



Interoffice Communication

To Restrict Area - Deregulation File
From P. L. Fetzer
Date June 15, 1976
Subject Calculation of VCM Exposure in Restricted Areas

The average data shown in the attached table was determined by the following criteria.

1. Actual loading times during the past three months were obtained from Tom Randolph for both tank car and vinyl ship loadings.
2. Data from the fixed point monitor sheets for CAR-401 points #2, #6, and #10 i.e. T-411A loading pumps, vent recovery unit and check tank transfer pumps respectively, were average for the specific time period.
3. The lab data, CAR-171 #6 point, was obtained for a five hour period, generally 0800 thru 1300 hrs, when the shipment samples would normally have been analyzed. An appropriate time period four hours prior to the end of each ship loading was selected as the analysis time for ship analysis.
4. Vinyl check tanks transfer pump area CAR-401 point 10, was average on a daily basis.

P. L. Fetzer

bc

VVC 000007711

VQM EXPOSURE DATA

	CAR-171	CAR-401		
	#6	# 2	# 6	# 10
	<u>LAB</u>	<u>P-411 Pumps</u>	<u>Vent Recovery</u>	<u>P-401 Pumps</u>
MARCH				
Tank Car	0.85	2.06	1.63	
Ship	0.57	0.97	1.96	
All Loading	0.85	2.06	1.63	0.5
Daily Avg				0.2
APRIL				
Tank Car	0.8	7.73 6.12	3.04	
Ship	0.48	0.08 0.8	1.5	
All Loading	0.7	6.12 5.05	2.71	.2 (1.31)*
Daily Avg				.35
MAY				
Tank Car	1.04	8.14	1.53	
Ship	0.72	8.37	0.9	
All Loading	.98	8.18	1.42	0.2
Daily Avg				0.13

*(Excluding one average value of 20 ppm)

VVC 000007712

	P-411 Pumps	CAR 401 VENT RECOVERY	P-401 Pumps	LAB
	F 2	# 6	F 2	# 6
MAR. '76	1.87	1.65	0.5	0.8
	0.97	1.76		
	2.1 -	1.6 +	-	0.85 +
			1.5	
APR. '76	6.12	2.71	0.2	0.7
	0.8	1.5	(1.31)	
	7.7 +	3.04 +	-	0.8 +
			1.0	
MAY '76	2.18	1.42	0.2	0.98
	8.37	0.9		
	8.14 +	1.53 +		1.04 +

VVC 000007713

100

100

	1.2	1.6			
	1.6	1.6	1.5		
	1.2	1.2			
	1.2		1.2	1.7	
	1.14	1.1	1.1	0.1	
	1.3			0.2	
1.2	1.2	1.2	1.7	1.2	
	1.1	1.1	1.1	1.3	
	1.1	1.2		1.2	
				1.1	
	1.2	1.2		1.5	
1.2	1.5	1.5	1.7	1.1	
1.2	1.5	1.5	1.2	1.3	
1.2	1.2	1.2		0.9	
1.2	1.2	1.2		1.5	
1.2	1.2	1.2	1.3	1.3	
1.2	1.2	1.2	1.4	1.3	
1.2	1.2	1.2	1.5	1.3	
1.2	1.2	1.2	1.6	1.3	
Group	1.87	1.66	1.5	1.8	
without ship	2.06	1.63		1.85	
ship	.97				
Total	10/17	8/19	1/17	4/18	
total only	8/14	7/14	1/14	3/17	
ship	2/3	1/3	0/3	1/3	

