SDMS DOCID# 1120642

SAMPLING PLAN

33777 Valley Center Road
in
Valley Center, California

CLIENT: Marvin Donius
33777 Valley Center Road
Valley Center, CA 92028

PREPARED BY: *Marc Boogay*
Consulting Engineer
326 Main Street
Vista, California 92084

DATE: Revised, May 12, 2008

PROJECT NUMBER: 08-0311

IMPORTANT NOTICE: This report is confidential. It may not be read or relied upon, except by the Client and U.S. EPA.

ABSTRACT

The property identified by the address 33777 Valley Center Road in Valley Center, California (the "site") had been in use as a mushroom farm, as well as being occupied by several other tenants that included a citrus packer and a tow yard. In October of 2007, fire destroyed all onsite buildings as well as most else located onsite including several cars in the paved tow yard, several trucks parked in an unpaved lot, several aboveground tanks (one containing diesel fuel), and an area used as a secondary containment for waste oil drums. Remaining building materials and destroyed vehicles are currently being demolished and removed from the subject site.

This sampling plan will address the possibility of impact to underlying soil and groundwater from possible releases of diesel fuel from a burst aboveground diesel fuel tank, possible release from a secondary containment area used for waste oil, possible release that may have occurred beneath burning vehicles, water quality in an onsite groundwater production well, and layout of onsite wastewater disposal systems.

This plan provides for near-surface soil sampling in several areas, composite samples of burn ash, sampling of groundwater produced by the onsite well, and identification of areas used by the onsite wastewater treatment system.

SIGNATURE

This sampling plan was completed by me or under my direction.

Marc Boogay
California Registered Environmental Assessor No. 478

May 12, 2008

REGISTERED ENVIRONMENTAL ASSESSOR
MARC A. BOOGAY
NO 478
EXP: 6 3008
STATE OF CALIFORNIA

TABLE OF CONTENTS

ABSTRACT 1

SIGNATURE 1

TABLE OF CONTENTS 2

APPENDICES 2

1.0 AUTHORIZATION 3

2.0 OBJECTIVE AND APPROACH 3

3.0 BACKGROUND 3

3.1 The Subject Site Prior to the October 2007 Fire 3
3.2 The Subject Site Subsequent to the October 2007 Fire 5

4.0 PROPOSED SOIL SAMPLING PROCEDURES AND OBSERVATIONS 6

4.1 Contaminants of Concern 6
4.2 Proposed Sampling Locations 6
4.3 Sampling Equipment and Procedures 7
4.4 Proposed Laboratory Analyses 9
4.5 On-site Wastewater Disposal System Assessment 10

APPENDICES

APPENDIX I MAP OF SUBJECT SITE (HIGHLIGHTING AREAS OF INTEREST)

APPENDIX II SUBJECT SITE PHOTOGRAPHS

APPENDIX III LABORATORY CERTIFICATION DOCUMENT

APPENDIX IV SCHEDULE FOR SAMPLE CONTAINERS, HOLDING TIMES, AND DETECTION LIMITS

1.0 AUTHORIZATION

This Sampling Plan is prepared in accordance with a contract between Marvin Donius (the "Client") and *Marc Boogay Consulting Engineer (MBCE)*, dated on March 20, 2008. Work concerned the property identified by the address 33777 Valley Center Road in Valley Center, California (the "site"), located on the Rincon Indian Reservation.

2.0 OBJECTIVE AND APPROACH

The subject site comprises an approximately 3-acre area, comprised of both paved and unpaved areas. It had previously included several buildings used for the cultivation of mushrooms, as well as several above-ground tanks, a paved parking lot in use by a towing company, an unpaved area used for parking trucks and RVs, as well as additional areas. All structures were destroyed by fire; most are now demolished, and most burned remains await removal.

The objective of this sampling plan is to guide progress toward environmental site assessment of the subject site, especially as regards fire-related release. It includes description of sampling and analyses for shallow soil beneath areas of (suspected) released petroleum hydrocarbons, sampling and analysis of burn ash, assessment of water quality from an onsite production well, and assessment of location and extent of onsite wastewater system(s), i.e., septic tank(s) and percolation field(s).

3.0 BACKGROUND

For purposes of this report, directions along Valley Center Road will be cited as "north" and "south," with perpendicular directions referred to as "east" and "west." The subject site was on the east side of Valley Center Road, in an area by reservation land, including the *Harrah's Rincon Casino and Resort*, as well as private residential land.

