



October 15, 2009  
Project No. 20092598V1



Mr. Ranajit Sahu, C.E.M., Ph.D.  
Basic Remediation Company  
875 West Warm Springs Road  
Henderson, Nevada 89011

**PROVIDING**

- Geotechnical Engineering
- Construction Materials Engineering
- Environmental Engineering
- Drilling Services

**RE: Galleria North and Sunset North Additional Sampling, Henderson, Nevada**

Dear Dr. Sahu:

On September 29, 2009 and September 30, 2009, Geotechnical and Environmental Services, Inc. (GES) implemented a sampling program per the direction of Basic Remediation Company (BRC). This activity report details the scope of services performed, which consisted of the following:

- September 25, 2009: USA Underground utility alert was called in after field marking the project area.
- September 25, 2009: Staked and located fifteen (15) sampling locations with a GPS Trimble ProXH Unit. The sample location coordinates were provided by ERM.
- September 29 – September 30, 2009: Collected fifteen (15) samples from fifteen (15) boring locations throughout the sites at depths ranging from 4.0 to 13 feet. A total of two (2) field duplicate samples, one (1) matrix spike/matrix spike duplicate sample and one (1) rinsate sample were taken throughout the sampling event.

GES's scope of services was to implement the field sampling program so that others can evaluate the data resulting from our sampling efforts. Therefore, this report does not provide conclusions regarding the analytes or their levels of occurrence.

**Field Investigation Methodology**

**Soils** - Soil samples were taken from fifteen (15) borings drilled using the hollow stem auger method. The boreholes were initiated using a Diedrich D-50+ Track Drill Rig outfitted with 6-1/2 inch outside diameter hollow stem augers. A California modified split spoon sampler was advanced at least 18 inches per sampling interval by using an autohammer with an equivalent force of a 140-pound hammer falling 30 inches for each blow.

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Soil samples were logged according to the USCS Classification by a qualified Geologist. Boring logs were prepared for the locations drilled (Appendix A, Figures 5 through 7). The soil from each sample interval was also field screened for volatile organic vapors (VOCs) using 10.6 eV and 11.7 eV photoionization detector probes (PIDs). The PID results and any odors or soil staining observed during the course of fieldwork are shown on the boring logs.

At each sample location and depth interval, the samples were collected in two (2) clean 2.5-inch diameter by 6.0-inch long stainless steel sleeves using standard split spoon sampling techniques. The ends of each sleeve(s) retained for analysis were covered with Teflon sheeting and placed in a sealable ZipLock™ type plastic bag. For each sample interval, one sleeve was shipped to Test America Laboratories (Earth City, Missouri) and one sleeve was shipped to GEL Laboratory (Charleston, South Carolina).

Each sample was provided a unique sampling number with the following designation: Sample Location, Depth Interval, Date, and Time. For example, the first sampling location was identified as JP04E-10, 9/29/09, 0647, while the final sampling location was identified as BD25E-10, 9/30/09, 0902. The soil samples were stored in coolers with ice and shipped daily via FedEx to Test America Laboratories and GEL Laboratory.

Soil samples and the breathing zone were monitored by two photoionization detector probes (10.6 eV and 11.7 eV) by GES personnel. The health and safety monitoring effort complied with the **BRC Health and Safety Plan, October, 2005**.

#### **Decontamination Procedures**

The drilling equipment and down-hole equipment were decontaminated prior to initial usage and then between each borehole location. Decontamination of drilling equipment consisted of high pressure washing prior to the initial boring. The down-hole equipment was washed between borehole locations using Liquinox™ detergent wash, a potable water rinse, and a final rinse with commercially available distilled water.

#### **Investigative Derived Waste (IDW)**

All Investigative Derived Waste consisted of drilling cuttings (soil) and equipment decontamination waste (Liquinox laboratory grade detergent and rinse water). Ground water was not encountered, therefore the drill cuttings were returned to the borehole after the sampling was completed. Decontamination fluid was minimal and disposed of in the boreholes.

#### **Documentation**

Documentation of the field activities consists of figures showing the site location (Vicinity Map, Figure 1), boring locations (Site Map, Figure 2 and Figure 3), photographs of representative boring locations (Figure 4) and boring logs for the central boring of each group (Figure 5 through 7). Only one boring log was prepared for each group of borings due to the close proximity of the locations (within 10-feet of the central boring). These documents are included as attachments. Copies of the Chain-of-Custodies and daily safety meeting forms are also included as attachments.

