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100-Acre Parcel Soil Gas Assessment Report

Former Marine Corps Air Station El Toro
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EXECUTIVE SUMMARY

The *100-Acre Parcel Soil Gas Assessment Report* (Report) presents the results of soil gas sampling and analyses conducted in the 100-Acre Parcel (the Site) of the Former Marine Corps Air Station (MCAS) El Toro, in Irvine, California (see Figure 1-1). The objective of the work activities described herein was to perform a screening-level assessment of potential impacts to soil gas that may exist at the Site due to the volatile organic compound (VOC) plume (primarily trichloroethylene, TCE) in groundwater that underlies much of the Site, or due to sources of methane that may exist (naturally-occurring or petroleum-derived). This screening-level assessment was initiated by Lowe Enterprises Real Estate Group (Lowe Enterprises) and the County of Orange (the County) as part of overall environmental due diligence in advance of, and to support the Environmental Impact Report (EIR).

In order to assess potential impacts to soil gas beneath the Site that may exist due to off-gassing of the underlying groundwater VOC plume or from sources of methane, soil gas probes were installed and sampled in accordance with the *Advisory Active Soil Gas Investigations* [DTSC *et al*., 2012] as described below. A total of 51 individual soil gas probes were installed in 20 locations (see Figure 3-1). Each location had two completion depths (generally 5 and 15 feet bgs), and 11 locations had an additional deeper completion depth (generally 40 feet bgs). Each individual probe completion was sampled and analyzed for VOCs (EPA Method 8260B), and the 5- and 15-foot bgs completions were sampled and analyzed for methane (ASTM D1946). A total of seven VOC compounds (tetrachloroethylene, PCE; trichloroethylene, TCE; chloroform; toluene; 4-isopropyltoluene; carbon tetrachloride; and Freon 113) were detected in 12 of 20 sampling locations at the Site. Soil gas analytical results are presented in Tables 4-1a through 4-2 along with residential and commercial/industrial or other appropriate screening levels for soil gas. There were no detections of methane in soil gas samples collected from the Site.

Based on the results presented in this Report the following conclusions are drawn:

1. The detections of VOCs in soil gas samples were at concentrations below risk-based screening levels, which are generally considered protective of human health and satisfactory to regulatory oversight agencies, and are not expected to have an impact on the development plans for the parcel:

a. Only a single VOC was detected (Freon 113) in three locations currently planned for residential land use (i.e., SV-4, SV-9, and SV-10) at concentrations more than 10,000 times below residential screening levels.

b. Three VOCs were detected (PCE, TCE, and chloroform) in three separate locations currently planned for commercial/industrial use (i.e., SV-12, SV-13, and SV-20) at concentrations below commercial/industrial screening levels. Further, the detections of TCE and chloroform were only in the deepest completions at those two locations, 35 feet bgs at SV-20 and 35.5 feet bgs at SV-13, respectively (i.e., TCE and chloroform were not detected in the shallower completions at those locations).

c. The implemented groundwater remedy is expected to continue to reduce existing VOC concentrations in groundwater in the future, further reducing the threat of contaminant off-gassing, migration in soil gas, and vapor intrusion potential.

2. There were no detections of methane in soil gas samples collected from the Site.

1. INTRODUCTION

1.1 Purpose and Objectives

The *100-Acre Parcel Soil Gas Assessment Report* (Report) presents the results of soil gas sampling and analyses conducted in the 100-Acre Parcel (the Site) of the Former Marine Corps Air Station (MCAS) El Toro, in Irvine, California (see Figure 1-1). The assessment of soil gas beneath the Site was performed by Geosyntec Consultants, Inc. (Geosyntec) at the direction of Lowe Enterprises Real Estate Group (Lowe Enterprises) on behalf of the County of Orange (the County) as part of environmental due diligence in support of the redevelopment of the Site. This Report was prepared by the staff of Geosyntec under the direction of Matt Thomas, Ph.D., and reviewed by Mr. Eric Smalstig, P.E., in accordance with Geosyntec's peer review policies.

The objective of the work activities described herein was to perform a screening-level assessment of potential volatile organic compound (VOC) impacts to soil gas that may exist at the Site due to the VOC plume in groundwater that underlies much of the Site, and potential naturally-occurring sources and/or petroleum-derived sources of methane.

1.2 Regulatory Context

Lowe Enterprises, in partnership with the County, plans to redevelop the Site located along the southwest border of former MCAS El Toro. An Environmental Impact Report (EIR) for the Site is currently under development. It is anticipated that regulatory stakeholders will be identified during the EIR process. While currently there is no regulatory requirement to perform the soil gas assessment presented in this Report, this screening-level assessment was initiated by Lowe Enterprises and the County as part of overall environmental due diligence in advance of, and to support the EIR. The results of this report will be incorporated into the EIR.

1.3 Geosyntec Approach

Lowe Enterprises has retained Geosyntec as its consultant for environmental due diligence for the redevelopment project. Based on previous reviews of documents related to locations of concern (LOCs) at former MCAS El Toro that Geosyntec has performed for the County in 2011, 2014, and 2015, there is a VOC plume in groundwater (primarily trichloroethylene, TCE) that underlies much of the Site. In addition, there may be naturally-occurring sources or petroleum-derived sources of methane. The VOC groundwater plume is associated with Installation Restoration Program (IRP) Site 24, the VOC Source Area. To assess potential impacts to soil gas beneath the Site that may exist due to off-gassing of VOCs from the plume and from

sources of methane (naturally-occurring sources or petroleum-derived sources), soil gas probes were installed and sampled in accordance with the *Advisory Active Soil Gas Investigations* [DTSC *et al*., 2012] as detailed in the sections that follow.

Consistent with applicable professional standards of care, our opinions are based, in part, on data furnished by others as noted in this Report where applicable, and Geosyntec is not able to independently verify data provided by others.

1.4 Report Organization

The remainder of this Report for the Site is organized into the following sections:

- Section 2, Background, provides the site setting and description, soil lithology, the VOC Source Area (IRP Site 24), potential methane sources, and historical and current site uses;
- Section 3, Field Activities, describes the sampling and analysis methodologies and field activities for the soil gas assessment; and
- Section 4, Results and Conclusions, summarizes the data collected during the assessment including soil lithology and soil gas analytical results, and conclusions that may be drawn from the results.

References, tables, figures, and appendices are included after the text of this Report.

2. BACKGROUND

2.1 Site Setting and Description

The Site covers approximately 107.7 acres within the southwest portion of former Marine Corps Air Station (MCAS) El Toro in the City of Irvine, California (Figure 1-1). The Site is situated approximately 2.25 miles southwest of the foothills of the Santa Ana Mountains and approximately 2 miles northeast of the San Joaquin Hills. It is elongated in a northwest to southeast orientation and, though not uniform in shape, is approximately 1.3 miles long and 0.15 miles wide. The Site is bounded by the proposed realignment of Marine Way on the northeast, the Southern California Regional Rail Authority (SCRRA) rail lines and the Orange County Transportation Authority (OCTA)-owned property on the southwest, City of Irvine property on the northwest, and the Great Park Neighborhoods' District 6 on the southeast. The OCTA-owned property comprises an approximately 21-acre parcel on the southwest boundary of the Site, which could potentially be a future OCTA rail maintenance facility. The development plan contemplates a mixed residential and commercial use with associated infrastructure, parking, and common areas.

The ground surface slopes gently from the east to west with elevation ranging from approximately 280 feet above mean sea level (msl) near its eastern end to approximately 230 feet above msl on its western end. The majority of the northwestern half of the Site is unpaved with the exception of the existing Perimeter Road which traverses the Site twice in the northwestern half. The majority of the southeastern half of the Site is paved with roads, parking lots, and demolished building foundations; there are numerous existing structures in this area related to former MCAS El Toro. The largest of the existing structures are four approximately equal-sized large warehouse buildings that are oriented in a straight line from northwest to southeast. One of these warehouse buildings is not part of the Site (i.e., Building 319, the Second Harvest Food Bank building).

Irvine has an arid climate with an average annual rainfall of 14.42 inches per year and an average temperature of 63.5 degrees Fahrenheit [U.S. Climate Data, 2015]. Precipitation occurs seasonally, as the region experiences intermittent winter storms generally from the months of November through March. Rainwater runoff at the Site collects in catch basins and flows into the flood control drainage system, which eventually discharges to the Marshburn Channel to the northwest of the Site, Bee Canyon Wash, which bisects the Site in a northeast to southwest orientation, or the Agua Chinon Wash to the southeast of the Site.

2.2 Soil Lithology

Former MCAS El Toro is situated on the Tustin Plain, a broad basin filled with marine and alluvial sediments deposited on marine sedimentary bedrock [Fife, 1974]. The Tustin Plain is bounded by bedrock, exposed in the Santa Ana Mountains to the north and east, and the San Joaquin Hills to the south. Shallow native subsurface soils beneath the Site consist of alluvial deposits originating from the Santa Ana Mountains to the northeast and San Joaquin Hills to the southwest. The alluvial deposits consist primarily of lean clay and silts, with interbedded layers of fine- to medium grained sands, sands with silt, silty sands, and sandy silts. First encountered groundwater generally flows within these alluvial sediments. Depth to groundwater at the Site is approximately 90 feet bgs [Enviro Compliance Solutions, 2014].

2.3 VOC Source Area (IRP Site 24)

Volatile Organic Compounds (VOCs), mainly TCE, were historically used at former MCAS El Toro for degreasing parts, paint stripping, and aircraft washing in an area in the southwestern portion of former MCAS El Toro [DON, 2005]. This area was designated as Installation Restoration Program (IRP) Site 24, the VOC Source Area. The area of IRP 24 includes the southeastern third of the Site, though based on concentrations in groundwater, it appears that releases of VOCs occurred primarily to the northeast, outside the boundary of the Site. Releases of VOCs contaminated the soil and migrated vertically downward into the groundwater, resulting in a plume of contaminated groundwater beneath much of the Site and extending offsite to the west of former MCAS El Toro [DON, 2005]. Contaminants in the soil and soil gas have been remediated by the Navy and contaminants in the groundwater are still undergoing active remediation.

The interim record of decision (ROD; documents the selected remedy for cleanup of a site) for the Site 24 soil (i.e., vadose zone, the unsaturated soil above groundwater) was completed in September 1997 [DON, 1997], and documented soil vapor extraction (SVE) as the selected remedy to address VOCs in soil. The selected remedy was implemented and documented in the Closure Report [Earth Tech, 2002]. The Closure Report concluded that VOC concentrations in soil vapor had been reduced below the groundwater protective threshold limits established in the interim ROD. The final soil ROD [DON, 2006] documented no further action (NFA) for the IRP Site 24 vadose zone based on the protection of human health and the environment. Soil vapor cleanup levels were designed to be protective of groundwater but not the indoor air intrusion pathway. Soil vapor cleanup goals exceeded screening levels for residential and

commercial industrial use by over an order of magnitude. No post-remediation (post-2002) data exists describing the nature and extent of the current soil vapor VOC plume.

The final groundwater ROD addressing IRP Site 24 (shallow groundwater unit, SGU) and downgradient IRP Site 18 (principal aquifer, PA) was issued in 2002 [DON, 2002], and documented groundwater extraction and treatment using air stripping as the selected remedy to address VOCs in groundwater. The groundwater treatment system began operation in 2006. An explanation of significant differences (ESD; documents the differences between the remedy in the ROD and the final implemented remedy) was completed in December 2008 [DON, 2008] that requires vadose zone re-sampling at the completion of the groundwater remedy and incorporation of this vadose zone re-sampling as a component of the selected remedy for groundwater. At present, groundwater is being extracted from 43 extraction wells, 24SGU-1 through 24SGU-39 and 24EX3 through 24EX6. The extracted water is conveyed to IRWD's SGU Treatment Plant where VOCs are removed using air stripping and is subsequently disposed of via the South Orange County Wastewater Authority ocean outfall pipeline. The Final Semiannual GW Monitoring and System Operations Data Package IRP Sites 18 and 24 GW Remedy Report [Enviro Compliance Solutions, 2014] indicates decreasing TCE trends in groundwater wells and provides the most recent groundwater plume information. Groundwater remediation is ongoing at IRP Site 24, with documented VOC impacts to the SGU still present.

The main concern for redevelopment of the Site with respect to the VOC plume in groundwater is that VOCs may off-gas from the groundwater plume, migrate in the subsurface (i.e., in soil gas) beneath the Site, and create the potential for vapor intrusion and impacts to indoor air within constructed structures.

2.4 Potential Methane Sources

The potential for naturally-occurring methane sources and/or petroleum-derived methane within the Site was evaluated. There are no known naturally-occurring methane sources at the Site. However, under certain conditions biological degradation of petroleum hydrocarbons in soils can produce methane gas. There are historically documented petroleum hydrocarbon impacts at locations within the Site. Many of these locations have been remediated to some extent by the Navy and the extent of petroleum hydrocarbon impacts remaining within these and other areas is not clearly defined.

