Mr. Jerry Wickham
Alameda County
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

7/19/12

Re: B&C Gas Mini Mart, 2008 First Street, Livermore, California
(ACEHD Case No. RO0000278)

Dear Mr. Wickham:

Stratus Environmental, Inc. (Stratus) has recently prepared a document titled *Quarterly Remediation Status Report, Second Quarter 2012* on my behalf. The report was prepared in regards to Alameda County Fuel Leak Case No. RO0000278, located at 2008 First Street, Livermore, California.

I have reviewed a copy of this report, sent to me by representatives of Stratus, and "I declare, under penalty of perjury, that the information and or/recommendations contained in the attached document or report is true and correct to the best of my knowledge."

Sincerely,

Balaji Angle
B&C Gas Mini Mart

STRATUS
ENVIRONMENTAL, INC.

3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

July 16, 2012
Project No. 2146-2008-01

Mr. Jerry Wickham
Alameda County
Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Quarterly Remediation Status Report, Second Quarter 2012,** B&C Gas Mini Mart, 2008 First Street, Livermore, California (ACEHD Case No. RO0000278)

Dear Mr. Wickham:

Stratus Environmental, Inc. (Stratus) is submitting the attached report, on behalf of Mr. Balaji Angle, to document work performed during the second quarter 2012 at the B&C Gas Mini Mart, located at 2008 First Street, Livermore, California. This report has been prepared in compliance with Alameda County Environmental Health Department (ACEHD) requirements for underground storage tank (UST) investigations.

If you have any questions regarding this report, please contact Scott Bittinger at (530) 676-2062 or Gowri Kowtha at (530) 676-6001.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

PROFESSIONAL GEOLOGIST
Scott G. Bittinger
No. 7477
STATE OF CALIFORNIA

Scott G. Bittinger, P.G.
Project Manager

Deborah L. Barr, P.E.
Project Engineer

Attachment: Quarterly Remediation Status Report, Second Quarter 2012

cc: Mr. Balaji Angle, B&C Gas Mini Mart

Date July 16, 2012

B&C GAS MINI MART
QUARTERLY REMEDIATION STATUS REPORT

Facility Address:	2008 First Street, Livermore, California
Consulting Co./Contact Person:	Stratus Environmental, Inc. / Scott Bittinger, P.G.
Consultant Project No:	2146-2008-01
Primary Agency/Regulatory ID No:	Alameda County Environmental Health Department (ACEHD) / Case No. RO0000278

WORK PERFORMED THIS PERIOD (Second Quarter 2012):

1. Stratus performed seven site visits to perform operation and maintenance work on an ozone injection system that is operating at the site. Field data sheets prepared at the time of each site visit are attached to this report (see Appendix A).

2. In accordance with SWRCB Resolution No. 2009-0042, this site is under a semi-annual groundwater monitoring and sampling program, with these activities performed during the first and third quarters of each calendar year; therefore, no groundwater sampling was conducted during the second quarter 2012.

WORK PROPOSED FOR NEXT PERIOD (Third Quarter 2012):

1. In a letter dated June 28, 2012, ACEHD personnel requested that a revised plan to perform remediation activities at the site be developed and submitted for agency review. These activities are to include an expansion of the area of groundwater treatment by ozone injection and a re-evaluation of possible use of soil vapor extraction (SVE) at the site, which was proposed for use at the site in a January 2009 Corrective Action Plan but not implemented, apparently due to recent 'above average' groundwater levels. A deadline of August 28, 2012 was established for submittal of a work plan.

2. Semi-annual groundwater monitoring and sampling will be performed in accordance with the approved well gauging and sampling schedule. Tentatively, we anticipate performing the next well gauging/sampling event in August 2012.