**Changes to Original Planned Work**

During this work there were no modifications to the original scope of services.

We appreciate this opportunity to provide our professional services. If you have questions or comment, feel free to contact our office at (702) 365-1001.

Sincerely,  
**Geotechnical & Environmental Services, Inc.**



Richard A. Cooke, C.E.M.  
Project Geologist  
C.E.M. #1820

RAC:KSH:ac

Enc.: Figures 1, 2, 3 and 4  
Boring Logs (3)  
Chain-of-Custody Records (4)  
Tailgate Safety Meeting Forms (2)

Dist: 1 pdf copy emailed to client at sahuron@earthlink.net  
1 original mailed to addressee  
1 cc to project file



Kyle S. Hansen, C.E.M.  
Environmental Program Manager  
C.E.M. #2167

**FIGURES:  
VICINITY MAP  
EXPLORATION LOCATION MAPS  
BORING LOGS**





★ SITE LOCATION



GEOTECHNICAL &  
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SERVICES, INC.  
(702) 365-1001  
7150 Placid Street  
Las Vegas, Nevada 89119

Vicinity Map  
Galleria North & Sunset North  
Sub-Area

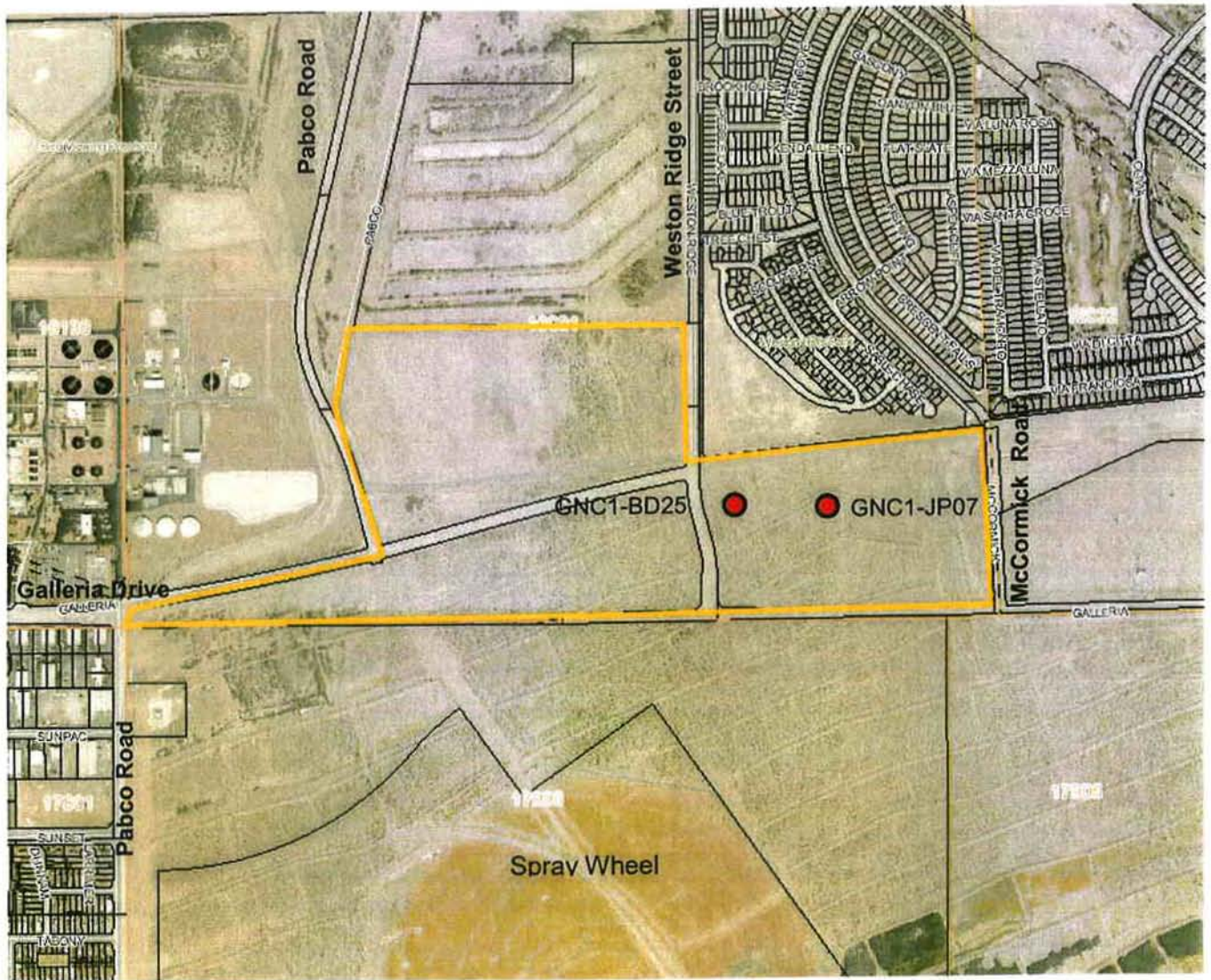
Job #20092598V1

Figure 1









Exploration Location



Site Boundary

Clark County Nevada  
Southern Nevada GIS  
IM3.7 Aerial Photograph  
Fall 2009-Spring 2009



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Las Vegas, Nevada 89119

Exploration Location Map  
Galleria North Sub-Area  
Las Vegas, Nevada

Job #20092598V1

Figure 3

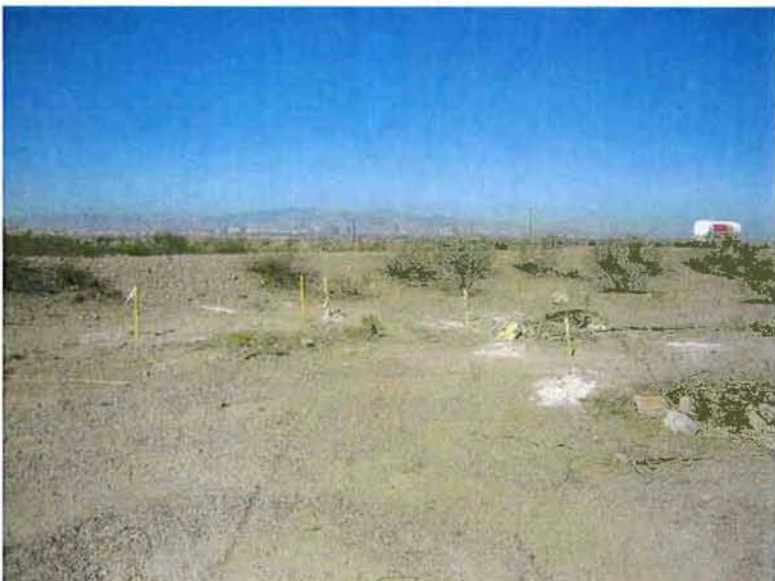




1. Sunset North: View showing JP04 group of borings.



2. Galleria North: View showing JP07 boring group.



3. Galleria North: View showing BD25 borings group.



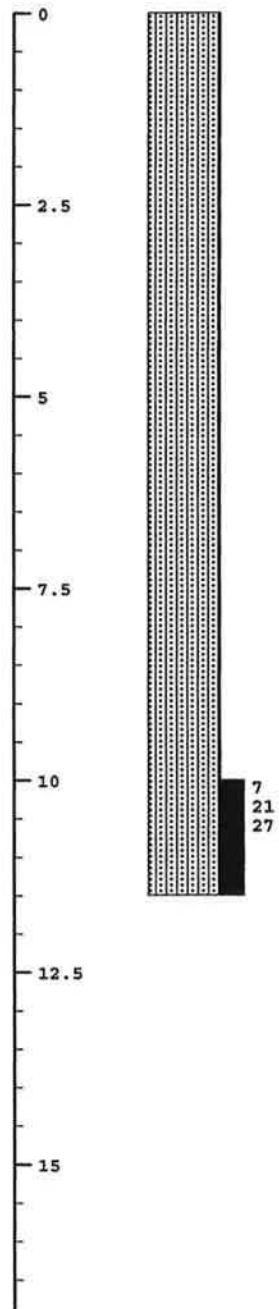
# EXPLORATION LOG SNC1-JP04C

**PROJECT:** GALLERIA & SUNSET NORTH SAMPLING  
**EXPLORATION LOCATION:** HENDERSON, NEVADA  
**EXPLORATION SIZE (dia.):** 6 1/4" O.D. H.S. AUGERS  
**ELEVATION:** EXISTING GROUND SURFACE

