



Memorandum

TO: David Yelton, City of Beverly Hills
CC: Heidi Rous, PCR Services
FROM: Everest Yan and Audrey Vinant-Tang, PCR Services
RE: **BEVERLY HILLS ARSENIC MONITORING MEMO**

DATE: December 8, 2015

This memorandum presents a summary of particulate arsenic air monitoring activities conducted for Lots 12 and 13 at 9315 Civic Center Drive in the City of Beverly Hills.

Lots 12 and 13 were previously used as a railroad right-of-way until 1998. Soil sampling previously performed on-site indicates that arsenic is present at elevated concentrations throughout the site.¹ The site is currently owned by the Beverly Hills Land Company and previously owned by Union Pacific Railroad (UPRR). The UPRR has entered into a voluntary cleanup agreement with the Department of Toxic Substances Control (DTSC). However, during the month of November 2015, landscaping work was performed on-site which included trimming of vegetation and trees.

Residents living near the site expressed concern about soil disturbance during landscaping activities on-site and potential arsenic exposure. In response to public concerns, the City of Beverly Hills requested that air monitoring be performed to determine arsenic exposure to off-site residents.

Air Sampling

Air sampling was performed to determine the level of particulate arsenic entrained in wind-blown dust coming from the site. Two (2) PQ100 ambient air particulate samplers were installed at one upwind location south-to-southwest of the parcels and one downwind site northeast of the parcel near the intersection of Beverly Boulevard and Civic Center Drive. Particulate arsenic levels in the ambient air is calculated using the incremental value between the upwind (or “background”) and downwind (or “site”) concentration levels. Locations of the air samplers are shown in **Figure 1**. Samplers were started on December 5th and were removed on December 8th. Maintenance checks were performed during this period to charge batteries and inspect filters.

¹ CH2M Hill, Remedial Design Soil Investigation Report for the Beverly Hills Land Corporation. October 2007.

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Wipe Sampling

Wipe sampling was performed to determine the level of arsenic in settled dust within the site's immediate vicinity. Sampling was conducted using ASTM E1792-compliant wipes for arsenic detection. Wipe samples were collected at the site's fence post, nearby vegetation, and other hard surfaces on which air-borne dust has been deposited. Wipe samples were taken at three (3) upwind and three (3) downwind surfaces. Locations of the wipe samples taken on Monday December 7th are shown in **Figures 2 and 3**.

Laboratory Results

Air filters were analyzed using the National Institute for Occupational Safety and Health (NIOSH) Method 7303 and wipe samples were analyzed using the Occupational Safety and Health Administration (OSHA) Method ID125G. Both techniques identify analyte presence and concentration by passing the digested matrix through inductively coupled argon plasma and atomic emission spectroscopy. The laboratory results for air sampling are in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) concentration levels and for wipe sampling in binary presence or absence.

As shown in **Table 1**, particulate arsenic concentrations in the air upwind and downwind of the parcel were at levels below the laboratory detection limits. A result of non-detection signifies that arsenic levels were not above the laboratory equipment's detection limit. Although samples are non-detect, arsenic may be present in the sample, but in concentrations below the detection limit. Random sampling does not necessarily represent the site as a whole and detectable levels of arsenic may be present elsewhere in the site vicinity.

Table 1

Laboratory Results from Arsenic Ambient Air Sampling

Sampling Location	Concentration ($\mu\text{g}/\text{m}^3$)	Detection Limit ($\mu\text{g}/\text{m}^3$)^a
Upwind	< 0.09	0.09
Downwind	< 0.2	0.2

^a The detection limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample.

Source: PCR Services Corporation, 2015.

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As shown in **Table 2**, arsenic concentrations in dust deposited on nearby surfaces was also below the detection limit for both upwind and downwind locations.

Table 2

Laboratory Results from Arsenic Wipe Sampling

Sampling Location	Surface Type	Result ($\mu\text{g}/\text{m}^3$)	Detection Limit ($\mu\text{g}/\text{m}^3$)
Upwind	Fenceline	< 5	5
Upwind	Utility box	< 5	5
Upwind	Vegetation	< 5	5
Downwind	Fenceline	< 5	5
Downwind	Road Signage	< 5	5
Downwind	Fenceline	< 5	5

Source: PCR Services Corporation, 2015.