Several tenants occupied the subject site prior to the October 2007 fire; these included *Mushroom Express, Automotive Specialists* (a towing company), a citrus packer, a lawn care company, a security company using part of the site for parked trailers, and two residential apartments. At the time of the visit conducted in relation to this study, some tenants had recently begun to resume limited operations onsite, mostly parking/storage-related usages.

3.1 The Subject Site Prior to the October 2007 Fire

The site was the subject of a 2007 Phase I [1], in which the exterior site was described as follows:

> The buildings were located near the center of the subject site lot, which was paved mostly in asphaltic concrete (AC). A driveway from Valley Center Drive ran near the west center side of the subject site lot. A chain-link fence surrounded the subject site on

[1] "Phase I Environmental Site Assessment 33777 Valley Center Road in Valley Center, California, Marc Boogay Consulting Engineer, August 16, 2007.

all sides. Immediately west of the buildings, just off of Valley Center Drive, was a vacant area that appeared to be used for general parking. Cover plates at grade were noted near the northwest corner of the southern building; these were said to be access-ways to one or more septic tanks.

At the southwest corner of the subject site was a trailer in use as an office for Automotive Specialists, a tenant of the subject site. The southeast corner of the subject site was separately fenced and said to be subleased to a tow yard for Automotive Specialists. This lot was paved in Portland cement concrete (PCC) and was occupied by parked cars, many of which were collision-damaged. Near the west end of this yard was a fenced dog enclosure and an unlabeled drum. Along the south wall of the southern building, immediately north of the vehicle yard, were several large piles of flattened cardboard boxes.

The area between the two concrete buildings was paved in PCC and appeared to be in use for miscellaneous storage. Stacks of boxes and crates were located along the sides of both buildings, a forklift, and several unused air conditioning units, an unused water softener tank, and two larger tanks were here. One of these tanks was 1000-gallon in size and was said to have been an onsite, in-ground gasoline tank; another was described an unused diesel fuel tank. A grade-mounted transformer was at the west end of this area.

The area immediately north of the buildings was also paved in PCC, and then sloped downhill. Here were stacks of pallets, piles of metal parts and scrap, and miscellaneous storage.

Downhill from this paved area, the remaining northern portion of the subject site was unpaved. This area was mostly covered with parked trucks, most of them owned by Mushroom Express. Several trailers were parked near the northwest corner of this lot. Two large autoclaves were near the north center portion of the subject site, as were piping, metal sheeting and scrap, lumber piles, tires, sheet-metal, and unused storage containers.

At the northeast corner of the subject site property was a separately fenced 1-acre lot. This was occupied by a lawn care company and consisted mostly of vacant, graded land. Piles of soil/gravel and a small bulldozer were also here.

Along the east side of the subject site, behind the buildings, was an unpaved area. A small wooden hut housed a water well and associated equipment. Additional crates, boxes, and packing materials were stored nearby. An aboveground tank was located along the east side of the subject site, in concrete block saddles. This held diesel fuel and was in use. Pavement beneath the tank appeared intact, and a small amount of stained soil was noted alongside the dispenser.

A shed was located immediately south of the aboveground tank; this was inaccessible. On the south side of the shed was a concrete block secondary enclosure holding drums of waste oil. A small water heater associated with a hand washing station adjoined this. Minor staining of PCC pavement near the secondary containment was noted.

On the east end of the southern concrete building was an overhead shade covering a large fruit-packing apparatus, consisting of conveyor belts, chutes, and a cleaning apparatus for fruit (a "dry brush bed"). No liquids or chemicals were observed in association with this operation. Ladders, boxes, and related materials were stored against the east side of the main building, below the packing apparatus.

Typical utilities were observed on or adjacent to the site. These included water, electricity and natural gas, and telephone. Overhead power lines were observed along the Valley Center Road.

The site's electricity/natural gas was provided by San Diego Gas & Electric and the water was provided to the site by the Valley Center Municipal Water District. The subject site was noted to have a septic tank and onsite wastewater disposal system, evidently for sink/toilet wastewater flows only.

It has also been reported that a sump exists at the site in the main corridor between buildings. This was described as a vault without piping, used for collection of runoff for reuse elsewhere on site.

