN REGION, 2708 M STREET, SUITE 115, BAKERSFIELD, CALIFORNIA 1930 (18500)

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### BAKERSFIELD CALIFORNIAN

### NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF EMISSION REDUCTION CREDIT CERTIFICATES

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of emission reduction credit certificates to San Joaquin Facilities Management for the installation of a vapor recovery system on four oil field storage tanks located at Cal Canal in Western Kern County (Southeast quarter of Section 31, Township 28S, Range 22E). The amount of emission reductions proposed is 207,106 pounds of Volatile Organic Compounds per year.

The analysis of the regulatory basis for this certificate, and of the resulting effect on ambient air quality, is available for public inspection at the District office at the address below. Written comments on Project #950784 must be submitted within 30 days of the publication date of this notice to SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, SOUTHERN REGION, 2700 M STREET, SUITE 275, BAKERSFIELD, CALIFORNIA 93301.

ACCT#: 1SAN51

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NOTICE OF

PRELIMINARY DECISION\_

ISSUANCE OF EMISSION REDUCTION CREDIT

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the San Joaquin Valley Unified Air Pollution Control District or s

licits public comment on the proposed issuance of emission reduction credit certificates to San Joaquin Facilities Manage-

san Joaquin Factivites manage-ment for the installation of a vapor recovery system on four oil field storage tanks located at Cal Canal in Western Kern County (Southeast quarter of Section 3).

Canal in western Kern County (Southeast quarter of Section 31, Township 285, Range 22E): The amount of emission reductions; proposed is 1,750 pounds of vola-tille organic compounds per year. The analysis of the regulatory at basis for this certificate, and of, the resulting effect on ambient air quality, is available for public-inspection at the District office at the address below. Writing com-ments on Project #50784 must be submitted within 30 days of, the. Publication date of this notice to SAN 50AQUIN VALLEY UNI-FIED AIR POLLUTION GON-TROL DISTRICT, SOUTHERNY-REGION, 2700 M STREET, SUITE 275, BAKERSFIELD, CALFFORNIA 93301

May 3, 1996 (23221)

#### **PROOF OF PUBLICATION**

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ALL IN THE YEAR 1996

I CERTIFY ( OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Signature

DATED AT BAKERSFIELD CA

5 14 July

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RECEIVE 7 1996 YAM SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION 1.1.20

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**PROOF OF PUBLICATION** 

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ACCT#: 1SAN51

MAY-01-96 WED 16:34 SJVUAPCD P. 01/01 MAL Erhardt - Southcen Region FAVED 70 PROOF of Story '#23221' Requested by IOELAINE (#F302L) on 5/01/96 15:23:31 Ad # #23221 Ad type C Basket CREDIY LIMIT Holds: Censor H Credit L Entered By IDELAINE On 5/01/96 at 15:23 For, IDELAINE Account ISANSI Class 520 Dis Sales/10 (Ins Sales 10 Name EY A.P.C.D. SAN JOAQUIN VALL Phone (805) 8613682 1.1.1.11 11. . Addr 2700 M STREET STE 275 GB/PD #950784 City BAKERSFIELD State CA Zip 93301 Ad Start 5/03/96 Times 1 Stop 5/03/96 Rate ( ) Run Days/Dates 3 39 Billing lines 3.24 Inches Total 148.36 Adcost 48.36 Resarks LN# OUTPUT TEXT \_\_\_\_\_ 1 S NUTICE OF **3 PRELIMINARY DECISION** 4 FOR THE PROPOSED 5 ISSUANCE OF EMISSION 6 REDUCTION CREDIT 7 CERTIFICATES A 9 NOTICE IS HEREBY GIVEN that 10 the San Joaquin Valley Unified 11 Air Pollution Control District so-12 lights public comment on the pro- // / / , t., t., t., t., t. 13 posed issuance of emission 11, • 14 reduction credit certificates to 15 San Joaquin Facilities Manage-BAKERSFIELD CALIFORNIA 16 ment for the installation of a 17 vapor recovery system on four oil LEGAL DESK 18 field storage tanks located at Cal 19 Canal in Western Kern County 20 (Southeast quarter of Section 31. 21 Township 285, Range 22E). The 22 amount of emission reductions 23 proposed is 1,750 pounds of vola-RECEIVE 24 tile organic compounds per year. 25 The analysis of the regulatory 26 pasis for this certificate, and of 27 the resulting effect on ambient air MAY 1 1996 28 quality, is available for public 29 inspection at the District office at 30 the address below. Written com-SAN JOAQUIN VALLEY UNIFIED dents on Project 4950784 dust be APCD-SOUTHERN REGION 31 32 submitted within 30 days of the 33 publication date of this notice to 34 SAN JOAQUIN VALLEY UNI-35 FIED AIR POLLUTION CON-36 TROL DISTRICT, SOUTHERN 37 REBIUN, 2700 M STREET, 38 SUITE 275, BAKERSFIELD, 1 1/1 1 39 CALIFORNIA 93301. 11. .



December 6, 1996



DFC 1 1 1996

Bill Oliver Operations Manager San Joaquin Facilities Management 1100 Mohawk Street, Suite 150 Bakersfield, CA 93309

SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION

### RE: Notice of Final Action - Emissions Reduction Credit Certificates Project #950784

Dear Mr. Oliver:

The District has made its final decision to issue an Emissions Reduction Credit Certificate to San Joaquin Facilities Management for the installation of a vapor control on four oil field storage tanks located at Cal Canal in Western Kern County. The amount of emission reductions is 104 tons of Volatile Organic Compounds per year. The certificate S-417-1 and a copy of the Notice of Final Action are enclosed.

No comments were received within the 30-day public comment period.

Thank you for your cooperation in this matter. Should you have any questions, please contact Mr. Thomas Goff, Permit Services Manager - Southern Region, at (805) 862-5200.

Sincerely,

Seyed Sadredin Director of Permit Services

MPE/adt Enclosures Certified Mail #Z 051 670 861 c: Thomas Goff, Permit Services Manager - Southern Region

David L. Crow

Executive Director/Air Pollution Control Officer 1999 Tuolumne Street, Suile 200 • Fresno, CA 93721 • (209) 497-1000 • Fax (209) 233-2057

Central Region 1999 Tuclumne Street, Suite 200 • Fresno, CA 93721 (209) 497-1000 • Fax (209) 233-2057



December 6, 1996

Raymond Menebroker, Chief Project Assessment Branch Stationary Source Division California Air Resources Board P.O. Box 2815 Sacramento, CA 95812-2815

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Central Region 1999 Tuolumne Street, Suite 200 • Fresno, CA 93721 (209) 497-1000 • Fax (209) 233-2057



December 6, 1996

Ken Bigos, Chief Stationary Source Branch NSSA-5-1 U.S. E.P.A. - Region IX 75 Hawthorne Street San Francisco, CA 94105

### RE: Notice of Final Action - Emissions Reduction Credit Certificates Project #950784

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Central Region 1999 Tuolumne Street, Suite 200 • Fresno, CA 93721 (209) 497-1000 • Fax (209) 233-2057 Southern Region 2700 M Street, Suite 275 • Bakersfield, CA 93301 (805) 862-5200 • Fax (805) 862-5201 T.

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TELEPHONE CONVERSATION: DATE: September 13, 1996 TIME: 2:45 PM APCD REPRESENTATIVE: MAT EHRHARDT, AQE II WITH: Jennifer Fox TITLE: COMPANY: EPA PHONE #: (415) 744-1257 SUBJECT: Public comment for project 950784 SUMMARY: No comments TELEPHONE CONVERSATION: DATE: September 19, 1996 TIME: 8:30 AM APCD REPRESENTATIVE: MAT EHRHARDT, AQE II WITH: Alex Krichovsky TITLE: COMPANY: CARB PHONE #: (916) 327-5626 SUBJECT: Public comment for project 950784 SUMMARY: No comments

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August 13, 1996

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Mr. Bill Oliver Operations Manager San Joaquin Facilities Management 1100 Mohawk Street, Suite 150 Bakersfield CA 93309

aug 1 5 1996

SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION

### RE: Preliminary Public Notice - Emissions Reduction Credit Certificates Project #950784

Dear Mr. Oliver:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities's request for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on four oil field storage tanks located at Cal Canal in Western Kern County. The amount of this banking certificate has been revised due to comments received during the public comment period. The calculation of the actual emission reductions will be based on site specific data for the tanks.

Also enclosed is a copy of Preliminary Notice which will be published in approximately three days from the date of this letter.

Publication will start a 30 day public comment period. Please submit your written comments on our analysis, as soon as possible, to provide ample time for our review and consideration.

Thank you for your cooperation in this matter. Should you have any questions, please contact Mr. Mat Ehrhardt of Permit Services at (805) 862-5200.

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ME:cga Enclosures cc: Thomas Goff, Permit Services Manager - Southern Region

> David L. Crow Executive Director/Air Pollution Control Officer 1999 Tvolumne Street, Suite 200 Fresno. CA 93721 + (209) 497-1000 + FAX (209) 233-2057

Northern Region 4230 Kieman Avenue, Sulte 130 + Modesto, CA 95356 (209) 545-7000 + FAX (209) 545-8652 Central Region 1999 Tuolumne Street, Suite 200 • France, CA 93721 (209) 497-1000 • FAX (209) 233-2057 Southern Region 2700 M Street, Suite 275 + Bakersfield, CA 93301 (805) 862-5200 + FAX (805) 862-5201



August 13, 1996

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Also enclosed is a copy of Preliminary Notice which will be published in approximately three days from the date of this letter.

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Thank you for your cooperation in this matter. Should you have any questions, please contact Mr. Mat Ehrhardt of Permit Services at (805) 862-5200.

Sincerely,

Seved Sadredin Director of Permit Services

ME:cga Enclosures cc: Thomas Goff, Permit Services Manager - Southern Region

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August 13, 1996

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1100 MOHAWK STREET, SUITE 150, BAKERSFIELD, CA 93309 (805) 631-8713 FAX: (805) 631-8719

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SAN JOAQUIN FACILITIES

MANAĜEMENT, INC.

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May 23, 1996

SJVUAPCD Attn: Mr. Thomas Goff Manager of Permit Services 2700 M Street, Suite 275 Bakersfield, CA 93301

Subject: Public Notice: Cal Canal Vapor Recovery System ERC's Project #950784

Dear Mr. Goff:

Thank you for meeting with us on the subject ERC's. It is apparent from your public notice analysis and our discussion of May 22, 1996, that there is a misunderstanding of lease operation during the portion of the two year time period that Texaco operated the lease. This has apparently led to your not giving us all the emission credits we deserve for controlling this emission source. Therefore, we request that we be given all the emission credits we requested adjusted as necessary for the proposed control measure. Of course, we expect to receive all the credits if the control measure is adopted without requiring controls on these tanks. Following is our understanding of the issues:

- During part of the baseline period (10/91-6/93), Texaco operated a gas lift system on gas well #1-31. It was shut down in June or early July 1993 by Texaco. A small compressor with an IC engine was operated which used some of the gas in the sales gas line to Chevron. Gas remaining in the sales gas line was still purchased by Chevron. Gas was injected into the well to help carry additional liquids to the surface. This was not a gas reinjection system such as operated at Elk Hills to pressurize the strata to force crude oil to the surface. The effect of this system is that more gas would be separated in the gas oil separator used for #1-31 well and may have added more gas to the crude oil tanks for this lease then we documented. This operation didn't effect the pressure setting on the gas oil separators which is set based on Chevron's compressor station intake pressure which hasn't changed since 1990. See attached letter from Chevron.
- No booster compressor was used by Texaco or ourselves during the two year period to boost the gas pressure in the sales gas

1100 MOHAWK STREET, SUITE 150, BAKERSFIELD, CA 93309 (805) 631-8713 FAX: (805) 631-8719 111

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line to the Chevron compressor station. The pressure is in the same range now as then. See attached letter from Chevron.

• Rule 4623 was adopted on December 17, 1992 and required final compliance by July 1, 1994. SJFM, inc. is exempt from Rule 4623 and purchased the lease effective August 1, 1993. There was no vapor recovery system on any of the Cal Canal leases purchased by SJFM, inc. The latest draft of the proposed revisions to Rule 4623 maintain the exemption for small producers.

- The amount of gas contained in the crude oil leaving the gas oil separators is pressure dependent. The lease was operated by Texaco and is operated now supplying gas directly to Chevron's compressor station. The gas line pressure has to be sufficient to meet the intake pressure at Chevron's compressor station thereby determining the amount of gas left in the crude oil. The Pierson lease separator is subject to the same Chevron pressure limits, but is sold to Chevron through a separate sales line and meter.
- The District needs to adjust the amount of ERC's based on ethane being no longer a VOC. Test data has already been submitted showing the amount of ethane.

In conclusion, SJFM, Inc. installed and is operating a vapor recovery system not required by current rules. A large emission reduction has occurred which is much more than calculated by AP-42 due to the gassy nature of this crude oil (actually a gas field with liquids). This has been documented by recovery of gas from the tanks using the same pressure operating parameters as used during the two year time period. This actual documentation more accurately represents the emission reduction that occurred. Therefore, we request that the District revise their calculations to account for the actual emission reduction that has occurred and give us the additional ERC's. If you have any questions or require further information, please notify us immediately.

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Sincerely, UL I

Bill Oliver Operations Manager

cc: Jack Caufield

805-631-8719

SAN JOAQUIN FAC MGMT

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THEVEON GASOBELD

TEL No.8053956528

May 23,96 13:45 No.005 P.01



May 23, 1996

### San Joaquin Facilities Management, Inc.

Re: Delivery Pressure at TF110 Cal Canal and TF166 Pearson Attn: Mr. Bill Oliver

Dear Sir:

The gas delivered into Chevron's gas system through meters TF110 and TF168 at section 31, T28S, R22E M.D.B.M. for the period in question 1990 to present has been delivered at pressures between 100 - 150 psl (pounds per square inch). The gas delivered through TF110 and TF168 must be above the operating line pressure in order to enter our gas system. Chevron's gas system at these points operates between 90 + 120 psi consistently and this gas feeds into the intake of our compressor P205. Low pressure on the system would cause this compressor to go down. Occidental Petroleum, Texaco and now San Joaquin Facilities have owned, produced, ... and delivered gas into Chevron's gas system at these delivery points in the past. There have been no operational or mechanical changes that would have caused this gas gathering system to have operated at a lower pressure during the period in question.

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if there are any questions, please call me at ( 805 ) 395 - 6342.

Recards P.E. Ayels **Gas** Coordination

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### SAN JOAQUIN FACILITIES MANAGEMENT, INC.

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MAY 2 9 1996

SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION

May 23, 1996

SJVUAPCD Attn: Mr. Thomas Goff Manager of Permit Services 2700 M Street, Suite 275 Bakersfield, CA 93301

Subject: Public Notice: Cal Canal Vapor Recovery System ERC's Project #950784

Dear Mr. Goff:

Thank you for meeting with us on the subject ERC's. It is apparent from your public notice analysis and our discussion of May 22, 1996, that there is a misunderstanding of lease operation during the portion of the two year time period that Texaco operated the lease. This has apparently led to your not giving us all the emission credits we deserve for controlling this emission source. Therefore, we request that we be given all the emission credits we requested adjusted as necessary for the proposed control measure. Of course, we expect to receive all the credits if the control measure is adopted without requiring controls on these tanks. Following is our understanding of the issues:

- During part of the baseline period (10/91-6/93), Texaco operated a gas lift system on gas well #1-31. It was shut down in June or early July 1993 by Texaco. A small compressor with an IC engine was operated which used some of the gas in the sales gas line to Chevron. Gas remaining in the sales gas line was still purchased by Chevron. Gas was injected into the well to help carry additional liquids to the surface. This was not a gas reinjection system such as operated at Elk Hills to pressurize the strata to force crude oil to the The effect of this system is that more gas would be surface. separated in the gas oil separator used for #1-31 well and may have added more gas to the crude oil tanks for this lease than we documented. This operation didn't effect the pressure setting on the gas oil separators which is set based on Chevron's compressor station intake pressure which hasn't changed since 1990. See attached letter from Chevron.
- No booster compressor was used by Texaco or ourselves during the two year period to boost the gas pressure in the sales gas

line to the Chevron compressor station. The pressure is in the same range now as then. See attached letter from Chevron.