Wind Data

Wind speed and direction representative of the site was collected from two nearby weather stations along Wilshire Boulevard. The prevailing wind patterns during the monitoring activities and the month of November were from the south and southeast blowing towards the north and northwest. As seen in **Figure 4**, winds blow across the site coming from Civic Center Drive and blowing towards North Santa Monica Boulevard. The site is located adjacent to Santa Monica Boulevard which has a large number of vehicle trips on a regular basis. The number of vehicles travelling along Santa Monica Boulevard may generate air flow near the project site. However, the site is currently protected with vegetation for wind screening purposes. Winds were relatively calm during the monitoring period, averaging 1 mile per hour (mph) with a maximum speed of 6 mph. These wind conditions are similar to those present on November 21st and 22nd, 2015, when landscaping work was performed.

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Conclusions

Although laboratory analysis did not detect arsenic in the air samples, it should be noted that concentrations in the air may be below detection limits. As discussed previously, winds during the monitoring period were generally calm with no significant gusts. Also, at the time of monitoring, no maintenance activities were performed at the site that would generate dust. The calm wind speeds and inactivity at the site may have resulted in arsenic not being detected in air samples during the monitoring period.

Wipe test sampling indicates that arsenic levels are below the laboratory detection limit. It is possible that arsenic is present in nearby deposited dust below the analytical detection limit.

MEMO ATTACHMENT

Figure 1: Air Monitoring Locations



Figure 2: Upwind Sampling Locations

Legend

- | | | | |
|---|------------------|---|-----------------|
| 1 | Fenceline Wipe | 3 | Vegetation Wipe |
| 2 | Utility Box Wipe | U | Air Monitor |