2.5 Historical and Current Site Uses

The Site lies within and adjacent to the southwestern border of former MCAS El Toro. The northwestern portion of the Site, northwest of the Bee Canyon Wash was near the

direct flight line of the east/west oriented runway and appears to have remained undeveloped during the operational years of former MCAS El Toro. The remainder of the Site, southeast of the Bee Canyon Wash, was mostly paved with roads and parking lots and there were numerous structures in this area. Four approximately equal-sized large warehouse buildings oriented in a straight line from northwest to southeast were built along the southwestern border of former MCAS El Toro. Adjacent to these warehouses on the northeast were rail lines that formerly connected to the railroad ROW along the southwest border of former MCAS El Toro. Most of the consumable goods, equipment, and raw materials used at former MCAS El Toro passed through these warehouses. In addition to the four warehouse buildings there were many additional smaller buildings in this area that were used for storage, offices, and training facilities, including the defense reutilization and marketing office (DRMO), a storage area for scrap and salvage materials.

Since decommissioning in 1999, several buildings within the Site have been razed. The four warehouse buildings and a number of smaller buildings remain as well as foundations of buildings that have been razed. Most of the Site is still paved with roads and parking lots. A portion of the Site (approximately 40 acres) has not been transferred to the County but rather is held by the Navy, leased to City of Irvine by a Lease in Furtherance of Conveyance (LIFOC) pending further environmental investigation and/or remediation by the Navy, and subleased to the County. This area is referred to as “the LIFOC area” of the Site.

3. SOIL GAS ASSESSMENT FIELD ACTIVITIES

3.1 Sampling and Analytical Program Overview

Geosyntec conducted a voluntary screening-level soil gas assessment as part of overall environmental due diligence for redevelopment of the Site intended to assess potential VOC and methane impacts to soil gas that may exist at the Site. A total of 51 individual soil gas probes were installed in 20 locations (see Figure 3-1). Each location had two completion depths (generally 5 and 15 feet bgs), and 11 locations had an additional deeper completion depth (generally 40 feet bgs). Each individual probe completion was sampled and analyzed for VOCs (EPA Method 8260B), and the 5- and 15-foot bgs completions were sampled and analyzed for methane (ASTM D1946).

3.2 Methodology for Selection of Sampling Locations

Provisions of the County's sublease of the LIFOC area from the City of Irvine limit land uses and activities and, consequently, the LIFOC area is inaccessible for environmental testing (see Figure 3-1). To assess potential VOC and methane impacts to soil gas at the Site, soil gas sampling locations were chosen in non-LIFOC areas across the Site, at a density of approximately one probe location per 3 acres (see Figure 3-1), with each planning area (not shown in figure) having one to two probes. Depth to groundwater is approximately 90 feet bgs [Enviro Compliance Solutions, 2014]. Probes were targeted at each location for depths of 5 feet and 15 feet bgs, and at 11 of 20 locations, for an additional depth of 40 feet bgs.

3.3 Field Work Preparation

A Site-specific Health and Safety Plan (HASP) for the proposed work tasks was prepared in compliance with California Occupational Safety and Health Agency (CalOSHA), Health and Safety Code, Title 8, California Code of Regulations (CCR), Section 5192 and other appropriate sections. The HASP evaluated potential health and safety issues and provided methods for mitigating hazards. A copy of the HASP was maintained at the Site during field activities.

Prior to commencing field work, Geosyntec worked cooperatively with County of Orange (owner) representatives to arrange access to the Site. A portable global positioning system (GPS) unit was first utilized to identify a total of 20 proposed boring locations for installation of soil gas probes, 11 probe locations in the northwest portion of the parcel (currently planned for residential use), six (6) probe locations in the middle portion of the parcel near Buildings 317 and 318 (currently planned for commercial use), and three (3) probe locations on the southeast end of the parcel (currently planned

for commercial use) (see Figure 3-1). Each of the 20 boring locations was marked with white staking (if in soil) or with white paint (if covered with asphalt or concrete). Given the nature of the Site and the potential for encountering underground utilities/infrastructure, a geophysical subsurface utility locating company, Goldak, Inc., was retained to identify and mark utilities and anomalies in proximity to boring locations. Some of the proposed probe locations were moved slightly based on the geophysical investigation. After final marking of boring locations, Underground Service Alert (USA) of southern California was notified at least 48 hours prior to the commencement of intrusive work, to mark and clear utilities in the investigation areas and to reduce the potential for accidentally encountering buried utility lines (USA ticket numbers A51610959, A51611002, and A51611019). Seven of the 20 locations required coring through concrete or asphalt cover prior to advancing borings.

3.4 Soil Gas Sampling

3.4.1 General

BC2 was retained to advance soil borings at 20 locations designated SV-1 through SV-20 and to install temporary soil gas probes at target depths of 5 and 15 feet bgs at all 20 locations and at an additional target depth of 40 feet bgs at 11 of the 20 locations as shown on Figure 3-1. Subsequently, Jones Environmental, a mobile environmental laboratory, was retained to sample and analyze soil gas samples from the probes. The naming convention for soil gas sample locations is as follows: the first two letters (i.e., SV) designate soil vapor media (i.e., soil gas) locations. The second one or two digits correspond to sequentially numbered locations 1 through 20 (e.g., SV-1). Individual soil gas sample identifiers consist of this name appended with the approximate depth of the sample in feet bgs (e.g., "-5'" for 5 feet bgs). The rationale for selection of the proposed soil gas sampling locations and target depths was provided in Section 3.2.

3.4.2 Installation of Temporary Soil Gas Probes

The first 5 feet of each boring were completed by hand auger to reduce the potential for impairing unidentified underground utilities or pipes. Obstructions were encountered during hand augering in several borings so the boring locations were shifted slightly and the first 5 feet were completed by hand-auger again. This process was repeated until a depth of 5 feet was reached. Once hand augering was completed, soil borings were advanced using a direct push drill rig to the target boring depth and a continuous soil core was collected using a 4-foot sampler lined with acetate sleeves. Borings were logged for geologic lithology in accordance with the Unified Soil Classification System (USCS). Boring logs are included in Appendix A. A portable GPS unit was used to log the final location of each soil gas probe.

While target depths of 5, 15, and 40 feet bgs had been selected, the final probe depths were determined in the field based on lithologies encountered at each location (i.e., probes depths were modified to avoid significantly fine-grained material which may limit desired gas sampling flow rates). Several soil gas probes were set at depths other than the target depths of 5, 15, and 40 feet bgs due to observed lithologies (see Appendix A). For final probe depths see also Tables in Section 4. Once the borings were advanced, nested temporary soil gas probes were constructed in the borehole with installation methods and materials performed in general accordance with the methods presented in the April 2012 *Advisory Active Soil Vapor Investigations* [DTSC *et al.*, 2012].

The temporary soil gas probes consist of a prefabricated 6-inch long by approximately ½-inch diameter stainless steel tip attached to approximately 7-, 17-, or 42-foot lengths (depending on the depth of the completion) of ¼-inch inner diameter Teflon® tubing. The probes were placed within the boring at the target depth within an approximately 1-foot thick sand pack. Approximately 1 foot of dry granular bentonite was then placed above the sand pack, followed by hydrated bentonite pellets up to the depth of the next shallower completion (if one exists) and then the process was repeated until the ground surface was reached. The end of each probe was fitted with a gas-tight valve and marked to designate the probe identification and depth. Probes were completed with an 8-inch diameter flush mount well box. Figure 3-2 shows how the typical single and nested temporary soil gas probes were constructed. Figure 3-3 shows a schematic of target probe depths and the range of actual depths of installed probes as they were adjusted for subsurface conditions.

3.4.3 Purging, Sampling, and Analysis of Temporary Soil Gas Probes

Soil gas purging, sampling, leak testing, and analysis was performed by Jones Environmental consistent with the methods described in the *Advisory Active Soil Vapor Investigations* [DTSC *et al.*, 2012]. Sampling was scheduled so that it occurred a minimum of 48 hours following the installation of temporary soil gas probes where soils had been excavated by hand auger (i.e., the 5 foot bgs probes) to allow subsurface conditions to equilibrate. Each of the other probes were sampled a minimum of 24 hours following installation.

A step purge volume versus contaminant concentration test was conducted at two soil gas sampling locations/depths (SV-1-14' and SV-1-40') that were selected as representative of the different soil types observed at the Site. For each purge volume test, a sample was collected after removal of one, three, and ten purge volumes of gas to select the soil-type-specific purge volumes for this sampling event. Per the guidance

document, because VOCs were not detected in the samples collected for purge tests, the default of three (3) purge volumes was used for collection of samples. Once VOCs were detected, step purge volume tests were performed at two additional locations/depths (SV-13-15.5' and SV-13-35.5'). The selected purge volume for these tests (10) were different than the default value of three (3). Per the guidance document, ten purge volumes were used to collect samples at subsequent locations and 10 percent of samples were resampled and reanalyzed for comparison to results obtained using three purge volumes.

The soil gas probes were purged and sampled by applying a vacuum to the probe using a pump and analyzed by Jones Environmental, a NELAP and State-certified mobile/fixed-based laboratory, for VOCs (EPA Method 8260B) and methane (ASTM D1946) under chain-of-custody protocol. Purging during the step purge test was conducted at approximately the same rate that soil gas was sampled, between 200 to 2000 milliliters per minute (ml/min) [DTSC *et al.*, 2012]. A total of 56 soil gas samples (i.e., 51 primary samples, one sample per location/depth, and five duplicates, approximately 10%) were collected with a gas-tight syringe from the Site on June 19th, 22nd, and 23rd, 2015, and analyzed for VOCs by the mobile laboratory. Subsequently, a total of 43 soil gas samples (i.e., 38 primary samples, one sample per location/depth, and five duplicates, approximately 10%) were collected in Tedlar® bags from the Site on September 29th and 30th and October 1st, 2015, analyzed for methane by the fixed-based laboratory. Per the guidance document, samples could not be collected from SV-18 in October 2015 because the maximum allowable applied vacuum (100 inches of water) could not produce flow from either depth. Target analyte reporting limits were low enough to allow comparison of analytical results to risk-based or other appropriate screening levels for Site-related compounds.

A tracer gas mixture of n-propanol and n-pentane was placed at the tubing/ground surface interface before sample collection. These compounds were analyzed during the 8260B analytical run to evaluate whether surface leaks into the subsurface are compromising the sample. N-propanol or n-pentane were not detected in any of the samples.

3.4.4 Quality Assurance/Quality Control

Quality assurance and quality control (QA/QC) was implemented during field activities. Duplicate soil gas samples were collected and analyzed by the mobile/fixed-based laboratory at a minimum of 10% of the total number of discrete samples.

3.5 Investigation-Derived Waste

The investigation derived waste (IDW) soil generated during the soil boring advancement was containerized (e.g., Department of Transportation approved 30-gallon or 55-gallon drums), sealed, properly labeled, and is temporarily stored at the Site. The containerized IDW will be managed and/or disposed of pursuant to County guidance, per applicable procedures and protocols. IDW generated during gas probe installation and sampling, and decontamination of the drilling equipment was managed by BC2.

3.6 Deviations from Guidance Documents

Deviations from the methodologies in the soil gas guidance document [DTSC *et al*., 2012] were not necessary.

4. RESULTS AND CONCLUSIONS

4.1 Introduction

The data collected during this assessment are intended to provide the information necessary to assess whether there are significant impacts to soil gas at the Site resulting from the exiting TCE plume in groundwater associated with IRP Site 24 or from sources of methane that may exist at the Site. Laboratory reporting limits were lower than appropriate screening levels for each analyte.

4.2 Soil Lithology

As noted in the boring logs in Appendix A, the lithology observed in borings during this assessment generally consisted mostly of moist lean clays and silts with sand, with interbedded layers of sandy silts, silty sands, and fine to medium sands from ground surface to approximately 40 feet bgs. This is consistent with the alluvial deposits documented to exist in this area of Orange County.

4.3 Soil Gas Analytical Results

4.3.1 General

The rationale for selection of the soil gas sampling locations, final depths, and analysis is provided in Sections 3.2 and 3.4. A total of 56 soil gas samples (i.e., 51 primary samples, one sample per location/depth, and five duplicates, approximately 10%) were collected and analyzed by the mobile laboratory for VOCs (EPA method 8260B). A total of 43 soil gas samples (i.e., 38 primary samples, one sample per location/depth, and five duplicates, approximately 10%) were collected from the Site analyzed for methane by the fixed-based laboratory. Soil gas VOC analytical laboratory reports are provided in Appendix B and soil gas methane analytical laboratory reports are provided in Appendix C.

4.3.2 Volatile Organic Compounds (VOCs)

A total of seven VOC compounds (tetrachloroethylene, PCE; trichloroethylene, TCE; chloroform; toluene; 4-isopropyltoluene; carbon tetrachloride; and Freon 113) were detected in 12 of 20 sampling locations at the Site. Soil gas VOC analytical results are presented in Table 4-1a through 4-1c along with residential and commercial/industrial screening levels for soil gas. The results are divided according to the current anticipated land use for each probe location: future residential, commercial (existing building), and future commercial. The screening levels correspond to each of these

anticipated land uses as follows: screening levels were calculated by dividing the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) "Note 3" screening levels for ambient air [DTSC, 2015] by the appropriate attenuation factors for future residential development (0.001 [DTSC, 2011]), existing commercial development (0.001 [DTSC, 2011]), or future commercial development (0.0005 [DTSC, 2011]), respectively.

