March 17, 1982

Mr. M. D. Sargent
Environmental Protection Co-ordinator
Texaco Inc.
1515 W. 22nd Street
Oak Brook, Il. 60521

Re: Cloverleaf Texaco
2631 North Glenstone

Dear Mr. Sargent:

This office has monitored the L.E.L. in the sump of the Cloverleaf Texaco. Our test results for the last few weers have indicated a 0% L.E.L. We did experience a significant rainfall event during this time period.

To complete our files, would you furnish a copy of the Kent-Moore Tank System Tightness Reports for the Cloverleaf Texaco.

The City of Springfield does appreciate Texaco's prompt and efficient handling of the problem. If you have any questions, please feel free to call 417-864-1924.

Yours truly,

Stephen D. Short
Water Pollution Control Inspector III
Surveillance & Enforcement

SDS:js

2631 N Glenstone

18 TANK 1st tank from Building (Identify by # or Position) PRODUCT Lead-free (Brand and Grade) CAPACITY 4018 (Gallons) LAST DELIVERY 2-9-82 (Date)

19 PRODUCT QUANTITY — GALLONS

STICK READINGS BEFORE FILL-UP — Water Bottom ___" (to 1/8 in.) ___ (gallons) — Product Inventory ___" (to 1/8 in.) ___

FILL-UP DELIVERY (Take Temperature on Truck) (Meter Off) .....

ADDED TO FILL TESTER TO 12" (Fill Hoses - Prime Pump) .....

TOTAL QUANTITY IN SYSTEM .....

20 TEMPERATURE

INVENTORY ___ °F

ON TRUCK ___ °F

IN FULL TANK ___ °F

CHANGE TO EXPECT DURING TEST ___ °F (+ or −)

21 MEASUREMENTS

TANK LENGTH ___' ___"

To Compute Length of Discharge Tube

TANK DIAMETER 6' ___"

TANK TOP TO GRADE ___"

ELBOW FLANGE ABOVE GRADE ___"

NEEDED TO CONNECT 21" (+ or − 6")

LENGTH TO ASSEMBLE ___"

22 TEMPERATURE / VOLUME FACTOR (a) TO TEST THIS TANK

23 THERMAL-SENSOR READING AFTER CIRCULATION ___ (Letter) ___ (Units) ___ °F (Nearest)

24 UNITS PER °F IN RANGE OF EXPECTED CHANGE ..... ___ (Units)

CALCULATIONS

25 4030 (Total Quantity (19)) X .0006 (Coeficient of Expansion for Involved Product) = 2.418 Gallons (Volume Change in this System per °F)

26 2.418 (Volume Change per °F (25)) ÷ 318 (Units per °F in Test Range (24)) = .008 Gallons (Volume Change per Unit Compute to 3 Dec. Places) { This To Fa (a

27 LOG OF TEST PROCEDURES / 31 VOLUME MEASUREMENTS / 34 TEMPERATURE CHANGES / 38 NET VOLUME CHANG

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 Stand Pipe Level After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c)x(a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accum
8:45	Filled System to 12		00	12						
8:50	Raised to 42		2.00 / 12	.16 / 42	−.84					
9:20	Raised to 42		1.00 / 36	.68 / 42	−.32	06267				
9:50	Raised to 42		.68 / 41	.62 / 42	−.06	06317	+50	.400	−.460	
9:20			.62 / 41.5	.64 / 41	+.02	06317	0	0	+.02	
10:50			.64 / 43	.73 / 42	+.09	06332	+15	.120	−.03	
[illegible]	Lowered to 12		.00 / 42	1.66 / 12	+1.66	—				

27 LOG OF TEST PROCEDURES / VOLUME MEASUREMENTS / TEMPERATURE CHANGES / NET VOLUME CHANG

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 Stand Pipe Level After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c) x (a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accumula
11:25		1	.67 / 14	.79 / 12	.10	06352	+20	.160	−.060	
11:55		2	.24 / 14	.34 / 12	.10	06363	+11	.088	+.012	
12:25		3	.34 / 14	.45 / 12	.11	06371	+8	.064	+.046	+.0
12:55		4	.45 / 14	.56 / 12	.11	06379	+8	.064	+.046	

Tank Certified tight
2-13-82

18 TANK 2nd From Building (Identify by # or Position) PRODUCT Lead Free (Brand and Grade) CAPACITY 4015 Gallons LAST DELIVERY 2-9-82 Date

19 PRODUCT QUANTITY — GALLONS

STICK READINGS BEFORE FILL-UP — Water Bottom ___" to 1/8 in. ___ gallons — Product Inventory ___" to 1/8 in. ___

FILL-UP DELIVERY (Take Temperature on Truck) (Meter Off) .....