3.2 The Subject Site Subsequent to the October 2007 Fire

Subsequent to the October 2007 fire, the subject site appeared unchanged except for vast fire damage. The center area, where building had been located, comprised piles of concrete and metal rubble and scrap. Some of this was sorted and arranged in organized piles; other areas appeared not to have been sorted.

The southeast corner of the subject site, which had been the location of the towing yard, was still paved, and a number of cars were observed here. Several cars had been completely destroyed by the fires and materials from these vehicles were noted on the pavement. Condition of the pavement appeared relatively intact; no very large cracks or areas where penetrations of automotive contaminants were likely to have seeped through asphalt materials were noted. At the northeast corner of this paved area was the area used as a secondary containment for drums of waste oil. This area had also been damaged by fire, and it appeared that all oily products here had been burnt away. Small, residual amounts of waste oil mixed with water, etc. were observed in drums here.

The aboveground diesel fuel storage tank along the east edge of the subject site was severely damaged. This had exploded in the fire and no fuel remained. An explosion caused by the fire appeared to have blown off the south end-plate of the tank (a horizontal cylinder) and to have moved the entire tank ca. 1.5-feet north of its original location in the concrete saddle. Pavement was noted beneath the associated dispenser; however, areas beneath the tank and within a few feet were unpaved.

The wooden hut/shed structure that had previously surrounded the existing onsite water well had been destroyed; however the main elements of the well and its associated piping appeared undamaged.

On the north side of the subject site, immediately north of the paved area that was the previous location of the onsite buildings, was an area where several large trucks had been parked. These were also seriously damaged in the fire, and the area had dark ash on the ground. The remains of the trucks and been removed, and the top layer of soil appeared to have been raked

over. Small piles of ash and related remnants of the fire were observed in this general area and across the entire site.

4.0 PROPOSED SOIL SAMPLING PROCEDURES AND OBSERVATIONS

4.1 Contaminants of Concern

Soil in the area around the burst diesel fuel tank is suspected of having impact from diesel fuel.

Soil in the area of fire-damaged vehicles parked over an unpaved area is suspected of having impact by petroleum hydrocarbons in the diesel fuel and gasoline ranges and by heavier hydrocarbons, e.g., motor or hydraulic oils.

Soil in the area around the secondary containment area used for waste oil is suspected of having impact from waste oil, i.e., motor or hydraulic oils.

Burn-ash is suspected of containing elevated levels of metals, e.g., heavy metals including copper, zinc, chrome, etc.

Water is suspected of having impact by components of petroleum hydrocarbons, viz., fuels and lubricants. This sample is also to be analyzed for most typical inorganic analytes as listed in Table 64431-A of the California Safe Drinking Water Act & Related Laws and Regulations [2], as well as for the VOCs/SOCs listed in Table 64444-A of the same document.

Petroleum products are suspected in any sludge or runoff as may have collected in the sump centrally located between site buildings.

4.2 Proposed Sampling Locations

At each soil sample location, specimens will be taken from near-surface (ca. 0.5-feet deep) and shallow (1-to-2-foot deep) soil. Location selection will be biased by apparent staining or odors or on lowest area. Where no basis for such bias exists, soil samples shall be taken as noted below. A deeper (ca. 3-4-foot) soil sample will be taken at each location if petroleum-product is detected in soil vapor from the 1-to-2-foot deep sample. Sampled materials shall be as follows:

1- Soil from the unpaved area alongside a secondary containment structure for waste oil (located along the east side of the subject site, near the northeast corner of the lot previously used by the towing company). If no basis for location selection bias exists, select two locations randomly about one foot from the north and south corners of the containment.

2- Soil from unpaved areas beneath and alongside the aboveground storage tank (used for diesel fuel), located near the center of the east side of the subject site. If no basis for location selection bias exists, select three locations at 25-, 50-, and 75-percent points along the area's longest dimension. Samples will be taken from near-surface (ca. 0.5-feet deep) and shallow (1-to-2-foot deep) soil.

3- Soil from the unpaved area immediately north of the paved center of the subject site and the previously existing buildings, where several vehicles were destroyed by fire and

[2] California Regulations Related to Drinking Water, from Title 22 California Code of Regulations, California Safe Drinking Water Act & Related Laws and Regulations:" last updated October 11, 2007.

where ash and darkened soil was observed. Four locations will be selected for shallow (1-to-2-foot deep) samples here. Each will be from a random part of a selected grid element.

