AP42 Section: 11.1

Reference Number: 297

Title: Source Sampling For Particulate Emissions, Syar Industries, Inc., Vallego, CA,
Bay Area Air Quality Management District, San Francisco, CA,

April 4, 1990.

AP-42 Section 11.1
Reference

DISTRIBUTION:

Firm
Permit Services
Enforcement
Technical Services
Source Inventory
Planning
Requester
DAPCO

BAY AREA
AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street
San Francisco, California 94109
(415) 771-6000

SUMMARY OF SOURCE TEST RESULTS

Report No. 90 Report Sect. 4
Reference ~~296~~ 297
Test Date: 4/4/
Test Times:
Run A: 0813-1038 (54 min)
Run B: 1112-1219 (54 min)
Run C: 1256-1428 (48 min)

SOURCE INFORMATION

Firm Name and Address
SYAR INDUSTRIES, INC.
Lake Herman Road
Vallejo, CA 94591

Firm Representative and Title
Mike Burneson,
Plant Manager
Phone No. (707)252-8711

Source:
S-23
Asphalt Plant
Plant No. 128
Operates on demand

Permit Conditions
None

BAAQMD REPRESENTATIVES

Source Test Engineers
C. McClure/H. Doi

Permit Services Division / Enforcement Division
T. Hirata

Test Requested by:
B. Nishimura (CDS)

Operating Parameters:
Kiln is natural gas fired. 1200 tons of 1/2" agregate were produced. Baghouse inlet temperature averaged 325°F with a differential of 3 inches W.C.

Applicable Regulations: 6-310, 6-311

VN Recommended: NO

Source Test Results and Comments:

METHOD:	TEST	RUN A	RUN B	RUN C	AVERAGE	LIMIT
ST-17	Stack Volume Flowrate, SDCFM	28,500	27,000	29,500	28,500	
	Stack Gas Temperature °F	254	250	259	254	
ST-23	Water Content, Volume %	26.9	31.5	27.3	28.6	
ST-24	Oxygen, Volume %	9.0	8.7	9.0	8.9	
ST-24	Carbon Dioxide, Volume %	7.1	7.1	9.4	7.9	
ST-24	Carbon Monoxide, ppm	*>1950	>1950	>1950	>1950	
	Carbon Monoxide, lb/hr	>239	>229	>252	>240	
ST-15	Particulate, gr/SDCF	.038	.036	.035	.036	.15
	Particulate, lb/hr	9.2	8.3	8.9	8.8	40
	Isokinetic Ratio, act/theo.	1.01	1.08	1.01		

* ">" indicates results greater than instrument full scale.

Source Test Team Leader / Date	Senior Source Test Engineer / Date	Approved by Source Test Manager / Date
C. McClure 4/25/90	K. Kunaniec 4/25/90	G. Karels 4/26/90

12/6/60

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, Calif. 94109 • 771-6000

Source Test Data Sheet

Source Operation: ASPHALT
Plant: S4A2 128
Sample Type: PART
Process Cycle: BATCH/BB
Duct Size: 42" X 60 (4' 1.5" + 13.5" CONV.)
Duct Pressure: −.25" H_2O
ASSUMED H_2O: 26%

Source Test No.:
Run No.: T & A
Date: 4/4/90

5.4 mm Nozzle Diameter
0.84 Pitot Tube
VAN #12 Gas Collector No.
29.94 Barometric Pressure
.002 ft³ Leak Rate @ 15"Hg
9 TIME EACH POINT
6 # OF POINTS
54 TIME EACH RUN

Sampling Train: PROBE ⇒ FILTER # 364 ⇒ IMP # P1 ⇒ IMP # P2 ⇒ PUMP.