3. Stratus will continue operation of the existing ozone injection system until a revised remedial plan is developed and approved by ACEHD. It should be noted that during the second quarter 2012, ongoing maintenance problems with the existing ozone injection system resulted in non-continuous operation of this equipment. While we believe that ozone injection is a viable groundwater remedial alternative for near-source fuel contaminants, replacement of the existing ozone injection system will be considered as part of the late August 2012 work plan to allow for continuous remediation of the saturated zone.

Current Phase of Project:	Groundwater Monitoring, Onsite Ozone Injection (CAP/REM – O&M)
Frequency of Groundwater Sampling:	MW-2 though MW-7, MW-13, CMT-1 Z1, CMT-2 Z1, CMT-3 Z1, and CMT-4 Z2 = semi-annually (first & third calendar quarter); MW-8 through MW-12 and D-2 = annually (third calendar quarter)
Frequency of Groundwater Monitoring:	All wells = semi-annual (1st & 3rd); additional groundwater level measurements are collected during operation and maintenance visits for the ozone injection system.

IN-SITU GROUNDWATER REMEDIATION SYSTEM

Equipment Inventory:	Calcon Environmental (Calcon) HiPro™ 2500 Ozone Injection System
Ozone Injection System Status:	Operational
Injection wells:	SP-1A/B, SP-2A/B, SP-4A/B (ozone not being injected into well SP-3A/B). Offsite wells SP-5 A/B/C and SP-6 A/B/C not connected to remediation system).

REMEDIATION SYSTEM

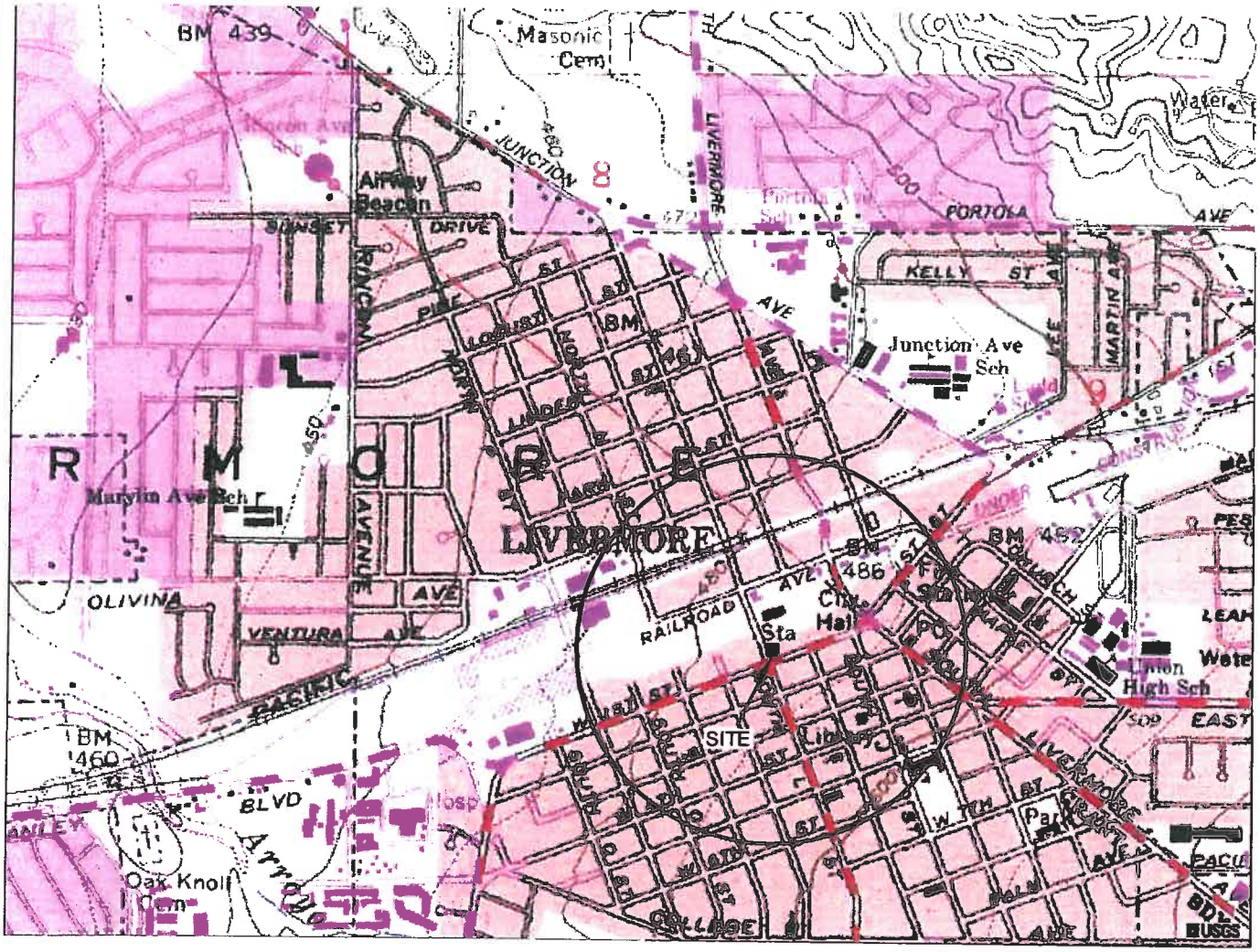
Ozone Injection System Description and Second Quarter 2012 Operation and Maintenance