4- Water from the onsite water production well will be sampled.

5- Two composite samples will be taken of burn-ash. One will be taken from several locations on the west side of the subject site, and another will be similarly taken from the east side.

6- The sump is to be checked for condition and content. Any liquid or semi-liquid seen in the sump is to be sampled and analyzed for petroleum product content.

4.3 Sampling Equipment and Procedures

Field Equipment

Soil sampling will be performed by use of a hand-held, low-powered soil-drill with a 3-inch diameter auger until the target depth is reached. A 2-inch diameter hand-auger will also be available on the site. A slide-hammer driven sampler with a removable stainless steel liner will be used to acquire the samples. A spade and several new trowels will be on hand at the site. Quart-sized polyethylene bags with zipper-locked closures will be on hand for further enclosing samples and for the onsite soil vapor assessment.

A flame- or photo-ionization detector shall be used to screen vapor assessment samples noted above.

Burn-ash will be sampled by grabbing material directly from paved or unpaved surfaces. Only glass jars (ca. 200-ml) will be necessary for this work.

Water sampling will be done directly from the onsite well using a portable power supply (if/as necessary) and glass bottles and vials provided by the laboratory. Portable, hand-held meters for temperature, conductivity, and pH are to be on hand.

Field Methods and QC/QA

The soil sampling will involve drilling to target depths by use of a hand-held, powered soil-drill. A slide-hammer will be used to drive a soil sampling device with a removable stainless steel liner to acquire the samples. Polyethylene caps will be placed on the sample liner, which will then serve as the sample container.

Soil sample tubes or jars will then be closed by Teflon sheet stretched across the sampler's open end and held in place by threaded, polyethylene caps. In the event soils are too non-cohesive, the hole shall be enlarged as needed (e.g., by a spade) and undisturbed soil shall be cut from the sidewall and moved directly into glass jars (ca. 200-ml). At locations for deeper samples, additional soil shall be taken by the sampling device into a bag for onsite vapor assessment; where this is deemed to indicate significant impact at depth, drilling/sampling will be attempted at greater (ca. 3-4-feet) depth.

The procedure for head space sampling shall be as follows:

1. Obtain soil to fill a quart-sized plastic bag about 1-inch deep across its bottom fold.
2. Close the bag with deliberate attempt to include ambient air.
3. Break up the sample under hand pressure, through the bag material.
4. Wait 1- to 2-minutes and insert the probe of the vapor detector.
5. Record the level indicated.

The burn-ash sampling will be performed by scooping burn-ash residues from paved and unpaved surfaces using a clean sheet of new paper. Samples will be placed in glass jars (ca. 200-ml). Two composite samples will be taken, each from at least three separate areas. One will be made up of material taken from the east side of the site, and another from material taken from the west side.

Prior to sampling of the onsite groundwater well a portable, electric depth-measuring device shall be used to sound the well depth. Sampling shall be by directly holding an open sampling vessels beneath the adjoining open valve. The well will be run for at least 5-minutes prior to sampling to ensure purging of water in the well and that the sample is representative of water in the soil formation. Two water specimens will be taken. The site owner has been instructed not to run the well, to allow valid pre- and post-purge samplings.

The procedure for well sampling shall be as follows:

1. Sound the well for groundwater depth.
2. Note the time, and energize well pump with completely open-pipe flow. Immediately take a pre-purge sample.
3. Note temperature, conductivity, and pH.
4. Well-purging: A 5-gallon graduated bucket and a watch shall be used to assess the well pump flow rate with hose attached for disposal of pumped water to an onsite septic system. Water in excess of three-times the well volume [3] (87-gallons) shall be purged from the well. During this flow, temperature, conductivity, and pH shall be recorded to start and every five minutes.
5. Take a sample of post-purge groundwater. Again check temperature, conductivity, and pH, to verify these parameters are not changing by more than 10-percent of the scale reading.

Sampling of liquids or sludges in the sump shall be by dipping 40-ml vials into the vault contents; in the event its depth is too small for dipping, the contents shall be scooped by a new trowel.