Traverse Point (T_S=307°F, 460, 767)	Dist. From inches	Initial Traverse: Duct Temp°F	H H_2O	$\sqrt{h}$	Sampling: Traverse Point	h H_2O	V_s FPS	Time	Meter: Rate CFM	Meter: Temp °F	Meter: Volume Ft³	Vac "Hg	Sat'd Gas Temp°F	T_s Duct Temp°F	Remarks: ROTO CFH	Remarks: Vm/POINT
								0813 0			756.76					
A-1	.65				A-1	.65	53.3	STOP 9	.A1125	60	60.46 760.46	6	36	279 739	24.7	
A-2	.75				A-2	.75	55.2	18	.A528	60	64.59 764.62	9	37	225 685	27.5	
B-1	.56				C-1	.45	43.4	27	.35339	60	67.79 767.79	7	37	237 697	21.1	
B-2	.70				C-2	.62	51.71	STOP 36	.40439	60	71.43 771.43	9	37	269 729	24.3	
C-1	.50				E-1	.32	36.32	45	.2975	61	74.11 774.11	5	38	235 695	17.8	
C-2	.24				E-2	.60	51.29	1030 54	.3952	61	77.67 777.67	9	38	279 739	23.7	
D-1	.30						48.51			60.33	20.91		37.17	254		
D-2	.25									520.33°R			497.17	714°R		
E-1	.40	ΔP=.70														
E-2	.25	T_s=767°R			.0474(166)			=26.9%								
F-1	.33				21.3 + 0.0474(166) 27% ESTIMATE 50%!											
F-2	.20															

$D_n = 13.7 \left[\frac{T_s + 460}{V_s(100 - \%H_2O)}\right]^{1/2}$ = 5.18 (767; 57.1, 74)

$Q_m = \left[(2.638 \times 10^{-3}) \frac{(100-\%H_2O)D_{mm}^2}{}\right]\frac{V_s}{T_s}$ ((74) 26 (6.4)²)

Condensate: 166 (9)

V_o 21.30 SCF

$\%H_2O$

$V_S = 2.9(K_p)\sqrt{T_s \cdot h_{H_2O}}$ (20.91, 29.94)

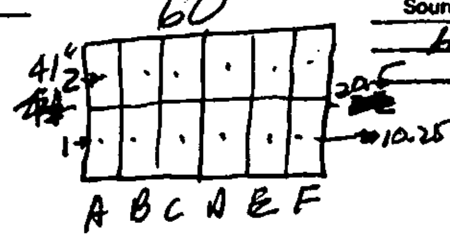
$V_o = \frac{17.71(V_m)(P_b)}{T_m \text{ or } 520.6}$ = 21.30

$\frac{44+60}{2(44+60)}$ $\frac{2(44)(60)}{44+60}$ = 50.76

51" 12 PTS

#2 #1
44.25 23.75 0

60



1	2
10.25	30.75
13.5	13.50
23.75	44.25

Source Test Team
CHUCK McCLURE
Source Test Engineer I
H.001

B SITUATION

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, Calif. 94109 • 771-6000

Source Test Data Sheet

Source Operation: ASPHALT PLT
Plant: STAR #128
Sample Type: PARTICULATE/GAS
Process Cycle: BAGHOUSE
Duct Size: 41X60+3"DIA
Duct Pressure: −0.25" H_2O
ASSUMED H_2O: 2.6%

Source Test No.:
Run No.: B
Date: 4/4/90

5.4 MM Nozzle Diameter
0.84 Pitot Tube
VAN #12 Gas Collector No.
29.94 Barometric Press.
0.001 at 22 Leak Rate @ 15" Hg
9 TIME EACH POINT
6 # OF POINTS
54 TIME EACH RUN

Sampling Train: PROBE ⇒ FILTER # 365 ⇒ IMP # P3 ⇒ IMP # P4 ⇒ PUMP

Traverse Point	Dist. From inches	INITIAL TRAVERSE Duct Temp °F	INITIAL TRAVERSE h H_2O	INITIAL TRAVERSE √h	SAMPLING Traverse Point	SAMPLING h H_2O	SAMPLING V_s FPS	SAMPLING Time	METER Rate CFM	METER Temp °F	METER Volume Ft^3	SAMPLING Vac "Hg	SAMPLING Sat'd Gas Temp °F	SAMPLING T_s Duct Temp °F	REMARKS Roto CFH	REMARKS Vm/POINT
								1112 D			777.84					
					B-1	.60	48.6	9	.41652	62	21.69 781.596	8	39	205	25	
					B-2	.75	56.3	STOP 18	.44978	62	25.44 785.65	10	38	253	27	
					D-1	.45	42.9	27	.35412	64	18.84 788.86	6	38	230	21.2	
					D-2	.60	50.45	36	.40169	64	22.47 792.45	8	39	250	24.1	
					F-1	.60	51.74	45	.39168	64	25.07 796.99	8	39	272	23.5	
					F-2	.41	41.97	1219 54	.32498	64	18.36 788.99	5	40	264	19.8	
							48.60			63.33	21.15		38.8	249.8		
										523.33			498.8	708.8		

$$D_n = 13.7\left[\frac{T_s + 460}{V_s(100-\%H_2O)}\right]^{1/2}$$

$$Q_m = \left[(2.638 \times 10^{-3})\,(100-\%H_2O)\,D_{nm}^2\right]\frac{V_s}{T_s}$$