**PROJECT NO.:** 20092598V1  
**EXPLORATION DATE:** 9/29/09  
**EQUIPMENT:** DIEDRICH D-50 TRACK RIG  
**LOGGED BY:** SANCHEZ/DAVIS

**INITIAL DEPTH TO WATER:** NOT ENCOUNTERED  
**FINAL DEPTH TO WATER:** NOT ENCOUNTERED

**DATE MEASURED:** NA  
**DATE MEASURED:** NA

ELEVATION/ DEPTH	SOIL & SAMPLE SYMBOLS	USCS	DESCRIPTION	PI	LL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	Pocket Penetrometer (tsf)	WELL CONSTRUCTION
0		SM	Light brown (7.5YR 6/3)silty SAND, trace gravel, dry and medium dense.						
2.5									
5									
7.5									
10			...PIDs: 10.6 eV = 0.0 ppmV; 11.7 eV = 0.0 ppmV.						
12.5			END OF BORING AT 11.5 FEET						
15									

The descriptions contained within this exploration log apply only at the specific exploration location and at the time the exploration was made. It is not intended to be representative of subsurface conditions at other locations or times.

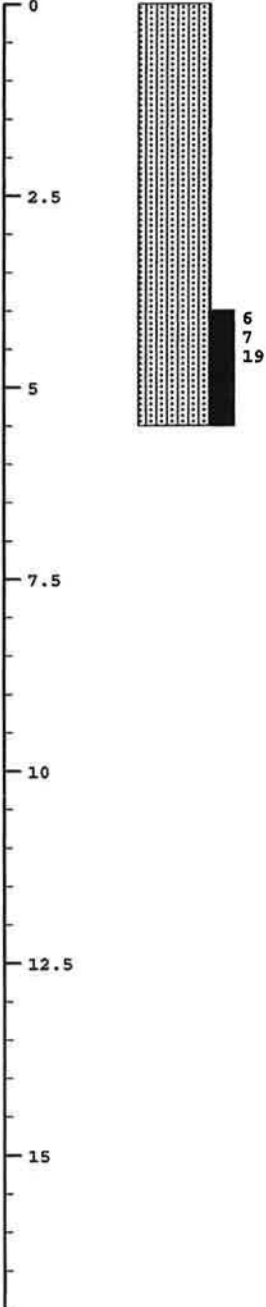
# EXPLORATION LOG GNC1-JP07C

**PROJECT:** GALLERIA & SUNSET NORTH SAMPLING  
**EXPLORATION LOCATION:** HENDERSON, NEVADA  
**EXPLORATION SIZE (dia.):** 6 1/4" O.D. H.S. AUGERS  
**ELEVATION:** EXISTING GROUND SURFACE

**PROJECT NO.:** 20092598V1  
**EXPLORATION DATE:** 9/29/09  
**EQUIPMENT:** DIEDRICH D-50 TRACK RIG  
**LOGGED BY:** SANCHEZ/DAVIS

**INITIAL DEPTH TO WATER:** NOT ENCOUNTERED  
**FINAL DEPTH TO WATER:** NOT ENCOUNTERED

**DATE MEASURED:** NA  
**DATE MEASURED:** NA

ELEVATION/ DEPTH	SOIL & SAMPLE SYMBOLS	USCS	DESCRIPTION	PI	LL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	Pocket Penetrometer (tsf)	WELL CONSTRUCTION
0		SM	Light brown (7.5YR 6/3)silty SAND with gravel, dry and medium dense.						
2.5			...six-inch thick gravel layer.						
5			...PIDs: 10.6 eV = 0.0 ppmV; 11.7 eV = 0.0 ppmV.						
			END OF BORING AT 5.5 FEET						
7.5									
10									
12.5									
15									

The descriptions contained within this exploration log apply only at the specific exploration location and at the time the exploration was made. It is not intended to be representative of subsurface conditions at other locations or times.