- Rule 4623 was adopted on December 17, 1992 and required final compliance by July 1, 1994. SJFM, inc. is exempt from Rule 4623 and purchased the lease effective August 1, 1993. There was no vapor recovery system on any of the Cal Canal leases purchased by SJFM, inc. The latest draft of the proposed revisions to Rule 4623 maintain the exemption for small producers.
- The amount of gas contained in the crude oil leaving the gas oil separators is pressure dependent. The lease was operated by Texaco and is operated now supplying gas directly to Chevron's compressor station. The gas line pressure has to be sufficient to meet the intake pressure at Chevron's compressor station thereby determining the amount of gas left in the crude oil. The Pierson lease separator is subject to the same Chevron pressure limits, but is sold to Chevron through a separate sales line and meter.
- The District needs to adjust the amount of ERC's based on ethane being no longer a VOC. Test data has already been submitted showing the amount of ethane.

In conclusion, SJFM, Inc. installed and is operating a vapor recovery system not required by current rules. A large emission reduction has occurred which is much more than calculated by AP-42 due to the gassy nature of this crude oil (actually a gas field with liquids). This has been documented by recovery of gas from the tanks using the same pressure operating parameters as used during the two year time period. This actual documentation more accurately represents the emission reduction that occurred. Therefore, we request that the District revise their calculations to account for the actual emission reduction that has occurred and give us the additional ERC's. If you have any questions or require further information, please notify us immediately.

Sincerely, Bill Pluve Bill Oliver

Bill Oliver Operations Manager

cc: Jack Caufield



May 23, 1996

### San Joaquin Facilities Management, Inc.

Re: Delivery Pressure at TF110 Cal Canal and TF166 Pearson Attn: Mr. Bill Oliver

Dear Sir:

The gas delivered into Chevron's gas system through meters TF110 and TF166 at section 31, T28S, R22E M.D.B.M. for the period in question 1990 to present has been delivered at pressures between 100 - 150 psi (pounds per square inch). The gas delivered through TF110 and TF166 must be above the operating line pressure in order to enter our gas system. Chevron's gas system at these points operates between 90 - 120 psi consistently and this gas feeds into the intake of our compressor P205. Low pressure on the system would cause this compressor to go down. Occidental Petroleum, Texaco and now San Joaquin Facilities have owned, produced, and delivered gas into Chevron's gas system at these delivery points in the past. There have been no operational or mechanical changes that would have caused this gas gathering system to have operated at a lower pressure during the period in question.

If there are any questions, please call me at (805) 395 - 6342.

Regards mer P.E. Ayels

Gas Coordination



May 1, 1996

MAY 3 1996

SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION

Bill Oliver Operations Manager San Joaquin Facilities Management 1100 Mohawk Street, Suite 150 Bakersfield, CA 93309

RE: Preliminary Public Notice - Emissions Reduction Credit Certificates Project #950784

Dear Mr. Oliver:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities's request for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on four oil field storage tanks located at Cal Canal in Western Kern County.

The Preliminary Public Notice for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. Should you have any questions, please contact Mat Ehrhardt of Permit Services at (805) 862-5200.

Sincerely,

Seved Sadredin Director of Permit Services

SS:ad Enclosure c: Thomas Goff, Permit Services Manager - Southern Region

> David L. Crow Executive Director/Air Pollution Control Officer 1999 Tuolumne Street, Suite 200 Fresno, CA 93721 \* (209) 497-1000 \* FAX (209) 233-2057



May 1, 1996

Ray Menebroker, Chief Project Assessment Branch Stationary Source Division California Air Resources Board P.O. Box 2815 Sacramento, CA 95812-2815

### RE: Preliminary Public Notice - Emissions Reduction Credit Certificates Project # 950784

Dear Mr. Menebroker:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities's request for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on four oil field storage tanks located at Cal Canal in Western Kern County.

The Preliminary Public Notice for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. Should you have any questions, please contact Mat Ehrhardt of Permit Services at (805) 862-5200.

Sincerely,

Seyed Sadredin Director of Permit Services

SS:ad Enclosure c: Thomas Goff, Permit Services Manager - Southern Region

> David L. Crow *Executive Director,' Air Pollution Control Officer* 1999 Tuolumne Street, Suite 200 Fresno. CA 93721 \*(209) 497-1000 \*FAX (209) 233-2057



May 1, 1996

Ken Bigos, Chief Stationary Source Branch NSSA-5-1 U.S. E.P.A. - Region IX 75 Hawthorne Street San Francisco, CA 94105

### RE: Preliminary Public Notice - Emissions Reduction Credit Certificates Project #950784

Dear Mr. Bigos:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities's request for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on four oil field storage tanks located at Cal Canal in Western Kern County.

The Preliminary Public Notice for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. Should you have any questions, please contact Mat Ehrhardt of Permit Services at (805) 862-5200.

Sincerely,

Seyed Sadredin Director of Permit Services

SS:ad Enclosure c: Thomas Goff, Permit Services Manager - Southern Region

> David L. Crow Executive Director/Air Pollution Control Officer 1999 Tuolumne Street, Suite 200 Freano, CA 93721 • (209) 497-1000 • FAX (209) 233-2057

TELEPHONE CONVERSATION:

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DATE: 10/13/95 TIME: 10:00 AM

APCD REPRESENTATIVE: MAT EHRHARDT, AQE II WITH: Bill Oliver TITLE: Operations Manager COMPANY: SJFM PHONE #: 631-8713

SUBJECT: Cal Canal Vapor Recovery System Design

SUMMARY: Asked Bill how he measured the gas flowrate. He stated that there is a orifice meter which measures the gas coming from the storage tanks.

I asked if the system used any Make-up gas (Texaco system design had it). He stated no.

Asked if the compressor operated continuously.

He stated that it operated at 1.5 oz. and shuts down at 0.1 oz.



### SAN JOAQUIN FACILITIES MANAGEMENT, INC.

September 27, 1995

Mr. Thomas Goff Permit Services Manager SJVUAPCD 2700 M. Street, Suite 275 Bakersfield CA 93301

Re: Cal Canal Vapor Recovery System Emission Reduction Credits

Dear Mr. Goff:

Attached is a \$650.00 check and an application for emission reduction credits for the installation of the Cal Canal vapor recovery system. This facility is exempt from Rule 4623 since we are a small producer and the tanks have less than 150 barrels of oil throughput. In Jack Caufield's Memorandum of July 26, 1996 to Sam Parks of the District's staff, we demonstrated the percent efficiency met the proposed efficiency of the vapor recovery system by calculating the fugitive emissions compared to the volume of vapors recovered. This completed the project. See attached calculation sheets. Note, we have revised the fugitive emissions using the latest AP-42 (Oil Production, August 1995).

If you have any questions or need further information, please feel free to call.

Sincerely,

Biel Oliver

Bill Oliver Operations Manager

cc: Jack Caufield

JC:js



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SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION

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### FACSIMILE TRANSMITTAL

TO:	Mat Ehrhan	et_	DATE:	6/18/96		
COHPANY:	SJVUAPCO	·····	FAX #:	862-520	<i></i>	
			TIME:	250 pm		
SUBJECT:	Monthly Goo V	olimes of	for C	el Canal /	Ferson.	
FROM:	Sill Office	· ./	·····	·	e.,	.,
	<u>San Joaquin Fac</u>	ilities Man	<u>agement</u>	. Inc.		,,
Telephon	e: <u>(805) 631–8713</u>	Fax:	(805) 6	<u> 31-8719</u>		

Number of pages (including transmittal page)

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1100 Монажк Street, Suite 150, Bakersfield, CA 93309 (805) 631-8713 Fax: (805) 631-8719

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GAS VOLUMES - MCF/MO. CAL CANAL / PIERSON 1993-1995



JUN 1 8 1996

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#110 - Cal Canal #166 - Pierson

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FAXed to SSVWAPCD'S. FAXed Embandet 6/18/96 Mad 1 deres

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February 21, 1996

Bill Oliver Operations Manager San Joaquin Facilities Management 1100 Mohawk Street, Suite 150 Bakersfield, CA 93309

Re: **Project #** 950784 **Project Description:** Cal Canal Vapor Recovery System Emission Reduction Credit (ERC) Certificate Application.

Dear Mr. Oliver:

The Air Pollution Control District is in receipt of the additional information requested regarding the above-referenced project, and has again reviewed the application for completeness.

Based on this review, the application now appears to be complete. However, during the processing of this application, the District may request additional information to clarify, correct or otherwise supplement the information on file.

Thank you for your cooperation. Should you have any questions, please telephone Mr. Thomas Goff of Permit Services at (805) 861-3682.

Sincerely,

Seyed Sadredin Director of Permit Services

Thomas E. Goff, P.E. Permit Services Manager - Southern Region

MPE

David L. Crow

Executive Director/Air Pollution Control Officer 1999 Tuctumne Street, Suite 200 + Fresno, CA 93721 + (209) 497-1000 + FAX (209) 233-2057

Northern Region 4230 Kiernan Avenue, Suite 130 - Modesto, CA 95356 (209) 545-7000 - Fax (209) 545-8652 Central Region 1599 Tuolumne Street, Suite 200 • Fresno, CA 93721 (209) 497-1000 • Fax (209) 233-2057



JAN 2 9 1996

SAN JOAQUIN VALLEY UNIFIED APCD-SOUTHERN REGION

#### January 28, 1996

(CAUFIELD-ENTERPRISES

> Mr. Thomas Goff, P.E. Permit Service Manager - Southern Region San Joaquin Valley Unified Air Pollution Control District Bakersfield, CA 93301

Re: Project # 950784 Project Description: Cal Canal Vapor Recovery System Emission Reduction Credit (ERC) Certificate Application

Dear Mr. Goff:

This is in response to your letter of November 1, 1995. Lease operation was the same before and after installation of the vapor recovery system. Lease operation is slightly different from Texaco's operation since SJFM eliminated the Pierson Lease tanks and their emissions by shutting down the tanks and sending the oil to the Chevron Lease wash tank, creating an additional emission reduction from the Pierson Lease tanks.

Attached is thruput data for the tanks when operated by Texaco and drawings. Also attached is thruput data for 1995 showing thruput in the same tanks. We have also included a copy of the memo to Hans Hu which completed the project, starting the time clock for the 180 days. We didn't calculate tank emissions, since we believe the majority of gas recovered is gas released due to the pressure drop in the tanks. The Pierson Lease still has the original oil/gas separator in operation. The Pierson Lease oil now goes directly to the S-2246-7 wash tank.

San Joaquin Facilities Management has made major modifications to their operations benefiting air quality. If you have any questions or need further information, I suggest we meet and discuss the issues. Thank you for considering our request.

Sincerely,

dack Caufield Environmental Consultant

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Rinks : NONE





#### FAX TRANSMITTAL MEMO

TO:	Sam	Parks,	SJVUAPCD	FA

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AX# 805/861-2060

FROM:

Jack Caufield

PHONE/FAX# 805/589-0483

..

DATE: 7/26/95

NO. OF PAGES 5 including cover

COMMENTS:

Calculations as requested. Have an analysis of lease produced gas. Don't have an analysis of collected vapors. Expect them to be similar.

cc: Bill Oliver, SJFM, Inc.

MEMORANDUM

DATE:	July 26, 1995
то:	Sam Parks, SJVUAPCD
FROM:	Jack Caufield, Caufield Enterprises 805/589-0483
RE;	Cal Canal Vapor Recovery System Efficiency

PRISES

cc: Bill Oliver, SJFM, INC.

We understand from Hans Hu and yourself that we need to calculate the efficiency of the vapor recovery system by calculating the fugitive emissions compared to the volume of vapors recovered. The valves and flanges are included in the valve and flange inspection program. Therefore, a control factor will be used. As discussed with Hans Hu, the potential to emit wasn't increased by placing the vapor recovery system in service, <u>Since the vapor recovery system</u> <u>piping had been used in the past</u>. Please let me know if you need further information or need to discuss this further.

The vapor recovery piping consists of the following:

	Component	Total Hydrocarbons
	6 valves	.415 + .00593 = .42093
	$6 \times .42093 \times (177) = .4$	581 lb./day
	2 pancake valves	.1034 + .522 = .625
	$2 \times .6254 \times (177) = .2$	88
	15 flanges	.00822 + .000193 = .008413
	15 x .008413 x (1-1)* =	0
	9 Unions	,0723 + .00177 = .07407
	2 Dressler couplings	.0723 + .0177 = .07407
	$11 \times .07407 (1-1) * = 0$	
4+ <i>i</i> - 1	1 reciprocating compress	or driven by electric motor**

والمشرق المراجع المراجع المراجع

Total hydrocarbons = .581 + .288 = .87 lb./day

Flow from tanks between 1/1/95 and 7/12/95 was 2910 MCF.

2910/193 days = 15.08 MCF/day

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Based on the attached gas analysis of leases combined gases, the gas weights 17.75 CF/LB

 $(15.08 \times 1000)/17.75 = 849.58 \text{ LB/day}.$ 

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100 - .87/849.58 = 99.9 % total efficiency\*\*\* ·

While we have complied with your request, we don't believe this is a valid representation of the percent recovered vapors. Much of this system operates at or near a vacuum, so the valve factors used overstate the remaining emissions, even using the efficiency factors. 1.18 1 30

\* 100% control efficiency for connections per Lance Ericksen after original inspection.

\*\* Crankcase vent controlled by venting to an oil
drum

\*\*\* Total efficiency of all gas and other releases. The efficiency would be the same for non-methane hydrocarbons, since all gases are collected and sold.

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# SJFM GAS VOLUMES

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Vapor Recovery	3004	JUL 6/12 1995	7,200	5.200	0.0621	50	116	200	2910
E. Ustan USL Lse	3006	JUL 6/12 1995	7.300	1.300	0.1925	168	307	526	8804
Pierson Fee	3013	JUL 6/12 1995	6.400	4.000	0.1906	168	820	1361	19881
Well #12 & 22	3018	JUL 6/12 1995	7.300	3.500	0.0391	168	168	235	2652

JULY 1995

CAL CANAL FIELD

805-631-8719 10:14 SAN JOAQUIN FAC MGMT PAGE Ø1 I-HX -41 ZALCO L'ABORATORIES, INC. Analytical & Consulting Services\_ Lab. No. 039645\_001 San Joaquin Facilities Management Received: May 9, 1994 1100 Mohawk Street, Suite 150 Repor/Led: May 19, 1994 Bakersfield, CA 93309 Attention: Bill Oliver Sample Description: Separator Sample - / Cal Conal - Mani Hender C Oufice more @ \* CHROMATOGRAPHIC ANALYSIS (21605) \* G.P.M. Components Mole 1 WE & USE GAS ANALYSIS SUBMITTED WITH OLGBINAL APPLICATION Air (N2+02) .145 .196 -MRE Carbon Dioxide 4.885 10.083 Néthane 79.132 59.540 Ethane 8.506 11.996 Propane 4.157 8.597 1.143 1.799 .215 lsoButane .660 N-Butane 1.429 3.897 .450 **IsoPentane** . 374 . . 136 1,264 N-Pentane .378 1.281 .137 llexanes+ . 334 1.349 .143 . . . 100.000 100.000 2.225 Totals = SPECIFIC GRAVITY (Air + 1) .7383 SPECIFIC VOLUME, cu.ft./lb 17.75 GROSS CALORIFIC VALUE, BTU/cu.ft. 1154.71 > 2.8GROSS/CALORIFIC VALUE, BTU/cu.ft. 1174.68 GROSS CALORIFIC VALUE, HTU/16 20847.15 NET CALORIFIC VALUE, STU/cu.tt. 1046.48 NET/ CALORIFIC VALUE, BTU/cu.ft. 1064.58 COMPRESSIBILITY FACTOR '2' (60 F,1 ATM) .9967 Water Saturated \*\* Dry Gas 0 60 F 1.20217 - 3 Jim Etherton 4157-21主命 Laboratory Director 1:31..... 4309 Armour Avenue - Bekersfield, California 93309. FAX (805) 395-3069 (805) 395-0539 el a Bar John a er en statut