A Calcon HiPro™ 2500 ozone injection system is currently being used to complete remedial work. The remediation system is situated within a locked, fenced remedial compound located immediately adjacent to a convenience store building located on the property (see Figure 2). The system is currently configured to cyclically inject an air/ozone mixture into wells SP-1A/B, SP-2A/B, and SP-4A/B. Subgrade piping with conveyance tubing extends from the remediation compound area to well SP-3A/B, however this tubing is not currently connected to the ozone injection system. Conveyance piping and tubing has not been installed to offsite wells SP-5A/B/C or SP-6A/B/C.

Stratus personnel visited the site on April 10, April 23, May 7, May 22, May 31, June 4, and June 20, 2012 in order to conduct operation and maintenance visits for the ozone injection system. Field data sheets documenting observations and work performed by Stratus personnel are included in Appendix A. Upon arrival at five of the seven visits, the remediation system was observed non-operational due to equipment malfunctions. Maintenance work was performed during each site visit and the equipment was re-started prior to departure.

ATTACHMENTS:

- Figure 1 Site Location Map
- Figure 2 Site Plan
- Appendix A Field Data Sheets



GENERAL NOTES:
BASE MAP FROM U.S.G.S.
LIVERMORE, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1999

N

QUADRANGLE LOCATION

0 1800 FT

APPROXIMATE SCALE

STRATUS
ENVIRONMENTAL, INC.

B & C GAS MINI MART
2008 FIRST STREET
LIVERMOORE, CALIFORNIA

SITE LOCATION MAP

FIGURE
1
PROJECT NO.
2146-2008-01

LEGEND:

- MW-1 MONITORING WELL LOCATION
- SV-MW-2 SOIL VAPOR EXTRACTION WELL
- SP-1A/B OZONE SPARGE WELL

GROTH BROTHERS SHOWROOM

PLANTER

SP-5A/B

SV-MIP-8

SP-5C

PLANTER

SIDEWALK

DRIVEWAY

SIDEWALK

PLANTER

MW-5

SP-6A/B

SP-6C

FIRST STREET

SIDEWALK

SP-3A/B

SV-MW-2

MW-2

MW-6

SP-1A/B

MW-1

SP-2A/B

SP-4A/B

CMT4

SIDEWALK

EXISTING USTs

MW-3

LIQUOR STORE

SPARGING EQUIPMENT ENCLOSURE

STATION BUILDING

CANOPY AND PUMP ISLANDS

BUILDING

MW-4

NOTE: LOCATIONS OF FEATURES DEPICTED ON THIS FIGURE ARE APPROXIMATE.

STRATUS ENVIRONMENTAL, INC.