Condensate (g)
V_o 21.43 SCF
$\%H_2O$

Source Test Team
CHUCK McCLURE
Source Test Engineer I
4.001

$$V_s = 2.9(k_p)\sqrt{\frac{T_s}{21.15 \times 29.94}}\sqrt{h_{H_2O}}$$

$$V_o = \frac{17.71(V_m)(P_b)}{T_m\ °R} = \frac{}{623.33} = 21.43$$

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, Calif. 94109 • 771-6000

Source Test Data Sheet

Source Operation ASPHALT PLT.
Plant STAR INV #1228
Sample Type PARTICULATE & GAS
Process Cycle BAGHOUSE
Duct Size 41 X 60
Duct Pressure -0.25" H_2O
ASSUMED H_2O 26%

Source Test No. ______
Run No. C
Date: 4/4/90

5.4 Nozzle Diameter
0.84 Pitot Tube
VM #12 Gas Collector No.
29.94 Barometric Pressure
0.003 @ 12 Leak Rate @ 15" Hg
8 TIME EACH POINT
6 # OF POINTS
48 TIME EACH RUN

NOTE ⇒

Sampling Train: PROBE ⇒ FILTER # 363 ⇒ IMP # P5 ⇒ IMP # P6 ⇒ FILTER

Traverse Point	Dist. From inches	Initial Traverse: Duct Temp °F	Initial Traverse: H H_2O	Initial Traverse: [illegible]	Sampling: Traverse Point	h H_2O	V_s FPS	Time	Meter Rate CFM	Meter Temp °F	Meter Volume Ft^3	Vac "Hg	Sat'd Gas Temp °F	T_s Duct Temp °F	Remarks: ROTO CFH	Remarks: Vm/POINT
								1256 D			799.55					
					A-1	.70	53.34	8	.4432	64	03.10 803.11	7	39	225 (685)	26.6	
					A-2 75	.75	55.4	STOPPED 16	.4576	64	06.77 806.77	9	40	230 (690)	27.4	
					C-1	.47	44.15	24	.3596	64	09.65 809.65	6	40	239 (699)	21.6	
					C-2	.68	54.46	32	.4217	64	13.02 813.03	8	41	275 (735)	25.3	
		H_2O AT	C-2		E-1 C-2	.60	51.64	40	.3924	64	16.17 816.17	7	41	289 (749)	23.5	
		END OF	BAKE?		E-2 C-2	.60	61.85	1428 48	.3909	64	19.38 819.30	7	41	295 (755)	23.45	
					AB-		51.81			64	19.75		40.33	258.83		
					START					524°R	19.75		500.33	718.83		
					H_2O AT C-2											

$$D_n = 13.7\left[\frac{T_s + 460}{V_s(100-\%H_2O)}\right]^{1/2}$$

$$Q_m = \left[(2.638 \times 10^{-3}) \quad (100-\%H_2O)D_{mm}^2\right]\frac{V_s}{T_s}$$

Condensate (9)
V_o SCF
$\%H_2O$ ______

B-STRATTON Source Test Team
CHUCK McCLURE
Source Test Engineer I
H. DOI

$$V_S = 2.9(K_p)\sqrt{T_s \cdot h_{H_2O}}$$

$$V_o = \frac{17.71(V_m)(P_b)}{T_m\ °R}$$

VM

SOURCE TEST LAB DATA SHEET

PLANT: Syar Asphalt
SOURCE OPERATION: Asphalt Plant, Baghouse
SOURCE TEST NO.: _____
FILTER MEDIA: _____

PAGE 1 OF 1
INITIAL HO
TEST DATE 4/4/90

Drying Procedure: 105 °C 24 hours before and after test, desiccated

FILTER DATA

RUN NO.	FILTER NO.	TARE WEIGHT (g)			FINAL WEIGHT (g)	SAMPLE WEIGHT (µg)

PROBE & NOZZLE RINSE DATA (Total Fallouts)