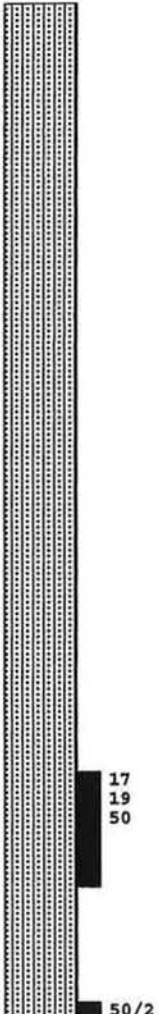
# EXPLORATION LOG GNC1-BD25C

**PROJECT:** GALLERIA & SUNSET NORTH SAMPLING  
**EXPLORATION LOCATION:** HENDERSON, NEVADA  
**EXPLORATION SIZE (dia.):** 6 1/4" O.D. H.S. AUGERS  
**ELEVATION:** EXISTING GROUND SURFACE

**PROJECT NO.:** 20092598V1  
**EXPLORATION DATE:** 9/29/09  
**EQUIPMENT:** DIEDRICH D-50 TRACK RIG  
**LOGGED BY:** SANCHEZ/DAVIS

**INITIAL DEPTH TO WATER:** NOT ENCOUNTERED  
**FINAL DEPTH TO WATER:** NOT ENCOUNTERED

**DATE MEASURED:** NA  
**DATE MEASURED:** NA

ELEVATION/ DEPTH	SOIL & SAMPLE SYMBOLS	USCS	DESCRIPTION	PI	LL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	Pocket Penetrometer (tsf)	WELL CONSTRUCTION
0		SM	Light brown (7.5YR 6/3)silty SAND with gravel, dry and medium dense.						
2.5									
5			...six-inch thick gravel layer.						
7.5									
10			...PIDs: 10.6 eV = 0.0 ppmV; 11.7 eV = 0.0 ppmV.						
12.5			...weakly cemented, dry.						
15			END OF BORING AT 13.2 FEET						

The descriptions contained within this exploration log apply only at the specific exploration location and at the time the exploration was made.  
It is not intended to be representative of subsurface conditions at other locations or times.

# KEY TO SYMBOLS

Symbol Description

## Strata symbols



Silty sand

## Soil Samplers



California sampler

## Notes:

1. Exploratory borings were drilled on 9/29/09 using 6 1/4-inch outside diameter continuous flight power auger.
2. No free water was encountered at the time of drilling.



**CHAIN-OF-CUSTODY FORMS  
AND  
TAILGATE SAFETY MEETING FORMS**

## ERM CHAIN OF CUSTODY RECORD

## ERM CONTACT PERSON

Name: Maria Barajas-Albalawi  
 Address: 2525 Natomas Park Drive, Suite 350  
 Sacramento, CA 95833  
 Phone #: (916) 924-9378

## LABORATORY: TestAmerica-St. Louis

Contact Person: Jerry Everett  
 Address: 13715 Rider Trail North  
 Earth City, Missouri 63045  
 Phone: (314) 298-8566

FED EX #:

Date: 9-29-09

## SAMPLER(S) PRINTED NAME AND SIGNATURE

Doris Davis

## ANALYSIS REQUEST

## PROJECT NAME: OPEN SPACE SUB AREA

PROJECT NUMBER: 20082584

## Container

SAMPLE ID	DATE	TIME	Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	EDA	IONS* by EPA 300.0	Dioxins/Furans* by EPA 8290	Gen. Chem* (please see methods)	pH by EPA 9045C/9040B	METALS* by EPA Methods 6010B/6020/7471A/7470A	Hex chromium by EPA 7196A	OC Pesticides* by EPA 8081A	Aroclors* by EPA 8082	Congeners* by EPA 1668	Aldehydes* by EPA 8315	VOCs* by EPA 8260B	Physical Parameters 3*	Percent Moisture
JP04E-10	9-29-09	0647	/											X								
JP04S-10	9-29-09	0705	/											X								
JP04W-10	9-29-09	0727	/											X								
JP04N-10	9-29-09	0743	/											X								
JP04C-10	9-29-09	0802	/											X								
JP04C-10DUP	9-29-09	0802	/											X								
JP07N-4	9-29-09	1205	/											X								
JP07N-4DUP	9-29-09	1205	/											X								
JP07E-4	9-29-09	1238	/											X								
JP07C-4	9-29-09	1245	/											X								

## Comments/Instructions:

\* Please refer to Table 5 (Southern Ribs Sampling: emailed on October 17, 2008)

1 Analyze at TA-Sacramento

4 Please report results in dry weight, therefore all soil will require % moisture testing.

2 Analyze at TA-Nashville

5 Extract samples for Aroclors by 8082 only. If sum of the congeners result (method 1668) is greater than 33 ppb, please analyze for aroclors by 8082

3 Analyze at TA-Burlington

Signature:

Print Name:

Company Name/Title:

Date:

Time:

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

For Lab Use Only: Sample Condition Upon Receipt

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office



LVR 105

**LABORATORY:** TestAmerica-St. Louis

**Contact Person:** Jerry Everett

Address: 13715 Rider Trail North

Earth City, Missouri 63045

Phone: (314) 298-8566

Date: 9-23-09

## ANALYSIS REQUEST

[illegible]

\* Please refer to Table 5 (Southern Ribs Sampling; emailed on October 17, 2008)



<sup>1</sup> Analyze at TA-Sacramento

<sup>4</sup> Please report results in dry weight, therefore all soil will require % moisture testing.