4.3.3 Methane

There were no detections of methane in soil gas samples collected from the Site (see Table 4-2).

4.4 Conclusions

The following conclusions may be drawn from the results of the voluntary screening-level soil gas assessment performed by Geosyntec on behalf of Lowe Enterprises and the County for the Site:

1. The detections of VOCs in soil gas samples were at concentrations below risk-based screening levels, which are generally considered protective of human health and satisfactory to regulatory oversight agencies, and are not expected to have an impact on the development plans for the parcel:

    a. Only a single VOC was detected (Freon 113) in three locations currently planned for residential land use (i.e., SV-4, SV-9, and SV-10) at concentrations more than 10,000 times below residential screening levels.

    b. Three VOCs were detected (PCE, TCE, and chloroform) in three separate locations currently planned for commercial/industrial use (i.e., SV-12, SV-13, and SV-20) at concentrations below commercial/industrial screening levels. Further, the detections of TCE and chloroform were only in the deepest completions at those two locations, 35 feet bgs at SV-20 and 35.5 feet bgs at SV-13, respectively (i.e., TCE and chloroform were not detected in the shallower completions at those locations).

    c. The continued implementation of the groundwater remedy is expected to continue to reduce existing VOC concentrations in groundwater in the future, further reducing the threat of contaminant off-gassing and migration in soil gas.

2. There were no detections of methane in soil gas samples collected from the Site.

REFERENCES

Cal-EPA Department of Toxic Substances Control (DTSC), 2015. *Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note Number: 3, DTSC-Modified Screening Levels (DTSC-SLs).* May.

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TABLES

Table 4-1a
Soil Gas VOC Analytical Results
Anticipated Residential Land Use Areas - Future Construction
(June 2015)

Geosyntec consultants

Analyte>>		Tetrachloroethylene (PCE)	Trichloroethylene (TCE)	Chloroform	Toluene	4-Isopropyltoluene	Carbon Tetrachloride	Freon 113
Units>>		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Regulatory Thresholds								
Future Residential Screening Level[1]		0.48	0.48	0.12	310	NA	0.067	31,000
Sample ID	Date Collected	Analytical Results						
SV-1-5'	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-1-14' (1 PV)	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-1-14' (3 PV)	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-1-14' (10 PV)	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-1-40' (1 PV)	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-1-40' (3 PV)	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-1-40' (10 PV)	6/19/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-2-6'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-2-14'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-3-5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-3-13.5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-4-12'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-4-22.5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-4-36.5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.079**
SV-4-36.5' REP	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.076**
SV-5-6'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-5-15'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-5-15' REP	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-5-34'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-6-8'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-6-12.5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-7-7'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-7-14'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-8-6.5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-8-20'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-9-9'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-9-23'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.096**
SV-9-37'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.373**
SV-10-5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-10-5' REP	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-10-10.5'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.427**
SV-11-8'	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-11-17'	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-11-32'	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040

Definitions:

ug/L microgram per liter

ND<0.008 Not detected at concentrations above the listed laboratory reporting limit (e.g., 0.008 ug/L)

NA Note 3 screening levels do not exist for this compound

PV Purge volumes; samples collected with 1, 3, or 10 purge volumes as indicated for purge testing [DTSC *et al.* , 2012]

REP Replicate - the gas sample collected from a soil gas probe was analyzed a second time by the same equipment to compare results

0.272 Bold type indicates a detection above laboratory reporting limits

Notes:

Only compounds detected in at least one sample collected from the 100-Acre Parcel are shown in this table

[1] California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) Note 3 screening levels for ambient air converted to soil gas screening levels by dividing by the appropriate attenuation factor for future residential development (0.001 [DTSC, 2011])

0.272	Green indicates a detection less than or equal to residential screening levels
1.42	Orange indicates a detection greater than residential but less than or equal to commercial/industrial screening levels
None Detected	Red indicates a detection greater than commercial/industrial screening levels
	No compounds were detected at concentrations greater than commercial/industrial screening levels

Table 4-1b
Soil Gas VOC Analytical Results
Anticipated Commercial Land Use Areas - Existing Building 317
(June 2015)

Geosyntec consultants

Analyte>>		Tetrachloroethylene (PCE)	Trichloroethylene (TCE)	Chloroform	Toluene	4-Isopropyltoluene	Carbon Tetrachloride	Freon 113
Units>>		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Regulatory Thresholds								
Existing Commercial/Industrial Screening Level[1]		2.1	3.0	0.5	1,300	NA	0.29	130,000
Sample ID	Date Collected	Analytical Results						
SV-12-6' (10 PV)	6/23/2015	**0.563**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**25.2J**
SV-12-6'	6/22/2015	**0.527**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**23.2J**
SV-12-20'	6/22/2015	**0.807**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**40.6J**
SV-12-39'	6/22/2015	**0.563**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**34.8J**
SV-13-15.5' (1 PV)	6/22/2015	**0.290**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**13.8**
SV-13-15.5' (3 PV)	6/22/2015	**0.289**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**13.1**
SV-13-15.5' (10 PV)	6/22/2015	**0.291**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**13.8**
SV-13-23.5'	6/22/2015	**0.295**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**14.7**
SV-13-35.5' (1 PV)	6/22/2015	**0.219**	ND<0.008	**0.353**	ND<0.008	ND<0.008	ND<0.008	**32.3J**
SV-13-35.5' (3 PV)	6/22/2015	**0.209**	ND<0.008	**0.345**	ND<0.008	ND<0.008	ND<0.008	**31.8J**
SV-13-35.5' (10 PV)	6/22/2015	**0.207**	ND<0.008	**0.334**	ND<0.008	ND<0.008	ND<0.008	**29.8J**
SV-14-7'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**1.27**
SV-14-16'	6/22/2015	**0.264**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**1.17**
SV-14-31'	6/22/2015	**0.283**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.063**	**2.85**
SV-15-8'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**3.73**
SV-15-20'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**4.02**
SV-15-33'	6/22/2015	ND<0.008	ND<0.008	ND<0.008	**0.766**	ND<0.008	ND<0.008	**10.2**

Definitions:

ug/L microgram per liter

ND<0.008 Not detected at concentrations above the listed laboratory reporting limit (e.g., 0.008 ug/L)

NA Note 3 screening levels do not exist for this compound

PV Purge volumes; samples collected with 1, 3, or 10 purge volumes as indicated for purge testing [DTSC *et al.* , 2012]

0.272 Bold type indicates a detection above laboratory reporting limits

25.2J "J" indicates an estimated concentration; concentration exceeded the calibration range of the analyte

Notes:

Only compounds detected in at least one sample collected from the 100-Acre Parcel are shown in this table

[1] Cal-EPA DTSC Note 3 screening levels for ambient air converted to soil gas screening levels by dividing by the appropriate attenuation factor for existing commercial/industrial development (0.001 [DTSC, 2011])

0.272	Green indicates a detection less than or equal to residential screening levels
1.42	Orange indicates a detection greater than residential but less than or equal to commercial/industrial screening levels
None Detected	Red indicates a detection greater than commercial/industrial screening levels

Samples in two locations had detections of analytes that were above residential but below the commerical/industrial screening levels (SV-12, and SV-13); However, these locations are in areas planned for commercial use.

No compounds were detected at concentrations greater than commercial/industrial screening levels

Table 4-1c
Soil Gas VOC Analytical Results
Anticipated Commercial Land Use Areas - Future Construction
(June 2015)

Geosyntec consultants

	Analyte>>	Tetrachloroethylene (PCE)	Trichloroethylene (TCE)	Chloroform	Toluene	4-Isopropyltoluene	Carbon Tetrachloride	Freon 113
	Units>>	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Regulatory Thresholds								
Future Commercial/Industrial Screening Level[1]		4.2	6.0	1.1	2,600	NA	0.58	260,000
Sample ID	Date Collected	Analytical Results						
SV-16-10.5'	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.325**
SV-16-10.5' REP	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.342**
SV-16-15'	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.266**
SV-17-7.5'	6/23/2015	**0.282**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**9.77**
SV-17-15.5'	6/23/2015	**0.144**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**22.9J**
SV-18-16.5'	6/23/2015	**0.067**	**0.226**	ND<0.008	**0.299**	**0.319**	ND<0.008	**0.825**
SV-18-20.5'	6/23/2015	**0.067**	**0.223**	ND<0.008	**0.345**	**0.352**	ND<0.008	**0.471**
SV-18-38'	6/23/2015	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-19-5'	6/23/2015	**0.155**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-19-11'	6/23/2015	**0.306**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-19-11' REP	6/23/2015	**0.305**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-20-5'	6/23/2015	**0.134**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-20-14'	6/23/2015	**0.300**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.008	ND<0.040
SV-20-35'	6/23/2015	**0.411**	**1.42**	ND<0.008	ND<0.008	ND<0.008	ND<0.008	**0.099**

Definitions:

ug/L microgram per liter

ND<0.008 Not detected at concentrations above the listed laboratory reporting limit (e.g., 0.008 ug/L)

NA Note 3 screening levels do not exist for this compound

REP Replicate - the gas sample collected from a soil gas probe was analyzed a second time by the same equipment to compare results

0.272 Bold type indicates a detection above laboratory reporting limits

22.9J "J" indicates an estimated concentration; concentration exceeded the calibration range of the analyte

Notes:

Only compounds detected in at least one sample collected from the 100-Acre Parcel are shown in this table

[1] Cal-EPA DTSC Note 3 screening levels for ambient air converted to soil gas screening levels by dividing by the appropriate attenuation factor for future commercial/industrial development (0.0005 [DTSC, 2011])

0.272	Green indicates a detection less than or equal to residential screening levels
1.42	Orange indicates a detection greater than residential but less than or equal to commercial/industrial screening levels
None Detected	Red indicates a detection greater than commercial/industrial screening levels

Samples in one location had detections of analytes that were above residential but below the commerical/industrial screening levels (SV-20); However, this location is in an area planned for commercial use.

No compounds were detected at concentrations greater than commercial/industrial screening levels

Table 4-2
Soil Gas Methane Analytical Results
(September/October 2015)

Geosyntec consultants

	Analyte>>	Methane
	Units>>	%
Regulatory Threshold		
	10% of LEL[1]	0.5
Sample ID	Date Collected	Analytical Results
SV-1-5'	9/29/2015	ND<0.01
SV-1-14'	9/29/2015	ND<0.01
SV-2-6'	9/29/2015	ND<0.01
SV-2-14'	9/29/2015	ND<0.01
SV-3-5'	9/29/2015	ND<0.01
SV-3-13.5'	9/29/2015	ND<0.01
SV-4-12'	9/29/2015	ND<0.01
SV-4-22.5'	9/29/2015	ND<0.01
SV-5-6'	9/29/2015	ND<0.01
SV-5-15'	9/29/2015	ND<0.01
SV-5-15' REP	9/29/2015	ND<0.01
SV-6-8'	9/29/2015	ND<0.01
SV-6-12.5'	9/29/2015	ND<0.01
SV-7-7'	9/29/2015	ND<0.01
SV-7-14'	9/29/2015	ND<0.01
SV-8-6.5'	9/29/2015	ND<0.01
SV-8-20'	9/29/2015	ND<0.01
SV-9-9'	9/29/2015	ND<0.01
SV-9-9' REP	9/29/2015	ND<0.01
SV-9-23'	9/29/2015	ND<0.01
SV-10-5'	9/30/2015	ND<0.01
SV-10-10.5'	9/30/2015	ND<0.01
SV-11-8'	9/30/2015	ND<0.01
SV-11-8' REP	9/30/2015	ND<0.01
SV-11-17'	9/30/2015	ND<0.01
SV-12-6'	9/30/2015	ND<0.01
SV-12-20'	9/30/2015	ND<0.01
SV-13-15.5'	9/30/2015	ND<0.01
SV-13-23.5'	9/30/2015	ND<0.01
SV-14-7'	9/30/2015	ND<0.01
SV-14-16'	9/30/2015	ND<0.01
SV-15-8'	9/30/2015	ND<0.01
SV-15-20'	9/30/2015	ND<0.01
SV-15-20' REP	9/30/2015	ND<0.01
SV-16-10.5'	9/30/2015	ND<0.01
SV-16-15'	9/30/2015	ND<0.01
SV-17-7.5'	9/30/2015	ND<0.01
SV-17-15.5'	9/30/2015	ND<0.01
SV-18-16.5'	10/1/2015	No Flow
SV-18-20.5'	10/1/2015	No Flow
SV-19-5'	10/1/2015	ND<0.01
SV-19-5' REP	10/1/2015	ND<0.01
SV-19-11'	10/1/2015	ND<0.01
SV-20-5'	9/30/2015	ND<0.01
SV-20-14'	9/30/2015	ND<0.01

Definitions:

% Percent of methane in soil gas by volume

ND<0.01 Not detected at concentrations above the listed laboratory reporting limit (e.g., 0.01 %)

REP Replicate - the gas sample collected from a soil gas probe was analyzed a second time by the same equipment to compare results