All efforts will be made to limit release of volatile chemicals from the samples by filling the sample container with minimal headspace and by sealing the samples quickly and tightly, using plastic caps. Groundwater samples will be taken by use of 40-mL vials. Again all efforts will be made to limit release of volatile chemicals from the samples by filling the sample container with

---

[3] The well volume has been over-estimated based on 10-inch diameter and 70-foot depth (without subtracting for volume of pumps, pipes, etc.) as follows: $(10/12)^2 \times p/4 \times 70 \times 7.48$gal/cf = 29-gallons.

minimal headspace and by sealing the samples quickly and tightly, using plastic caps. The composite sample will be taken in a large (1-gallon) polyethylene bag with zippered closure. Ash will be massaged into homogeneity and a composite sample transferred to a 4-oz. glass jar.

The scope of environmental risk at the site is not deemed to warrant additional expense for duplicate samples and field blanks.

Sample Labeling/Documentation

Samples will be immediately identified on labels to be on the sample container and further secured by placement into polyethylene bags with zip-locking closures.

Logbook Maintenance

A logbook will be kept at the site, and entries will include time, location, and observations of all material events during the course of the field work.

Containers/preservatives, etc.

Soil and burn ash containers will be as described above, under Field Methods and QC/QA. Containers for sampling groundwater, and preservative measures, detection limits, and holding times will be as listed in Appendix IV. All samples will be individually labeled and put into individual protective polyethylene bags with zip-locked closure; following this, each will be immediately placed within an insulated and iced cooler. Samples will be delivered by *Golden State Overnight* courier service without delay to the laboratory.

American Scientific Laboratory will be used for analysis; its certification is provided as Appendix III.

4.4 Proposed Laboratory Analyses

Soil samples from the area with the burst diesel fuel tank will be analyzed for "total petroleum hydrocarbons" in the diesel fuel range using EPA Method 8015. Soil samples from the unpaved area beneath fire-damaged parked vehicles will be analyzed for "total petroleum hydrocarbons" in both gasoline and diesel fuel ranges using EPA Method 8015. Soil in the area around the waste oil storage containment would be analyzed for "total recoverable petroleum hydrocarbons" using EPA Method 418.1.

Burn-ash will be analyzed for metallic content using the sweep of TTLC-CCR Title 22 Metals (formerly the CAM 17 metals sweep), including the elements, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Hg, Mo, Ni, Se, Ag, Ti, V, and Zn).

Groundwater will be analyzed for impact by petroleum hydrocarbons in fuel using the examinations, "total petroleum hydrocarbons" EPA Method 8015 (to include both diesel fuel and gasoline ranges), "total recoverable petroleum hydrocarbons" EPA Method 418.1 (to include hydraulic and lubricating oils), "BETX", for benzene, toluene, ethylbenzene, xylene, oxygenates, and other gasoline constituents/solvents EPA Method 8260. This sample is also to be analyzed for typical inorganic analytes as listed in Table 64431-A of the California Safe Drinking Water

Act & Related Laws and Regulations [4], as well as for the VOCs/SOCs listed in Table 64444-A of the same document. Total lead shall also be analyzed.

Containers to be used and holding times and detection limits involved with the analyses are described in the table attached as Appendix IV. The laboratory's pre-printed chain-of-custody form shall be used, with sample numbers, sample container, specified analyses, and signature spaces for personnel accepting or relinquishing custody of the specimens.

4.5 On-site Wastewater Disposal System Assessment

A local contractor with experience in septic system forensics will be retained to map out the percolation systems including septic tanks, "tight" lines, and percolation lines. These will be flagged in the field, and rough-surveyed so that they can be drawn onto a site plan.

---

[4] California Regulations Related to Drinking Water, from Title 22 California Code of Regulations, California Safe Drinking Water Act & Related Laws and Regulations:" last updated October 11, 2007.