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2.	MAILING ADDRES	551						
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7. 8. 9.	REQUESTED ERC 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER 4TH QUARTER SIGNATURE OF A CLI TYPE OR PRINT N Bill Olive	s (In Pounds Per C VOC 83041.5 79735.3 85745.7 122110.7 PPLICANT: U NAME OF APPLIC r	Alendar Quarter):	CO TYPE OF Opera	PM10	SOK SOK E OF APPLICANT Inager DATE: 7/28/95	(Use additional sheets is OTHER ; ; TELEPHONE N 805/631-8	<b>0:</b>
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7. 8. 9. OR AF	REQUESTED ERC 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER 4TH QUARTER SIGNATURE OF A ULL TYPE OR PRINT N BIII OLIVE CD USE ONLY: DCT 3 1995 SAN JOAQUIN VALLEY U	s (In Pounds Per Ca VOC 83041.5 79735.3 85745.7 122110.7 IPPLICANT: VAME OF APPLIC SP	ANT: FILING FEE RECEIVED: \$_ DATE PAID:	$\frac{c_0}{TYPE OF}$ $Opera$ $\frac{c_0}{0}$	PMIO R PRINT TITL ations Ma	SOx SOx E OF APPLICANT Inager DATE: 2/28/95	(Use additional sheets if OTHER TELEPHONE N 805/631-8	<b>0:</b>
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Southern Regional Office \* 2700 M St., Suite 275 \* Bakersfield, California 93301 \* (805) 861-3682 \* FAX (805) 861-2060

#### EMISSION REDUCTION CALCULATIONS

1 1

> Potential Fugitive Emissions from vapor recovery system The vapor recovery piping consists of the following: Component Total Hydrocarbons (AP-42 8/95) 8 valves  $\overline{8 \times 4.5E} - 03 \times 2.2 \text{ LB/kg} \times 24 \times (1 - .77) = .44 \text{ lb./day}$ .00822 + .000193 = .00841315 flanges  $15 \times 3.9E-4 \times 2.2 \text{ LB/kg} \times 24 (1-1)^* = 0$ 11 connections  $11 \times .07407 (1-1) * = 0$ 1 reciprocating compressor driven by electric motor\*\* Total hydrocarbons = .44 lb./day \* Using fugitive emission control factor recommended by the District (gas plant study). Per Lance Ericksen, District agrees with 100 % control for all flanges and connections with a control program \* \* Compressor operates at a vacuum, so no emissions expected. Emissions by quarter: 3rd Qt. 1994-5 4th Qt.r 1994 1st Qt. 1995 2nd Ot. 1995 Gas Flow Rate (MCF)<sup>(2)</sup>: 1432 2032 1327 1382 Cubic foot /pound: 11.17 Weight percent non-methane hydrocarbons: 67.194% or 0.6714 weight fraction 1427 \* 1000/11.17 \* .6714 = 85773.3 2032 \* 1000/11.17 \* .6714 = 122138.3  $1382 \times 1000/11.17 \times .6714 = 83068.5$  $1327 \times 1000/11.17 \times .6714 = 79762.6$ Emissions (LB/quarter): 85773.3 122138.3 83068.5 79762.6 Less potential fugitive emissions (0.44 LB/day \* 0.6714 = 0.30 lb./day non-methane hydrocarbons<sup>(1)</sup> (92 \* .30 = 27.6) (92 \* .30 = 27.6) (90 \* .30 = 27)(91 \* .30 = 27.3)Emission reduction in pounds per quarter: 85745.7 122110.7 83041.5 79735.3

(1) While we have reduced the emissions by the potential fugitive emissions, we don't believe this is a valid representation of the percent recovered vapors. Much of this system operates at or near a vacuum, so the valve factors used overstate the remaining emissions, even using the efficiency factors.

(2) Crude throughput was similar the previous year.

Gas Volumes by month (MCF) August 1994 250 September 1994 675 October 1994 693 November 1994 945 December 1994 394 January 1995 693 February 1995 332 March 1995 357 April 1995 387 May 1995 463 June 1995 477 July 1995 507

1-95 TUE 14,02 ZAUCOLLABSLIN P.02 ZALCO LABORATORIES, INC. Analytical & Consulting Services 4309 Armour Avenue (805) 395-0539 FAX (805) 395-3069 Bakersfield, California 93308 8/1/95 Lab<sup>V</sup> No.: 044794\_001 San Joaquin Facilities Management Received: Jul 25, 1995 1100 Mohawk Street, Suite 150 Reported: Jul 31, 1995 Bakersfield, CA 93309 Attention: Bill Oliver muk file Sample Description: Cal. Canal Vapor Recovery \* CHROMATOGRAPHIC ANALYSIS (Z 1535) \* Mole % Wt % CHONS Components Wt % \_\_\_\_\_ \_\_\_\_\_ 0.000 0.000 CARBON Hydrogen 71.74 Carbon Dioxide (44) 8.610 11.243 HYDROGEN 16.76 .748 .711 OXYGEN 8.89 Oxygen (32) 3.136 2.607 NITROGEN Nitrogen (28) 2.61 Carbon Monoxide 0.000 0.000 SULFUR 0.00 Hydrogen Sulfide 0.000 0.000 المرجع المرجع المرجع -----~ Methane (16) 38,330 18,246 Totals 100.00 (30) 15.055 Ethane 13.433 Total H/C .23 Propane (44) 17.314 22.654 IsoButane (55) 3.623 6.250 N-Butane (58) 8.601 14.835 IsoPentane (12) 2.087 4.467 N-Pentane (12) 1.984 4.247 Hexanes+ (86) .511 1.308 Totals = 100.000 100.000 SPECIFIC GRAVITY (Air = 1) 1.1732 SPECIFIC VOLUME, cu.ft./1b × 11.17 GROSS CALORIFIC VALUE, BTU/cu.ft. \* 1664,55 GROSS CALORIFIC VALUE, BTU/cu.it. \*\* 1693.33 GROSS CALORIFIC VALUE, HTU/16 18911.92 \*\* NET CALORIFIC VALUE, BTU/cu. ?t. \*\* 1550.83 NET CALORIFIC VALUE, BTU/10 \*\* 17320.44 DSCF EXHAUST PER SCF FUEL (0% Oxygen) 14.6478 COMPRESSIBILITY FACTOR 'Z' (60 F,1 ATM) .9914 EPA 'F' Factor @ 68 F: 8833.188 DSCF / MM Btu. KCAPCD 'F' Factor @ 60 F: 8700.691 DSCF / MM Btu. \*\* Dry Gas @ 60 F, 14.73 psia \* Water Saturated

tory Director

PAGE 02 SAN JOAQUIN FAC MGMT 805-631-8719 861 - 2060 12-95 MOH 12:07 ZALCO\_LABS\_INC. F.02 `\_ ZALCO LABORATORIES, INC. Analytical & Consulting Services 4309 Armour Avenue (805) 395-0539 Bakersfield, California 93308 FAX (805) 395-3069 San Joaquin Facilities Management Laboratory No: 44204 1100 Mohawk Street, Suite 150 Date Received: 6-7-95 Bakersfield, CA 93309 Date Reported: 6-9-95 Attention: 8ill Oliver An de Ampreise FAT Sample: 011 Sample Description: See Below Sampled by Brent on 6-7-95 at 1100 hours D 323/1 Reid Vapor Pressure Lab No. Description @ 100 'F. psi 44204 Cal Canal 7.79 at 69 •F

**References:** 

1. Annual Book of ASTM Standards, 1990 vol.

2. State of California, Air Resources Board Technical Guidance Document to the Criteria and Guidelines Regulation for AB2588. EIB/TSD August 1989 pp. 216-217.

Jim Etherton

Lab Operations Manager

- JE/16

# ERC APPLICATION REVIEW

Project 950784

Facility Name: Mailing Address:	San Joaquin Facilities Management 1100 Mohawk Street, Suite 150 Bakersfield, CA 93309
Contact Name:	Jack Caufield (Consultant)/Bill Oliver (Operations Manager)
Telephone:	(805) 589-0483/(805) 631-8713
Engineer: Date:	Mat Ehrhardt, AQE II 6/28/96
Reviewed By: Date:	Lance Ericksen
Certificate #(s):	S-417-1

#### I. SUMMARY:

San Joaquin Facilities Management has submitted an application to bank emission reduction credits for the installation of a vapor recovery system on four oil production storage tanks. The Authorities to Construct which authorized the installation of the vapor control system are S-2246-7-1, '-8-1, '-9-1 and '-10-1.

The following emission reductions have been found to qualify for banking:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	52331	0
2nd Quarter	0	0	0	47077	0
3rd Quarter	0	0	0	51194	0
4th Quarter	0	0	0	56504	0

#### II. APPLICABLE RULES:

Rule 2201: New and Modified Stationary Source Review Rule (June 15, 1995)

Rule 2301: Emission Reduction Credit Banking (December 17, 1992)

Rule 4623: Storage of Organic Liquids (December 17, 1992) Exempt - Pursuant to Section 4.2.2

#### III. PROJECT LOCATION:

The tanks are part of the Light Oil Western Stationary Source. The tanks are located at the Cal Canal Lease in the South Belridge Oil Field. The Southeast quarter of Section 31, Township 28S, Range 22E.

#### IV. METHOD OF GENERATING REDUCTIONS:

The reductions were achieved by the installation of the vapor recovery system (VRS) on four oil production storage tanks. The tank vapors are compressed and sent to a sales gas pipeline

#### V. CALCULATIONS:

#### A. Assumptions and Emission Factors

- 0.01117 MCF gas/lb (Gas analysis)

- The gas is 53.760% Non-Methane and Non-Ethane VOC by weight (Gas Analysis)

- Emission Factor for storage tanks based upon actual gas volumes recorded after the installation of the vapor recovery system. The data and calculation is shown below:

Month/Year	S-2246-7	S-2246-8	S-2246-9	S-2246-10	Total	VRS Gas		
8/94	553 BBL	553 BBL	2440 BBL	2993 BBL	6539 BBL	250 MCF		
9/94	277 BBL	277 BBL	1815 BBL	2092 BBL	4461 BBL	675 MCF		
10/94	487 BBL	487 BBL	2024 BBL	2511 BBL	5509 BBL	693 MCF		
11/94	599 BBL	599 BBL	2677 BBL	3276 BBL	7151 BBL	945 MCF		
12/94	411 BBL	411 BBL	2654 BBL	3065 BBL	6541 BBL	394 MCF		
1/95	442 BBL	442 BBL	2616 BBL	3058 BBL	6558 BBL *	693 MCF		
2/95	404 BBL	404 BBL	2259 BBL	2663 BBL	5730 BBL	332 MCF		
3/95	446 BBL	446 BBL	2648 BBL	3094 BBL	6634 BBL	357 MCF		
4/95	373 BBL	373 BBL	2406 BBL	2779 BBL	5931 BBL	387 MCF		
5/95	459 BBL	459 BBL	2437 BBL	2896 BBL	6251 BBL	463 MCF		
6/95	404 BBL	404 BBL	2199 BBL	2603 BBL	5610 BBL	477 MCF		
7/95	426 BBL	426 BBL	2032 BBL	2458 BBL	5342 BBL	507 MCF		
Total	5281 BBL	5281 BBL	28207 BBL	33488 BBL	72257 BBL	6173 MCF		

Tank oil	through	ut and	VRS	gas	recovered	
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The emission factor for the storage tanks was calculated by dividing the amount of vapor recovery gas collected by the actual tank throughput. The result is shown below.

Emission Factor = 6173 MCF/72257 BBL = 0.0854 MCF/BBL

#### B. Baseline Period Determination and Data

The application to install vapor recovery was deemed complete on October 6, 1993. The baseline period is from October 1991 through September 1993. The applicant has submitted throughput data for the four tanks for the baseline period.

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Month/Year	S-2246-7	S-2246-8	S-2246-9	S-2246-10	Total
10/91	2251 BBL	2753 BBL	502 BBL	502 BBL	6008 BBL
11/91	2208 BBL	2724 BBL	516 BBL	516 BBL	5964 BBL
12/91	2131 BBL	2630 BBL	499 BBL	499 BBL	5759 BBL
1/92	1751 BBL	2278 BBL	527 BBL	527 BBL	5083 BBL
2/92	2054 BBL	2535 BBL	481 BBL	481 BBL	5551 BBL
3/92	2251 BBL	2690 BBL	439 BBL	439 BBL	5819 BBL
4/92	1907 BBL	2336 BBL	429 BBL	429 BBL	5101 BBL
5/92	1787 BBL	2272 BBL	485 BBL	485 BBL	5029 BBL
6/92	2268 BBL	2543 BBL	275 BBL	275 BBL	5361 BBL
7/92	2501 BBL	2956 BBL	455 BBL	455 BBL	6367 BBL
8/92	2500 BBL	2905 BBL	405 BBL	405 BBL	6215 BBL
9/92	1874 BBL	2302 BBL	428 BBL	428 BBL	5032 BBL
10/92	2017 BBL	2459 BBL	442 BBL	442 BBL	5360 BBL
11/92	2132 BBL	2602 BBL	470 BBL	470 BBL	5665 BBL
12/92	2105 BBL	2541 BBL	436 BBL	436 BBL	5518 BBL
1/93	2084 BBL	2543 BBL	459 BBL	459 BBL	5545 BBL
2/93	2059 BBL	2508 BBL	449 BBL	449 BBL	5465 BBL
3/93	1471 BBL	1917 BBL	446 BBL	446 BBL	4280, BBL
4/93	1394 BBL	1847 BBL	453 BBL	453 BBL	4147 BBL
5/93	1621 BBL	2081 BBL	460 BBL	460 BBL	4622 BBL
6/93	1545 BBL	1947 BBL	402 BBL	402 BBL	4296 BBL
7/93	1479 BBL	2018 BBL	539 BBL	539 BBL	4575 BBL
8/93	1516 BBL	1987 BBL	471 BBL	471 BBL	4445 BBL
9/93	1434 BBL	1951 BBL	517 BBL	517 BBL	4419 BBL

Tank oil Throughput

4

#### **C. Hstorical Actual Emissions**

The historical actual emissions (HAE) were calculated using the emission factor and throughput during the baseline period. Sample calculations for the fourth quarter is shown below.

4th QTR 1991 Throughput = 6008 BBL + 5964 BBL + 5759 BBL = 17,731 BBL/QTR

4th QTR 1992 Throughput = 5360 BBL + 5665 BBL + 5518 BBL = 16,543 BBL/QTR

Avg. Throughput = (17,731 BBL + 16,543 BBL)/2 = 17,137 BBL/QTR

E = 17,137 BBL/QTR x 0.0854 MCF/BBL x 1 lb/0.01117 MCF = 131,068 lb/QTR

Methane and Ethane Adjusted =  $131,021 \times 0.53760 = 70,462$  lb/QTR

Both methane and ethane are not defined as volatile organic compounds therefore the emission calculations will not include either. The average VOC pound/quarter emissions during the baseline period are shown below:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	65259	0
2nd Quarter	0	· 0	0	58707	0
3rd Quarter	0	0	0	63840	0
4th Quarter	0	0	0	70462	0

Actual emission reductions must be in excess of any emissions specified in Sections 3.2.3.1, 3.2.3.2 and 3.2.3.3 of Rule 2201 at the time the application for Authority to Construct was deemed complete. The applications to install vapor recovery were deemed complete on October 6, 1993. Each section is listed below and the emission reductions required discussed:

Section 3.2.3.1 - Required or encumbered by any laws, rules, regulations, agreement, or orders:

At the time the application was deemed complete Rule 4623 did not require vapor collection systems for tanks with capacities of 84,000 gallons or less of a small producer providing the daily throughput is less than 6,300 gallons per day provided the tank was equipped with a pressure relief device set to within ten percent of the maximum allowable working pressure of the tank. Pursuant to CARB Technical Guidance for Rule AB 2588 (Aug. 1989) Table C-4 the control efficiency of a pressure vacuum relief valve set to within ten percent of the

working pressure of the tank is equal to 10%. Thus, District rules required 10% control at the time the application was deemed complete.

Section 3.2.3.2 - Attributed for a control measure noticed for workshop, or proposed or contained in a State Implementation plan:

At the time the application was deemed complete the July 8, 1993 draft revision to Rule 4623 was noticed for workshop. The draft rule did not change the requirements for small producers. Thus, control measures noticed for workshop required 10% control at the time the application was deemed complete.