ADDED TO FILL TESTER TO 12" (Fill Hoses - Prime Pump) .....

TOTAL QUANTITY IN SYSTEM .....

20 TEMPERATURE

INVENTORY ___ °F

ON TRUCK ___ °F

IN FULL TANK ___ °F

CHANGE TO EXPECT DURING TEST ___ °F (+ or −)

21 MEASUREMENTS

TANK LENGTH ___' ___"

To Compute Length of Discharge Tube

TANK DIAMETER ___"

TANK TOP TO GRADE ___"

ELBOW FLANGE ABOVE GRADE ___"

NEEDED TO CONNECT 21" (+ or − 6")

LENGTH TO ASSEMBLE ___"

22 TEMPERATURE / VOLUME FACTOR (a) TO TEST THIS TANK

23 THERMAL-SENSOR READING AFTER CIRCULATION ___ Letter ___ Units ___ °F Nearest

24 UNITS PER °F IN RANGE OF EXPECTED CHANGE ..... ___ Units

CALCULATIONS

25 4020 (Total Quantity (19)) X .0006 (Coeficient of Expansion for Involved Product) = 2.418 Gallons (Volume Change in this System per °F)

26 2.418 (Volume Change per °F (25)) ÷ 323 (Units per °F in Test Range (24)) = .007 Gallons (Volume Change per Unit Compute to 3 Dec. Places) { Th T Fa (

27 LOG OF TEST PROCEDURES / 31 VOLUME MEASUREMENTS / 34 TEMPERATURE CHANGES / 38 NET VOLUME CHANG

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 Stand Pipe Level After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c)x(a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accum
4:10										
4:15	Fill ÷ 42		2.0/12	.64/42	-1.36					
4:45			1.00/34	.52/42	-.48	6503				
5:15			.52/34	.32/42	-.20	6503	0	-0	-.20	
5:45			.32/41	.25/42	-.07	6503	0	0	-.07	
5:46			.0/42	1.56/12	+1.56					
6:15			.56/12	.56/12	0	6510	+7	-.04	-.04	

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 Stand Pipe Level After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c) x (a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accumulc
6:45			.56/12	.56/12	0	6509	-1	-.07	+.07	
7:15			.56/12	.56/12	0	6509	0	0	0	

certified tight
Kim Weaver
2/12/82

face
531 N. Glenoak
2/11/82

18 TANK 3rd from Building (Identify by # or Position) PRODUCT Reg (Brand and Grade) CAPACITY 4015 Gallons LAST DELIVERY 2-9-82 Date

19 PRODUCT QUANTITY — GALLONS

STICK READINGS BEFORE FILL-UP — Water Bottom ___" to 1/8 in. ___ gallons — Product Inventory ___" to 1/8 in. ___

FILL-UP DELIVERY (Take Temperature on Truck) (Meter Off) .....

ADDED TO FILL TESTER TO 12" (Fill Hoses - Prime Pump) .....

TOTAL QUANTITY IN SYSTEM .....

20 TEMPERATURE

INVENTORY ___ °F

ON TRUCK ___ °F

IN FULL TANK ___ °F

CHANGE TO EXPECT DURING TEST ___ °F (+ or −)

21 MEASUREMENTS

TANK LENGTH ___' ___"

To Compute Length of Discharge Tube

TANK DIAMETER ___"

TANK TOP TO GRADE ___"

ELBOW FLANGE ABOVE GRADE ___"

NEEDED TO CONNECT 21" (+ or − 6")

LENGTH TO ASSEMBLE ___"

22 TEMPERATURE / VOLUME FACTOR (a) TO TEST THIS TANK

23 THERMAL-SENSOR READING AFTER CIRCULATION ___ Letter ___ Units ___ °F Nearest

24 UNITS PER °F IN RANGE OF EXPECTED CHANGE ..... ___ Units

CALCULATIONS

25 4030 (Total Quantity (19)) X .0006 (Coeficient of Expansion for Involved Product) = 2.418 Gallons (Volume Change in this System per °F)

26 2.418 (Volume Change per °F (25)) ÷ 326 (Units per °F in Test Range (24)) = .007 Gallons (Volume Change per Unit Compute to 3 Dec. Places) { Th T Fo