0 20 FT

APPROXIMATE SCALE

B & C GAS MINI MART
2008 1st STREET
LIVERMOORE, CALIFORNIA

SITE PLAN

FIGURE
2

PROJECT NO.
2146-2008-01

APPENDIX A

FIELD DATA SHEETS

BTC GAS Mini Mart
2008 First Street, Livermore

ORIGINAL

Ozone Injection System

Date: 4 10 12
Onsite Time: 1015
Offsite Time: 1130
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: Rain
Ambient Temperature: 50

Ozone Generator Panel:

System Status Upon Arrival: ☐ Operational ☒ Non-operational Hi Temp
System Status Upon Arrival: ☒ Operational ☐ Non-operational
Comp1
Hour Meter Reading: 322
Oxygen flow rate: 11
Injection Pressure: 11 - Station 3
System HRS 6.7
Air + ozone flow rate: 4.0

10 mins AT Each well

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2		38.76	7.39	1.05	797	327	17.8
MW-6		BAD well					
mw-1		No well Abandon					
MW-3		37.69	6.89	8.60	721	357	18.1
MW-5		Middle Road					
SP-5							
B		37.99	6.76	1.59	692	298	18.6
[redacted]		37.87	6.69	1.94	924	334	18.1
C		37.62	7.14	2.04	697	366	18.6

- once or twice a quarter

Signature: CHILL
Date: 4-10-12

BTC GAS Mini Mart
2008 First Street, Livermore

ORIGINAL

Ozone Injection System

Date: 4.23-12
Onsite Time: 0930
Offsite Time: 1100
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: Clouds
Ambient Temperature: 52

Ozone Generator Panel:

System Status Upon Arrival: [X] Operational [ ] Non-operational
System Status Upon Arrival: [X] Operational [ ] Non-operational

Hour Meter Reading: 214.2
Injection Pressure: 5 on 4
Comp Hrs 589

Oxygen flow rate: 1.3 scfm
Air + ozone flow rate: 2.5 scfm

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2		36.84	7.16	2.26	238	168	19.1
MW-6		BAD	one				
mw-1		No	well				
MW-3		35.90	6.99	1.26	706	166	18.9
MW-5		NM					
SP-5							
A		36.15	6.83	1.80	536	174	19.2
B		36.72	7.15	1.65	691	128	18.5
C		35.71	~~7.60~~ 7.50	2.00	576	10	18.4

- once or twice a quarter

Filter 8 3/4 x 9 3/4

Signature: [signature]
Date: 4 23 12

BAD Solenoid station one\ Replace with extra one

B+C GAS Mini Mart
2008 First Street, Livermore

ORIGINAL

Ozone Injection System

Date: 5-7-12
Onsite Time: 0830
Offsite Time: 0930
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: Clear
Ambient Temperature: 58

Ozone Generator Panel:

System Status Upon Arrival: ☒ Operational ☐ Non-operational
System Status Upon Arrival: ☒ Operational ☐ Non-operational

Hour Meter Reading: 365.6
Injection Pressure: 8 #3
Comp HRS 884.9

Oxygen flow rate: 12 scfh
Air + ozone flow rate: 82.6 CFM

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2		37.11	6.58	3.77	696	302	19.3
~~DATW-6~~							
~~mw-1~~							
MW-3		36.25	6.71	1.95	701	297	18.8
MW-5							
SP-5							
A		36.58	6.49	1.81	716	323	18.8
B		36.37	6.33	2.06	1420	290	18.1
C		36.0	6.37	3.23	1887	242	18.6

- once or twice a quarter

Signature: CHILL Date: 5-7-12

Solinst - Active 45 mA 100% ED IP65

Dura Valve
Model 4M310-08 25-110 PSI

B+C GAS Mini Mart
2008 First Street, Livermore ORIGINAL

Ozone Injection System

Date: 5-22-12
Onsite Time: 0457
Offsite Time: 1015
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: Clear
Ambient Temperature: 50