Section 3.2.3.3 - Proposed in the District's adopted air quality plan for attaining the reductions required by the California Clean Air Act:

A control measure for organic liquid storage tanks is in the 1991 Air Quality Attainment Plan. Pursuant to District Policy NSR-ERC 28 if a rule has been proposed for workshop at the time the ATC was deemed complete the quantity of adjustment must be based on the level of control required by the draft rule not the level of control required by the plan. The adjustments required by the rule noticed for workshop have been discussed under Section 3.2.3.2.

Therefore, the uncontrolled emissions must be adjusted by 10% to reflect the controls in place during the baseline period that were required by District Rule 4623.

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	58733	0
2nd Quarter	0	0	0	52836	0
3rd Quarter	0	0	0	57456	0
4th Quarter	0	0	0	63416	0

**Historical Actual Emissions (HAE)** 

#### D. Actual Emissions Reductions

The actual emission reduction for modifications due to the installation of a control device are equal to the HAE multiplied by the control efficiency. The control efficiency for the vapor recovery system was demonstrated to be greater than 99% control. The permit has a limit which requires 99% control and this number will be used to calculate the AER.

 $AER = HAE \times 0.99$ 

The AER is shown in the table below:

	Actual Emission Reduction						
	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds		
1st Quarter	0	0	0	58146	0		
2nd Quarter	0	0	0	52308	0		
3rd Quarter	0	0	0	56882	0		
4th Quarter	0	0	0	62782	0		

## . . . .

#### Ε. **Air Quality Improvement Deduction**

Pursuant to section 6.5 of Rule 2201 the AER can be banked after a ten (10) percent air quality improvement deduction. The ten percent deduction is shown in the table below:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	"CO pounds
1st Quarter	0	0	0	5815	0
2nd Quarter	0	0	0	5231	0
3rd Quarter	. 0	0	0	5688	0
4th Quarter	0	0	0	6278	0

#### Air Quality Improvement Deduction (10% of AER)

#### F. Increases in Permitted Emissions

No IPE associated with this project.

#### G. **Bankable Emissions Reductions Credits**

The bankable ERC's are equal to the AER minus the 10% air quality improvement deduction. The amount of bankable emission reductions are listed in the table below:

7

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	52331	0
2nd Quarter	0	0	0	47077	0
3rd Quarter	0	0	0	51194	0
4th Quarter	0	0	0	56504	0

## TOTAL CREDITABLE REDUCTIONS QUANTIFIED FOR PROJECT

#### VI. COMPLIANCE:

#### A. Real

The applicant has installed vapor recovery on four oil petroleum storage tanks. The emission reductions were calculated using the actual throughput data supplied by the applicant. The voluntary installation of the vapor recovery system resulted in actual emission reductions therefore, the reductions are real.

#### B. Enforceable

Authorities to Construct S-2246-7-1, '-8-1, '-9-1 and '-10-1 which authorized the installation of the vapor recovery system were issued on February 16, 1994. Compliance with the 99% vapor recovery requirement was demonstrated by the applicant on July 26, 1995. Permits to Operate S-2246-7-1, '-8-1, '-9-1 and '-10-1 contain conditions which make the reductions enforceable. The permits have a condition which limits the fugitive component count and a condition that requires the vapor recovery system achieve 99% control; therefore the reductions are enforceable.

#### C. Quantifiable

The calculation section quantifies the emission reductions generated by the installation of the vapor recovery system. The calculations were performed by developing an emission factor for the storage tanks based on measured VRS gas and tank throughput data. The emission factor was then used to quantify emissions during the baseline period using tank throughput data; therefore, the reductions are enforceable.

#### D. Permanent

The actual emission reductions resulted from the permanent installation of the vapor recovery system; therefore, the reductions are permanent.

#### E. Surplus

The installation of the tank vapor control system was voluntary. San Joaquin Facilities Management meets the definition of small producer in District Rule 4623 and is exempt from the requirement to install vapor recovery. The resulting emission reductions are not mandated by any other law, rule, regulation, agreement, or order of the District, state, or federal government in effect on the day the ATC was deemed complete. The emission reductions were not used to offset on site increases in permitted emissions. The actual emission reductions have been adjusted by 10% since the tanks were required to operate with pressure vacuum relief valves; therefore, the reductions are surplus.

#### F. Timeliness

The emission reductions resultant from ATCs S-2246-7-1, '-8-1, '-9-1 and '-10-1 occurred when the applicant demonstrated compliance with the 99% control efficiency requirement on July 26, 1995. Pursuant to Section 4.2 of Rule 2301, for emission reductions occurring after September 19, 1991, an ERC application must be filed no later than 180 days after the emission reduction occurred. The ERC application was filed within 70 days, on October 3, 1995; therefore, the application was timely.

#### VII. RECOMMENDATIONS:

Provide written notice of initial acceptance to applicant, ARB, and EPA and publish notice in the Bakersfield Californian for emission reduction credits in the amount calculated to initiate a 30 day public comment period.

With Proliminary Deasion Noticeo 05/03/96

## ERC APPLICATION REVIEW Project 950784

Facility Name: Mailing Address:	San Joaquin Facilities Management 1100 Mohawk Street, Suite 150 Bakersfield, CA 93309
Contact Name:	Jack Caufield (Consultant)/Bill Oliver (Operations Manager)
Telephone:	(805) 589-0483/(805) 631-8713
Engineer: Date:	Mat Ehrhardt, AQE II 3/18/96
Reviewed By: Date:	Lance Ericksen 3/18/96

Certificate #(s): S-417-1

#### I. SUMMARY:

San Joaquin Facilities Management has submitted an application to bank emission reduction credits for the installation of a vapor recovery system on four oil production storage tanks. The Authorities to Construct which authorized the installation of the vapor control system are S-2246-7-1, '-8-1, '-9-1 and '-10-1.

The following emission reductions have been found to qualify for banking:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	334	0
2nd Quarter	0	0	0	489	0
3rd Quarter	0	0	0	561	0
4th Quarter	0	0	. 0	366	0

#### II. APPLICABLE RULES:

Rule 2201: New and Modified Stationary Source Review Rule (June 15, 1995)

Rule 2301: Emission Reduction Credit Banking (December 17, 1992)

Rule 4623: Storage of Organic Liquids (December 17, 1992) Exempt - Pursuant to Section 4.2.2

*San Joaquin Facilities Management 950784 Mar 18, 1996* 

#### III. PROJECT LOCATION:

4),

The tanks are part of the Light Oil Western Stationary Source. The tanks are located at the Cal Canal Lease in the South Belridge Oil Field.

The Southeast quarter of Section 31, Township 28S, Range 22E.

#### IV. METHOD OF GENERATING REDUCTIONS:

The reductions were achieved by the installation of the vapor recovery system on four oil production storage tanks. The tank vapors are compressed and sent to a sales gas pipeline.

#### V. CALCULATIONS:

#### A. Assumptions and Emission Factors

- Tanks 3.0 emission calculations used to quantify historical actual emissions
- RVP of oil stored in tank = 7.79 psia (6/9/95 Zalco Test)
- Four turnovers/year for wash tanks (S-2246-7 and '-9) (Tanks 3.0)

#### B. Baseline Period Determination and Data

The application to install vapor recovery was deemed complete on October 6, 1993. The baseline period is from October 1991 through September 1993. The applicant has submitted throughput data for the four tanks for the baseline period. The wash tanks operate at a constant level and they emissions will be calculated at 4 turnovers per year. The throughput data for the stock tanks is presented below:

San Joaquin Facilities Management 950784 . Mar 18, 1996

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## V. CALCULATIONS(continued):

Month/Year	S-2246-8	S-2246-10
10/91	2753 Barrels	502 Barrels
11/91	2724 Barrels	516 Barrels
12/91	2630 Barrels	499 Barrels
1/92	2278 Barrels	527 Barrels
2/92	2535 Barrels	481 Barrels
3/92	2690 Barrels	439 Barrels
4/92	2336 Barrels	429 Barrels
5/92	2272 Barrels	485 Barrels
6/92	2543 Barrels	275 Barrels
7/92	2956 Barrels	455 Barrels
8/92	2905 Barrels	405 Barrels
9/92	2302 Barrels	428 Barrels
10/92	2459 Barrels	442 Barrels
11/92	2602 Barrels	470 Barrels
12/92	2541 Barrels	436 Barrels
1/93	2543 Barreis	459 Barrels
2/93	2508 Barrels	449 Barrels
3/93	1917 Barrels	446 Barrels
4/93	1847 Barrels	453 Barrels
5/93	2081 Barrels	460 Barrels
6/93	1947 Barrels	402 Barreis
7/93	2018 Barrels	539 Barrels
8/93	1987 Barrels	471 Barreis
9/93	1951 Barrels	517 Barrels

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#### V. CALCULATIONS (continued):

#### C. Historical Actual Emissions

The historical actual emissions (HAE) were calculated using tanks 3.0. The emission reports for the tanks are included in Appendix A. The pound/quarter emissions during the baseline period are shown below:

Quarter	S-2246-7 (Ib)	S-2246-3 (lb)	S-2246-9 (lb)	S-2246-10 (Ib)	Total (Ib)
4th Qtr 1991	425.21	2761.15	352.44	637.83	4176.63
1st Qtr 1992	397.59	2500.48	328.03	588.23	3814.33
2nd Qtr 1992	679.83	3547.74	571.04	831.39	5630.00
3rd Qtr 1992	760.79	4200.71	644.27	953.75	6559.52
4th Qtr 1992	425.21	2650.76	352.44	602.19	4030.60
1st Qtr 1993	397.59	2382.17	328.03	569.94	3677.73
2nd Otr 1993	679.83	3239.43	571.04	863.28	5353.63
3rd Qtr 1993	760.79	3621.57	644.27	1015.75	6042.38

Since ethane is expected to be delisted as an volatile organic compound the emission calculations will shown both the ethane-adjusted and non-adjusted amounts. The certificate will be issued for the non-adjusted amount. The ethane-adjusted amount is expressed for future reference. The ethane-adjusted amount will appear in parenthesis to the right of the non-adjusted amount. From the gas analysis submitted with the project the gas consisted of 13.433% Ethane. The average non-methane VOC pound/quarter emissions during the baseline period are shown below:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	3746 (3243)	0
2nd Quarter	0	0	0	5492 (4754)	0
3rd Quarter	0	0	0	6301 (5455)	0
4th Quarter	0	0	0	4104 (3552)	0

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#### V. CALCULATIONS (continued):

The Historical Actual Emissions must be discounted for any emission reduction which is contained in a State Implementation Plan. A control measure for organic liquid store tanks was in the 1991 Air Quality Attainment Plan. The plan called for a 90% reduction in emissions from tanks which would emit 5 lb/day of uncontrolled emissions. All of the tanks would have a uncontrolled potential to emit greater than 5 lb/day. The following table shows the Historic Actual Emissions from the storage tanks after being discounted by 90%.

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	374.6 (324.3)	0
2nd Quarter	0	0	0	549.2 (475.4)	0
3rd Quarter	0	0	0	630.1 (545.5)	0
4th Quarter	0	0	0	410.4 (355.2)	0

Historica	Actual	Emissions	(HAE)
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#### D. Actual Emissions Reductions

The actual emission reduction for modifications due to the installation of a control device are equal to the HAE multiplied by the control efficiency. The control efficiency for the vapor recovery system was demonstrated to be greater than 99% control. The permit has a limit which requires 99% control and this number will be used to calculate the AER.

#### $AER = HAE \times 0.99$

The AER is shown in the table below:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	370.9 (321.0)	0
2nd Quarter	0	0	0	543.7 (470.7)	0
3rd Quarter	0	0	0	623.8 (540.0)	0
4th Quarter	0	0	0	406.3 (351.7)	0

#### V. CALCULATIONS (continued):

#### E. Air Quality Improvement Deduction

Pursuant to section 6.5 of Rule 2201 the AER can be banked after a ten (10) percent air quality improvement deduction. The ten percent deduction is shown in the table below:

·	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	37.1 (32.1)	0
2nd Quarter	0	0	0 ·	54.4 (47.1)	0
3rd Quarter	0	0	0	62.4 (54.0)	0
4th Quarter .	0	0	0	40.6 (35.2)	0

#### Air Quality Improvement Deduction (10% of AER)

#### F. Increases in Permitted Emissions

No IPE associated with this project.

### G. Bankable Emissions Reductions Credits

The bankable ERC's are equal to the AER minus the 10% air quality improvement deduction. The amount of bankable emission reductions are listed in the table below:

	PM10 pounds	SOx pounds	NOx pounds	VOC pounds	CO pounds
1st Quarter	0	0	0	334 (289)	О
2nd Quarter	0	0	0	489 (424)	0
3rd Quarter	0	0	0	561 (486)	0
4th Quarter	0	0	0	366 (317)	0

#### TOTAL CREDITABLE REDUCTIONS QUANTIFIED FOR PROJECT

#### VI. COMPLIANCE:

#### A. Real

The applicant has installed vapor reconvey on four oil petroleum storage tanks. The emission reductions were calculated using the Tanks 3.0 emission calculation program and actual throughput data supplied by the applicant. The voluntary installation of the vapor recovery system resulted in actual emission reductions therefore, the reductions are real.

#### B. Enforceable

Authorities to Construct S-2246-7-1, '-8-1, '-9-1 and '-10-1 which authorized the installation of the vapor recovery system were issued on February 16, 1994. Compliance with the 99% vapor recovery requirement was demonstrated by the applicant on July 26, 1995. Permits to Operate S-2246-7-1, '-8-1, '-9-1 and '-10-1 contain conditions which make the reductions enforceable. The permits have a condition which limits the fugitive component count and a condition that requires the vapor recovery system achieve 99% control; therefore the reductions are enforceable.

#### C. Quantifiable

The calculation section quantifies the emission reductions generated by the installation of the vapor recovery system. The calculations were based on actual operating history and the Tanks 3.0 tank emission calculation program; therefore, the reductions are enforceable.

#### D. Permanent

The actual emission reductions resulted from the permanent installation of the vapor recovery system; therefore, the reductions are permanent.

#### E. Surplus

The installation of the tank vapor control system was voluntary. San Joaquin Facilities Management meets the definition of small producer in District Rule 4623 and is exempt from the requirement to install vapor recovery. The resulting emission reductions are not mandated by any other law, rule, regulation, agreement, or order of the District, state, or federal government in effect on the day the ATC was deemed complete. The emission reductions were not used to offset on site increases in permitted emissions. Emission reductions from organic liquid storage tanks were listed in the 1991 Air Quality Attainment Plan and the measure has been noticed for consideration during the current calendar year. Therefore, the Historical Actual Emissions have been adjusted by 90%. The remaining reductions are surplus.

Note: The current draft version of Rule 4623 does not require tanks operated by a small producer to be equipped with vapor recovery. If the rule is adopted without requiring

#### VI. COMPLIANCE (continued):

additional vapor control or no rule is adopted additional emission reductions will then become surplus.

#### F. Timeliness

The emission reductions resultant from ATCs S-2246-7-1, '-8-1, '-9-1 and '-10-1 occurred when the applicant demonstrated compliance with the 99% control efficiency requirement on July 26, 1995. Pursuant to Section 4.2 of Rule 2301, for emission reductions occurring after September 19, 1991, an ERC application must be filed no later than 180 days after the emission reduction occurred. The ERC application was filed within 70 days, on October 3, 1995; therefore, the application was timely.

#### VII. RECOMMENDATIONS:

Provide written notice of initial acceptance to applicant, ARB, and EPA and publish notice in the Bakersfield Californian for emission reduction credits in the amount calculated to initiate a 30 day public comment period.