APPENDIX I MAP OF SUBJECT SITE (HIGHLIGHTING AREAS OF INTEREST)

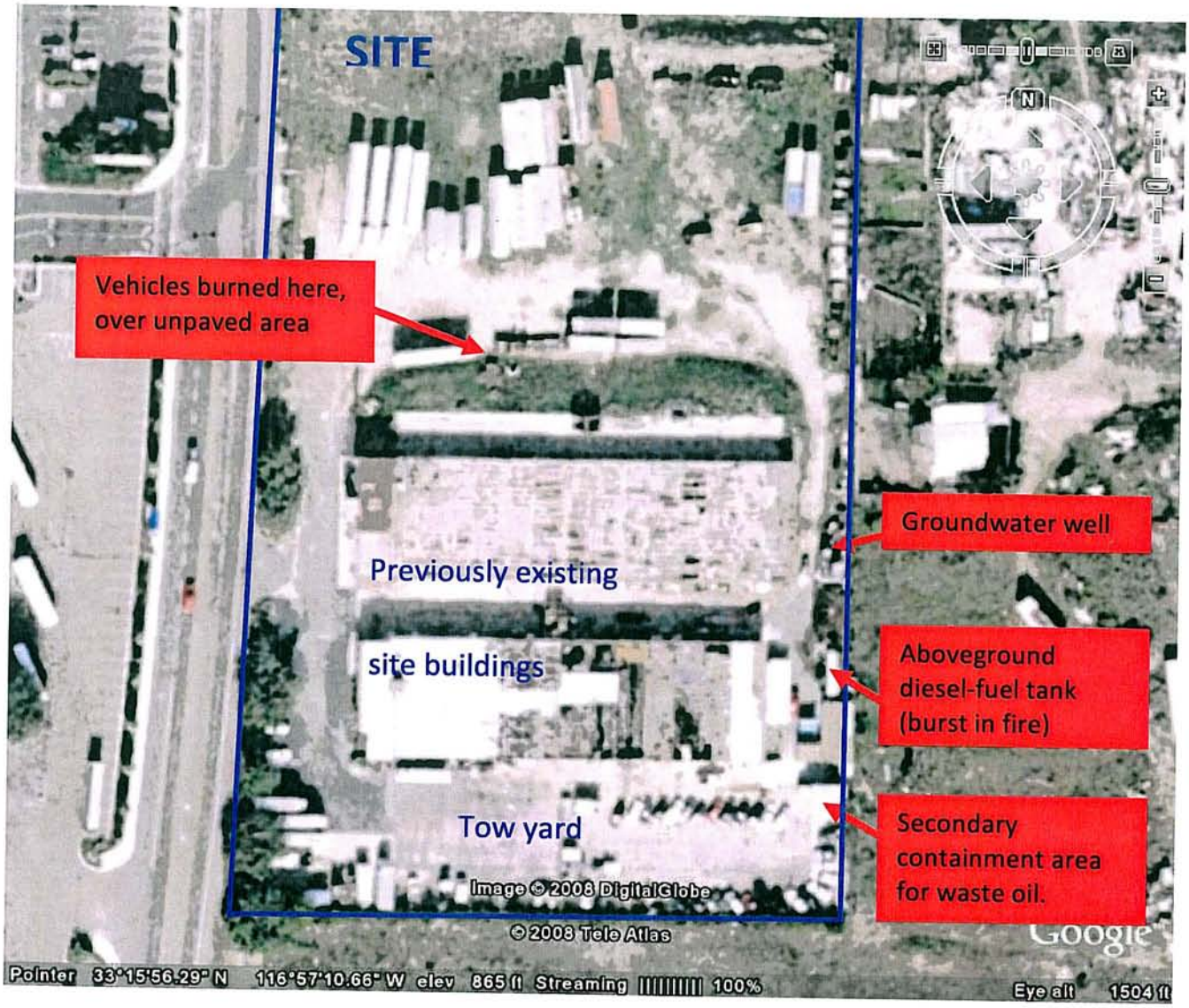

Photo Source: Google Earth 2007 Edition
(from photograph prior to 2007 fire)

N

APPENDIX III LABORATORY CERTIFICATION DOCUMENT

Follows this page.

STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

ENVIRONMENTAL LABORATORY CERTIFICATION

Is hereby granted to

AMERICAN SCIENTIFIC LABORATORIES, LLC

2520 N SAN FERNANDO ROAD
LOS ANGELES, CA 90065

Scope of certification is limited to the
"Accredited Fields of Testing"
which accompanies this Certificate.