410

#2

15	12	—	—
16	13	—	—
17	14	—	—
18	15	—	—
19	16	—	—
20	17	—	—
21	18	—	—
22	19	—	—
23	20	—	—
24	21	—	—
25	22	—	—
26	23	—	—
27	24	—	—
28	25	—	—
29	26	—	—
30	27	—	—
31	28	—	—
32	29	—	—
33	30	—	—
34	31	—	—
35	32	—	—
36	33	—	—
37	34	—	—
38	35	—	—
39	36	—	—
40	37	—	—
41	38	—	—
42	39	—	—
43	40	—	—
44	41	—	—
45	42	—	—
46	43	—	—
47	44	—	—
48	45	—	—
49	46	—	—
50	47	—	—
51	48	—	—
52	49	—	—
53	50	—	—
54	51	—	—
55	52	—	—
56	53	—	—
57	54	—	—
58	55	—	—
59	56	—	—
60	57	—	—
61	58	—	—
62	59	—	—
63	60	—	—
64	61	—	—
65	62	—	—
66	63	—	—
67	64	—	—
68	65	—	—
69	66	—	—
70	67	—	—
71	68	—	—
72	69	—	—
73	70	—	—
74	71	—	—
75	72	—	—
76	73	—	—
77	74	—	—
78	75	—	—
79	76	—	—
80	77	—	—
81	78	—	—
82	79	—	—
83	80	—	—
84	81	—	—
85	82	—	—
86	83	—	—
87	84	—	—
88	85	—	—
89	86	—	—
90	87	—	—
91	88	—	—
92	89	—	—
93	90	—	—
94	91	—	—
95	92	—	—
96	93	—	—
97	94	—	—
98	95	—	—
99	96	—	—
100	97	—	—

all
without ship 8.18 1.4v
8.14 1.53 .2
ship 8.37 .9

VVC 000007715

15	1.5	—
16	1.5	—
17	1.5	—
18	1.5	—
19	1.5	—
20	1.5	—
21	1.5	—
22	1.5	—
23	1.5	—
24	1.5	—
25	1.5	—
26	1.5	—
27	1.5	—
28	1.5	—
29	1.5	—
30	1.5	—
31	1.5	—
32	1.5	—
33	1.5	—
34	1.5	—
35	1.5	—
36	1.5	—
37	1.5	—
38	1.5	—
39	1.5	—
40	1.5	—
41	1.5	—
42	1.5	—
43	1.5	—
44	1.5	—
45	1.5	—
46	1.5	—
47	1.5	—
48	1.5	—
49	1.5	—
50	1.5	—
51	1.5	—
52	1.5	—
53	1.5	—
54	1.5	—
55	1.5	—
56	1.5	—
57	1.5	—
58	1.5	—
59	1.5	—
60	1.5	—
61	1.5	—
62	1.5	—
63	1.5	—
64	1.5	—
65	1.5	—
66	1.5	—
67	1.5	—
68	1.5	—
69	1.5	—
70	1.5	—
71	1.5	—
72	1.5	—
73	1.5	—
74	1.5	—
75	1.5	—
76	1.5	—
77	1.5	—
78	1.5	—
79	1.5	—
80	1.5	—
81	1.5	—
82	1.5	—
83	1.5	—
84	1.5	—
85	1.5	—
86	1.5	—
87	1.5	—
88	1.5	—
89	1.5	—
90	1.5	—
91	1.5	—
92	1.5	—
93	1.5	—
94	1.5	—
95	1.5	—
96	1.5	—
97	1.5	—
98	1.5	—
99	1.5	—
100	1.5	—

1.98
1.04
1.72
at
1.72

1.72

1. ... of
... ..

815-819

-235 , 239 Doug Mitchell
Atkinson

815-819-240

1			1.5			
2			—			
3		1.2	.1			
4	1.3	5.1	.1			
5	3.4	6.	.2			
6	5.4	2.1	.2			
7	3.	5.1	.2			
8	2.3	4.1	.1			
9	1	.1	.4			
10	3.1	.2	.5			
11	1.5	1.5	—			
12	5.2	.7	.2			
13	1.5	.1	—			
14	.3	—	—			
15	—	—	—			
16	—	—	—			
17	—	—	—			
18	—	—	—			
19	—	—	—			
20	—	—	—			
21	1.5	2.0	—			
22	3.5	6.0	.5			
23	1.5	1.5	—			
24	1.5	—	—			
25	1.2	.1	—			
26	1.3	2.3	—			