# APPENDIX A

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	TANK	TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT IDENTIFICATION AND PHYSICAL CHARACTERISTICS		03/19/96 PAGE 1
dentification Identification No.:	2246-7-0			
City:	Bakersfield		-	
State:	CA			
Company:	SJFM			
Type of Tank:	Vertical Fixed Roof			

ank Dimensions	
Shell Height (ft):	24.0
Diameter (ft):	15.5
Liquid Height (ft):	12.0
Avg. Liquid Height (ft):	12.0
Volume (gallons);	16940
Turnovers:	4.0
Net Throughput (gal/yr):	67760
aint Characteristics	
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
Roof Characteristics	
Type:	Cone
Height (ft):	0.48
Radius (ft) (Dome Roof):	0.00
<pre>Slope (ft/ft) (Cone Roof):</pre>	0.0625
3reather Vent Settings	
Vacuum Setting (psig):	-0.03
Pressure Setting (psig):	0.03

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Meteorological Data Used in Emission Calculations: Bakersfield, California

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California (Avg Atmosph

(Avg Atmospheric Pressure = 14.7 psia)

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

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# 03/19/96 Page 2

Mixture/Component	Month	Dnily Temper Avg.	Liquid atures Min.	Surf. (deg F) Max.	Liquid Bulk Temp. (deg F)	Vapor P Avg.	ressures Min.	(psia) Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
	•••••										•••••	•••••	• • • • • • • • • • • • • • • • • • • •
Cal Canal (RVP = 7.79)	JAN	58.96	54.72	63.20	65.62	5.1930	4.8143	5.5947	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	FEB	61.61	56,50	66.72	65.62	5.4413	4.9706	5.9462	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	MAR	63.99	57.94	70.05	65.62	5.6721	5.0999	6.2944	50.000			50.00	Option 4: RVP=7,79
Cal Canal (RVP = 7.79)	APR	67.10	60.11	74.10	65.62	5.9852	5.2997	6.7389	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	MAY	71.16	63.37	78.95	65.62	6.4139	5.6113	7.3030	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	JUN	74.87	66.58	83.16	65.62	6.8262	5.9319	7.8216	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	JUL	77.51	69.15	85,87	65.62	7.1318	6.1987	8.1702	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	AUG	76.28	68.37	84.18	65.62	6.9881	6.1168	7.9514	50.000			50,00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	SEP	73.43	66.20	80.66	65.62	6.6638	5.8932	7.5103	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	OCT	68.60	62.17	75.04	65.62	6.1409	5.4949	6.8455	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	NON	62.72	57.55	67.89	65.62	5.5480	5.0646	6.0668	50,000			50.00	Option 4: RVP=7.79
Cal Conal (RVP = 7.79)	DEC	58,84	54,63	63.05	65.62	5,1820	4.8065	5,5801	50,000			50.00	Option 4: RVP=7.79

		TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)								• . •	03/19/ PAGE 3	96
Honth:	Jonuary	February	March	April	Мау	June	July	August	September	October	Noveniber	December
Standing Losses (lb): Vapor Space Volume (cu ft): Vapor Density (lb/cu ft): Vapor Space Expansion Factor:	81.2726 2294.74 0.0467 0.108496	104.0202 2294.74 0.0486 0.138107	130.0725 2294.74 0.0505 0.171919	160.7796 2294.74 0.0529 0.211366	195.6629 2294.74 0.0563 0.255640	226.4536 2294.74 0.0595 0.294432	242.8700 2294.74 0.0619 0.314817	222.7230 2294.74 0.0608 0.289099	190.4051 2294.74 0.0582 0.248010	152,1095 2294,74 0,0542 0,199490	107.5880 2294.74 0.0495 0.142537	80.4532 2294.74 0.0466 0.107629
Vented Vapor Saturation Factor:	0.230035	0.221867	0.214778	0.205857	0.194777	0.185192	0.178673	0.181679	0.183853	0.201690	0.218532	0.230412
Tank Vapor Space Volume Vapor Space Volume (cu ft); Tank Diameter (ft): Vapor Space Outage (ft); Tank Shell Height (ft); Average Liquid Height (ft); Roof Outage (ft);	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16	2294.74 15.5 12.16 24.0 12.0 0.16
Roof Outage (Cone Roof) Roof Outage (ft): Roof Height (ft): Roof Slope (ft/ft): Shell Radius (ft):	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.1	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.8	0,16 0,484 0,06245 7,8	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.8	0.16 0.484 0.06245 7.0
Vapor Density Vapor Density (lb/cu ft): Vapor Molecular Weight (lb/lb-mole): Vapor Pressure at Daily Average Liquid Surface Temperature (osia):	0.0467 50.000000 5.193020	0.0486 50.000000 5.441310	0.0505 50.000000 5.672118	0.0529 50.000000 5.985153	0,0563 50,000000 6,413873	0.0595 50.000000 6.826157	0.0619 50.000000 7.131837	0.0608 50.000000 6.988126	0.0582 50.000000 6.663762	0.0542 50.000000 6.140863	0.0495 50.000000 5.548025	0.0466 50.000000 5.181991
Daily Avg. Liquid Surface Temp.(deg. R): Daily Average Ambient Temp. (deg. R): Ideal Gas Constant R	518.63 507.82	521.28 512.82	523,66 516,72	526.77 522.27	530.83 530.22	534,54 537,92	537.18 544.12	535.95 542.12	533.10 536.97	528.27 527.62	522.39 515.82	518.51 507.82
(psia cuft /(lb-mole-deg R)): Liquid Bulk Temperature (deg. R): Tank Paint Solar Absorptance (Shell): Tank Paint Solar Absorptance (Roof): Daily Total Solar Insolation	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17	10.731 525.29 0.17 0.17
Factor (Btu/sqt(day):	700.00	1102.00	1595.00	2095.00	2309.00	2149.00	2004.00	2421.00	1992.00	1420.00	942.00	0//.00
<pre>Vapor Space Expansion Factor Vapor Space Expansion Factor: Daily Vapor Temperature Range (deg.R): Daily Vapor Pressure Range (psia): Breather Vent Press. Setting Range(psia): Ventor Descure at Daily Vargers (invide)</pre>	0.108496 16.97 0.780389 0.06	0.138107 20.44 0.975648 0.06	0.171919 24.22 1.194512 0.06	0.211366 27.97 1.439287 0.06	0.255640 31.17 1.691711 0.06	0.294432 33.17 1.889715 0.06	0.314817 33.44 1.971463 0.06	0.289099 31.61 1.834656 0.06	0.248010 28.92 1.617109 0.06	0.199490 25,73 1.350583 0.06	0.142537 20.68 1.002197 0.06	0.107429 16.83 0.773575 0.06
Surface Temperature (psia): Vapor Pressure at Daily Minimum Liquid	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5,181991
Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid Sufface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg R): Daily Min. Liquid Surface Temp. (deg R): Daily Max. Liquid Surface Temp. (deg R):	4.814286 5.594674 518.63 514.39 522.87	4.97050 5.946199 521.28 516.17 526.39	6.294363 523.66 517.61 529.72	5.299656 6.738943 526.77 519.78 533.77	7,302980 530,83 523,04 538,62	7.821612 534.54 526.25 542.83	8.170204 537.18 528.82 545.54	6. 116785 7.951441 535.95 528.04 543.85	7.510323 533.10 525.87 540.33	5.494946 6.845529 528.27 521.84 534.71	6.066772 522.39 517.22 527.56	4,800488 5,580064 518,51 514,30 522,72

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Daily Ambient Temp. Range (deg.R):	18.50	21.10	23,10	25.00	26.70	27.90	28.70	27.90	27.00	26.10	22.50	18.90

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

## 03/19/96 Page 4

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Month:	January	February	March	April	Мау	June	July	August	September	October	November	December
Vented Vapor Saturation Eactor												
Vented Vapor Saturation Factor:	0.230035	0.221867	0.214778	0.205857	0.194777	0.185192	0.178673	0.181679	0.188853	0.201690	0.218532	0.230412
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Vapor Space Outage (ft):	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16	12.16
Working Losses (lb):	26.1830	27.4349	28.5986	30.1769	32.3385	34.4172	35.9585	35.2339	33.5985	30,9620	27.9729	26,1274
Vapor Molecular Weight (lb/lb-mole);	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50,000000
Vapor Pressure at Daily Average Liquid												-
Surface Temperature (psin):	5.193020	5,441310	5.672118	5,985153	6.413873	6.826157	7,131837	6.988126	6.663762	6.140863	5.548025	5.181991
Net Throughput (gal/month):	5647	5647	5647	5647	5647	5647	5647	5647	5647	5647	5647	5647
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1,0000	1,0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (cuft):	2264	2264	2264	2264	2264	2264	2264	2264	2264	2264	2264	2264
Maximum Liquid Height (ft):	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Working Loss Product Factor:	0,75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0,75	0.75
Total Losses (lb):	107.46	131.46	158.67	190.96	228.00	260.87	278.83	257.96	224.00	183.07	135,56	106.58

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	TANKS PROGRAM 3.0	03/19/96	
	EMISSIONS REPORT - DETAIL FORMAT	PAGE 5	
	INDIVIDUAL TANK EMISSION TOTALS		

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ionths in Report:	January, February, March, April, May, June, July, August, Sentembar Deschart Neuerhan, Descuber
	September, October, November, December

	Losses (lbs	.):	
.iquid Contents	Standing	Working	Total
Cal Canal (RVP = 7.79)	1894.41	369.00	2263.41
'otal:	1894.41	369.00	2263.41

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 TANKS PROGRAM 3.0	 03/19/96
EMISSIONS REPORT - DETAIL FORMAT	PAGE 1
TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS	 . ·

Identification	
Identification No.:	2246-8-0
City:	Bakersfield
State:	CA
Company:	SJFM 91-92
Type of Tank:	Vertical Fixed Roof
Tank Dimensions	
Shell Height (ft):	16.0
Diameter (ft):	29.8
Liquid Height (ft):	12.0
Avg. Liquid Height (ft):	: 10.0
Volume (gallons):	62615
Turnovers:	20.7
Net Throughput (gal/yr):	1298808
Paint Characteristics	•
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
Roof Characteristics	
Type:	Cone
Height (ft):	0.93
Radius (ft) (Dome Roof)	: 0.00
Slope (ft/ft) (Cone Roo	f): 0.0625
Breather Vent Settings	ł
Vacuum Setting (psig):	-0.03
Pressure Setting (psig)	: 0.03

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Meteorological Data Used in Emission Calculations: Bakersfield, California

(Avg Atmospheric Pressure = 14.7 psia)

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# TANKS PROGRAM 3.003/19/96EMISSIONS REPORT - DETAIL FORMATPAGE 2LIQUID CONTENTS OF STORAGE TANKPAGE 2

lixture/Component	Month	Daily I Tempera Avg.	Liquid atures Min.	Surf, (deg F) Max.	Liquid Bulk Temp. (deg F)	Vapor P Avg.	ressures Min.	(psia) Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Cal Canal (RVP = 7.79)	JAN	58.96	54.72	63.20	65.62	5.1930	4.8143	5.5947	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	FEB	61.61	56.50	66,72	65.62	5.4413	4.9706	5.9462	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	MAR	63.99	57.94	70.05	65.62	5.6721	5.0999	6.2944	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	APR	67.10	60.11	74.10	65.62	5.9852	5.2997	6,7389	50.000			50.00	Option 4: RVP=7.79
tal Conal (RVP = 7,79)	мач	71.16	63.37	78.95	65.62	6.4139	5.6113	7.3030	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	JUN	74.87	66.58	83.16	65.62	6.8262	5.9319	7.8216	50.000			50.00	Option 4: RVP=7.79
tal Canal (RVP = 7,79)	JUL	77.51	69.15	85.87	65.62	7.1318	6.1987	8.1702	50.000			50.00	Option 4: RVP±7.79
Cal Canal (RVP = 7,79)	AUG	76.28	68.37	84.18	65.62	6,9881	6.1168	7.9514	50.000			50.00	Option 4: RVP=7.79
Jal Canal (RVP = 7,79)	SEP	73.43	66.20	80.66	65.62	6.6638	5.8932	7.5103	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	100	68.60	62.17	75.04	65.62	6.1409	5.4949	6.8455	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	NOV	62.72	57.55	67.89	65.62	5,5480	5.0646	6.0668	50.000			50,00	Option 4: RVP±7.79
Jal Canal (RVP = 7.79)	DEC	58,84	54.63	63.05	65.62	5.1820	4.8065	5.5801	50.000			50.00	Option 4: RVP=7.79

	· · · · ·	EMISSI	TANK ONS RE	5 PROGR PORT -	AM 3.0 DETAIL	FORMAT					03/19/ PAGE 3	96
	<u></u>											
Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (1b): Vapor Space Volume (cu ft): Vapor Density (1b/cu ft): Vapor Space Expansion Factor: Vented Vapor Saturation Factor:	247.5986 4401.23 0.0467 0.108496 0.365392	318.8902 4401.23 0.0486 0.138107 0.354631	400.9433 4401.23 0.0505 0.171919 0.345182	499.0390 4401.23 0.0529 0.211366 0.333143	612.5967 4401.23 0.0563 0.255640 0.317955	714.3768 4401.23 0.0595 0.294432 0.304601	770.1375 4401.23 0.0619 0.314817 0.295402	704.5665 4401.23 0.0608 0.289099 0.299656	598.9220 4401.23 0.0582 0.248010 0.309725	473.6647 4401.23 0.0542 0.199490 0.327462	330.6757 4401.23 0.0495 0.142537 0.350199	245.0317 4401.23 0.0466 0.107429 0.365885
Tank Vapor Space Volume Vapor Space Volume (cu ft): Tank Diameter (ft): Vapor Space Outage (ft): Tank Shell Height (ft): Average Liquid Height (ft): Roof Outage (ft):	4401.23 29.8 6.31 16.0 10.0 0.31	4401.23 29.8 6,31 16.0 10.0 0,31	4401.23 29.8 6.31 16.0 10.0 0.31	4401.23 29.8 6.31 16.0 10.0 0.31	4401.23 29.8 6,31 16.0 10.0 0.31	4401.23 29.8 6.31 16.0 10.0 0.31						
Roof Outage (Cone Roof) Roof Outage (ft): Roof Height (ft): Roof Slope (ft/ft): Shell Radius (ft):	0.31 0.931 0.06248 14.9											
Vapor Density Vapor Density (lb/cu ft): Vapor Molecular Weight (lb/lb-mole): Vapor Perfector at Daily Avecome Light	0,0467 50,000000	0,0486 50,000000	0.0505 50.000000	0.0529 50.000000	0,0563 50,000000	0.0595 50.000000	0,0619 50,000000	0,0608 50,000000	0,0582 50,00000	0.0542 50.000000	0.0495 50.000000	0.0466 50.000000
Surface Temperature (psia): Daily Avg. Liquid Surface Temp.(deg. R): Daily Average Ambient Temp. (deg. R): Ideal Car Constant R	5.193020 518.63 507.82	5,441310 521,28 512,82	5.672118 523.66 516.72	5.985153 526.77 522.27	6.413873 530.83 530.22	6.826157 534.54 537.92	7.131837 537.18 544.12	6.988126 535.95 542.12	6.663762 533.10 536.97	6.140863 528.27 527.62	5.548025 522.39 515.82	5.181991 518.51 507.82
(psia cuft /(lb-mole-deg R)): Liquid Bulk Temperature (deg, R): Tank Paint Solar Absorptance (Shell): Tank Paint Solar Absorptance (Shell):	10.731 525.29 0.17 0.17	10,731 525,29 0,17 0,17	10.731 525.29 0.17 0.17									
Daily Total Solar Insolation Factor (Btu/sqftday):	766.00	1102.00	1595.00	2095.00	2509.00	2749.00	2684.00	2421.00	1992.00	1458.00	942.00	677.00
Vapor Space Expansion Factor	0.400/0/	5. 47.540 <sup>7</sup>	0.474040	0.044744	0.055//0	0.00//70	0.74/017	0.000000		8 400/00	0.1/2577	0 407/70
Vapor Space Expansion Factor: Daily Vapor Temperature Range (deg.R): Daily Vapor Pressure Range (psia): Breather Vent Press. Setting Range(psia):	0.108498 16.97 0.780389 0.06	0.138107 20.44 0.975648 0.06	24.22 1.194512 0.06	0.211366 27.97 1.439287 0.06	0.255840 31.17 1.691711 0.06	33.17 1.889715 0.06	0.314817 33.44 1.971463 0.06	0.289099 31.61 1.834656 0.06	28.92 1.617109 0.06	25.73 25.73 1.350583 0.06	20.68 1.002197 0.06	16.83 0.773575 0.06
Vapor Pressure at Daily Average Liquid Surface Temperature (psia): Vapor Pressure at Daily Minimum Liquid	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid	4.814286	4.970550	5.099851	5.299656	5.611269	5.931897	6.198740	6.116785	5.893214	5.494946	5.064575	4.806488
Sufface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg R): Daily Min. Liquid Surface Temp. (deg R): Daily Max. Liquid Surface Temp. (deg R):	5.594674 518.63 514.39 522.87	5.946199 521.28 516.17 526.39	6.294363 523.66 517.61 529.72	6.738943 526.77 519.78 533.77	7.302980 530.83 523.04 538.62	7.821612 534.54 526.25 542.83	8.170204 537.18 528.82 545.54	7.951441 535.95 528.04 543.85	7.510323 533.10 525.87 540.33	6.845529 528,27 521.84 534.71	522.39 517.22 527.56	5.580064 518.51 514.30 522.72