Continued certification status depends on successful completion of site visit, proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **2200**

Expiration Date: **01/31/2009**

Effective Date: **01/01/2007**

Richmond, California
subject to forfeiture or revocation

George C. Kulasingam, Ph.D.
Program Chief
Environmental Laboratory Accreditation Program

WATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

JAMES F. STAHL
Chief Engineer and General Manager

March 12, 2003
Laboratory I.D. No. 10223

Rojert G. Araghi
Laboratory Director
American Scientific Laboratories, LLC
2520 North San Fernando Road
Los Angeles, California 90065

Dear Mr. Araghi:

The County Sanitation Districts of Los Angeles County (Districts) *Wastewater Ordinance* specifies that all required industrial wastewater analyses be performed by a California State Certified laboratory or by a laboratory approved by the Sanitation Districts.

The Districts recognize your revised certification as an Environmental Laboratory by the State of California Department of Health Services and will accept the sample results for those analyses which you are certified to perform. The laboratory identification number appearing on this letter **must** be included on all analysis reports submitted to the Districts.

Continued recognition of your certification shall be maintained by periodic satisfactory completion of performance sample analyses, compliance with Districts' requirements and an adequate rating on any future visits by Districts' personnel. Please notify the District upon any changes of name, address, telephone number, or supervisory personnel.

If you have any questions regarding this laboratory approval, please contact David B. Whipple of the Sanitation Districts' Industrial Waste Section at extension 2909.

Very truly yours,

James F. Stahl

Linda M. Shadler
Supervising Civil Engineer
Industrial Waste Section

LMS:DBW:dfd
Docs: 209260

Recycled Paper

APPENDIX IV SCHEDULE FOR SAMPLE CONTAINERS, HOLDING TIMES, AND DETECTIN LIMITS

Follows this page.

Chemical Analyses per EPA Table 64431-1, Detection Limits
"inorganic chemicals"

analyte	EPA Method	detection limit
aluminum	200.8	0.19-µg/L (MDL)
antimony	200.8	0.0080-µg/L (MDL)
arsenic	200.8	0.014-µg/L (MDL)
asbestos	100.2	7 MFL
barium	200.8	0.024-µg/L (MDL)
beryllium	200.8	0.022-µg/L (MDL)
cadium	200.8	0.013-µg/L (MDL)
chromium	200.8	0.012-µg/L (MDL)
cyanide	sm4500- CN- E	0.02 mg/L (MDL)
fluoride	300	0.013-mg/L (MDL)
mercury	245.1/245.2/7470a/7471a	0.1 ug/L(MDL)
nickel	200.8	0.011 µg/L (MDL)
nitrate (as NO3)	300	0.007 mg/L
nitrate+nitrite (sum as nitrogen)	300	0.012 mg/L
nitrite (as nitrogen)	300	0.0052-µg/L (MDL)
perchlorate	314	0.45-µg/L (MDL)
selenium	200.8	0.017-µg/L (MDL)
thallium	200.8	0.020-µg/L (MDL)
added analysis: lead	200.8	0.017-µg/L (MDL)

Chemical Analyses per EPA Table 64444-A
"organic chemicals"
volatile organic chemicals (VOCs)

analyte	EPA Method	detection limit (MDL)
benzene	524.2	0.090-µg/L
carbon tetrachloride	524.2	0.14µg/L
1,2-dichlorobenzene	524.2	0.090µg/L
1,4-dichlorobenzene	524.2	0.11-µg/L
1,1-dichloroethane	524.2	0.090-µg/L
1,2-dichloroethane	524.2	0.080-µg/L
1,1-dichloroethylene	524.2	0.080-µg/L
cis-1,2-dichloroethylene	524.2	0.080-µg/L
trans-1,2-dichloroethylene	524.2	0.090-µg/L
dichloromethane	524.2	0.090-µg/L
1,2-dichloropropane	524.2	0.030-µg/L
1,3-dichloropropene	524.2	0.050-µg/L
ethylbenzene	524.2	0.13-µg/L
methyl-tert-butyl ether	524.2	0.060-µg/L
monochlorobenzene	524.2	0.090-µg/L
styrene	524.2	0.10-µg/L
1,1,2,2-tetrachloroethane	524.2	0.090-µg/L
tetrachloroethylene	524.2	0.080-µg/L
toluene	524.2	0.080-µg/L
1,2,4-trichlorobenzene	524.2	0.11-µg/L
1,1,1-trichloroethane	524.2	0.090-µg/L
1,1,2-trichloroethane	524.2	0.050-µg/L
trichloroethylene	524.2	0.10-µg/L
trichlorofluoromethane	524.2	0.080-µg/L
1,1,2-trichloro-1,2,2-trifluoroethane	524.2	0.090-µg/L
vinyl chloride	524.2	0.080-µg/L
xylenes	524.2	0.29-µg/L