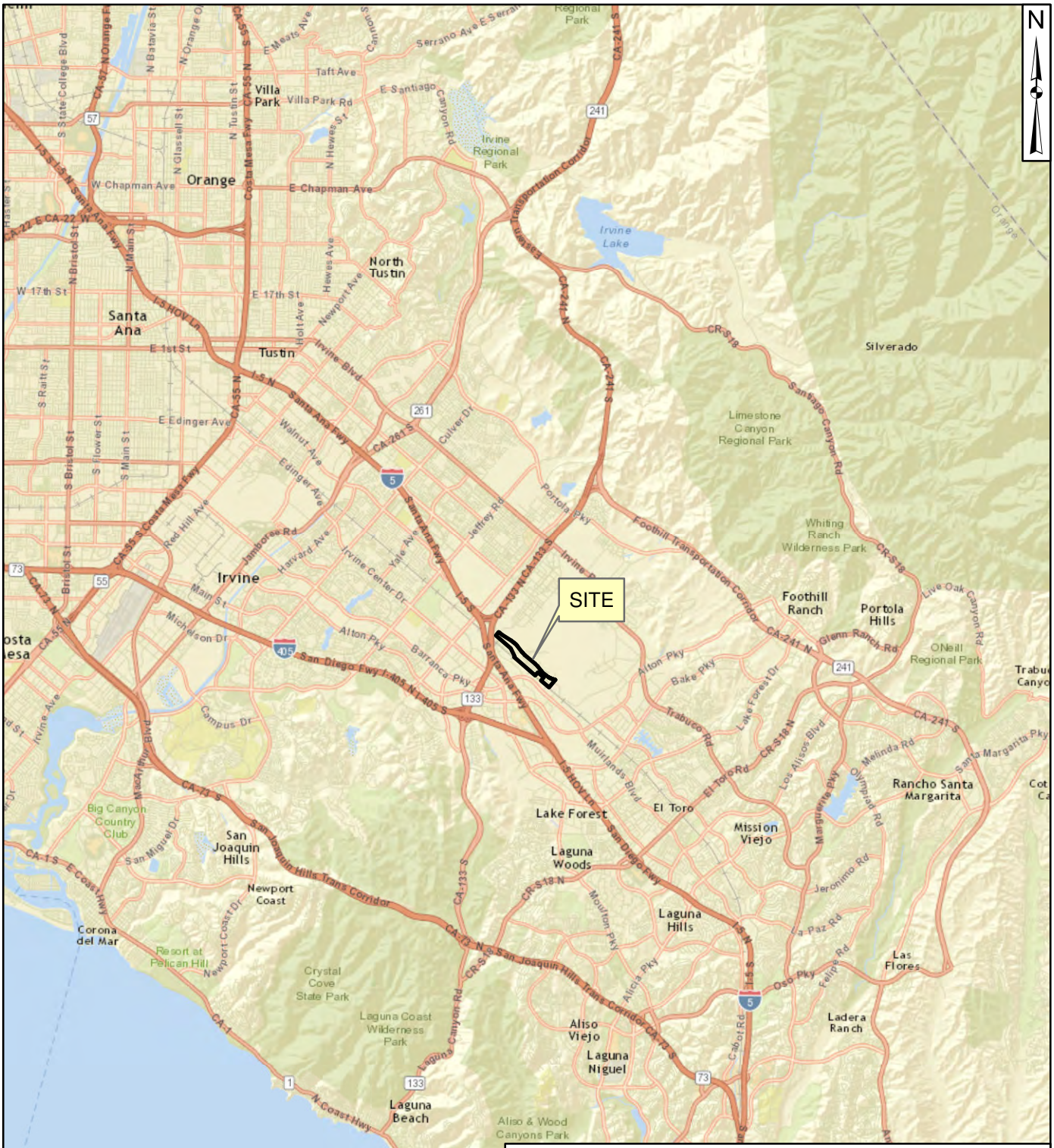
Notes:

[1] 10% of the Lower Explosive Limit (LEL) is a common is a commonly utilized action level above which mitigation measures are recommended [DTSC, 2005]

The LEL (5% for methane) represents the lower limit of ignitablility (i.e., concentrations below the LEL are too lean to burn)

There were no detections of methane in soil gas samples collected from the Site

FIGURES



Site Location Map

100-ACRE PARCEL
FORMER MCAS EL TORO
ORANGE COUNTY, CALIFORNIA

2 1 0 2 4 Miles

Geosyntec consultants

Figure 1-1

Project No: HR1462 | November 2015

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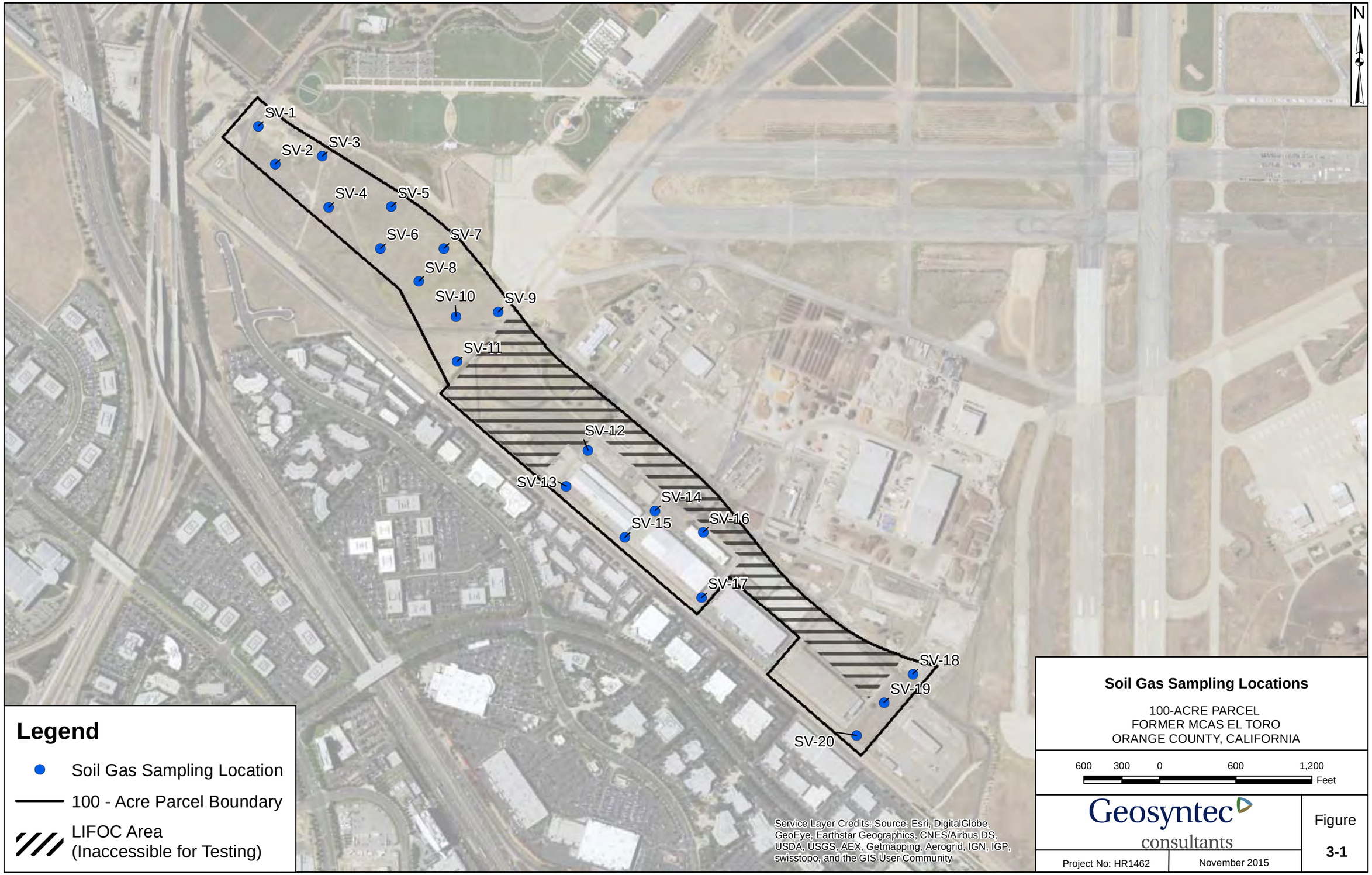

Soil Gas Sampling Locations

100-ACRE PARCEL
FORMER MCAS EL TORO
ORANGE COUNTY, CALIFORNIA

Geosyntec consultants

Figure 3-1

Project No: HR1462

November 2015

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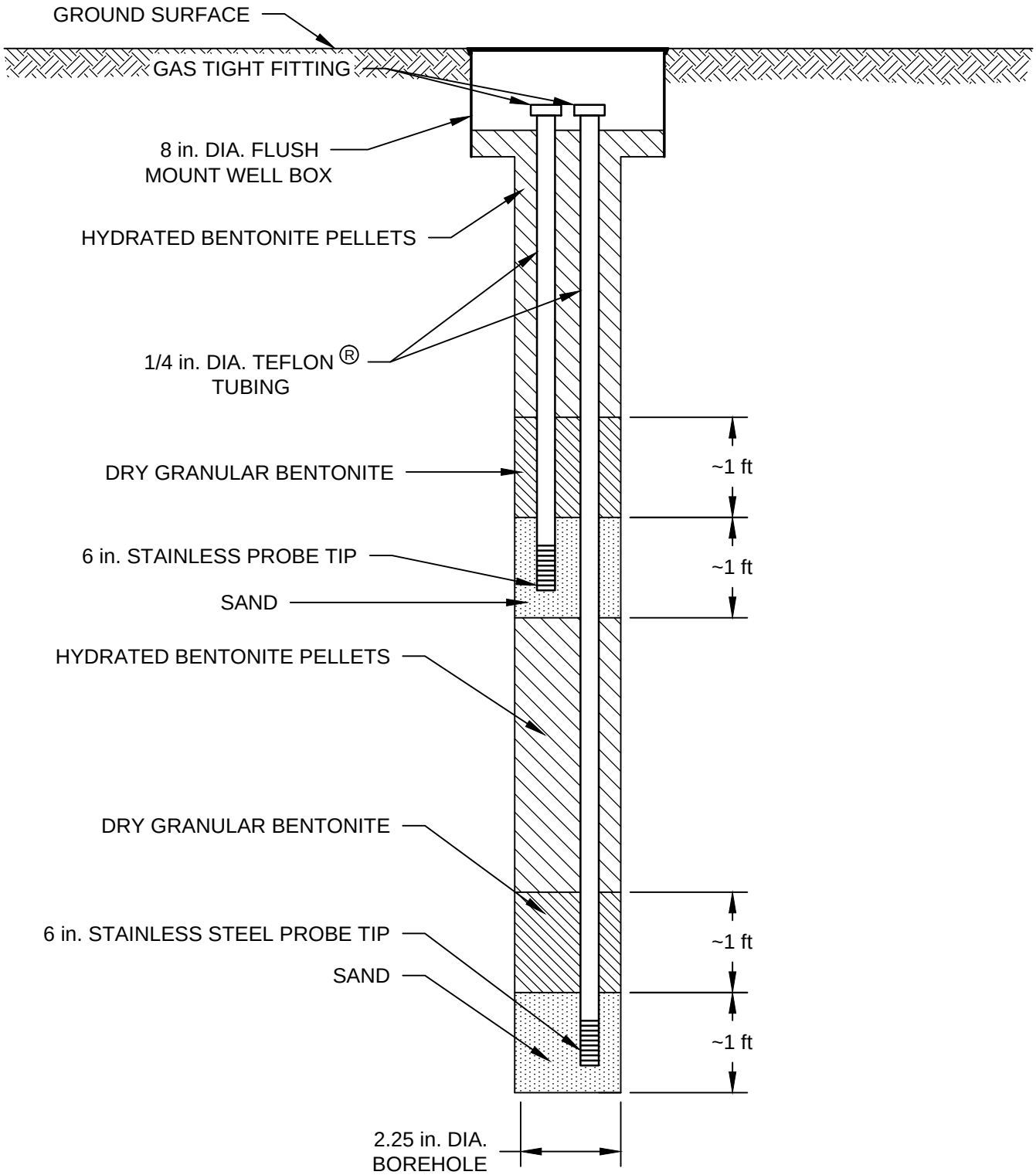

NOT TO SCALE

TYPICAL NESTED TEMPORARY SOIL GAS PROBE CONSTRUCTION
100-ACRE PARCEL
FORMER MCAS EL TORO
ORANGE COUNTY, CALIFORNIA

NOTE: SOME PROBE LOCATIONS HAD AN ADDITIONAL COMPLETION DEPTH.

SOURCE: FIG. 1 OF ADVISORY ACTIVE SOIL GAS INVESTIGATIONS [DTSC et al., 2012].