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Daily Ambient Temp. Range (deg.R):	18.50	21.10	23.10	25.00	26.70	27.90	28,70	27.90	27.00	26.10	22.50	18.90
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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

03/19/96 PAGE 4

onth:	January	February	March	April	Мау	June	July	August	September	October	November	December
ented Vapor Saturation Factor											•••••	
Vented Vapor Saturation Factor:	0.365392	0.354631	0.345182	0.333143	0.317955	0.304601	0.295402	0.299656	0.309725	0.327462	0.350199	0.365885
Vapor Pressure at Daily Average Liquid												••••••••
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Vapor Space Outage (ft):	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6,31	6.31	6.31	6.31	6.31
orking Losses (lb):	443.6138	517.2645	572.1749	524.2994	546.4619	650.9594	790.5641	761,2690	575.2493	633,9674	\$66.7307	511.0738
Vapor Molecular Weight (lb/lb-mole):	50.000000	50.000000	50,000000	50.000000	50.000000	50.000000	50.000000	50.000000	50,000000	50.000000	50.000000	50,000000
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):	5,193020	5.441310	5.672118	5.985153	6.413873	6,826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Net Throughput (gal/month):	95676	106470	112980	98112	95424	106806	124152	122010	96684	115626	114408	110460
Turnover Factor:	1,0000	1,0000	1.0000	1.0000	1.0000	1.0000	1,0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (cuft):	8370	8370	8370	8370	8370	8370	8370	8370	8370	8370	8370	8370
Maximum Liquid Height (ft):	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Tank Diameter (ft):	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
Working Loss Product Factor:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
otal Losses (lb):	691.21	836,15	973.12	1023.34	1159.06	1365.34	1560.70	1465.84	1174.17	1107.63	897.41	756,11

:	化工具的 医无关节 医静脉管 化分子子	TANKS PROGRAM 3.0		03/19/96	· 1
• :		EMISSIONS REPORT - DETAIL FORMAT	• •	PAGE 5	
÷		INDIVIDUAL TANK EMISSION TOTALS		•	
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onths in Report: January, February, March, April, May, June, July, August, September, October, November, December

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	Losses (lbs.	.):	
iquid Contents	Standing	Working	Total
al Canal (RVP = 7.79)	5916.44	7093.63	13010.07
otal:	5916.44	7093.63	13010.07

	TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT	 	03/19/96 Page 1
TANK	IDENTIFICATION AND PHYSICAL CHARACTERISTICS	 	

Identification	
Identification No.:	2246-8-0
City:	Bakersfield
State:	CA
Company:	SJFM 92-93
Type of Tank:	Vertical Fixed Roof
Tank Dimensions	
Shell Height (ft):	16.0
Diameter (ft):	29.8
Liquid Height (ft):	12.0
Avg, Liquid Height (ft):	10.0
Volume (gallons):	62615
Turnovers:	17.7
Net Throughput (gal/yr):	1108842
Paint Characteristics	
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
xoof Characteristics	
Type:	Cone
Height (ft):	0.93
Radius (ft) (Dome Roof):	0.00
Slope (ft/ft) (Cone Roof	f): 0.0625
Breather Vent Settings	•
Vacuum Setting (psig):	-0,03
Pressure Setting (psig):	. 0.03

Meteorological Data Used in Emission Calculations: Bakersfield, California 👘 (Avg Atmospheric Pressure = 14.7 psia)

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## TANKS PROGRAM 3.003/19/96EMISSIONS REPORT - DETAIL FORMATPAGE 2LIQUID CONTENTS OF STORAGE TANKPAGE 2

lixture/Component	Month	Daily Temper Avg.	Liquid atures Min,	Surf. (deg F) Max.	Liquid Bulk Temp. (deg F)	Vapor P Avg.	'ressures Min.	(psia) Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Moi. Weight	Basis for Vapor Pressure Calculations
Cal Canal (RVP = 7.79)	JAN	58.96	54.72	63.20	65.62	5.1930	4.8143	5.5947	50.000			50,00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	FEB	61.61	56.50	66.72	65.62	5.4413	4.9706	5.9462	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	MAR	63.99	57.94	70.05	65.62	5.6721	5.0999	6.2944	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	APR	67.10	60.11	74.10	65.62	5.9852	5.2997	6.7389	50.000			50.00	Option 4: RVP=7.79
Tal Canal (RVP = 7.79)	MAY	71.16	63.37	78.95	65.62	6.4139	5.6113	7.3030	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	NÚL	74.87	66.58	83.16	65.62	6.8262	5.9319	7.8216	50.000			\$0.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	JUL	77.51	69.15	85.87	65.62	7.1318	6.1987	8.1702	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	AUG	76.28	68.37	84.18	65.62	6.9881	6.1168	7.9514	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	SEP	73.43	66.20	80.66	65,62	6.6638	5.8932	7.5103	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	OCT	68.60	62.17	75.04	65.62	6.1409	5.4949	6,8455	50,000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	NOV	62.72	57.55	67.89	65.62	5,5480	5,0646	6,0668	50.000			50,00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	DEC	58.84	54.63	63.05	65.62	5.1820	4.8065	5.5801	50.000			50.00	Option 4: RVP=7.79

	-	EMISSI	TANK	5 PROGR PORT –	AM 3.0 DETAIL	FORMAT	· · · · · · · · · · · · · · · · · · ·				03/19/ PAGE 3	96
un an an an Angele an an Angele an Angel Angele an Angele an An		DE1	TAIL CA	LCULATI	ONS (A	<b>₽-42)</b>					<u> </u>	• : •
ionth:	January	february	March	April	Мау	June	July	August	September	October	November	December
itanding Losses ((b):	247,5986	318,8902	400.9433	499.0390	612.5967	714.3768	770,1375	704.5665	598,9220	473.6647	330.6757	245.0317
Vapor Space Volume (cu ft):	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23	4401.23
Vapor Density (lb/cu ft):	0.0467	0.0486	0.0505	0.0529	0.0563	0.0595	0.0619	0.0608	0.0582	0.0542	0.0495	0.0466
Vapor Space Expansion factor: Vented Vapor Saturation factor;	0.108496 0.365392	0.138107 0.354631	0.171919 0.345182	0.211366 0.333143	0.255640 0.317955	0.294432	0.314817 0.295402	0.289099	0.248010 0.309725	0.199490 0.327462	0.142537 0.350199	0,107429
ank Vanne Snach Volume												••••
Vapor Space Volume (cu ft):	4401.23	4401-23	4401.23	4401.23	4401.23	4401.23	4401.23	4401 23	4401.23	4401 23	4401 23	4401.23
Tank Diameter (ft):	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.6
Vapor Space Outage (ft):	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.3
Tank Shell Height (ft):	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Average Liquid Height (ft):	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Roof Outage (ft):	0.31	0.31	0,31	0.31	0.31	0,31	0.31	0,31	0.31	0.31	0.31	0.31
oof Outage (Cone Roof)		0.74					- 74					
Noof Vulage (ft):	10.0	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.3
Roof Slope (ft/ft):	0.751	0.04268	0.931	0.04368	0.721	0.047/8	0.042/8	0.931	0.731	0.931	0.731	0.93
Shell Rodius (ft):	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.1
apor Density												
Vapor Density (lb/cu ft):	0.0467	0.0486	0.0505	0.0579	0.0563	0.0595	0,0619	0.0608	0.0582	0.0542	0.0495	0.046
Vapor Molecular Weight (lb/lb-mole):	50.000000	50,000000	50.000000	50.000000	50.000000	50.000000	50,000000	50.000000	50.000000	50.000000	50.000000	50,00000
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5,18199
Daily Avg. Liquid Surface Temp.(deg. R):	518.63	521.28	523.66	526.77	530.83	534.54	537.18	535.95	533.10	528.27	522.39	518.5
Daily Average Ambient Jemp. (deg, R): Ideal Gas Constant R	507.82	512.82	516.72	522,27	530,22	537.92	544.12	542.12	536.97	527.62	515.82	507.8
(psia_cuft /(lb-mole-deg_R)):	10.731	10.731	10.731	10.731	10.731	10.731	10,731	10.731	10.731	10.731	10.731	10.73
Liquid Bulk Temperature (deg. R):	525.29	525,29	525.29	525.29	525.29	525.29	525.29	525,29	525,29	525.29	525.29	525.2
Tank Paint Solar Absorptance (Shell):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.1
Deily Total Solar Localation	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.1
Factor (Btu/sqftday):	766.00	1102.00	1595.00	2095.00	2509.00	2749.00	2684,00	2421.00	1992.00	1458.00	942.00	677.00
apor Space Expansion Factor												
Vapor Space Expansion Factor:	0.108496	0.138107	0.171919	0.211366	0.255640	0.294432	0.314817	0.289099	0.248010	0.199490	0.142537	0.10742
Daily Vapor Temperature Range (deg.R):	16.97	20.44	24.22	27.97	31.17	33.17	33.44	31.61	28.92	25,73	20.68	16.8
Daily Vapor Pressure Range (psia):	0.780389	0.975648	1.194512	1.439287	1.691711	1.889715	1.971463	1.834656	1.617109	1.350583	1.002197	0.77357
Breather Vent Press. Setting Range(psia): Vapor Pressure at Daily Average Liquid	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.0
Surface Temperature (psia): Vapor Pressure at Daily Minimum Liquid	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5,18199
Surface Temperature (psia):	4.814286	4.970550	5.099851	5.299656	5.611269	5,931897	6.198740	6.116785	5.893214	5.494946	5.064575	4,80648
Vapor Pressure at Daily Maximum Liquid			(	/	N					, ,,,,,,,		
Surface Temperature (psia):	5.594674	5,946199	6.294363	6.738943	7.302980	7.821612	8.170204	7.951441	(.510323	6.845529	6.066772	5,58006
Daily Avg. Liquid Surface Temp. (deg R):	510.03	521.28	223,00	510 70	530.85	524.24	537,18	232.42	733.10 575 97	520.27	517 22	5  0.) 51/ 1
varty Min. Liquid Surface lemp. (deg K):	514*38	310.17	211.01	518.10	523.04	120.23	320.02	320.04	10,02	221.04	211.22	314.3
Daily Max Liquid Surface Temp (den 9).	577 87	576 70	520 72	577 77	ናጊ용 ኡን	562 RT	545 54	5/7 85	540.33	576 71	527 54	522.7

Daily Ambient Temp. Range (deg.R):	18,50	21.10	23,10	25.00	26.70	27,90	28.70	27.90	27.00	26.10	22.50	18.90
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TANKS PROGRAM 3.0 Emissions report - Detail Format Detail Calculations (AP-42)												96
ith:	January	February	March	April	Мау	June	July	August	September	October	November	December
ited Vapor Saturation Factor												••••••
/ented Vapor Saturation Factor: /apor Pressure at Daily Average Liquid	0.365392	0.354631	0.345182	0.333143	0.317955	0.304601	0.295402	0,299656	0.309725	0.327462	0.350199	0.365885
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
<pre>/apor Space Outage (ft):</pre>	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6.31	6,31	6.31	6.31	6.31
-king Losses (lb):	495.2194	511,7552	407.7544	414.5466	500.5226	498.3948	539.7017	520,7027	487.5375	566.2644	541.3485	493.7789
<pre>/apor Molecular Weight ((b/(b-mole): /apor Pressure at Daily Average Liquid</pre>	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50,000000	50.000000	50.000000	50.000000	50,000000
Surface Temperature (psia):	5.193020	5.441310	5.672118	5,985153	6.413873	6,826157	7,131837	6,988126	6.663762	6.140863	5.548025	5.18199
<pre>!et Throughput (gal/month):</pre>	106806	105336	80514	77574	87402	81774	84756	83454	81942	103278	109284	106722
urnover factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
faximum Liquid Volume (cuft):	8370	8370	8370	8370	8370	8370	8370	8370	8370	8370	8370	8370
laximum Liquid Height (ft):	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Jonk Diameter (TT): Jorking Loss Product Factor:	29.8	29.8	29.8	29.8	29.8	29.8 0.75	29.8	29.8 0.75	29.8	29.8	29.8	29.8
tal Losses (lb):	742.82	830.65	808.70	913,59	1113.12	1212.77	1309.84	1225.27	1086.46	1039.93	872.02	738.8

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TANKS PROGRAM 3.0	03/19/96
EMISSIONS REPORT - DETAIL FORMAT	PAGE 5
INDIVIDUAL TANK EMISSION TOTALS	

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`ths in Report: January, February, March, April, May, June, July, August, September, October, November, December

uid Contents Canal (RVP = 7.79)	Losses (lbs	Losses (lbs.):							
uid Contents Canal (RVP = 7,79) al:	Standing	Working	Total						
Canal (RVP = 7,79)	5916.44	5977.53	11893.97						
tal:	5916.44	5977.53	11893.97						

 	TANKS PROGRAM 3.0		03/19/96
: -	EMISSIONS REPORT ~ DETAIL FORMAT	· · ·	PAGE 1
TANK	IDENTIFICATION AND PHYSICAL CHARACTERISTICS	÷	• .

entification	
Identification No.:	2246-9-0
City:	Bakersfield
State:	CA
Company:	SJFM
Type of Tank:	Vertical Fixed Roof
ink Dimensions	
Shell Height (ft):	16.0
Diameter (ft):	15.5
Liquid Height (ft):	10.0
Avg. Liquid Height (ft):	10.0
Volume (gallons):	14117
Turnovers:	4.0
Net Throughput (gal/yr):	56468
aint Characteristics	
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
oof Characteristics	
Type:	Cone
Height (ft):	0.48
Radius (ft) (Dome Roof):	: 0.00
Slope (ft/ft) (Cone Root	f): 0.0625
reather Vent Settings	t.
Vacuum Setting (psig):	-0.03
Pressure Setting (psig)	. 0.03

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Acteorological Data Used in Emission Calculations: Bakersfield, California

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(Avg Atmospheric Pressure = 14.7 psia)

