Bay Area Air Quality Management District

939 Ellis Street, San Francisco, CA 94109 (415) 749-5014

REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division
Laboratory Services Section

To: Glen Colwell
Person Submitting Sample
Technical Services Division, Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Location: Shore Terminals-Selby, 90 San Pablo Ave., Crockett, CA 94525 **Lab No. 02-354**
Source Operation (S#) Plant # 581
Date Received 10/23/02 Analyst: D. Patel **Head Space of 75 % full glass container**
Date of Analysis 10/31 to 11/14/02 Reference: DP-12/38 **At 100 deg. F (in water bath)**
Column: DB-1 Detector: FID
Column: 25 M Plot Al2O3/KCL 0.53 mm; Detector: FID & PID Sys:Shimadzu14 A-2
Column: 20 ft x 1/8 inch. Carboxene-1000 Detector: TCD Sys:VA3800#2

HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1	HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1
Methane	**0.5**	4.5	4.5	Me-Cy-C6	**0.5**	3.1	21.7
Ethane	**0.5**	<0.5	<0.5	n-Heptane	**0.5**	18.9	132.3
Ethylene	**0.5**	<0.5	<0.5	C7-Olefin	**0.5**	43.8	306.6
Propylene	**0.5**	<0.5	<0.5	Benzene	**0.5**	4.9	29.4
Propane	**0.5**	9.5	28.5	C8-Olefin	**0.5**	106.9	855.2
Iso-butane	**0.5**	11.5	46.0	Toluene	**0.5**	14.9	104.3
n-Butane	**0.5**	47.1	188.4	MTBE	**0.5**	<0.5	<0.5
C4- Olefin	**0.5**	<0.5	<0.5	Octane	**0.5**	50.5	404.0
Iso-Pentane	**0.5**	51.2	256.0	C8-Paraffins	**0.5**	65.6	524.8
n-Pentane	**0.5**	49.0	245.0	C9-Olefin	**0.5**	38.2	344
Methylcyclopentar	**0.5**	18.5	111.0	Nonane	**0.5**	58.6	527.4
C5-Paraffins	**0.5**	5.4	27.0	C9-Paraffin	**0.5**	21.3	191.7
C5-Olefin	**0.5**	0.5	2.5	C9+ Paraffin	**0.5**	44.1	441.0
Cyclohexane	**0.5**	21.2	127.2	Ethylbenzene	**0.5**	19.3	154.4
n-Hexane	**0.5**	23.5	141.0	p/m-Xylene	**0.5**	60.3	482.4
C6-Paraffins	**0.5**	14.9	89.4	O-xylene	**0.5**	76.0	608.0
C6-Olefin	**0.5**	2.8	16.8	Cumene	**0.5**	<0.5	<0.5
3-Methylpentane	**0.5**	41.6	249.6	C9+Olefin	**0.5**	5.5	55.0
C7-Paraffins	**0.5**	12.5	87.5	n-Propylbenzene	**0.5**	<0.5	<0.5
2 Me C6	**0.5**	1.4	9.8	C9+ Aromatics	**0.5**	52.3	523.0
2,2,4 TriMeC5	**0.5**	<0.5	<0.5				
TOTAL AS C 1							**7335**
THC as C1 by B-400							

V. N. Recommended: ☐ **YES** ☐ **NO** **REG.** **RULE** **SEC.**

☐ **NO**

☐ **FURTHER EVALUATION NEEDED**

☐ **FOR INFORMATION ONLY**

James Hesson
Laboratory Services Manager

Date

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REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division
Laboratory Services Section

To: Glen Colwell
Person Submitting Sample
Technical Services Division, Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Location: Shore Terminals-Selby, 90 San Pablo Ave., Crockett, CA 94525 **Lab No. 02-355**
Source Operation (S#) Plant # 581
Date Received 10/23/02 Analyst: D. Patel **Canister # ST-408**
Date of Analysis 10/24 to 10/30/02 Reference: DP-12/30
Column: DB-1 Detector: FID
Column: 25 M Plot Al2O3/KCL 0.53 mm; Detector: FID & PID Sys:Shimadzu14 A-2
Column: 20 ft x 1/8 inch. Carboxene-1000 Detector: TCD Sys:VA3800#2

HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1	HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1
Methane	**0.5**	2330	2330.0	Me-Cy-C6	**0.5**	27.9	195.3
Ethane	**0.5**	60.6	121.2	n-Heptane	**0.5**	1.1	7.7
Ethylene	**0.5**	<0.5	<0.5	C7-Olefin	**0.5**	<0.5	<0.5
Propylene	**0.5**	<0.5	<0.5	Benzene	**0.5**	2.7	16.2
Propane	**0.5**	6.1	18.3	C8-Olefin	**0.5**	64.9	519.2
Iso-butane	**0.5**	7.7	30.8	Toluene	**0.5**	19.2	134.4
n-Butane	**0.5**	32.5	130.0	MTBE	**0.5**	<0.5	<0.5
C4- Olefin	**0.5**	5.2	20.8	Octane	**0.5**	32.0	256.0
Iso-Pentane	**0.5**	35.0	175.0	C8-Paraffins	**0.5**	69.9	559.2
n-Pentane	**0.5**	30.4	152.0	C9-Olefin	**0.5**	250	2250
Methylcyclopentar	**0.5**	11.6	69.6	Nonane	**0.5**	51.3	461.7
C5-Paraffins	**0.5**	<0.5	<0.5	C9-Paraffin	**0.5**	68.5	616.5
C5-Olefin	**0.5**	<0.5	<0.5	C9+ Paraffin	**0.5**	142	1420
Cyclohexane	**0.5**	14.3	85.8	Ethylbenzene	**0.5**	<0.5	<0.5
n-Hexane	**0.5**	13.5	81.0	p/m-Xylene	**0.5**	<0.5	<0.5
C6-Paraffins	**0.5**	9.1	54.6	O-xylene	**0.5**	<0.5	<0.5
C6-Olefin	**0.5**	0.6	3.6	Cumene	**0.5**	<0.5	<0.5
3-Methylpentane	**0.5**	25.4	152.4	C9+Olefin	**0.5**	109	1090
C7-Paraffins	**0.5**	27.6	193.2	n-Propylbenzene	**0.5**	<0.5	<0.5
2 Me C6	**0.5**	6.2	43.4	C9+ Aromatics	**0.5**	44.0	440.0
2,2,4 TriMeC5	**0.5**	8.2	65.6				
TOTAL AS C 1							**11694**
THC as C1 by B-400							**12018**

Compound	**Conc.**
Carbonmonoxide (CO)	<LOD*
Carbondioxide(CO2)	14.17 %V/v

*** LOD= 150 ppm**

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REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division
Laboratory Services Section

To: Glen Colwell
Person Submitting Sample
Technical Services Division, Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Location: Shore Teminals-Selby, 90 San Pablo Ave., Crockett, CA 94525 **Lab No. 02-355**
Source Operation (S#) Plant # 581
Date Received 10/23/02 Analyst: D. Patel **Canister # ST-413**
Date of Analysis 10/24 to 10/30/02 Reference: DP-12/30
Column: DB-1 Detector: FID
Column: 25 M Plot Al2O3/KCL 0.53 mm; Detector: FID & PID Sys:Shimadzu14 A-2
Column: 20 ft x 1/8 inch. Carboxene-1000 Detector: TCD Sys:VA3800#2

HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1	HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1
Methane	**0.5**	2065	2065	Me-Cy-C6	**0.5**	27.9	195.3
Ethane	**0.5**	54.8	109.6	n-Heptane	**0.5**	0.9	6.3
Ethylene	**0.5**	<0.5	<0.5	C7-Olefin	**0.5**	<0.5	<0.5
Propylene	**0.5**	<0.5	<0.5	Benzene	**0.5**	2.7	16.2
Propane	**0.5**	6.9	20.7	C8-Olefin	**0.5**	105.8	846.4
Iso-butane	**0.5**	8.5	34.0	Toluene	**0.5**	19.8	138.6
n-Butane	**0.5**	35.0	140.0	MTBE	**0.5**	<0.5	<0.5
C4- Olefin	**0.5**	5.3	21.2	Octane	**0.5**	29.2	233.6
Iso-Pentane	**0.5**	36.1	180.5	C8-Paraffins	**0.5**	62.9	503.2
n-Pentane	**0.5**	31.0	155.0	C9-Olefin	**0.5**	210	1890
Methylcyclopentar	**0.5**	11.6	69.6	Nonane	**0.5**	51.6	464.4
C5-Paraffins	**0.5**	<0.5	<0.5	C9-Paraffin	**0.5**	51.8	466.2
C5-Olefin	**0.5**	<0.5	<0.5	C9+ Paraffin	**0.5**	78.6	786
Cyclohexane	**0.5**	14.0	84.0	Ethylbenzene	**0.5**	<0.5	<0.5
n-Hexane	**0.5**	13.2	79.2	p/m-Xylene	**0.5**	<0.5	<0.5
C6-Paraffins	**0.5**	8.8	52.8	O-xylene	**0.5**	<0.5	<0.5
C6-Olefin	**0.5**	0.8	4.8	Cumene	**0.5**	<0.5	<0.5
3-Methylpentane	**0.5**	25.6	153.6	C9+Olefin	**0.5**	119	1191
C7-Paraffins	**0.5**	27.0	189.0	n-Propylbenzene	**0.5**	<0.5	<0.5
2 Me C6	**0.5**	6.1	42.7	C9+ Aromatics	**0.5**	45.7	457.0
2,2,4 TriMeC5	**0.5**	7.1	56.8				
TOTAL AS C 1							**10653**
THC as C1 by B-400							**10468**

Compound	**Conc.**
Carbonmonoxide (CO)	<LOD*
Carbondioxide(CO2)	13.12 % v/v

*** LOD= 150 ppm**

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REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division
Laboratory Services Section

To: Glen Colwell
Person Submitting Sample
Technical Services Division, Source Test Section

HYDROCARBON SPECIATION ANALYSIS SHEET

Location: Shore Terminals-Selby, 90 San Pablo Ave., Crockett, CA 94525 **Lab No. 02-355**
Source Operation (S#) Plant # 581
Date Received 10/23/02 Analyst: D. Patel **Canister # ST-449**
Date of Analysis 10/24 to 10/30/02 Reference: DP-12/30
Column: DB-1 Detector: FID
Column: 25 M Plot Al2O3/KCL 0.53 mm; Detector: FID & PID Sys:Shimadzu14 A-2
Column: 20 ft x 1/8 inch. Carboxene-1000 Detector: TCD Sys:VA3800#2

HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1	HYDROCARBON Compound	LOD (PPM)	Conc. (PPM) FID/PID	Conc. (PPM) as C1
Methane	**0.5**	361	361	Me-Cy-C6	**0.5**	12.5	87.5
Ethane	**0.5**	8.9	17.8	n-Heptane	**0.5**	<0.5	<0.5
Ethylene	**0.5**	<0.5	<0.5	C7-Olefin	**0.5**	<0.5	<0.5
Propylene	**0.5**	<0.5	<0.5	Benzene	**0.5**	1.0	6.0
Propane	**0.5**	3.0	9.0	C8-Olefin	**0.5**	40.4	323.2
Iso-butane	**0.5**	3.3	13.2	Toluene	**0.5**	7.9	55.3
n-Butane	**0.5**	12.5	50.0	MTBE	**0.5**	<0.5	<0.5
C4- Olefin	**0.5**	2.0	8.0	Octane	**0.5**	14.2	113.6
Iso-Pentane	**0.5**	13.1	65.5	C8-Paraffins	**0.5**	35.8	286.4
n-Pentane	**0.5**	11.4	57.0	C9-Olefin	**0.5**	96.0	864
Methylcyclopentar	**0.5**	4.6	27.6	Nonane	**0.5**	29.5	265.5
C5-Paraffins	**0.5**	<0.5	<0.5	C9-Paraffin	**0.5**	56.0	504.0
C5-Olefin	**0.5**	<0.5	<0.5	C9+ Paraffin	**0.5**	71.1	711
Cyclohexane	**0.5**	5.8	34.8	Ethylbenzene	**0.5**	<0.5	<0.5
n-Hexane	**0.5**	5.2	31.2	p/m-Xylene	**0.5**	<0.5	<0.5
C6-Paraffins	**0.5**	7.8	46.8	O-xylene	**0.5**	<0.5	<0.5
C6-Olefin	**0.5**	<0.5	<0.5	Cumene	**0.5**	<0.5	<0.5
3-Methylpentane	**0.5**	6.0	36.0	C9+Olefin	**0.5**	73	725
C7-Paraffins	**0.5**	6.1	42.7	n-Propylbenzene	**0.5**	<0.5	<0.5
2 Me C6	**0.5**	12.3	86.1	C9+ Aromatics	**0.5**	25.5	255.0
2,2,4 TriMeC5	**0.5**	3.7	29.6				
TOTAL AS C 1							**5113**
THC as C1 by B-400							**5241**

Compound	**Conc.**
Carbonmonoxide (CO)	<LOD*
Carbondioxide(CO2)	5.08 % v/v

*** LOD= 150 ppm**

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REPORT OF LABORATORY ANALYSIS — FL-2

Technical Division **Laboratory Services Secti**	**To: Glen Colwell/Eric Stevenson** **Person Submitting Sample** **Source Test Section**

Lab Method:	Method 44A	**Lab No:**	**02-355**
Sample Location:	Shore Terminals - Selby, 90 San Pablo Ave., Crockett		
Sample Type:	Hydrocarbon vapors from ship vessel loading operation		
Source Operation:		**PLT #:**	581
Date Received:	10/23/02	**Date Analyzed:**	10/24/2002
Analyst:	C. V. David/H.Amin	**Lab Ref:**	CVD21:57

RESULTS OF GAS CHROMATOGRAPHIC ANALYSIS FOR TRS and SO_2

COMPOUND	CONCENTRATION (ppm) Canister # ST-408	Canister# ST-413	Canister# ST-449
Hydrogen Sulfide (H_2S)	<0.1	<0.1	<0.1
Carbonyl Sulfide (COS)	<0.1	<0.1	<0.1
Sulfur Dioxide (SO_2)	<0.1	<0.1	<0.1
Methyl Mercaptan (MeSH)	<0.1	<0.1	<0.1
Ethyl Mercaptan (EtSH)	<0.1	<0.1	<0.1
Dimethylsulfide (DMS)	<0.1	<0.1	<0.1
Carbon Disulfide (CS_2)	<0.1	<0.1	<0.1
Isopropyl Mercaptan (i-PrSH)	<0.1	<0.1	<0.1
n-Propyl Mercaptan (n-PrSH)	<0.1	<0.1	<0.1
n-Butyl Mercaptan (n-BuSH)	<0.1	<0.1	<0.1
Methyl Ethyl Sulfide (MES)	<0.1	<0.1	<0.1

Note: The samples were diluted with Helium before analysis.

The dilution fa	**ST-408**	**DF=1.45**
	ST-413	**DF=1.37**
	ST-449	**DF=1.39**

V. N. Recommended:

- ☐ **YES** **REG____** **RULE____ SEC.____**
- ☐ **NO**
- ☐ **FURTHER EVALUATION NEEDED**
- **X FOR INFORMATION ONLY**

Signed by James Hesson — 10/31/02

James Hesson — **Date**

Laboratory Services Manager