RUN NO.	FILTER NO.	JAR TARE WEIGHT (g)	JAR FINAL WEIGHT (g)	SAMPLE WEIGHT (µg)

PROBE & NOZZLE RINSE DATA (Catchment)

RUN NO.	PROBE/NOZZLE NOS.	JAR TARE WEIGHT (g)	JAR FINAL WEIGHT (g)	SAMPLE WEIGHT (µg)

IMPINGER DATA

SOLUTION	NO.	A TARE WEIGHT	B FILLED WEIGHT	C FINAL WEIGHT	C-A SAMPLE WEIGHT	C-B CONDENSATE WEIGHT	
H_2O	P-1	463.4	564.0	728.4	265.0	164.4	164.0
	P-2	506.3	606.4	606.8	100.5	0.4	1.4
	P-3	491.6	591.8	797.6	306.0	205.8	207.5 20
	P-4	496.3	596.0	597.7	101.4	1.7	
	P-5	494.6	594.3	750.7	256.1	156.4	157.0 15
	P-6	487.6	587.7	588.3	100.7	0.6	

SOURCE TEST LAB DATA SHEET

PLANT: Sycar Asphalt Plant #128
SOURCE OPERATION: Baghouse
SOURCE TEST NO.:
FILTER MEDIA: 110 mm Glass fibre filter

PAGE 1 OF 1
INITIAL CM/HD/CJM
TEST DATE 4/4/90

Drying Procedure: 105 °C 24 hours before and after test, desiccated

FILTER DATA

RUN NO.	FILTER NO.	TARE WEIGHT (g) (5 PM 4/3)	(12 AM 4/4)	FINAL WEIGHT (g) (4:45 PM 4/4)	(10:10 AM 4/5)	SAMPLE WEIGHT (g)
A	364	.6580	.6581	0.6809	0.6912	0.0228
B	365	.6661	.6661	0.6910	0.6911	0.0249
C	363	.6570	.6570	0.6792	0.6792	0.0222

PROBE & NOZZLE RINSE DATA (total all runs)

RUN NO.	FILTER NO. & JAR #	FINAL JAR TARE WEIGHT (g)	FILTER FINAL WEIGHT (g)	SAMPLE WEIGHT (g)
A	364 + 12	0.0298	0.0228	0.0526
B	365 + 13	0.0255	0.0249	0.0504
C	363 + 14	0.0228	0.0222	0.0450

PROBE & NOZZLE RINSE DATA (certified)

RUN NO.	PROBE/NOZZLE NOS.	JAR TARE WEIGHT (g) (4:4 PM)	(10:10 AM 4/5)	JAR FINAL WEIGHT (g) (4:13 PM 4/4)	(4:16 PM 4/5)	SAMPLE WEIGHT (g)
A	12	56.5280	56.5281	56.5679	56.5680	0.0298
B	13	54.5963	54.5965	54.5720	54.5722	0.0255
C	14	54.6199	54.6196	54.6424	54.6426	0.0228

INTERPRETER DATA

SOLUTION	NO.	A TARE WEIGHT	B FILLED WEIGHT	C FINAL WEIGHT	C-A SAMPLE WEIGHT	C-B CONDENSATE WEIGHT

Form: "Source Test Lab Data Sheet"