11.16

1.16
35

19
with out of
sky
6.12 5.05
273 6.12
.8

2.71
3.04
1.5

1.2
1.31
upheld ①

.7
.8

VVC 000007717

FREQUENCY RECORD

CAR-171			CAA 401					
#6			#2		#6		#18	
Lab			P-411 Pump		Vent Recovery		P-401 Pump	
March								
TC	2/15	20%	8/14	57.1	7/14	50.0	8/14	7.1
Ship	1/3	33.3	2/3	66.6	1/3	33.3	0/3	—
all Loading	4/18	22.2	10/17	58.8	8/17	47.1	1/17	5.9
April								
TC	2/17		15/19		7/19		2/19	
Ship	1/3		1/4		1/4		0/4	
all	3/20		14/23		8/23		2/23	
May								
TC	4/17		17/20		7/20		1/20	
Ship	2/3		4/4		1/4		0/4	
all	8/20		21/24		8/24		1/24	

VVC 000007718

10-6-45

1165

Simulation of VCM Apparatus in the VCM of Chem
2010-10-16

The average data shown in the above table were determined by the following relation:

1. Actual loading times during the past three months were noted for each cargo compartment for both tank and wing ship loadings.
2. Data from the fixed point monitoring sheets for CHAR-401 points #2, #6 and #10, i.e. T-401A loading pumps, vent recovery point and check tank transfer pump ^{respectively} were reviewed for the specific time periods.
3. The list of tank areas affected for cargo loading, generally 1000 to 1200 hrs, indicated the amount of cargo loaded (in weight) and the amount of time. An approximate time period of 4 hours was the loading each ship. Loading was scheduled as the earliest time for ship discharge.
4. The amount of cargo loaded for each ship was noted and the amount of time was noted as well as the amount of cargo on a daily basis.

April 25

CAR-101

#6

LAP

March

	#6 LAP	#8 P-411 pump	#10 P-411 pump	#10 P-411 pump
Time to	1.25	2.06	1.63	
Ship	1.57	1.97	1.96	
all loading	1.8	1.87	1.66	1.5
Time to				2.2

April

	#6	#8	#10	#10
Time to	0.8	2.73	3.04	
Ship	0.48	0.08	1.5	
all loading	0.7	6.12	2.71	2 (1.31)*
Time to				1.35

May

	#6	#8	#10	#10
Time to	1.04	2.14	1.53	
Ship	0.72	8.37	0.9	
all loading	1.98	8.18	1.42	1.2
Time to				1.13

* (Estimating an average value of 20 ppm)

Need the
information by 11/11/11

Deregulation of Regulated Area

5-28

- Deregulate -
1. loading pump
 2. Vent Recovery
 3. lab
 4. transfer pumps
 5. top of EDC Tanks
- } 08
check

log sheets

Monitoring data - loading and unloading
Check on ship loading data

401 (2) 1. Loading Pump -

401 (6) 2. Vent Recovery Unit

171 (6) 3. lab - normally - handling check first
{ correct leak -
log sheets + charts
(log sheet of time analyzing VCM)

4. transfer pumps

401 H/O

(use log sheet data)
(check location of the sample point)