Ozone Generator Panel:

System Status Upon Arrival: ☐ Operational ☒ Non-operational High Temp
System Status Upon Arrival: ☒ Operational ☐ Non-operational
Hour Meter Reading: 372
Oxygen flow rate: 1.2
Injection Pressure: 6
Air + ozone flow rate: 4.1 #4
Comp HR 1174

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2		32.81	6.94	1.00	706	303	18.0
MW-6		Bracketed					
mw-1		Gone					
MW-3		36.84	7.08	1.29	702	305	18.1
MW-5		37.27	6.94	1.24	910	259	18.1
SP-5							
A		36.75	6.61	0.94	745	292	18.0
B		37.02	6.24	0.97	151.5	278	18.8
C		36.53	6.65	1.65	182	264	18.4

- once or twice a quarter

Hook up SP3A+B To system.
Ozone To ~~MW~~ SP1 A+B
SP2
SP3
SP4

O^2 Generator Not working

Signature: CHILL
Date: 5-22-12

35.50
1.25

B+C GAS Mini Mart
2008 First Street, Livermore ORIGINAL

Ozone Injection System

Date: 5-31-12
Onsite Time: 0900
Offsite Time: 0914
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: 70
Ambient Temperature: Clear

Ozone Generator Panel:

System Status Upon Arrival: ☐ Operational ☒ Non-operational
System Status Upon Arrival: ☒ Operational ☐ Non-operational

Hour Meter Reading: 380
Oxygen flow rate: 12
Injection Pressure: 12
Air + ozone flow rate: 4.4 #6

1388 HRS Comp

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2							
MW-6							
mw-1							
MW-3							
MW-5							
SP-5							
A							
B							
C							

- once or twice a quarter

Signature: CAM
Date: 5-31-12

B+C GAS Mini Mart
2008 First Street, Livermore

Ozone Injection System

Date: 6-4-12
Onsite Time: 0715
Offsite Time: 0810
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: Clouds
Ambient Temperature: 40

Ozone Generator Panel:

System Status Upon Arrival: ☐ Operational ☒ Non-operational
System Status Upon Arrival: ☒ Operational ☐ Non-operational

Hour Meter Reading: 386
Injection Pressure: 13 PSI #5
1400 HRS Compressor

Oxygen flow rate: 12
Air + ozone flow rate: 4.4

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2		3.837	7.01	2.77	694	217	18.8
MW-6							
mw-1							
MW-3		37.41	7.12	2.00	688	214	18.6
MW-5							
SP-5							
A		36.7	7.02	3.31	872	299	18.2
B		37.58	7.44	3.06	692	334	18.1
C		37.35	7.51	3.10	216	328	18.6

Compressor off Like Turned off or power outage Restart

- once or twice a quarter

Signature: CHILL
Date: 6-4-12

B+C GAS Min. Mart
2008 First Street, Livermore

ORIGINAL

Ozone Injection System

Date: 6-20-12
Onsite Time: 0445
Offsite Time: 0945
Equipment Manufacturer/Model#:

Technician: CHILL
Weather Conditions: Clear
Ambient Temperature: 50

Ozone Generator Panel:

System Status Upon Arrival: ☐ Operational ☑ Non-operational Hi Temp

System Status Upon Arrival: ☒ Operational ☐ Non-operational

Hour Meter Reading: 387.4
Oxygen flow rate: 12
Injection Pressure: 12
1697 comp MR3
Air + ozone flow rate: 4.2

Field Measurments

Well ID	Time	DTW	pH	DO	Cond.	ORP	Temp
		feet bgs	units	mg/L	msiemen	mV	deg F
mw-2							
mw-6	NO Readings						
mw-1							
mw-3							
MW-5							
SP-5							
A							
B							
C							

- once or twice a quarter

Put Tarp over compound To shade From sun see if Helps over Heat

Signature: CHILL
Date: 6-20-12