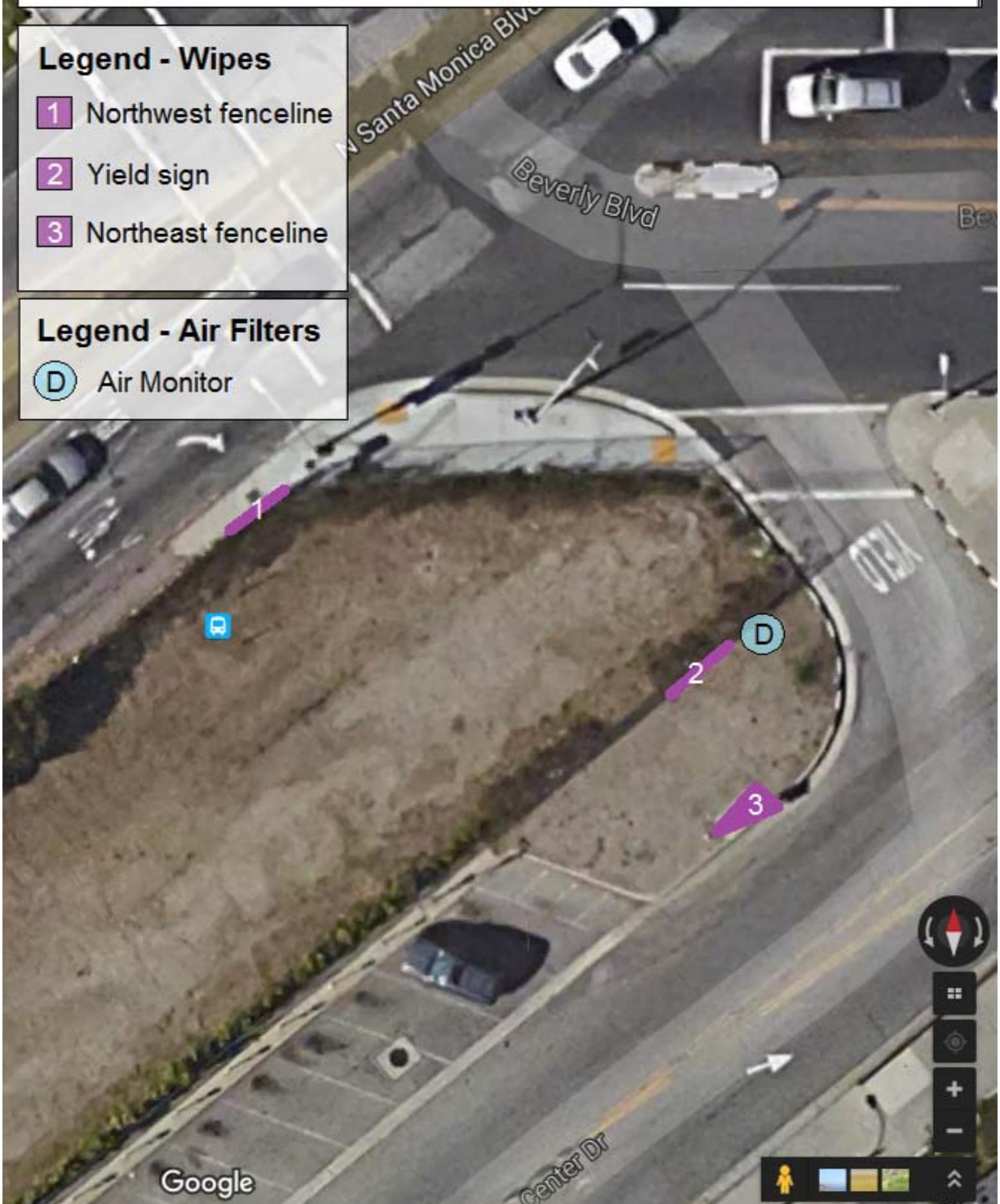
Figure 3: Downwind Sampling Locations

Legend - Wipes

- 1 Northwest fenceline
- 2 Yield sign
- 3 Northeast fenceline

Legend - Air Filters

- D Air Monitor

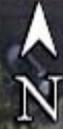


Google

Figure 4: Wind Rose

Direction blowing to between 12/5-12/8/15

Legend (m/s)	
	0.5 - 2.1
	2.1 - 3.6
	3.6 - 5.7
	5.7 - 8.8
	8.8 - 11.1
	>= 11.1





Metals Analysis of Air Filters

PCR Environmental Services
Audrey Vinant-Tang
201 Santa Monica Blvd.
Suite 500
Santa Monica, CA 90401

Client ID: L1654
Report Number: M167327
Date Received: 12/09/15
Date Analyzed: 12/09/15
Date Printed: 12/10/15
First Reported: 12/10/15

Job ID / Site: UPRR Parcels, Beverly Hills
Date(s) Collected: 12/5, 12/7/15

FALI Job ID: L1654
Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample Number	Lab Number	Volume	Analyte	Result	Result Units	Reporting Limit*	Method Reference
P0983877	30728149	7150 L	As	< 0.09	ug/m3	0.09	NIOSH 7303
P0983876	30728150	4950 L	As	< 0.2	ug/m3	0.2	NIOSH 7303

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

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Client Name & Address: Client No.: L1654 PCR Environmental Services 201 Santa Monica Blvd., Suite 500 Santa Monica, CA90401		PO / Job#:	Date: 12/5/15
Contact: Audrey Vinant-Tang		Turn Around Time: Same Day / <input checked="" type="checkbox"/> 1Day / 2Day / 3Day / 4Day / 5Day	
Phone: (310) 566-8031 Fax: (310) 451-5279		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer	
E-mail: a.vinant-tang@pcmet.com		<input type="checkbox"/> PLM: <input type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400 / 1000 / <input type="checkbox"/> CARB 435	
Site: UPRR Parcels		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Microvac: <input type="checkbox"/> Qual(+/-) / <input type="checkbox"/> D5755(str/area) / <input type="checkbox"/> D5756(str/mass)	
Site Location: Beverly Hills, CA		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project	
Comments:		<input checked="" type="checkbox"/> Metals Analysis: Method: ICP	
		Matrix: Air Filters	
		Analytes: Arsenic	

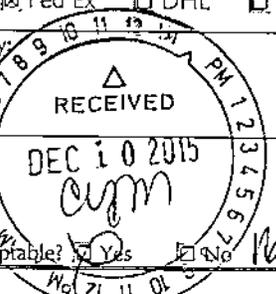
Report Via: Fax E-Mail Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg. LPM	Total Time	
P0983877	12/5/15 7:40	Civic Center (Upwind)	<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C	7:42 (+2) 19:17	2.0	3575 min.	7150 L
P0983876	12/5/15 8:55	Beverly Boulevard (Downwind)	<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C	8:56 (+2) 1:15	2.0	2475 min.	4950 L
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				
			<input checked="" type="checkbox"/> A <input type="checkbox"/> P <input type="checkbox"/> C				