FLABDATA : RJ : June 23, 1989

10.6) $G = 15.43 \cdot \frac{W_P}{V_O}$

SYARINO #128
4/4/90

RUN A) $G_A = 15.43 \cdot \frac{0.0526}{21.30}$

$W_{P_A} = 0.0526\,g$

$V_{O_A} = 21.30\,SDCF$

$\boxed{G_A = 0.038\,gr/SDCF}$

RUN B) $G_B = 15.43 \cdot \frac{0.0504}{21.42}$

$W_{P_B} = 0.0504\,g$

$V_{O_B} = 21.42\,SDCF$

$\boxed{G_B = 0.036\,gr/SDCF}$

RUN C) $G_C = 15.43 \cdot \frac{0.0450}{19.98}$

$W_{P_C} = 0.0450\,g$

$V_{O_C} = 19.98\,SDCF$

$\boxed{G_C = 0.035\,gr/SDCF}$

$\boxed{G_{AVG} = 0.036\,gr/SDCF}$

10.7) $m_A = \frac{G \cdot Q_O}{116.7} = \frac{(0.038)(28252)}{116.7}$

$Q_{O_A} = 28252\,SDCFM$

$\boxed{m_A = 9.2\,Lb/HR}$

$m_B = \frac{(0.036)(27021)}{116.7}$

$Q_{O_B} = 27021\,SDCFM$

$\boxed{m_B = 8.3\,Lb/HR}$

$m_C = \frac{(0.035)(29714)}{116.7}$

$Q_{O_C} = 29714\,SDCFM$

$\boxed{m_C = 8.9\,Lb/HR}$

$\boxed{m_{AVG} = 8.8\,Lb/HR}$

SYAR IND #128
4/4/90

$$R_I = \frac{(T_s)(V_m)\ x100}{(60)(100-\%H_2O)(A_n)(V_{s_{AVG}})(TIME)(T_m)}$$

$A_n = 0.0002465\ ft^2$

RUN A) $V_{s_{AVG_A}} = 48.51\ FPS$ $T_{m_A} = 520.33°R$

$(100-\%H_2O_A) = 73.05$

$V_{m_A} = 20.91\ ft^3$

$T_{s_A} = 714°R$

$TIME = 54\ min$

$$R_{I_A} = \frac{(714)(20.91)\ x100}{(60)(73.05)(0.0002465)(48.51)(54)(520.33)}$$

$R_{I_A} = 1.01$

RUN B) $(100-\%H_2O)_B = 68.49$ $V_{m_B} = 21.15\ ft^3$ $T_{s_B} = 709.8°R$

$V_{s_B} = 48.67\ FPS$ $T_{m_B} = 523.33°R$

$$R_{I_B} = \frac{(709.8)(21.15)\ x100}{(60)(68.49)(0.0002465)(48.67)(54)(523.33)}$$

$R_{I_B} = 1.08$

RUN C) $(100-\%H_2O)_C = 72.68$ $V_{m_C} = 19.75\ ft^3$ $T_{s_C} = 718.83°R$

$$R_{I_C} = \frac{(718.83)(19.75)(x100)}{(60)(72.68)(0.0002465)(51.81)(48)(524)}$$

$T_{m_C} = 524°R$

$V_{s_C} = 51.81\ FPS$

$R_{I_C} = 1.01$

PPM TO Lb/Hr (CO)

SYAR IND #128
4/4/90

$$Lb/Hr = \frac{(PPM)(\overline{MW})(60)(Q_O)}{386.9 \times 10^6}$$

$\overline{MW}_{CO}$ ⇒ C = 12.011
O = 15.9994
28.0104

$\overline{MW}_{CO} = 28.01$

RUN A)

$$Lb/Hr_{A_{CO}} = \frac{(>1950)(28.01)(60)(28252)}{386.9 \times 10^6}$$

$Q_{O_A} = 28252$ SDCFM

$PPm_A > 1950$

$Lb/Hr_{A_{CO}} = > 2.393 \times 10^2 \Rightarrow > 239$ Lb/Hr

RUN B)

$$Lb/Hr_{B} = \frac{(>1950)(28.01)(60)(27021)}{386.9 \times 10^6}$$

$Q_B = 27021$ SDCFM

$Lb/Hr_{CO_B} = > 228.8 \Rightarrow > 229$ Lb/Hr

RUN C)

$Q_{O_C} = 29714$ SDCFM

$$Lb/Hr_{C_{CO}} = \frac{(>1950)(28.01)(60)(29714)}{386.9 \times 10^6}$$

$Lb/Hr_{CO_C} = > 251.6 \Rightarrow > 252$ Lb/Hr$_{CO_C}$

GAS ANALYSIS

SYARINO #128
VALLEJO CA 4/4/90

(u = UNITS ON CHART PAPER)

RUN A)

O_2	CO_2
3.92	1.95
4.00	2.30
3.23	2.20
4.00	2.23
3.58	2.30
3.48	
$\bar{X}$ = 3.70u	$\bar{X}$ = 2.20u

CO
>1950 PPM

$\frac{4.94}{2.02} = \frac{X}{3.70}$

$\frac{14.8}{4.6} = \frac{X}{220}$

RUN A
O_2 = 9.05%
CO_2 = 7.1%
CO = >1950PPM

RUN B)

O_2	CO_2
4.0	2.0
3.45	2.18
3.10	2.35
3.76	2.20
3.50	2.30
3.58	2.20
$\bar{X}$ = 3.56u	$\bar{X}$ = 2.205u