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Figure 3-2

Project No: HR1462 | November 2015

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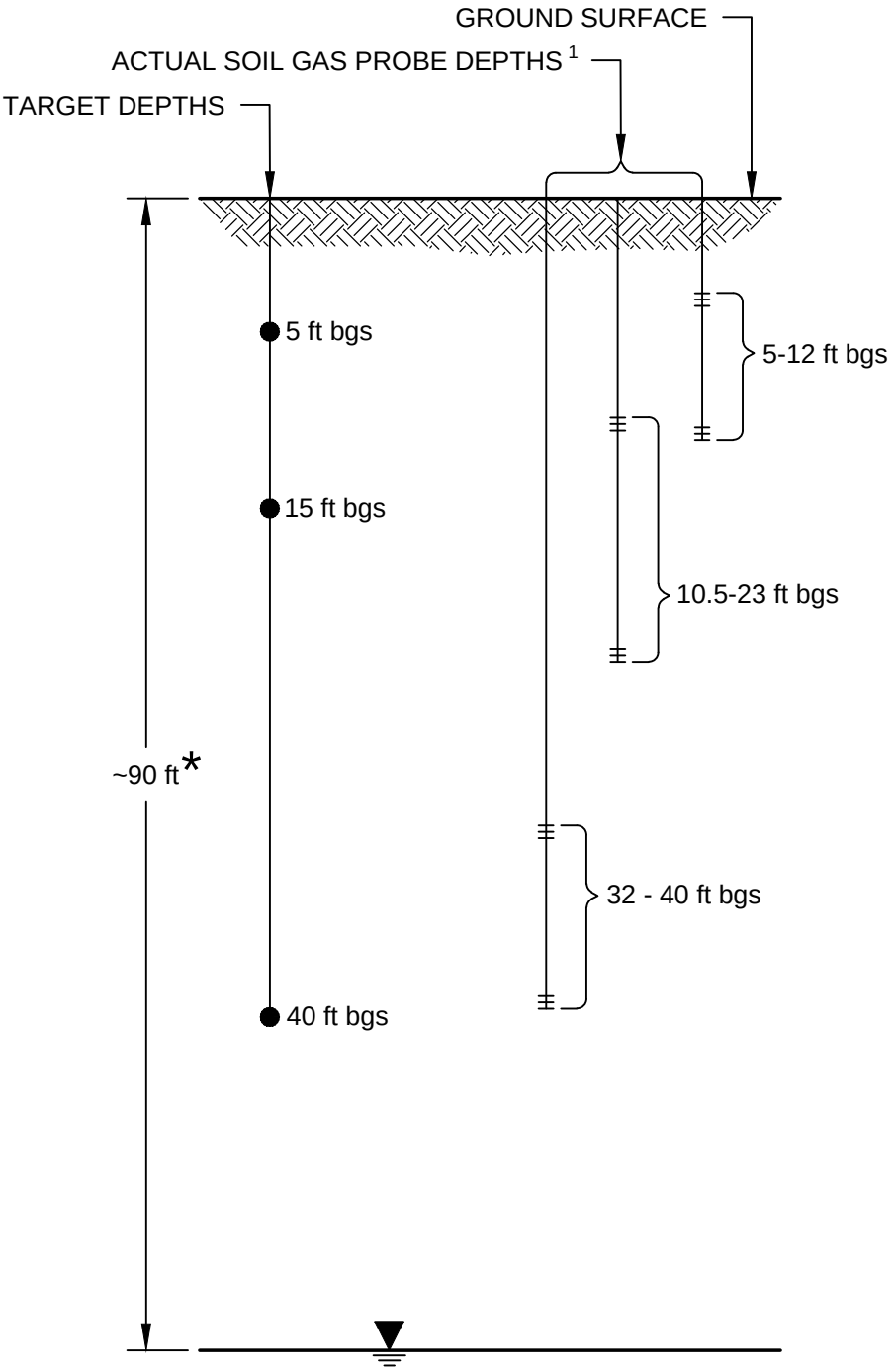
SOIL GAS SAMPLING



LEGEND

▼	GROUNDWATER TABLE
ft bgs	FEET BELOW GROUND SURFACE
*	APPROXIMATE DEPTH TO STATIC WATER LEVEL [ENVIRO COMPLIANCE SOLUTIONS, 2014]

NOTE:

1. SOME PROBE LOCATIONS AND/OR DEPTHS WERE OMITTED AND/OR MODIFIED BASED ON FIELD CONDITIONS.

NOT TO SCALE

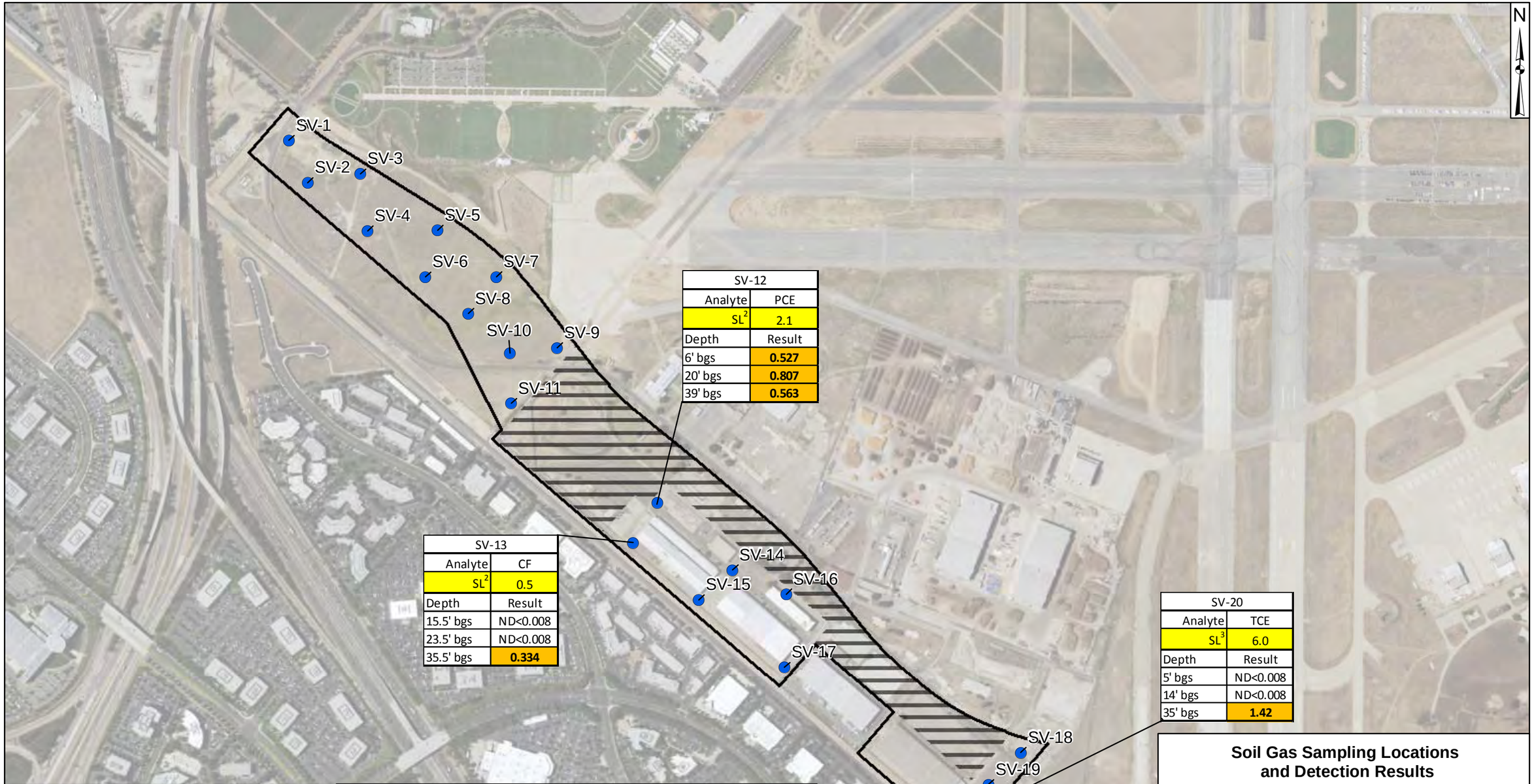
SAMPLING DEPTH SCHEMATIC
100-ACRE PARCEL
FORMER MCAS EL TORO
ORANGE COUNTY, CALIFORNIA

Geosyntec consultants

Figure 3-3

Project No: HR1462 | November 2015

N:\CACADD\OXY LA VERNE\OXY LA VERNE-HR1408\1480F002.dwg 11/06/15 14:33 sberdy



SV-12	
Analyte	PCE
SL[2]	2.1
Depth	Result
6' bgs	**0.527**
20' bgs	**0.807**
39' bgs	**0.563**

SV-13	
Analyte	CF
SL[2]	0.5
Depth	Result
15.5' bgs	ND<0.008
23.5' bgs	ND<0.008
35.5' bgs	**0.334**

SV-20	
Analyte	TCE
SL[3]	6.0
Depth	Result
5' bgs	ND<0.008
14' bgs	ND<0.008
35' bgs	**1.42**

Legend

- Soil Gas Sampling Location
- 100 - Acre Parcel Boundary
- LIFOC Area (Inaccessible for Testing)

Notes:
Only detections at concentrations greater than residential screening levels are shown;
Note, detections are in areas planned for commercial use.
Results reported are in micrograms per liter (ug/L)
bgs: Below ground surface
PCE:Tetrachloroethylene
TCE: Trichloroethylene
CF: Chloroform (Trichloromethane)
ND<0.008: Not detected at concentrations above the listed laboratory reporting limit (e.g., 0.008 ug/L)
SL[2]: California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) "Note 3" screening levels for ambient air converted to soil gas screening levels by dividing by the appropriate attenuation factor for existing commercial/industrial development (0.001 [DTSC, 2011])
SL[3]: Cal-EPA DTSC "Note 3" screening levels for ambient air converted to soil gas screening levels by dividing by the appropriate attenuation factor for future commercial/industrial development (0.0005 [DTSC, 2011])
1.42 Orange indicates a detection greater than residential but less than or equal to commercial/industrial screening levels
No compounds were detected at concentrations greater than commercial/industrial screening levels

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Soil Gas Sampling Locations and Detection Results