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

03	/19	/96
PA	GE	2

<sup>:</sup> xture/Component	Month	Daily 1 Tempera Avg.	.iquid ntures Min.	Surf. (deg F) Max.	Liquid Bulk Temp. (deg F)	Vapor P Avg.	ressures Min.	(psia) Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
31 Canal (RVP = 7.79)	JAN	58.96	54.72	63.20	65.62	5.1930	4.8143	5.5947	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	FEB	61.61	56.50	66.72	65.62	5.4413	4.9706	5.9462	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	HAR	63.99	57.94	70.05	65.62	5.6721	5.0999	6.2944	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	APR	67.10	60.11	74.10	65.62	5.9852	5,2997	6.7389	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	MAY	71.16	63.37	78.95	65.62	6.4139	5.6113	7.3030	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	ากห	74,87	66,58	83,16	65.62	6.8262	5,9319	7.8216	50.000			50,00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	JUL	77.51	69.15	85.87	65.62	7.1318	6,1987	8.1702	50.000			50.00	Option 4: RVP=7.79
al Conal (RVP = 7.79)	AUG	76,28	68.37	84.18	65.62	6.9881	6,1168	7.9514	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	SEP	73.43	66.20	80.66	65.62	6.6638	5.8932	7,5103	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	001	68.60	62.17	75.04	65.62	6.1409	5.4949	6.8455	50.000			50.00	Option 4: RVP=7.79
al Canal (RVP = 7.79)	NOV	62.72	57.55	67.89	65.62	5.5480	5.0646	6,0668	50.000			50.00	Option 4: RVP=7.79
cal Canal (RVP = 7.79)	DEC	58,84	54.63	63.05	65.62	5.1820	4.8065	5,5801	50.000			50.00	Option 4: RVP=7.79

		emissi Det	TANK ONS RE AIL CA	S PROGR PORT - LCULATI	AM 3.0 Detail Ons (A)	FORMAT P-42)	: . · ·	· · ·			03/19/ PAGE 3	96.
onth:	January	february	March	April	May	June	July	August	September	October	November	December
	•••••				•••••				•••••			
tanding Losses (1b):	66.3985	85.5389	107.5731	133.9309	164.4672	191.8541	206.8750	189.2419	160.8276	127.1383	88.7097	65.7094
Vapor Space Volume (cu II): Vapor Depaity (lb/cu ft):	1102.39	1102.39	1102.59	1162.59	1102.59	1162.59	1162.59	1162,39	0 0502	1102.39	0.0405	1162.59
Vapor Space Expansion Factor:	0.0407	0 138107	0.0303	0.0329	0.0303	0.0275	0.0019	0 280/99	0.0302	0.0342 0 100400	0 142537	0 107629
Vented Vapor Saturation Factor:	0.370950	0.360119	0.350603	0.338472	0.323159	0,309685	0.300399	0.304695	0.314856	0.332745	0.355655	0.371446
ank Vapor Space Volume												
Vapor Space Volume (cu ft):	1162.59	1162.59	1162.59	1162.59	1162.59	1162.59	1162,59	1162.59	1162,59	1162.59	1162.59	1162.59
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Vapor Space Outage (ft):	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6,16	6,16	6.16	6.16	6,10
Tank Shell Height (ft):	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Average Liquid Height (ft):	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Roof Outage (ft):	0.16	0.16	Ų.16	0.16	0.16	0.16	0.16	Ų. 16	0,15	0.16	V.16	0.10
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0,10
Roof Height (ft):	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0,484	0.484	0.484	0.484	0.484
Roof Slope (ft/ft):	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.0624
Shell Radius (ft):	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.0
Vapor Density												
Vapor Density (lb/cu ft):	0.0467	0,0486	0.0505	0.0529	0.0563	0.0595	0.0619	0,0608	0.0582	0,0542	0.0495	0.0460
Vapor Molecular Weight (lb/lb-mole): Vapor Pressure at Daily Average Liquid	50,000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	. 50.00000
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.18199
Daily Avg. Liquid Surface Temp.(deg. 8):	: 518.63	521.28	523.66	526.77	530,83	534.54	537.18	535.95	533.10	528.27	522.39	518.5
Daily Average Ambient Temp. (deg. R): Ideal Gas Constant R	507.82	512.82	516.72	522.27	530.22	537.92	544.12	542.12	536,97	527.62	515.82	507,8
(psia cuft /(lb-mole-deg R)):	10,731	10.731	10,731	10.731	10,731	10.731	10.731	10.731	10.731	10.731	10.731	10.73
Liquid Butk Temperature (deg. R):	525.29	525.29	525.29	525.29	525.29	525.29	525,29	525.29	525,29	525.29	525,29	525.2
Tank Paint Solar Absorptance (Shell):	0,17	0.17	0.17	0,17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.1
Tank Paint Solar Absorptance (Roof):	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.1
Daily Iotal Solar Insolation Factor (Btu/sqftday):	766.00	1102.00	1595.00	2095.00	2509.00	2749.00	2684.00	2421.00	1992.00	1458.00	942.00	677.00
Nonor Engle Exampler factor												
Vanor Space Expansion Factors	D 109/04	0 138107	0 171010	0.211366	0.255640	0.294432	0.314817	0.289099	0,248010	0,199490	0,142537	0,10742
Daily Vapor Temperature Range (deg R):	16.97	20.44	24.22	27.97	31.17	33.17	33.44	31.61	28.92	25.73	20.68	16.8
Daily Vapor Pressure Range (osia):	0.780389	0.975648	1,194512	1,439287	1.691711	1.889715	1.971463	1.834656	1.617109	1.350583	1,002197	0.77357
Breather Vent Press, Setting Range(psia)	): 0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.0
Vapor Pressure at Daily Average Liquid	-						•					
Surface Temperature (psia):	5.193020	5,441310	5.672118	5,985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5,18199
Vapor Pressure at Daily Minimum Liquid										<b>r</b>		,
Surface Temperature (psin):	4.814286	4.970550	5.099851	5.299656	5.611269	5.931897	6.198740	6.116785	5.893214	5.494946	5.064575	4.80648
Vapor Pressure at Daily Maximum Liquid	F F0//7/	F 01/100	1 201717	4 710047	7 703000	7 071/17	8 170001	7 051//1	7 510777	1 0/5530		5 58004
Surface Temperature (psia):	5.5946/4	2.940199	0.294363	0./30743	7.302980	(.021012 ET/ E/	0.1/0204	(.Y)1441 876 AB	(1.210323 (1.210323)	0.04222) 200	F 5,000//2	5,30000
Jaily Avg. Liquid Surface Temp. (deg R)	: 010.03 . E1/ 70	521.25	517 21	510 70	220.03 220.03	524.24	570 PJ	527.97 528 A/	575 87	520.21	517.22	510.J
Daily Man. Liquid Surface Temp. (deg K)	; J14.37 • 697.87	524 10	520 77	517.70 517 77	523.04 578 43	542 RT	572 25.05	5/3 RS	540.33	534.7	527.54	522.7
varry way, Fidnin Shitace temby (dod K)	. 200.01	720.39	267.16		550.02	146.01	242.24	242.02		44711		

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Daily Ambient Temp. Range (deg.R):	18.50	21.10	23.10	25.00	26.70	27.90	28,70	27,90	27.00	26.10	22.50	18.90
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TANKS PROGRAM 3.0	- <u></u>	03/19/96
EMISSIONS REPORT - DETAIL FORMAT		PAGE 4
DETAIL CALCULATIONS (AP-42)		

lonth:	January	February	March	April	May	June	ylut	August	September	October	November	December
/ented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.370950	0.360119	0.350603	0.338472	0.323159	0.309685	0.300399	0.304695	0.314856	0.332745	0.355655	0.371446
Surface Temperature (psia):	5,193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6,140863	5.548025	5.181991
Vapor Space Outage (ft):	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16
forking Losses (lb):	21.8200	22,8632	23.8330	25.1483	26.9497	28.6820	29.9664	29.3626	27.9997	25.8026	23.3116	21.7736
Vapor Molecular Weight (lb/lb-mole):	50.000000	50.000000	50.000000	50,000000	50.000000	50.000000	50.000000	50,000000	50.000000	50,000000	50.000000	50,000000
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):	5.193020	5.441310	5.672118	5,985153	6.413873	6,826157	7.131837	6,988126	6.663762	6.140863	5,548025	5,181991
Net Throughput (gal/month):	4706	4706	4706	4706	4706	4706	4706	4706	4706	4706	4706	4706
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1,0000	1.0000	1,0000	1.0000	1.0000	1.0000	1.0000
Haximum Liquid Volume (cuft):	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887
Maximum Liquid Height (ft):	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Working Loss Product Factor:	0,75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Total Losses ((b):	88.22	108.40	131.41	159.08	191.42	220.54	236.84	218.60	188.83	152.94	112.02	87,48

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT INDIVIDUAL TANK EMISSION TOTALS

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onths in Report: January, February, March, April, May, June, July, August, September, October, November, December

	Losses (lbs.):							
iquid Contents	Standing	Working	Total					
.al Canal (RVP = 7.79)	1588.26	307.51	1895.78					
otal:	1588.26	307.51	1895.78					

	TANKS PROGRAM 3.0		03/19/96
	EMISSIONS REPORT - DETAIL FORMAT	•	PAGE 1
TANK	IDENTIFICATION AND PHYSICAL CHARACTERISTICS		·

dentification	
Identification No.:	2246-10-0
City:	Bakersfield
State:	CA
Company:	SJFM 91-92
Type of Tank:	Vertical Fixed Roof
ank Dimensions	
Shell Height (ft):	16.0
Diameter (ft):	15.5
Liquid Height (ft):	10.0
Avg. Liquid Height (ft):	7.0
Volume (gallons):	14117
Turnovers:	16.1
Net Throughput (gal/yr):	228522
Paint Characteristics	
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
Roof Characteristics	
Type:	Cone
Height (ft):	0.48
Radius (ft) (Dome Roof):	0.00
Slope (ft/ft) (Cone Root	(): 0.0625
Breather Vent Settings	1
Vacuum Setting (psig):	-0.03
Pressure Setting (psig):	. 0.03

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Meteorological Data Used in Emission Calculations: Bakersfield, California

(Avg Atmospheric Pressure = 14.7 psia)

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

Liquid Daily Liquid Surf. Liquid Vapor Bulk Vapor Temperatures (deg F) Temp. Vapor Pressures (psia) Mol. Mass Mass Mol. Basis for Vapor Pressure `ixture/Component Month Avg. Min. Max. (deg F) Avg. Min. Max. Weight Fract. Fract. Weight Calculations Cal Canal (RVP = 7.79) JAN 58.96 54.72 63.20 65.62 5.1930 4.8143 5.5947 50.000 50.00 Option 4: RVP=7.79 50.00 Option 4: RVP=7.79 lal Canal (RVP = 7.79) FE9 61.61 56.50 66.72 65.62 5.4413 4.9706 5.9462 50.000 Tal Canal (RVP = 7.79) MAR 63.99 57.94 70.05 65.62 5.6721 5.0999 6.2944 50.000 50.00 Option 4: RVP=7.79 tal Canal (RVP = 7.79) APR 67.10 60.11 74.10 65.62 5.9852 5.2997 6.7389 50.000 50.00 Option 4: RVP=7.79 Cal Canal (RVP = 7.79) 71.16 63.37 78.95 65.62 6.4139 5.6113 7.3030 50.000 50.00 Option 4: RVP=7.79 MAY Cal Canal (RVP = 7.79) JUN 74.87 66.58 83.16 65.62 6.8262 5.9319 7.8216 50,000 50.00 Option 4: RVP=7.79 Sal Canal (RVP = 7.79) 77.51 69.15 85.87 65.62 7.1318 6.1987 8.1702 50.000 50.00 Option 4: RVP=7.79 JUL 76.28 68.37 84.18 65.62 6.9881 6.1168 7.9514 50.000 50.00 Option 4: RVP=7.79 Cal Canal (RVP = 7.79) AUG Cal Canal (RVP = 7.79) SEP 73.43 66.20 80.66 65.62 6.6638 5.8932 7.5103 50.000 50.00 Option 4: RVP=7.79 Cal Canal (RVP = 7.79) 68.60 62.17 75.04 65.62 6.1409 5.4949 6.8455 50.000 50.00 Option 4: RVP=7.79 OCT Cal Conol (RVP = 7.79) NOV 62,72 57,55 67.89 65.62 5,5480 5,0646 6,0668 50,000 50.00 Option 4: RVP=7.79 Cal Canal (RVP = 7.79) DEC 58.84 54.63 63.05 65.62 5.1820 4.8065 5.5801 50.000 50.00 Option 4; RVP=7.79

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

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#### 03/19/96 Page 3

lonth:	January	February	March	April	Мау	June	July	August	September	October	November	December
Janding Losses (10): Vapor Space Volume (cu ft): Vapor Density (1b/cu ft):	75.5794 1728.67 0.0467	96.9747 1728.67 0.0486	121.5254 1728.67 0.0505	150.6258 1728.67 0.0529	183.9313 1728.67 0.0563	213.5059 1720.67 0.0595	229.4455 1728.67 0.0619	210.2165 1728.67 0.0608	179.3157 1728.67 0.0582	142.6856 1728.67 0.0542	100.4030 1728.67 0.0495 <sup>.</sup>	74.8088 1728.67 0.0466
Vapor Space Expansion Factor: Vented Vapor Saturation Factor:	0.108496 0.283972	0.138107 0.274572	0.171919 0.266375	0.211366 0.256010	0.255640 0.243057	0.294432 0.231780	0.314817 0.224071	0.289099 0.227630	0.248010 0.236094	0.199490 0.251149	0.142537 0.270721	0.107429 0.284405
Tank Vapor Space Volume									-	×		
Vapor Space Volume (cu ft):	1728.67	1728.67	1728.67	1728,67	1728.67	1728.67	1728.67	1728,67	1728.67	1728.67	1728.67	1728.67
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15,5	15,5	15.5
Vapor Space Outage (ft):	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Tank Shell Height (ft):	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Average Liquid Height (ft):	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Roof Outage (ft):	0.16	0,16	0.16	0.16	0,16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Roof Outage (Cone Roof)		~			~ 44		<u> </u>	• • •		• • •		• • •
Roof Dutage (ft):	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.18	0.16	0.16	0.16
Roof Height (ft):	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484
Roof Slope (ft/ft):	0.06245	0.06245	0.06245	0.06245	0,06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245
Shell Radius (ft):	7,8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Vapor Density						0.0505				0.05/0	0.0105	
Vapor Density (lb/cu ft):	0.0467	0.0486	0.0505	0.0529	0.0565	0.0595	0.0619	8030.0	0,0582	0.0542	0,0495	0.0466
Vapor Molecular Weight (1D/1D-mole): Vapor Pressure at Daily Average Liquid	50.000000	50,000000	50.000000	20.000000	50,000000	20.000000	50,000000	50.000000	50.000000	50.000000	50.000000	50.000000
Surface Temperature (psia):	5,123020	5.441310	5.672118	5.985153	6,413873	6.826157	7,131837	6.988126	6.663762	6.140863	5.548025	5.181991
Daily Avg. Liquid Surface Temp.(deg. R):	518.63	521,28	523,66	526.77	530,83	534,54	537.18	535,95	533,10	528.27	522.39	518.51
Daily Avernge Ambient Temp. (deg. R): Ideal Gas Constant R	507.82	512,82	516,72	522.27	530.22	537,92	544.12	542.12	536.97	527.62	515.82	507.82
(psia_cuft /(lb-mole-deg R)):	10.731	10.731	10.731	10,731	10.731	10,731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	525.29	525.29	525.29	525.29	525.29	525.29	525.29	525.29	525.29	525.29	525.29	525.29
Tank Paint Solar Absorptance (Shell):	0.17	0.17	0.17	0,17	0.17	0.17	0.17	0,17	0.17	0.17	0.17	0,17
Tank Paint Solar Absorptance (Roof):	0.17	0.17	0.17	0.17	0,17	0.17	0.17	0.17	0,17	0.17	0.17	0.17
Factor (Btu/sqftday):	766.00	1102.00	1595.00	2095.00	2509.00	2749.00	2684.00	2421.00	1992.00	1458.00	942.00	677.00
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.108496	0.138107	0.171919	0.211366	0,255640	0.294432	0.314817	0.289099	0,248010	0,199490	0.142537	0.107429
Daily Vapor Temperature Range (deg.R):	16.97	20.44	24.22	27.97	31.17	33,17	33.44	31.61	28.92	25.73	20.68	16.83
Daily Vapor Pressure Range (osia):	0.780389	0.975648	1.194512	1.439287	1.691711	1.889715	1,971463	1.834656	1,617109	1.350583	1.002197	0.773575
Breather Vent Press, Setting Range(osia):	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Vapor Pressure at Daily Average Liquid	C 407030	5 111710	r (73140	E 005457	/ / 17077	1 03/157	7 471077	4 000104	6 6 6 7 7 6 7	4 1/09/7	5 5/0035	E 101001
Surface Temperature (psia): Vapor Pressure at Daily Minimum Liquid	5.193020	5.441510	5.072118	2.402123	0.4(30/3	0.020127	1.121031	0.900120	0,003/02	0.140463	3.340023	2.101991
Surface Temperature (psia):	4,814286	4.970550	5.099851	5.299656	5.611269	5.931897	6.198740	6.116785	5.893214	5.494946	5.064575	4.806488
vapor pressure at Daily Maximum Liquid	5 50/27/	5 0/4100	4 20/747	6 7700/7	7 303000	7 831413	n 17070/	7 051//1	7 510323	6 845520	6 044772	5 58004/
Surface temperature (psia):	2.2740/4	2.940199	0.274303 577 22	516743 516 77	510 47	57/ 57	537 18	535 05	533 10	528 27	572 70	518 51
Daily Avg. Liquid Surface Temp. (deg K):	51/ 70	514 17	243.00 517 24	510 79	527.02	536.35	כט ויכל	228 U/	575 PT	521 84	517 22	514 30
pairy min. Liquid Surface Temp. (deg K):	ענ.ויוג לח ככי	576.17	570 73	517.10	523.04 538 63	560.23	545 54	563 85	540 33	534.71	527.56	522.72
varty_max. tiquid surface remp. (deg k):	366.07	J20.JY	JL7.12	11.66	JJ0.02	772.03	P4.14	10.674	240.33		261,20	222.72