Sampled By: Everest Yan Date: 12/5-12/8/15 Time: 24-hours

Shipped Via: Fed Ex DHL UPS US Mail Courier Drop Off Other:

Relinquished By:	Relinquished By:	Relinquished By:
Date / Time:	Date / Time:	Date / Time:
Received By:	Received By:	Received By:
Date / Time:	Date / Time:	Date / Time:
Condition Acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No





Metals Analysis of IH Wipes

PCR Environmental Services
Audrey Vinant-Tang
201 Santa Monica Blvd.
Suite 500
Santa Monica, CA 90401

Client ID: L1654
Report Number: M167329
Date Received: 12/09/15
Date Analyzed: 12/10/15
Date Printed: 12/10/15
First Reported: 12/10/15

Job ID / Site: UPRR Parcels, Beverly Hills
Date(s) Collected: 12/7/15

FALI Job ID: L1654
Total Samples Submitted: 6
Total Samples Analyzed: 6

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
DOWN-1	30728170	As	< 5	ug	5	OSHA ID125G
DOWN-2	30728171	As	< 5	ug	5	OSHA ID125G
DOWN-5	30728172	As	< 5	ug	5	OSHA ID125G
UP-1	30728173	As	< 5	ug	5	OSHA ID125G
UP-3	30728174	As	< 5	ug	5	OSHA ID125G
UP-4	30728175	As	< 5	ug	5	OSHA ID125G

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

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Client Name & Address: Client No.: L1654 PCR Environmental Services 201 Santa Monica Blvd., Suite 500 Santa Monica, CA90401		PO / Job#:	Date: 12/5/15
Contact: Audrey Vinant-Tang		Turn Around Time: <input type="checkbox"/> Same Day / <input checked="" type="checkbox"/> 1 Day / <input type="checkbox"/> 2Day / <input type="checkbox"/> 3Day / <input type="checkbox"/> 4Day / <input type="checkbox"/> 5Day	
Phone: (310) 566-8031	Fax: (310) 451-5279	<input type="checkbox"/> PCM; <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer	
E-mail: a.vinant-tang@pcrnet.com	<input type="checkbox"/> PLM; <input type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400 / 1000 / <input type="checkbox"/> CARB 435		
Site: UPRR Parcels	<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402		
Site Location: Beverly Hills, CA	<input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield		
Comments:	<input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight %		
	<input type="checkbox"/> TEM Microvac: <input type="checkbox"/> Qual(+) / <input type="checkbox"/> D5755(str/area) / <input type="checkbox"/> D5756(str/mass)		
	<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot		
	<input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project		
	<input checked="" type="checkbox"/> Metals Analysis: Method: ICP		
	Matrix: Wipe Tests		
	Analytes: Arsenic		
		Report Via: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> E-Mail <input type="checkbox"/> Verbal	

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg. LPM	Total Time	
DOWN-1	12/7/15 5PM	Northeast fenceline along Civic Center	<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
DOWN-2	12/7/15 5PM	Back of sign on Civic Center	<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
DOWN-5	12/7/15 5PM	Northwest fenceline along Santa Monica Blvd.	<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
UP-1	12/7/15 6PM	Southern fenceline along Civic Center	<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
UP-3	12/7/15 6PM	Utility box southeast of site	<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
UP-4	12/7/15 6PM	Vegetation south of site	<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
			<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
			<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
			<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				
			<input type="checkbox"/> AI <input type="checkbox"/> PI <input type="checkbox"/> CI				

Sampled By: Everest Yan		Date: 12/7/15	Time: 5-6PM
Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> DHL <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:			
Relinquished By: <i>EV</i>	Relinquished By:	Relinquished By:	
Date / Time: 12/7/15 11:12 AM	Date / Time:	Date / Time:	
Received By: <i>EV</i>	Received By:	Received By:	
Date / Time: 12/7/15 11:12 AM	Date / Time:	Date / Time:	
Condition Acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Nam</i>	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	