100-ACRE PARCEL
FORMER MCAS EL TORO
ORANGE COUNTY, CALIFORNIA

600 300 0 600 1,200 Feet

Geosyntec consultants

Figure 4-1

Project No: HR1462 | November 2015

S:\GIS\HR1462\Projects\2015\100Acre\100ACRE_SoilVapor.mxd lv 11/6/2015

APPENDIX A

BORING LOGS

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-1**		**SHEET 1 OF 2**
START DRILL DATE	Jun 15, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 15, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	SANDY Lean CLAY (CL), light brown, dry, fine to coarse, (60,30,10), low plasticity, little silt and few medium angular gravel											Hand auger 5'.
	No gravel (65,35,0)											
	Grading to moist											
5												@5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10	Grading to tan Decreasing sand (75,25,0)											
	SILTY SAND (SM), light brown, dry, fine, (40,60,0), non-plastic											
	Grading to tan, decreasing silt with few gravel, (15,80,5)											@14 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
15	**Lean CLAY (CL)**, brown, moist, (90,10,0), plastic, few fine sand											
	Increasing sand (80,20,0)											
20												
	SILTY SAND (SM), brown, dry to moist, fine, (25,75,0), non plastic											
	Lean CLAY (CL), brown, moist, (90,10,0), plastic, few calcite veins and fine sand											
25												
	4" Seam **SILTY SAND (SM)**, brown, dry to moist, fine, (25,75,0)											
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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2100 Main St
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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-1
START DRILL DATE Jun 15, 15
FINISH DRILL DATE Jun 15, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
35	Grading to **SILT (ML)**, tan, dry-moist, (90,10,0), non to low plastic, with few clay and fine sand											
40	**Well-Graded SAND with SILT (SW)**, tan, dry to moist, fine to coarse, (10,90,0)											
	Clay (CL), with few fine sand, brown, moist, (90,10,0), plastic											@40 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	@41.5 ft 2" Seam **Poorly-Graded SAND (SP)**, trace silt, tan, dry to moist, fine, (3,97,0)											
	Grading to **SILT (ML)**, tan, dry-moist, (90,10,0), non to low plastic, with little clay and few fine sand										0930	
45	43.5 ft TD											
50												
55												
60												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas
NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-2**		**SHEET 1 OF 1**
START DRILL DATE	Jun 15, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 15, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	SILTY SAND (SM), brown, dry, fine to medium, (25,72,3), non-plastic, trace sandstone fragments and vegetation Grading to coarse sand										1020	Hand auger 5'.
5	**CLAYEY SAND (SC)**, dark brown, moist, fine to coarse, (35,65,0), plastic, few calcite veins											
	SANDY SILT (ML), tan-brown, fine to medium, moist, (60,40,0)											@6 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Well-Graded SAND with SILT (SW-SM), light tan gray with orange, dry to moist, fine to medium, (10,90,0), non-plastic										1037	
10	Trace gravel, medium, angular (10,85,5)											
15	**Lean CLAY (CL)**, dark brown, moist, (90,10,0), plastic, few silt and fine sand										1045	@14 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	SANDY SILT (ML), brown, moist, fine, (60,40,0), non-plastic 15 ft TD											
20												
25												
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-3**	**SHEET**	**1 OF 1**
START DRILL DATE	Jun 15, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 15, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILTY SAND (SM), brown, dry, fine to medium, (35,65,0), non-plastic, trace vegetation										1115	Hand auger 5'
	Grading to **SANDY SILT (ML)**, light brown, moist, fine to medium, (75,25,0), non-plastic, trace calcite and no vegetation											
5	Grading to **SILTY SAND (SM)**, light brown, moist, fine to medium, (40,60,0), non-plastic, no calcite											@5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	SILTY SAND (ML), tan, dry, fine, (80,20,0), non-plastic											
10	Grading to **Poorly-Graded SAND with SILT (SP-SM)**, tan to light brown, dry, fine, (10,90,0)											
	Few angular gravel											
	SILT (ML), brown, moist, (90,10,0), low plastic, trace fine sand and few clay											@13.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
15												
20	20 ft TD										1150	
25												
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-4**		**SHEET 1 OF 2**
START DRILL DATE	Jun 15, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 15, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Wood DEBRIS, mixed with soil										07:28	Hand auger to 5'
	Grading to **SILTY SAND (SM)**, drown, dry, fine to medium, (40,60,0), non-plastic, few vegetation											
5	Grading to **SANDY SILT (ML)**, brown, dry, fine, (70,30,0), non-low plastic, trace calcite veins										07:45	
	Grading to **SILT with SAND (ML)**, tan, dry, fine, (85,15,0), low plastic, few clay											
10	Increasing fine sand											
	SILTY SAND (SM), light brown, dry, fine to medium, (15,85,0), non-plastic											@12 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
15	**Lean CLAY (CL)**, dark brown, moist, (100,0,0), plastic, little silt											
20												
	@22.5 ft 3" seam **Poorly-Graded SAND with SILT (SP-SM)**, light brown, moist, medium, (10,90,0)											@22.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
25	**SILT (ML)**, brown, moist, (90,10,0), low plastic, few fine sand and clay											
	Lean CLAY (CL), SAA											
	SILT (ML), SAA											
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-4**		**SHEET 2 OF 2**
START DRILL DATE	Jun 15, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 15, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Well-Graded SAND with SILT (SW-SM), tan-brown, moist, fine to coarse, (10,90,0), non-plastic											
	Lean CLAY (CL), SAA											
35	**SILT (ML)**, SAA											@36.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	Lean CLAY (CL), SAA											
40	40 ft TD											
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-5 **SHEET** 1 **OF** 2
START DRILL DATE Jun 15, 15
FINISH DRILL DATE Jun 15, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SANDY SILT (ML), brown, dry, fine to coarse, (60,40,0), non-plastic, with few vegetation										12:55	Hand auger to 5'
5	Grading to **SILT (ML)**, brown, moist, (90,10,0), non-low plastic, with few sand and clay and calcite veins Grading to **SANDY SILT (ML)**, brown, moist, fine to coarse, (70,30,0), non-plastic										13:11	@6 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10	**SILTY SAND (SM)**, tan, dry, fine, (30,70,0), non-plastic											
15	**Lean CLAY with SAND (CL)**, dark brown, moist, fine, (85,15,0), plastic, few silt											@15 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
20	@18.5 ft 2" seam **Poorly-Graded SAND (SP)**, tan, moist, fine to medium, (3,97,0)											
25	@23.5 ft 2" seam **Poorly-Graded SAND (SP)**, tan, moist, fine, (3,97,0)											
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas
NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-5 **SHEET** 2 **OF** 2
START DRILL DATE Jun 15, 15
FINISH DRILL DATE Jun 15, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Grading to **Lean CLAY (CL)**, dark brown, moist, (100,0,0), plastic, little silt											
	SILTY SAND (SM), brown, moist, fine, (25,75,0), non-plastic											@34 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
35	**SILT with SAND (ML)**, brown, moist, fine, (80,20,0), low-plastic, little clay											
40	40 ft TD										13:32	
45												
50												
55												
60												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas

NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-6**		**SHEET 1 OF 1**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILT with GRAVEL (ML), brown, dry, fine to coarse, (75,10,15), non-plastic, sub rounded to angular gravel, few vegetation and sand										08:55	Hand auger to 5'
	SILT with SAND (ML), brown, dry, fine, (85,15,0), non-plastic, trace clay and calcite veins										09:06	
5												
	Grading to **SILTY SAND (SM)**, light brown, dry, fine to medium, (40,60,0), non-plastic											
	Grading to **Well-Graded SAND with SILT (SW-SM)**, tan, dry, fine to medium, (10,90,0)											@8 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10												
	Lean CLAY (CL), dark brown, moist, (90,10,0), plastic, few fine sand and silt											
	Poorly-Graded SAND with SILT (SP-SM), light brown, moist, fine, (10,90,0)											@12.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	Grading to **Lean CLAY (CL)**, SAA											
15												
	16 ft TD										09:18	
20												
25												
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-7**		**SHEET 1 OF 1**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	GRAVELLY SILT (ML), brown, dry, fine to coarse, (55,15,30), non-plastic, few vegetation, little sand @1 ft **SANDY SILT (ML)**, (55,45,0)										14:33	Hand auger to 5'
	SILT with SAND, brown, moist, fine, (75,25,0), non-plastic											
5	@5 ft Decreasing sand (85,15,0), low-plastic, few clay and calcite veins											
	Grading to light brown, increasing sand (75,25,0), low-plastic										14:45	@7 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10	Increasing clay, medium-plastic											
	No clay, non-plastic											
15	**Lean CLAY (CL)**, dark brown, moist, (90,10,0), medium-plastic, few fine sand and silt										14:50	@14 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	16 ft TD											
20												
25												
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-8**		**SHEET 1 OF 1**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILT (ML), brown, dry, (90,10,0), low-medium plastic, few fine sand and little clay and vegetation										09:40	Hand auger to 5'
	Decreasing clay and vegetation, low-plastic											
5											09:57	
	SILTY SAND (SM), tan, dry, fine to medium, (45,65,0), non-plastic											@6.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Grading to **SILT (ML)**, brown, moist, (90,10,0), medium-plastic, few fine sand and little silt											
10	@10 ft 3" seam **SILTY SAND (SM)**, light brown, moist, fine, (20,80,0), non-plastic											
	SILTY SAND (SM), dark brown, moist, fine to medium, (45,55,0), non-plastic											
	Lean CLAY (CL), dark brown, moist, (100,0,0), medium-plastic, little silt											
15	Little fine sand (85,15,0)											
	Decreasing sand (100,0,0)										10:02	
	Little fine sand (85,15,0)											
20	**SILTY SAND (SM)**, mottled brown, tan, and gray blue, moist, fine to coarse, (15,85,0), non-plastic											@19.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	20 ft TD											
25												
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-9 **SHEET** 1 **OF** 2
START DRILL DATE Jun 16, 15
FINISH DRILL DATE Jun 16, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILT (ML), brown, moist, (90,10,0), non-low plastic, few fine sand and vegetation										15:18	
5											15:32	
	SILTY SAND (SM), tan, moist, fine, (40,60,0), non-plastic											
10												@9 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Lean CLAY (CL), dark brown, moist, (100,0,0), medium-plastic, some silt											
15	Grading to **SILT with SAND (ML)**, dark brown, moist, fine, (85,15,0), low-plastic, little clay @16ft increasing to some clay and medium-plastic										15:40	
20												
	SILTY SAND (SM), light brown, moist, fine, (30,70,0), non-plastic											
	Grading to **Lean CLAY (CL)**, SAA											@23 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
25												
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas
NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-9**		**SHEET 2 OF 2**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	SILTY SAND (SM), light brown, moist, fine to medium, (40,60,0), non-plastic											
35	decreasing silt (20,80,0)											
	Increasing silt and trace gravel (42,55,3)											@37 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	Grading to **Lean CLAY with SAND (CL)**, olive-gray, moist, fine, (80,20,0), low plastic, some silt											
40	40 ft TD @ 16:02										16:02	
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-10**		**SHEET 1 OF 1**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILT (ML), brown, moist, (90,10,0), non-low plastic, few fine sand and vegetation										10:33	Hand auger to 5'
5	**SILT with SAND (ML)**, light brown, dry, fine to coarse, (75,20,5), non-plastic, few sub angular gravel										10:47	@5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Grading to brown, moist, (80,20,0), non-plastic											
10	Grading to **Lean CLAY (CL)**, dark brown, moist, (95,5,0), medium-plastic, few fine sand and silt											
15	increasing silt, decreasing clay, low plastic											
	Poorly-Graded SAND with SILT (SP-SM), light brown, moist, fine, (10,90,0)										10:52	@15.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	16 ft TD											
20												
25												
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-11**	**SHEET**	**1 OF 2**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	SILT (ML), brown, moist, (90,10,0), non-low plastic, few fine sand and vegetation										11:16	Hand auger to 3', refusal at 3'. Direct push @ 3'.
	Poorly-Graded SAND with SILT (SP-SM), light brown, moist, fine to medium, (10,90,0)										11:26	
	Grading to **SANDY SILT with GRAVEL (ML)**, tan, moist, fine to medium, (60,25,15), non-plastic											
	SILTY SAND (SM), tan, moist, fine to medium, (15,85,0), non-plastic											
5	**SILT (ML)**, brown, moist, (90,10,0), low-plastic, few fine sand and little clay											
	Lean CLAY (CL), dark brown, moist, (100,0,0), low plastic, some silt											
	SILT (ML), brown, moist, (90,10,0), low-plastic, little clay and few fine sand											@8 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10												
	@12.5 ft 3" seam **SILTY SAND (SM)**, light brown, moist, fine, (15,85,0), non-plastic											
15												
	@15.5 ft 3" seam **SILTY SAND (SM)**, SAA.											
	@17.5 ft 3" seam **SILTY SAND (SM)**, SAA.											@17 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
	Grading to **SILT with SAND**, light brown, moist, fine, (75,25,0), low-plastic, little clay											
20	Grading to **SILTY SAND (SM)**, brown, moist, fine to medium, (45,55,0), non-plastic Decreasing silt (15,85,0)											
	Lean CLAY (CL), dark brown, moist, (100,0,0), low plastic, some silt											
	@23.5 ft 3" seam **SILTY SAND (SM)**, light brown, moist, fine, (15,85,0), non-plastic											
25												
	@25.5 ft 2" seam **SILTY SAND (SM)**, SAA.											
	Increasing sand to **Lean CLAY with SAND (CL)**, (80,20,0)											
	SILT with SAND (ML), brown, moist, fine, (75,25,0), low-plastic, little clay											
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-11 **SHEET** 2 **OF** 2
START DRILL DATE Jun 16, 15
FINISH DRILL DATE Jun 16, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Grading to **SILTY SAND (SM)**, light brown, moist, fine to medium, (45,55,0), non-plastic											@32 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	SILT with SAND (ML), SAA											
	Decreasing sand (85,15,0)											
35	wet										11:41	
	Lean CLAY (CL), dark brown, moist, (90,10,0), medium-plastic, few fine sand											
40											11:45	
	Lost 3 outer rods in hole during extraction, located from 29-41 bgs. Pushed top of rods to approximately 33 ft bgs and backfilled with bentonite prior to installing probes. Recovered soil sample to 41' bgs.											
45	45 ft TD										13:17	
50												
55												
60												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas
NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-12**	**SHEET**	**1 OF 2**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	3.5" A/C on Aggregate Base											Core A/C. Hand auger to 5'.
	Lean CLAY (CL), dark brown with orange and olive-gray, moist, (100,0,0), medium plastic @2 ft few fine-coarse sand and some silt (90,10,0), low-plastic											
5												
	SILTY SAND (SM), light brown, moist, fine, (40,60,0), non-plastic											@6 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Lean CLAY (CL), dark brown, moist, (90,10,0), low plastic, few fine sand and some silt, trace calcite veins											
10												
	Grading to **SILT with SAND (ML)**, brown, moist, fine, (80,20,0), low plastic, little clay											
	SILTY SAND (SM), SAA.											
	Lean CLAY (CL), SAA, no calcite.											
15												
	SILTY SAND (SM), SAA.											
	@17.5 ft 2" seam **Lean CLAY**, dark brown, moist, (100,0,0), medium-plastic, little silt											
20	**Poorly-Graded SAND with SILT (SP-SM)**, light brown, moist, fine, (5,90,5), few angular fine gravel											@20 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
	Grading to tan											
	SANDY SILT (SM), brown, moist, fine, (40,55,5), non-plastic, few angular fine gravel											
25												
	Increasing gravel to **SANDY SILT with GRAVEL (SM)**, (40,45,15)											
	SILT with SAND (ML), brown, moist, coarse, (80,15,5), few fine sub angular gravel											
	SANDY Lean CLAY (CL), mottled, moist, fine											
30												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-12**		**SHEET 2 OF 2**
START DRILL DATE	Jun 16, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 16, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	to coarse, (60,35,5), non-low plastic, few fine gravel											
	SILTY SAND with GRAVEL (SM), brown, moist, fine to coarse, (40,40,20), non-plastic											
	Poorly-Graded SAND with SILT (SP-SM), light brown to tan, moist, fine to medium, (10,87,3), trace fine gravel											
35												
40	**SILT with SAND (ML)**, brown, moist, fine, (85,15,0), low-plastic, little clay										15:03	@39 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	40 ft TD											
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-13
START DRILL DATE Jun 17, 15
FINISH DRILL DATE Jun 17, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	6" A/C on Aggregate Base										07:29	Core A/C. Hand auger to 5'.
	Grading to **Lean CLAY with SAND (CL)**, dark brown with orange, moist, fine to coarse, (75,15,10), medium plastic, few silt Decreasing gravel (85,15,0)											
5											07:52	
	SILT with SAND (ML), dark brown, moist, fine to medium, (80,20,0), medium-plastic, some clay											
10	Grading to **SANDY SILT (ML)**, brown, moist, fine, (70,30,0), non-low plastic, few clay											
	@13 ft 3" seam **Well-Graded SAND (SW)**, tan, moist, fine to coarse (0,100,0)											
15	**SILTY SAND (SM)**, light brown, moist, fine, (35,65,0), non-plastic											@15.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Grading to **SILT (ML)**, brown, moist, (90,10,0), medium plastic, few fine sand and calcite viens, some clay											
20	Grading to **SILTY SAND (SM)**, light brown, moist, fine (30,70,0), non-low plastic, little clay											
	Decreasing fines (15,85,0), non-plastic											@23.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
25	Grading to tan, few fine angular gravel (15,80,5)											
	Grading to brown, increasing silt, (40,60,0), non-plastic											
30	**SANDY SILT (ML)**, brown, moist, fine, (65,30,5), non-plastic, few fine angular gravel										08:11	