Daily Ambient Temp. Range (deg.R): 18.	.50	21.10	23.10	25.00	26.70	27.90	28.70	27.90	27.00	26.10	22.50	18.90
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TANKS PROGRAM 3.0 Emissions Report - Detail Format Detail Calculations (AP-42)										03/19/96 PAGE 4		
onth:	January	February	March	April	Мау	June	July	August	September	October	November	December
ented Vapor Saturation Factor												• • • • • • • • • • • • • • • • • • • •
Vented Vapor Saturation Factor: Vapor Pressure at Daily Average Liquid	0.283972	0.274572	0.266375	0.256010	0.243057	0.231780	0.224071	0.227630	0.236094	0.251149	0.270721	0.284405
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Vapor Space Outage (ft):	9,16	9.16	9.16	9.16	9.16	9.16	9,16	9.16	9.16	9,16	9.16	9.16
forking Losses (lb):	102.6271	98.1476	93.3772	96.2861	116,6523	70.3947	121.6870	106,1322	106.9534	115.6018	107.3543	96.9680
Vapor Molecular Weight (1b/1b-mole): Vapor Pressure at Daily Average Liquid	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50,000000	50.000000	50.000000	50.000000
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Net Throughput (gal/month):	22134	20202	18438	18018	20370	11550	19110	17010	17976	21084	21672	20958
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (cuft):	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887
Maximum Liquid Height (ft):	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Working Loss Product Factor:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0,75	0.75	0.75
lotal Losses (1b):	178.21	195.12	214.90	246.91	300.58	283.90	351.13	316.35	286.27	258.29	207.76	171.78

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TANKS PROGRAM 3.0	· .	03/19/96
EMISSIONS REPORT - DETAIL FORMAT		PAGE 5
INDIVIDUAL TANK EMISSION TOTALS		

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onths in Report: January, February, March, April, May, June, July, August, September, October, November, December

1

	Losses (lbs			
iquid Contents	Standing	Working	Tota	
al Canal (RVP = 7.79)	1779.02	1232.18	3011.20	
'otal:	1779.02	1232.18	3011.20	



#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

dentification	
Identification No.:	2246-10-0
City:	Bakersfield
State:	CA
Company:	\$JFM 92-93
Type of Tank:	Vertical Fixed Roof
ank Dimensions	
Shell Height (ft):	16.0
Diameter (ft):	15.5
Liquid Height (ft):	10.0
Avg. Liquid Height (ft):	7.0
Volume (gallons);	14117
Turnovers:	16.5
Net Throughput (gal/yr):	232848
Paint Characteristics	
Shett Cotor/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
Roof Characteristics	
Type:	Cone
Height (ft):	0.48
Radius (ft) (Dome Roof):	0.00
Slope (ft/ft) (Cone Roof	(): 0.0625
Breather Vent Settings	l
Vacuum Setting (psig):	-0.03
Pressure Setting (psig):	0.03

Meteorological Data Used in Emission Calculations: Bakersfield, California

(Avg Atmospheric Pressure = 14.7 psia)

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			TANKS PROGRAM 3.0		03/19/96
•		• •	EMISSIONS REPORT - DETAIL FORMAT	· · ·	PAGE 2
· · .	1: ···	• •	LIQUID CONTENTS OF STORAGE TANK		•

'ixture/Component	Month	Daily f Temper Avg.	Liquid atures Min.	Surf. (deg F) Max.	Liquid Bulk Temp. (deg F)	Vapor P Avg.	<sup>o</sup> ressures Min.	(psia) Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
lal Canal (RVP = 7,79)	JAN	58.96	54.72	63.20	65.62	5.1930	4.8143	5.5947	50.000			50.00	Option 4: RVP=7.79
Canal (RVP = 7.79)	FEB	61.61	56.50	66.72	65.62	5.4413	4.9706	5.9462	50.000			50,00	Option 4: RVP=7.79
lal Canal (RVP = 7.79)	MAR	63.99	57.94	70.05	65.62	5.6721	5.0999	6.2944	50.000			50.00	Option 4: RVP=7.79
Cai Canal (RVP = 7.79)	APR	67.10	60.11	74.10	65.62	5.9852	5.2997	6,7389	50.000			50,00	Option 4: RVP=7.79
tal Canal (RVP = 7.79)	MAY	71.16	63.37	78.95	65.62	6.4139	5.6113	7.3030	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	JUN	74.87	66.58	83.16	65.62	6.8262	5.9319	7.8216	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7,79)	JUL	77.51	69.15	85.87	65.62	7.1318	6.1987	8.1702	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	AUG	76.28	68.37	84,18	65.62	6.9881	6.1168	7.9514	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	SEP	73.43	66,20	80.66	65.62	6.6638	5.8932	7.5103	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	OCT	68.60	62.17	75.04	65.62	6.1409	5.4949	6.8455	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	лол	62.72	57.55	67.89	65,62	5.5480	5.0646	6.0668	50.000			50.00	Option 4: RVP=7.79
Cal Canal (RVP = 7.79)	DEC	58.84	54.63	63.05	65.62	5.1820	4.8065	5.5801	50.000			50.00	Option 4: RVP=7.79

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

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#### 03/19/96 PAGE 3

onth:	January	February	March	April	May	June	July	August	September	October	November	December
tanding Losses (1b):	75.5794	96,9747	121.5254	150.6258	183.9313	213.5059	229,4455	210.2165	179.3157	142.6856	100.4030	74.8088
Vapor Space Volume (cu ft):	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67
Vapor Density (lb/cu ft):	0.0467	0.0486	0.0505	0.0529	0.0563	0.0595	0.0619	80.00.0	0.0582	0.0542	0.0495	0.0466
Vapor Space Expansion Eactor:	0 108496	0.138107	0 171919	0 211366	0 255640	0 294432	0.314817	0.289099	0 248010	0 199490	0 142537	0 107429
Vented Vapor Saturation Factor:	0.283972	0.274572	0.266375	0.256010	0.243057	0,231780	0.224071	0.227630	0.236094	0.251149	0.270721	0.284405
ank Vapor Space Volume									•			
Vapor Space Volume (cu ft):	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67	1728.67
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Vapor Space Outage (ft):	9.16	9,16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16
Tank Shell Height (ft):	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Average Liquid Height (ft):	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Roof Dutage (ft):	0.16	0.16	0.16	0.16	0,16	0.16	0.16	0.16	0.16	0,16	0.16	0.16
loof Outage (Cone Roof)												
Roof Outage (ft):	0.16	0.16	0,16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Roof Height (ft):	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484
Roof Slope (ft/ft):	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0.06245	0,06245	0,06245	0.06245	0.06245
Shell Radius (ft):	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
Vapor Density					*							
Vapor Density (lb/cu ft):	0.0467	0.0486	0.0505	0.0529	0.0563	0.0595	0.0619	0.0608	0.0582	0.0542	0.0495	0.0466
Vapor Molecular Weight (lb/lb-mole):	50.000000	50.000000	50.000000	50.000000	50.000000	50,000000	50,000000	50.000000	50,000000	50.000000	50.000000	50,000000
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psip):	5,193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Daily Avo. Liquid Surface Temp.(deg. R):	518.63	521.28	523.66	526.77	530.83	534.54	537.18	535.95	533.10	528.27	522.39	518.51
Daily Average Ambient Lown (deg R):	507 82	512 82	516 72	522 27	530 22	537.92	544 12	542.12	536.97	527.62	S15_82	507.82
Ideal Gas Constant R	201102	511102	210112	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	221172	5111112				• • • • • •	
<pre>(nsia cuft /(lb-mole-deg R));</pre>	10,731	10,731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	525.29	525.29	525,29	525.27	525.29	525.29	525.29	525.29	525.29	525.29	525.29	525.29
Tank Paint Solar Absorptance (Shell):	0,17	0.17	0.17	0,17	0,17	0.17	0,17	0.17	0.17	0.17	0.17	0.17
Tank Paint Solar Absorptance (Roof):	0,17	0.17	0.17	0,17	0.17	0,17	0.17	0.17	0.17	0.17	0.17	0.17
Daily Total Solar Insolation												
Factor (Btu/sqftday):	766.00	1102.00	1595.00	2095.00	2509.00	2749.00	2684.00	2421.00	1992.00	1458.00	942.00	677.00
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.108496	0.138107	0.171919	0.211366	0.255640	0.294432	0.314817	0.289099	0.248010	0.199490	0.142537	0.107429
Daily Vapor Temperature Range (deg.R):	16.97	20.44	24.22	27.97	31.17	33.17	33.44	31.61	28.92	25.73	20.68	16.83
Daily Vapor Pressure Range (psia):	0.780389	0.975648	1.194512	1.439287	1.691711	1.889715	1,971463	1.834656	1.617109	1.350583	1.002197	0.773575
Breather Vent Press, Setting Range(psia):	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0,06	0.06	0.06
Vapor Pressure at Daily Average Liquid												
Sucface Temperature (psia):	5, 193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5.181991
Vapor Pressure at Daily Minimum Liquid	2.1750.0	21441210	2.012110	51705175	01113015	01020101		01/20/20	0,000,00			
Surface Temperature (priz)	/ 91/294	/ 070550	5 000951	5 200454	5 611260	5 031807	6 108760	A 114785	5 803214	5 606066	5 064575	L 806488
Vana Braceves at Daily Review Limit	4.014200	4.910330	1.07701	3.277030	2.011207	2.721071	0.170740	0.10103	3.073214	217/7/90	2.007212	1.000-00
Suppor riessure at Darty maximum Liquid	5 50/47/	5 0/4100	6 20/ 7/7	6 7190/7	7 302080	7 821412	8 17020/	7 951441	7 510323	6.845520	6.066772	5.580064
suprace respectatore (psta):	2.2940/4 640 24	2.240177	0.674J0J 577 22	574 77	7.JU2700	57/ 6/	517 10	575 05	511 10	578 27	\$73 70	519 51
Dar(y Avg. Liquid Surface Temp. (deg R):	210.03	521.20	517 44	520.77	230.03	534.34	50,10 500 C	520.07	575 07	521 8/	517 37	516.31
waity Min. Liquid Surface Temp. (deg R):	514.59	516.1/	217.01	519.78	525.04	520.25	520.02	320.04	323.01	221.04	517.66	514.30
Daily Max. Liquid Surface Temp, (deg R);	522.87	526.39	529.72	555.77	23.862	242.85	545.54	243.02	240.33	224.71	261.20	266.15

Daily Ambient Temp. Range (deg.R):	18.50	21.10	23.10	25.00	26.70	27.90	28.70	27,90	27,00	26.10	22.50	18.90

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TANKS PROGRAM 3.00:EMISSIONS REPORT - DETAIL FORMATPIDETAIL CALCULATIONS (AP-42)											03/19/ Page 4	03/19/96 PAGE 4	
Month:	Јапиагу	February	March	April	May	June	July	August	September	October	November	December	
Vented Vapor Saturation Factor		• • • • • • • • • • • • • • • • • • • •					- • • • • •						
Vented Vapor Saturation factor: Vapor Pressure at Daily Average Liquid	0.203972	0.274572	0.266375	0.256010	0,243057	0.231780	0.224071	0.227630	0.236094	0.251149	0.270721	0.284405	
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5,181991	
Vapor Space Outage (ft):	9.16	9,16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	9.16	
Working Losses (lb):	89.3849	91.6181	94,8662	101.6728	110.6393	102,9043	144.1522	123,4278	129, 1937	101,7848	97.7839	84,7255	
Vapor Holecular Weight (lb/lb-mole): Vapor Pressure at Daily Average Liquid	50.000000	50.000000	50,000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	50.000000	
Surface Temperature (psia):	5.193020	5.441310	5.672118	5.985153	6.413873	6.826157	7.131837	6.988126	6.663762	6.140863	5.548025	5,181991	
Net Throughput (gal/month):	19278	18858	18732	19026	19320	16884	22638	19782	21714	18564	19740	18312	
Turnover factor:	1.0000	1,0000	1.0000	1.0000	1.0000	1.0000	1.0000	1,0000	1.0000	1.0000	1.0000	1.0000	
Maximum Liquid Volume (cuft):	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887	
Maximum Liquid Height (ft):	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10,0	10. <b>0</b>	
Tank Diameter (ft):	15.5	15.5	15.5	15.5	15.5	15.5	15,5	15.5	15.5	15.5	15.5	15.5	
Working Loss Product Factor:	0.75	0.75	0,75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
Total Losses (lb):	164.96	188,59	216.39	252,30	294.57	316.41	373.60	333.64	308,51	244.47	198.19	159.53	

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#### TANKS PROGRAM 3.0 EMISSIONS REPORT - DETAIL FORMAT INDIVIDUAL TANK EMISSION TOTALS

03/19/96 PAGE 5

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nths in Report: January, February, March, April, May, June, July, August, September, October, November, December

	Losses (lbs.	.):	
quid Contents	Standing	Working	Total
\ Canal (RVP = 7.79)	1779.02	1272,15	3051.17
stal:	1779.02	1272,15	3051.17

VELLOW

## NEW ERC FILE REQUEST FORM

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Processor Initials: MPE Today's Date: 3/13/96
COMPANY NAME: SAN JOAQUIN FACILITIES MENT
Project #: <u>950784</u> Original Project #:
ERC Number(s): $5 - 417 - 1$
Original Facility Number: S-2246 Year ERC Issued: 96
Description: ERC FOR INSTALLATION OF
VAPOR RECOVERY SYSTEM ON FOUR
OIL PRODUCTION STORAGE TANKS
Location: CAL CANAL SE S 31 T285 RZZE
LIGHT OIL WESTERN
===== POCKET FOLDER, PLEASE ADD TO INVENTORY

### **PROJECT ROUTING FORM**

PROJECT NUMBER:	950784	FACILITY ID: _	<u>S-2246</u>
PERMIT NOS:	ERC Application		<u> </u>
APPLICANT NAME:	SJFM		

PRELIMINARY REVIEW	ENGR	DATE	SUPR	DATE
A. Application Deemed Incomplete	MPE MS	10/23/95	AP.	10/23/95
B. Application Deemed Complete	ME	2/21/96	te.	2/22/96
180th Day for Developmental Pro	jects			
C. Application Pending Denial				
D. Application Denied				

ENGINEERING EVALUATION	INITIAL	DATE	
E. Engineering Evaluation Complete 1299	ME	3/21/96	, . )
F. Supervising Engineer Approval	Æ.	2/3/96+4	n  96
G. Compliance Division Approval			
H. Permit Services Regional Manager Approval	I. Loll	41/1/26	
DIRECTOR REVIEW: [ ] Not Required	Required	*+7/24/	96

#### PROJECTS REQUIRING PUBLIC NOTIFICATION

#### --PRELIMINARY DECISION:

·	Date placed in 'c:\notice' directory.
	Date of distribution to applicant, EPA, and CARB.
. <u></u>	Date of contact with EPA regarding comments on project.
·	Date of contact with CARB regarding comments on project.

--FINAL DECISION:

and the

Date placed in 'c:\notice' directory. Date of distribution to applicant, EPA, and CARB.

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#### San Joaquin Valley Unified APCD Permit Services Division Applications for Authority to Construct or Emission Reduction Credits Breakdown of Processing Time

Company	Name: <u>S</u>	JFM_		<b></b>					
Facility Id: 2246 Project Number: 950794									
Project Description: INSTALL VAPOR CONTROL ON									
FOUR STORAGE TANKS									
Code	Date	Time Spent	Initials		Activity Code List				
७५	10/19/95	4.0	ME		01- Pre-Application Meeting (phone) 02- Pre-Application Meeting (in person 03- Application Log-in 04- Preliminary Review				
οz	12/05/95	0.5	ME						
			-						

1/30/96 05- Defficiency Letter DY 2.5 ME 06- Verbal/telephone request for . 0 me /96 3 í. information 1 1 07- Billing Ð 14 マ 2 2 NS **08- Completeness Letter** 09- Post Application Meetings 10- BACT Determination 11- Emissions Calculations 12- Compliance Determination 13- Project Description, Flow Digram, Equipment Listing 14- Risk Assessment 15- CEQA Review 16- Draft Conditions 17- Prepare ATC 18- Prepare ERC 19- Prepare Preliminary Notice 20- Prepare Final Notice 99- Reworking of Engineering Evaluation TOTAL

TOTAL BILLING HOURS

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