27 LOG OF TEST PROCEDURES

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	31 VOLUME MEASUREMENTS 32 Stand Pipe Level Before	After	33 Product Added − Drained + (v)	34 TEMPERATURE CHANGES 35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c)x(a)=(t)	38 NET VOLUME CHANG 39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accum
2135	Filled system to 12									
2:40	Filled " to 42		12/12	42/42	-1.41					
3:10			12/12	42/42	-.93	6817				
3:40			.52/36	.50/42	-.32	6820	3			
4:10			.50/35	.30/42	-.20	6820	0			
4:40			.52/37	.8/42	-.22	6520	0			

27 LOG OF TEST PROCEDURES

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	31 VOLUME MEASUREMENTS 32 Stand Pipe Level Before	After	33 Product Added − Drained + (v)	34 TEMPERATURE CHANGES 35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c) x (a)=(t)	38 NET VOLUME CHANG 39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accumulc
4:45	Drained to 12		42/42	152/12	+1.52					
5:15	"		52/11	48/12	-.04	6820	0	0	-.04	
5:45			43/11	44/12	-.04	6814	-6	-.04	0	
6:15			44/11	41/12	-.03	6809	-5	-.035	.005	
6:45			41/11	59/12	-.02	6809	0	0	-.02	
						certified tight				
						Tim Warner				
						2/11/82				

18 TANK 4th from Building (Identify by # or Position) PRODUCT Regular (Brand and Grade) CAPACITY 4018 Gallons LAST DELIVERY 2-9-82 Date

19 PRODUCT QUANTITY — GALLONS

STICK READINGS BEFORE FILL-UP: Water Bottom ___" to 1/8 in. ___ gallons; Product Inventory ___" to 1/8 in. ___

FILL-UP DELIVERY (Take Temperature on Truck) (Meter Off) .....

ADDED TO FILL TESTER TO 12" (Fill Hoses - Prime Pump) .....

TOTAL QUANTITY IN SYSTEM .....

20 TEMPERATURE

INVENTORY ___ °F

ON TRUCK ___ °F

IN FULL TANK ___ °F

CHANGE TO EXPECT DURING TEST ___ °F (+ or −)

21 MEASUREMENTS

TANK LENGTH ___' ___"

To Compute Length of Discharge Tube

TANK DIAMETER ___"

TANK TOP TO GRADE ___"

ELBOW FLANGE ABOVE GRADE ___"

NEEDED TO CONNECT 21" (+ or − 6")

LENGTH TO ASSEMBLE ___"

22 TEMPERATURE / VOLUME FACTOR (a) TO TEST THIS TANK

23 THERMAL-SENSOR READING AFTER CIRCULATION ___ Letter ___ Units ___ °F Nearest

24 UNITS PER °F IN RANGE OF EXPECTED CHANGE ..... ___ Units

CALCULATIONS

25 4030 (Total Quantity (19)) X .0006 (Coeficient of Expansion for Involved Product) = 2.418 Gallons (Volume Change in this System per °F)

26 2.418 (Volume Change per °F (25)) ÷ 323 (Units per °F in Test Range (24)) = .007 Gallons (Volume Change per Unit Compute to 3 Dec. Places) { Th Ta Fa (a

27 LOG OF TEST PROCEDURES			31 VOLUME MEASUREMENTS			34 TEMPERATURE CHANGES			38 NET VOLUME CHANG	
28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c)x(a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accum
10:00	Filled system to 12									
10:10	Filled to 42		2.00/12	0/42	2.00					
10:25		1	1.0/29	.19/42	.81	6430				
10:55		2	.96/27	.05/42	-.86	6440	+10	.07	-.93	
11:25		3	.93/37	.79/42	-.19	6458	+28	.196	-.39	
11:55		4	.79/42.5	.80/42	+.01	6477	+19	.13	-.12	
[illegible]	[illegible]		0/42	1.58/12	1.58					

LOG OF TEST PROCEDURES			VOLUME MEASUREMENTS			TEMPERATURE CHANGES			NET VOLUME CHANGE	
28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c) x (a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accumula
12:30		1	.58/14	.69/12	+.11	6497	+20	.14	-.02	
1:00			.65/14	.78/12	.10	6510	+13	.09	+.01	
1:30			.77/14	.86/12	+.09	6524	+14	.09	0	
2:00			.85/14	.94/12	.09	6540	+16	.11	-.02	
								certified tight		
								[illegible] 2/11/82		

replace 51 D Clouter 2/11/82

18 TANK 5th from Building (Identify by # or Position) PRODUCT Lead Free (Brand and Grade) CAPACITY 6000 Gallons LAST DELIVERY 2-9-82 Date