non-volatile synthetic organic chemicals (SOCs)

analyte	EPA Method	detection limit(MDL)
alachlor	525.2	0.070 ug/L
atrazine	525.2	0.047 ug/L
bentazon	515.3	0.23 ug/L
benzo(a)pyrene	525.2	0.073-µg/L
carbofuran	531.1	0.63-µg/L
chlordane	508	0.045-µg/L
2,4-D	515.3	0.050 -µg/L
dalapon	515.3	0.040-µg/L
dibromochloropropane	504.1	0.0030-µg/L
Bis(2-ethyl-hexyl)adipate	525.2	0.23-µg/L
Bis(2-ethylhexyl)phthalate	525.2	0.51-µg/L
Dinoseb	515.3	0.050-µg/L
Diquat	549.2	3.9-µg/L
endothal	548.1	5.6-µg/L
endrin	508	0.0060-µg/L
ethylene dibromide	504.1	0.0070-µg/L
glyphosate	547	1.7-µg/L
heptachlor	508	0.0059-µg/L
heptachlor epoxide	508	0.0046-µg/L
hexachlorobenzene	508	0.0050-µg/L
hexachlorocyclopentadiene	508	0.019-µg/L
lindane	508	0.0044-µg/L
methoxychlor	508	0.0076-µg/L
molinate	507	0.051-µg/L
oxamyl	531.1	0.57-µg/L
pentachlorophenol	515.3	0.020-µg/L
picloram	515.3	0.34-µg/L
polychlorinated biphenyls	508	0.045-0.084-µg/L
simazine	507	0.25-µg/L
thiobencarb	507	0.37-µg/L
toxaphene	508	0.23-µg/L
2,3,7,8-TCDD (dioxin)	1613b	0.10-pg/L
2,4,5-TP (silvex)	515.3	0.020-µg/L

EPA Methods to be Used

Required Containers type and size, holding times, preservatives

EPA Method	description	cont. type	cont. size	max. holding time	preservative
200.8/245.1	Al, Sb, As, Ba, Be,Cd, Cr, Hg, Ni, Se, Pb, Ti	plastic bottle	500-mL	Hg, 28 days; others, 6 months	HNO3
100.2	asbestos	plastic bottle	1-liter	48 Hours	Cool 4 deg C
4500-CN-E	total cyanide	glass bottle	500-mL	14 days	NaOH
300	F, NO3, NO2	plastic bottle	500-mL	48 Hours	Cool 4 deg C
314	perchlorate	plastic bottle	500-mL	28 days	Cool 4 deg C
524.2	VOCs	glass vial	40-ml (x3)	14 days	HCL
504.1	EDB, DBCP	glass vial	40-mL (x3)	14 days	Cool 4 deg C
508	pesticides, PCBs	amber glass bottle	1-liter (x2)	7 days	Cool 4 deg C
515.3	chlorinated herbicides	amber glass bottle	500-mL	14 days	Cool 4 deg C
525.2-507 full list	triazines	amber glass bottle	1-liter (2)	14 days	HC L
525.2	SVOCs	amber glass bottle	1-liter (2)	14 days	HCL
531.1	carbamates	glass vial	40-ml (x3)	28 days	Cool 4 deg C
547	glyphosate	glass vial	40-ml (x3)	14 days	Cool 4 deg C
548.1	endothall	amber glass bottle	500-mL	7 days	Cool 4 deg C
549.2	diquat	plastic bottle	1-liter	7 days	Cool 4 deg C
8015 -d	TPH-diesel range	steel samp. cyl.	ca. 20-mL	7-prep,14-days ana	Cool 4 deg C
418.1	TRPH	steel samp. cyl.	ca. 20-mL	same	Cool 4 deg C
CCR tit22mets	title 22 metals	glass jar	250-mL	28, 6mo.	Cool 4 deg C
8015 -d, -g	TPH- full range	steel samp. cyl.	ca. 20-mL	same	Cool 4 deg C
1613b	dioxins (2,3,7,8-TCDD)	amber glass bottle	1-liter	28-days	Cool 4 deg C