5) Top of EDC Tanks

1. Personnel dosimeter - 15 minutes

2. Area monitor 8 in dosimeter

all ~~three~~ tanks

T-453 -, T-450

T-402, T-405 T-460 T-452

EXPORT

ABO

CC

TEW

ALPPO
SHIP TO BFB

CEMIRE

BFB-PAYBACK

1	2	3	4	5	6	7	8	9	10	11	12
BARFOM	1107614										
ZEEBRUE	1975141										
SPAIN	3000										
STURD JOESALFAR	483204										
GEON	2000										
BRASWIL	20163										
SUNNY QUEEN	NO. 2WAY										
GLOBAL GAS	6418376										
GRECE	220426										
WUG. CRPWA	120000										
DECKANS	1053043										
SPAIN	1500										
UNITED KINGDOM	1500										
NORWAY	177494										
	4043336										
	4041931										
	871801										
	810974										
	661052										
	733865										
	2700										
	3120										
	442884										
	742385										
	664416										
	8358432										
	184774										
	184269										
	584196										
	780										
	780										
	1105727										
	268779										
	536864										
	4500										
	1140										
	2280										
	181820										
	180620										
	182480										
	551540										
	183020										
	0										
	3104280										
	549465										
	3298029										
	921162										
	3900										
	221132										
	900										
	221026										
	900										
	221435										
	900										
	737315										
	183221										
	184761										
	3120										
	780										
	780										
	910280										
	5140948										
	918884										
	3900										
	368155										
	1500										
	736652										
	3120										
	183700										
	780										
	367016										
	1500										
	550764										
	2340										

COLUMN
WRITE

BORDEN

TOTAL

1	361840	1200	1843448	7720
2	247760	960	1833452	7580
3				
4				
5				
6				
7				
8				
9				
10	182240	580	2166761	7780
11			4883204	
12	177500	1080	1446711	6480
13	718920	7540	1890772	6480
14	359600	920	359600	920
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25	360360	860	10527043	
26			2379462	7480
27	350560		1986544	
28	177300		1870393	
29			1575611	
30	3046440		910780	
			68114789	

VVC 000007723

Prepared By
Approved By

Date

0000000000

MARCH 1976

Exp.

ABERDEEN

OKC

TENNESSEE

BORDEN

AIR PRODUCTS
TO BFG.

GENTLE

	1	2	3	4	5	6	7	8	9	10	11	12	13
1			1328452	8700									1328452
2			2099793	8880									2099793
3													
4													
5													
6													
7													
8													
9													
10	BEARNS 5635975												
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21	S/6440 4967415												
22	292240												
23	147360												
24	427820												
25	# 844 4869231												
26													
27	F200-127705 Chem.												
28													
29													
30	BEARNS 6149015												
31	21,617,676												
32	324,999												
33	324,970												

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

24 1155 0520
25 1155 0520
26 10.00 0540
27 10.00 0540
28 10.00 0540
29 10.00 0540
30 10.00 0540
31 10.00 0540
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86 10.00 0540
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88 10.00 0540
89 10.00 0540
90 10.00 0540
91 10.00 0540
92 10.00 0540
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97 10.00 0540
98 10.00 0540
99 10.00 0540
100 10.00 0540

VVC 000007724

MAY 19 1973

EXPORT

ABO

CXC

TENN

AIRPAD
SHIP TO BFB

GENTIRE

BFB-PAYBACK

1	2	3	4	5	6	7	8	9	10	11	12	13
1	184774	749212	749212	3180	365380	1280					367016	1560
2	184269	753948	753948	3180	181060	1100					550164	2340
3	589196	1564455	1564455	6600	546220	720	914482	3900			736652	3120
4		881689	881689	3600	366120	480					183700	780
5		536128	536128	2280	366020	580	549383	2340				
6		441695	441695	1800			363537	1560				
7												
8												
9												
10												
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28												
29												
30												

BARFON 1107614

SIGURD JORSALFAR 488204

SUNNY QUEEN 6498376
GLOBAL GAS 7505019

DEUMAS 10527043
877801

VVC 000007726

9 183000
10 183000
11 183000
12 183000
13 183000
14 183000
15 183000
16 183000
17 183000
18 183000
19 183000
20 183000
21 183000
22 183000
23 183000
24 183000
25 183000
26 183000
27 183000
28 183000
29 183000
30 183000

BORDEN

TOTAL

361840	1200	1843448	7220
347780	960	1833452	7580
		11017614	
		3025157	
182240	580	2166701	7780
177500	1080	4883204	6480
718920	2510	1416711	6480
359600	920	1890172	920
		359600	
		6498376	
		2505099	
		2391205	9960
		1715982	
		676695	
		551540	800
360300	860	10527043	
		2379462	7780

VVC 000007727