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas
NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-13**		**SHEET 2 OF 2**
START DRILL DATE	Jun 17, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 17, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	Lean CLAY with SAND (CL), dark brown with black streaks, moist, fine, (80,20,0), low plastic, some silt											
	SILTY SAND (SM), brown, moist, fine, (45,55,0), non-plastic @33.75 ft 1" seam **Lean CLAY with SAND (CL)**, SAA Grading to tan, decreasing silt (15,85,0)											
35												@35.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	SANDY SILT (ML), brown, moist, fine, (70,30,0), non-plastic @36.75 ft 2" seam **Poorly-Graded SAND (SP)**, tan, moist, fine, (3,97,0)											
	@39 ft 2" seam **Poorly-Graded SAND (SP)**, SAA.											
40	**Lean CLAY (CL)**, dark brown, moist, (95,5,0), medium plastic, some silt										08:22	
	40 ft TD											
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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Fax: (714) 969-0820

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-14 **SHEET** 1 **OF** 2
START DRILL DATE Jun 17, 15
FINISH DRILL DATE Jun 17, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	3.5" A/C on Aggregate Base										12:27	Core A/C Hand auger 5'
	Grading to **Lean CLAY with SAND (CL)**, dark brown to black, moist, fine to medium, (85,10,5), medium plastic, few subangular gravel										12:34	Petroleum odor @ 1 ft. No petroleum odor @ 2 ft.
	Grading to **SILT with SAND (ML)**, dark brown, moist, fine, (85,15,0), non-low plastic, little clay											
5											13:24	
	Poorly-Graded SAND with SILT (SP-SM), tan, moist, fine, (7,93,0)											@7 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10	**Lean CLAY (CL)**, dark brown, moist, (95,5,0), medium plastic, few fine sand and some some silt @11.75 ft 2" seam **SILTY SAND (SM)**, brown, moist, fine, (35,65,0), non-plastic											
	Grading to **SANDY SILT (ML)**, brown, moist, fine, (65,30,5), few angular gravel											
15	**SILTY SAND (SM)**, brown, moist, fine, (40,55,5), few angular gravel											@16 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
	Well-Graded SAND with SILT (SW-SM), tan mottled with olive, moist, fine, (5,80,15), with little angular gravel											
20	**SANDY SILT (ML)**, brown, moist, fine, (60,35,5), non-plastic, few gravel Grading to **SILT with SAND (ML)**, brown, moist, fine, (85,15,5), non-low plastic, few gravel and little clay											
	SILTY SAND (SM), brown, moist, fine, (40,55,5), few angular gravel Decreasing silt (15,80,5)											
25												
	Lean CLAY with SAND (CL), olive brown, moist, fine, (85,15,0), medium plastic, little silt @27.5 ft 1" seam **Poorly-Graded SAND (SP)**, tan, moist, medium, (3,92,5), few subrounded gravel @27.8 ft 1" seam **Poorly-Graded SAND (SP)**, SAA.											
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas

NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above. Sample from 1.5' bgs placed in sealed container. Tested with PID approx. 24 hr. later yielded non-detect.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-14**		**SHEET 2 OF 2**
START DRILL DATE	Jun 17, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 17, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	@ 29.5 ft Increasing sand (75,25,0)											
	Grading to **SANDY SILT (ML)**, brown, moist, fine, (60,40,0), non-low plastic, little clay											@31 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface. Diesel odor at 32'.
	SILTY SAND (SM), tan-brown, moist, fine, (15,85,0), few clay											
	SANDY SILT (ML), brown, moist, fine to coarse, (65,35,0), non-low plastic, little clay											
	@33 ft Grading to **SILT with SAND (ML)**, dark brown, wet, fine, (80,20,0), low plastic, little clay											
35	@34 ft Grading to moist and dark brown with olive											
	@38.5 ft Decreasing sand to **SILT (ML)**, (90,10,0)											
40	@39.7 ft 1" seam **SILTY SAND (SM)**, light brown, moist, fine, (25,75,0), non-plastic										13:55	
	40 ft TD											
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above. Sample from 1.5' bgs placed in sealed container. Tested with PID approx. 24 hr. later yielded non-detect.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-15**	**SHEET**	**1 OF 2**
START DRILL DATE	Jun 17, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 17, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	3.5" A/C on Aggregate Base										10:00	Core A/C Hand auger to 5'
	Grading to **SANDY Lean CLAY with GRAVEL (CL)**, dark brown to black, moist, fine to medium, (60,20,20), medium plastic, few subangular gravel @2 ft Grading to **Lean CLAY with SAND (CL)**, dark brown, moist, fine, (80,20,0), medium plastic										10:03	
5	**SILT with SAND (ML)**, brown, moist, fine, (80,20,0), non-low plastic, little clay @6 ft no clay, non-plastic											
	@7.5 ft 2" seam **Well-Graded SAND with SILT (SW-SM)**, light brown, moist, fine to coarse, (10,90,0)											@8 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Grading to **SILTY SAND (SM)**, brown, moist, fine, (40,60,0), non-plastic											
10	**Lean CLAY (CL)**, dark brown, moist, (90,10,0), medium plastic, few sand											
	Grading to **SILT with SAND (ML)**, brown, moist, fine, (80,20,0), non-low plastic, little clay											
	Lean CLAY (CL), dark brown, moist, (90,10,0), medium plastic, few sand											
15											10:15	
	SILTY SAND (SM), brown, moist, fine, (40,60,0), non-plastic											
20	@19.5 ft Grading to (15,80,5).											@20 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
25	@25 ft Grading to (45,55,0), little clay, non-low plastic											
	Lean CLAY (CL), light brown, moist, (90,10,0), low plastic, few fine sand and some silt											
30	@29.5 ft 2" seam **SILTY SAND (SM)**, brown,											

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-15**	**SHEET**	**2 OF 2**
START DRILL DATE	Jun 17, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 17, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	moist, fine, (20,80,0), non-plastic											
	SILT with SAND (ML), brown, moist, fine, (85,15,0), non-low plastic, little clay											
	SILTY SAND, light brown, moist, fine to medium, grading from (15,85,0) to (40,60,0), non-plastic											@33 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape surface.
35	**Lean CLAY (CL)**, dark brown, moist, (100,0,0), medium plastic, few silt											
	SILT with SAND (ML), dark brown, moist, fine, (85,15,0), low-plastic, little clay											
40	**Lean CLAY (CL)**, SAA										10:28	Diesel odor @ 40' High driving resistance
	SILT with SAND (ML), SAA											
	Lean CLAY (CL), SAA											
	44 ft TD										10:38	
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-16
START DRILL DATE Jun 17, 15
FINISH DRILL DATE Jun 17, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	3.5" A/C on Aggregate Base										14:57	Core A/C Hand auger 5'
	Grading to **SANDY SILT (ML)**, dark brown to black, moist, fine to coarse, (70,30,0), low-plastic, little clay @2.5 ft grading to brown to dark brown											
5												
	@7 ft 3" seam **Poorly-Graded SAND with SILT (SP-SM)**, tan-light brown, moist, fine, (10,90,0)											
10												
	Trace to few subangular fine gravel Grading to **SILTY SAND (SM)**, brown, moist, fine to medium, (40,57,3), non-plastic, trace fine subangular gravel											@10.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Increasing sand and gravel, grading to fine to coarse, (25,67,8)											
15												@15 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
	16 ft TD										15:16	
20												
25												
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas

NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-17 **SHEET** 1 **OF** 1
START DRILL DATE Jun 17, 15
FINISH DRILL DATE Jun 17, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	3.5" A/C on Aggregate Base										15:47	Core A/C Hand auger to 5'
	Grading to **Lean CLAY(CL)**, dark brown, moist, (90,10,0) medium plastic, little silt and few fine sand											
	SANDY SILT (ML), brown, moist, fine, (70,30,0), non-low plastic, few clay											
5												
												@7.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	Lean CLAY with SAND (CL), dark brown, moist, fine, (85,15,0), medium plastic, few silt											
10												
	Few calcite veins											
	No calcite veins											
	SANDY SILT (ML), brown, moist, fine, (70,30,0), non-low plastic, little clay											
15	@14.75 ft grading to light brown, moist, fine, (60,40,0), non-plastic, no clay											
	16 ft TD										16:20	@15.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
20												
25												
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas

NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-18 **SHEET** 1 **OF** 2
START DRILL DATE Jun 18, 15
FINISH DRILL DATE Jun 18, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	4.5" A/C on Aggregate Base										11:12	Core A/C Hand Auger to 5'.
	SANDY SILT (ML), brown, moist, fine, (65,35,0), non-plastic										11:18	
5	@4 ft grading to **SILT with SAND (ML)**, (75,25,0), non-low plastic, trace calcite veins and little clay										11:21	
	Lean CLAY (CL), brown, moist, (90,10,0), medium plastic, few fine sand and silt											
10	@10 ft grading to **Lean CLAY with SAND (CL)**, brown, moist, fine, (80,20,0), medium plastic											
	SILTY SAND (SM), tan, moist, fine to medium, trace gravel (15,82,3)											
	SANDY SILT (ML), brown, moist, fine, (70,30,0), non-plastic, few clay											
15												
	SILTY SAND (SM), dark brown, moist, fine, (45,55,0), non-plastic											@16.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	SILT with SAND (ML), brown to dark brown, moist, fine, (85,15,0), low-plastic, little clay											
20	**SILTY SAND (SM)**, tan-brown, moist, fine to medium, (30,70,0), non-plastic										11:43	@20.5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
	SILT with SAND (ML), olive brown, moist, fine, (85,15,0), low-plastic, little clay											
	Grading to **Lean CLAY with SAND (CL)**, dark brown, moist, fine, (85,15,0), medium plastic, little silt											
25	@24 ft 2" seam **SILTY SAND (SM)**, tan, moist, fine to medium, (25,75,0), non-plastic											Drillers say that the soil is very compacted.
	SILT with SAND (ML), olive brown, moist, fine, (85,15,0), low-plastic, little clay											
	Lean CLAY (CL), dark brown, moist, (97,3,0), medium plastic, trace medium sand											
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas
NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. Began using PID meter on 6/18. Non-detect on this boring. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-18**		**SHEET 2 OF 2**
START DRILL DATE	Jun 18, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 18, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	SILTY SAND (SM), brown, moist, fine, (40,60,0), non-plastic											
35	**SANDY SILT (ML)**, light brown, moist, fine, (60,40,0), non-plastic @37 ft Decreased sand to **SILT with SAND (ML)**, (80,20,0) @39 Increasing to little clay, low-plastic											1/3 Recovery 32'-36' aggregate @ bottom of the tube @ 36' 36'-40' Sample jammed in outer rod. @38 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
40	40 ft TD										12:01	
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. Began using PID meter on 6/18. Non-detect on this boring. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING SV-19 **SHEET** 1 **OF** 1
START DRILL DATE Jun 18, 15
FINISH DRILL DATE Jun 18, 15
LOCATION Orange County, CA
PROJECT El Toro
NUMBER HR1462

ELEVATION DATA:
GROUND SURF. (Ft)
TOP OF CASING (Ft)
DATUM

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILTY GRAVEL with SAND (GM), mottled, dry, fine to coarse, (15,25,60), non-plastic, few vegetation										10:00	Core 12" Hand auger at 1 ft, refusal at 3 ft, drill at 3 ft.
											10:22	
	SANDY SILT (ML), brown, moist, fine to medium, (65,35,0), non-plastic, few fine rounded gravel										10:26	
5	@6 ft no gravel (65,40,0)											@5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
	SILTY SAND (SM), orange-brown, moist, fine, (40,60,0), non-plastic											
10	Grading to **Poorly-Graded SAND with SILT (SP-SM)**, tan-orange, moist, fine (10,90,0)											@11 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	Lean CLAY (CL), dark brown, moist, (95,5,0), low-plastic, some silt and few fine sand @12.5 ft grading to **Lean CLAY with SAND (CL)**, (85,15,0), medium plastic, few silt											
15	@15 ft grading to **SANDY Lean CLAY (CL)**, brown, moist, fine, (65,35,0), medium plastic											
	@17.5 ft 4" seam **CLAYEY SAND (SC)**, tan-brown, moist, fine, (30,70,0), low plastic											
20	20 ft TD										10:36	
25												
30												

CONTRACTOR BC2
EQUIPMENT Geoprobe 7822DT
DRILL MTHD Direct Push
DIAMETER 2.25
LOGGER D. Simpson
REVIEWER M. Thomas

NORTHING
EASTING
COORDINATE SYSTEM:

NOTES: Continuous 1" diameter soil cores. Began using PID meter on 6/18. Non-detect on this boring. SAA - same as above.