19 PRODUCT QUANTITY

		GALLONS
STICK READINGS BEFORE FILL-UP	Water Bottom ___" to 1/8 in. ___ gallons; Product Inventory ___" to 1/8 in.	
FILL-UP DELIVERY (Take Temperature on Truck) (Meter Off)		
ADDED TO FILL TESTER TO 12" (Fill Hoses - Prime Pump)		
TOTAL QUANTITY IN SYSTEM		

20 TEMPERATURE

INVENTORY	°F
ON TRUCK	°F
IN FULL TANK	°F
CHANGE TO EXPECT DURING TEST	°F + or −

21 MEASUREMENTS

TANK LENGTH	' "
To Compute Length of Discharge Tube	
TANK DIAMETER	"
TANK TOP TO GRADE	"
ELBOW FLANGE ABOVE GRADE	"
NEEDED TO CONNECT	21 " + or − 6 "
LENGTH TO ASSEMBLE	"

22 TEMPERATURE / VOLUME FACTOR (a) TO TEST THIS TANK

23 THERMAL-SENSOR READING AFTER CIRCULATION ___ Letter ___ Units ___ °F Nearest

24 UNITS PER °F IN RANGE OF EXPECTED CHANGE ..... ___ Units

CALCULATIONS

25 6050 (Total Quantity (19)) X .00006 (Coeficient of Expansion for Involved Product) = 3.63 Gallons (Volume Change in this System per °F)

26 3.63 (Volume Change per °F (25)) ÷ 318 (Units per °F in Test Range (24)) = .011 Gallons (Volume Change per Unit Compute to 3 Dec. Places)

27 LOG OF TEST PROCEDURES / 31 VOLUME MEASUREMENTS / 34 TEMPERATURE CHANGES / 38 NET VOLUME CHANGE

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 Stand Pipe Level After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c)x(a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accum.
1:35	Raised to 12		0/0	12/12						
1:40	Raised to 42		2.00/12	.04/42	−1.96					
2:10	Raised to 42		1.00/34	.50/42	−.50					
2:40	Raised to 42		.50/35	.35/42	−.15	06408				
3:10			.35/42	.34/42	−.01	06413	+5	.055		
3:40			.34/13	.39/42	+.05	06459	+46	.506	.456 −	
4:10			.39/43	.42/42	+.03	06467	+8			

LOG OF TEST PROCEDURES / VOLUME MEASUREMENTS / TEMPERATURE CHANGES / NET VOLUME CHANGE

28 Date / Time	29 Record Each Step of Setting Up and Running Test	30 Reading No.	32 Stand Pipe Level Before	32 Stand Pipe Level After	33 Product Added − Drained + (v)	35 Thermal-Sensor Reading	36 Change Higher + Lower − (c)	37 Expansion or Contraction This Reading (c) x (a)=(t)	39 This Reading Volume (v) Adjusted for (t) (v) ± (t)	40 Accumulc
4:15	Lowered to 12		.00/42	1.76/12	+1.76					
4:45	Lowered to 12	1	.00/14	.10/12	+.10	06469	+2	.022	+.078	
5:15	Lowered to 12	2	.10/14	.21/12	+.11	06473	+4	.044	+.066	
5:45	Lowered to 12	3	.21/14	.35/12	+.14	06478	+5	.055	+.085	
6:15	Lowered to 12	4	.35/15	.50/12	+.15	06486	+8	.088	T .062	

TEXACO
PETROLEUM PRODUCTS

1515 West 22nd Street
Oak Brook, IL 60521

March 30, 1982

APR 5 1982

Mr. Stephen D. Short
Water Pollution Control Inspector
Surveillance and Enforcement
City of Springfield, Missouri
Department of Public Works
830 Boonville Avenue
Springfield, Missouri 65801

RE: CLOVERLEAF TEXACO
2631 NORTH GLENSTONE
SPRINGFIELD, MISSOURI

Dear Mr. Short;

We appreciate your report of March 17th that the L.E.L reading at the sump is 0%, and your acknowledgement of our efforts in handling this leak situation.

Copies of the Kent-Moore Tank System Tightness Tests, performed on February 11th and 12th, 1982 are attached as you requested. All of the underground gasoline tanks are certified tight.

Yours very truly,

M. D. Sargent

M. D. SARGENT, Environmental
Protection Coordinator

MDS/rar

Attachments (5)

This is recycled paper