<sup>2</sup> Analyze at TA-Nashville

<sup>6</sup> Extract samples for Aroclors by 8082 only. If sum of the congeners result (method 1668) is greater than 33 ppb, please analyze for aroclors by 8082

<sup>3</sup> Analyze at TA-Burlington

Signature:		Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		Doug Davis	GO/GO	4-29-05	1015
RECEIVED BY:		Craig Roberts	TASC	10/1/9	0915
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

## ERM CONTACT PERSON

**LABORATORY: GEL Laboratories, LLC**

Address: 2040 Savage Road

Phone: (843) 556-8171

Date: 9-30-09

ANALYSIS REQUEST

Doug Powers R.D. Dr.

PROJECT NUMBER: ~~20092586V1~~ 20092598V1

Container

[illegible]

\* [REDACTED]

~~Please report results in my night.~~

Date: \_\_\_\_\_

RELINQUISHED BY: [Signature]

Nov 6 Daw, S

GES/152

4-52-5

1702

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

## ERM CONTACT PERSON

Phone #: (916) 924-9378

Phone: (314) 298-8566

Date: 9-30-09

## ANALYSIS REQUEST

Container

[illegible]

\* Environmental Protection Agency, National Air Sampling Office (June 17, 2008)

4. Reference: 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 23

<sup>5</sup> Extract samples for Aroclors by 8082 only. If sum of the congeners result (method 1668) is greater than 33 ppb, please analyze for aroclors by 8082

<sup>3</sup> Analyze at TA-Burlington

Time:

9-34-05

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office



## TAILGATE SAFETY MEETING FORM

Date: 9-25-09 Time: 0630 Job Number: 2009259841Client: BRC

Site Specific Location: \_\_\_\_\_

## Safety Topics Presented

Protective Clothing/Equipment: Level 1 PPEChemical Hazards: Residual chemicals/metals in soil - see analytical list on C-O-C for details.Physical Hazards: Heat, slip, trip, falls,Special Equipment: NoneOther: Some wildlife - biting insects, snakes, coyotes.Emergency Procedures: Call 911Hospital: St. Rose Phone: \_\_\_\_\_ Ambulance Phone: 911Hospital Address and Route: Boulder Hwy and Lake Mead.

## ATTENDEES

## NAME PRINTED

Doug Davis  
Clint Bickam  
Eduardo Luis

## SIGNATURE

[Signature]  
Clint Bickam  
Eduardo LuisMeeting Conducted By: Doug Davis  
Name Printed

Signature

On-Site Safety Officer: Doug DavisProject Manager: Richard Cooke

## TAILGATE SAFETY MEETING FORM

Date: 9-30-09 Time: 0630 Job Number: 2009255641Client: BRCSite Specific Location: Gallens E Sunset

## Safety Topics Presented

Protective Clothing/Equipment: Level 1 PPEChemical Hazards: Residual chemicals/metals in soil - see analytical list on C-O-CG for details.Physical Hazards: Heat, slip, trip, fallsSpecial Equipment: NoneOther: Some wildlife - biting insects, snakes, coyotes.Emergency Procedures: Call 911Hospital: St. Rose Phone: \_\_\_\_\_ Ambulance Phone: 911Hospital Address and Route: Boilder Hwy and Lake Mead.

## ATTENDEES

## NAME PRINTED

Doug Davis  
Walker McKeag  
Clint Beckam  
Eduardo Luis  
\_\_\_\_\_  
\_\_\_\_\_

## SIGNATURE

Doug Davis  
Walker McKeag  
Clint Beckam  
Eduardo Luis  
\_\_\_\_\_  
\_\_\_\_\_

Meeting Conducted By: Doug Davis  
Name PrintedDoug Davis  
SignatureOn-Site Safety Officer: Doug DavisProject Manager: Richard Cooke