CO
>1950PPM

$\frac{4.94}{2.02} = \frac{X}{3.56}$

$\frac{14.8}{4.6} = \frac{X}{2.205}$

RUN B
O_2 = 8.7%
CO_2 = 7.1%
CO = >1950PPM

RUN C)

O_2	CO_2
4.10	2.98
3.50	3.12
3.74	3.22
3.50	3.29
3.60	2.10
$\bar{X}$ = 3.69u	$\bar{X}$ = 2.94u

CO.
>1950PPM

$\frac{4.94}{2.02} = \frac{X}{3.69}$

$\frac{14.8}{4.6} = \frac{X}{2.94}$

RUN C
O_2 = 9.02%
CO_2 = 9.4%
CO = >1950PPM

PLANT: STAR #128

DATE: 4/4/90

ADDRESS:

OPERATOR: CMP

PLANT #: 128

1) What are you producting: 1/4", (1/2") 3/4"

2) What rate are you producing at: 300T/HR Tons/Hour - Average

3) What is your maximum rate of production: 350T/HR Tons/Hour

4) How much will you produce today: 1200 Tons-Average

5) What type of fuel are you burning: NAT'L GAS.

6) What is your rate of fuel useage: ⇒

7) What is your baghouse inlet temperature averaging: 325°F

8) What is your baghouse differential pressure: 3 "H_2O

9) What is the mositure content of the agregate: 2% H_2O

10) Are there any abnormal conditions in the plant today: NO GOOD

Thank You

CMP.

PLANT# 128

Syar Industries, Inc
Lake Herman Road
Vallejo, CA 94591

Sources:

1	PRIMARY CRUSHER
2	CONE CRUSHER
3	TURBO CRUSHER
4	SPOKANE CRUSHER (SOUTH)
5	SPOKANE CRUSHER (NORTH)
8	A.S.B. PLANT PRIMARY CRUSHER
15	DIESEL TANK
16	DIESEL TANK
17	DIESEL TANK
18	DIESEL TANK
19	Description not found
20	DIESEL PUMP
21	DIESEL PUMP
-23	ASPHALTIC CONCRETE PLANT WITH ROTARY DRYER AND HEATER
24	ASPHALTIC CONCRETE SURGE BIN NO. 1
25	ASPHALTIC CONCRETE SURGE BIN NO. 2
28	DIESEL PUMP
29	TRANSFER POINTS COLLECTION SYSTEM
30	Stationary Tilt Type Concrete Mixer
31	Surge Bins
32	Cement Batcher
33	Pozzalan Silo
34	Cement Storage Silo (1)
35	Cement Storage Silo (2)
36	10-Yard Aggregate Weigh Batcher
37	ASB Plant Impact Crusher
40	Above Ground Asphalt Storage Tanks (AR4000)
41	Above Ground Asphalt Storage Tanks (AR4000)
42	Above Ground Asphalt Storage Tanks (AR8000)
43	Above Ground Asphalt Storage Tanks (SS-1)

Abatement Devices:

2	BAGHOUSE
4	BAGHOUSE
5	WATER SPRAY SYSTEM-TRANSFER POINTS
6	WATER SPRAY SYSTEM-TRANSFER POINTS
30	Pulse Jet Baghouse
31	Shaker Baghouse
32	Shaker Baghouse
33	Pulse Jet Baghouse
34	Shaker Baghouse
35	Pulse Jet Baghouse
36	Pulse Jet Baghouse
-23	ASPHALT PLANT HEATER

Emission Points:

1	train: ,A2,/
3	train: ,A4,/

list source information for source # >> 23

PLANT 128 Syar Industries, Inc; Vallejo

SOURCE 23 MINERL> Mining/quarry, Burns multi-fuels, Asphaltic concrete

ASPHALTIC CONCRETE PLANT WITH ROTARY DRYER AND HEATER

Primary Use: Other
External combustion: Dryer (non-foods)
Combustion products-

P/O $1470 Fee Insp Freq: 12 mo

Emission train: S25,S24> @ >A2

list source information for plant # >>

LINE MODIFY	MODIFY ALL	BLOCK MODE	REMOTE MODE *	193 CN	40	FORMAT MODE	MEMORY LOCK	DISPLAY FUNCTNS	AUTO LF