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GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-20**		**SHEET 1 OF 2**
START DRILL DATE	Jun 18, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 18, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION (1) Unit/Formation, Mem. (2) USCS Name (3) Color (4) Moisture (5) Percent Grain Size (6) Plasticity (7) Density/Consistency (8) Structure (9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS (1) Rig Behavior (2) Air Monitoring
	SILT with SAND (ML), brown to light brown, dry, fine to coarse, (55,25,20), non-plastic, little fine subangular gravel increasing with depth										07:50 08:27	Hand auger 1', refusal at 1'. Move 33" East, Hand Auger 1', Refusal at 1'. Drill at 1'.
5	**SILTY SAND (SM)**, tan-light brown, dry, fine to medium, (30,70,0), non-plastic, few clay											@5 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Blue tape at surface.
10	**SANDY SILT (ML)**, brown to dark brown, moist, fine, (65,35,0), non-plastic, few clay											
	Grading to **SILTY SAND (SM)**, light brown, moist, fine, (35,65,0), non-plastic											
15	**Lean CLAY (CL)**, dark brown, moist, (90,10,0), low-medium plastic, few fine sand and calcite veins, little silt											@14 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Green tape at surface.
	Grading to **SILT (ML)**, dark brown, moist, (100,0,0), non-low plastic, little clay											
20	**SANDY Lean CLAY (CL)**, olive brown, moist, fine to coarse sand, (65,35,0), low plastic, little silt @21 ft decreasing sand, (80,20,0), medium plastic, grading to brown											
25	@23.3 ft 3" seam **Poorly-Graded SAND with SILT (SP-SM)**, light brown, moist, fine to medium, (10,90,0) **SILTY SAND (SM)**, brown, moist, fine, (45,55,0), non-plastic											
	SANDY SILT (ML), brown, moist, fine, (65,35,0), non-plastic, little clay											
	SILTY SAND (SM), SAA											
30	**Lean CLAY with SAND (CL)**, orange-brown, moist, fine, (80,20,0), medium plastic, increasing sand with depth											

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. Began using PID meter on 6/18. Non-detect on this boring. SAA - same as above.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 969-0820

GS FORM: WELL BORE 01/04

BOREHOLE LOG

BORING	**SV-20**		**SHEET 2 OF 2**
START DRILL DATE	Jun 18, 15	**ELEVATION DATA:**	
FINISH DRILL DATE	Jun 18, 15	**GROUND SURF. (Ft)**	
LOCATION	Orange County, CA	**TOP OF CASING (Ft)**	
PROJECT	El Toro	**DATUM**	
NUMBER	HR1462		

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) USCS Name 3) Color 4) Moisture 5) Percent Grain Size 6) Plasticity 7) Density/Consistency 8) Structure 9) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID/FID (ppm)	TIME (00:00)	COMMENTS 1) Rig Behavior 2) Air Monitoring
	SILTY SAND (SM), tan-brown, moist, fine (35,65,0), non-plastic @33.3 ft 3" seam **SILT with SAND (ML)**, brown, moist, fine, (75,25,0), low plastic, little clay											
35	@34.3 ft 3" seam, **SILT with SAND (ML)**, SAA											@35 ft 6" Vapor probe in 12" sand, connected to 1/4" Teflon tubing. Red tape at surface.
	Lean CLAY with SAND (CL), brown, moist, fine, (85,15,0), low plastic, little silt @36.4 ft 1" seam **SILTY SAND (SM)**, tan, moist, fine, (20,80,0)											
40	40 ft TD										09:02	
45												
50												
55												
60												

CONTRACTOR	BC2	**NORTHING**	
EQUIPMENT	Geoprobe 7822DT	**EASTING**	
DRILL MTHD	Direct Push	**COORDINATE SYSTEM:**	
DIAMETER	2.25		
LOGGER	D. Simpson	**REVIEWER**	M. Thomas

NOTES: Continuous 1" diameter soil cores. Began using PID meter on 6/18. Non-detect on this boring. SAA - same as above.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

APPENDIX B

SOIL GAS VOC ANALYTICAL LABORATORY REPORTS

JONES ENVIRONMENTAL, INC.

P.O. Box 5387 | FULLERTON, CA 92838
(714) 449-9937 | FAX (714) 449-9685

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project Name:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. EPA 8260B - Volatile Organics by GC/MS + Oxygenates

Sampling – Soil Gas samples were collected in glass gas-tight syringes equipped with Teflon plungers. Tubing placed in the ground for soil gas sampling was purged three different times as recommended by DTSC/RWQCB guidance documents. This purge test determined how many purges of the soil gas tubing were needed throughout the project. One, three and ten purge volumes were analyzed to make this determination.

A tracer gas mixture of n-propanol and n-pentane was placed at the tubing-surface interface before sampling. These compounds were analyzed during the 8260B analytical run to determine if there were surface leaks into the subsurface due to improper installation of the probe. No n-propanol or n-pentane was found in any of the samples reported herein.

The sampling rate was approximately 200 cc/min except when noted differently on the chain of custody record using a gas tight syringe. 1, 3 and 10 purge volumes were used since these purging levels gave the highest results for the compound(s) of greatest interest.

Prior to purging and sampling of soil gas at each point, a shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then taken.

No flow conditions occur when a sampling rate greater than 10 mL/min cannot be maintained without applying a vacuum greater than 100 inches of water to the sampling train. The sampling train is left at a vacuum for no less than three minutes. If the vacuum does not subside appreciably after three minutes, the sample location is determined to be a no flow sample.

Analytical – Soil Gas samples were analyzed using EPA Method 8260 that includes extra compounds required by DTSC/RWQCB (such as Freon 113). Instrument Continuing Calibration Verification, QC Reference Standards, Instrument Blanks and Sampling Blanks were analyzed every 12 hours as prescribed by the method. In addition, Matrix Spike (MS) and Matrix Spike Duplicates (MSD) were analyzed with each batch of Soil Gas samples. A duplicate/replicate sample was analyzed each day of the sampling activity. All samples were injected into the GC/MS system within 30 minutes of sampling.

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager

JONES ENVIRONMENTAL, INC.
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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-1-40' 1PV**	**SV-1-40' 3PV**	**SV-1-40' 10PV**	**SV-1-14' 1PV**	**SV-1-14' 3PV**		
JEL ID:	**E-0337-01**	**E-0337-02**	**E-0337-03**	**E-0337-04**	**E-0337-05**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-1-40' 1PV**	**SV-1-40' 3PV**	**SV-1-40' 10PV**	**SV-1-14' 1PV**	**SV-1-14' 3PV**		
JEL ID:	**E-0337-01**	**E-0337-02**	**E-0337-03**	**E-0337-04**	**E-0337-05**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	112	108	106	108	110	75 - 125	%
Toluene-d_8	94	95	94	99	101	75 - 125	%
4-Bromofluorobenzene	88	90	91	104	106	75 - 125	%
	E2-061915-E-0337	E2-061915-E-0337	E2-061915-E-0337	E1-061915-E-0337	E1-061915-E-0337		

ND= Not Detected

JONES ENVIRONMENTAL, INC.
P.O. Box 5387 | FULLERTON, CA 92838
(714) 449-9937 | FAX (714) 449-9685

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-1-14' 10PV**	**SV-1-5'**	**SV-2-6'**	**SV-2-14'**	**SV-3-5'**		
JEL ID:	**E-0337-06**	**E-0337-07**	**E-0338-01**	**E-0338-02**	**E-0338-03**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-1-14' 10PV**	**SV-1-5'**	**SV-2-6'**	**SV-2-14'**	**SV-3-5'**		
JEL ID:	**E-0337-06**	**E-0337-07**	**E-0338-01**	**E-0338-02**	**E-0338-03**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	112	117	107	111	107	75 - 125	%
Toluene-d_8	100	93	97	96	98	75 - 125	%
4-Bromofluorobenzene	109	92	101	94	110	75 - 125	%
	E1-061915-E-0337	E2-061915-E-0337	E1-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-3-13.5'**	**SV-5-6'**	**SV-5-15'**	**SV-5-15' REP**	**SV-5-34'**		
JEL ID:	**E-0338-04**	**E-0338-05**	**E-0338-06**	**E-0338-07**	**E-0338-08**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-3-13.5'**	**SV-5-6'**	**SV-5-15'**	**SV-5-15' REP**	**SV-5-34'**		
JEL ID:	**E-0338-04**	**E-0338-05**	**E-0338-06**	**E-0338-07**	**E-0338-08**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.200	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	110	107	109	108	106	75 - 125	%
Toluene-d_8	94	99	95	92	101	75 - 125	%
4-Bromofluorobenzene	93	111	93	90	104	75 - 125	%
	E2-062215-E-0338	E1-062215-E-0338	E2-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-7-7'**	**SV-7-14'**	**SV-9-9'**	**SV-9-23'**	**SV-9-37'**		
JEL ID:	**E-0338-09**	**E-0338-10**	**E-0338-11**	**E-0338-12**	**E-0338-13**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-7-7'**	**SV-7-14'**	**SV-9-9'**	**SV-9-23'**	**SV-9-37'**		
JEL ID:	**E-0338-09**	**E-0338-10**	**E-0338-11**	**E-0338-12**	**E-0338-13**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	**0.096**	**0.373**	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	108	111	105	109	103	75 - 125	%
Toluene-d_8	97	94	98	97	96	75 - 125	%
4-Bromofluorobenzene	109	96	108	94	103	75 - 125	%
	E1-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-10-5'**	**SV-10-5' REP**	**SV-10-10.5'**	**SV-8-6.5'**	**SV-8-20'**		
JEL ID:	**E-0338-14**	**E-0338-15**	**E-0338-16**	**E-0338-17**	**E-0338-18**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-10-5'**	**SV-10-5' REP**	**SV-10-10.5'**	**SV-8-6.5'**	**SV-8-20'**		
JEL ID:	**E-0338-14**	**E-0338-15**	**E-0338-16**	**E-0338-17**	**E-0338-18**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	**0.427**	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	109	111	110	109	109	75 - 125	%
Toluene-d_8	99	98	94	94	99	75 - 125	%
4-Bromofluorobenzene	105	107	91	92	99	75 - 125	%
	E1-062215-E-0338	E1-062215-E-0338	E2-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-6-8'**	**SV-6-12.5'**	**SV-4-12'**	**SV-4-22.5'**	**SV-4-36.5'**		
JEL ID:	**E-0338-19**	**E-0338-20**	**E-0338-21**	**E-0338-22**	**E-0338-23**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-6-8'**	**SV-6-12.5'**	**SV-4-12'**	**SV-4-22.5'**	**SV-4-36.5'**		
JEL ID:	**E-0338-19**	**E-0338-20**	**E-0338-21**	**E-0338-22**	**E-0338-23**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	**0.079**	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	110	108	110	108	109	75 - 125	%
Toluene-d_8	93	100	101	99	95	75 - 125	%
4-Bromofluorobenzene	92	102	115	109	90	75 - 125	%
	E2-062215-E-0338	E1-062215-E-0338	E1-062215-E-0338	E1-062215-E-0338	E2-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-36.5' REP**	**SV-12-6'**	**SV-12-20'**	**SV-12-39'**	**SV-13-15.5' 1PV**		
JEL ID:	**E-0338-24**	**E-0338-25**	**E-0338-26**	**E-0338-27**	**E-0338-28**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-36.5' REP**	**SV-12-6'**	**SV-12-20'**	**SV-12-39'**	**SV-13-15.5' 1PV**		
JEL ID:	**E-0338-24**	**E-0338-25**	**E-0338-26**	**E-0338-27**	**E-0338-28**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	**0.076**	**23.2J**	**40.6J**	**34.8J**	**13.8**	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	**0.527**	**0.807**	**0.563**	**0.290**	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	117	123	108	112	106	75 - 125	%
Toluene-d_8	97	97	100	93	94	75 - 125	%
4-Bromofluorobenzene	89	87	111	93	90	75 - 125	%
	E2-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338	E2-062215-E-0338	E2-062215-E-0338		

ND= Not Detected

J=Estimated concentration. Samples exceed calibration range of analyte. Geosyntec requested sample not be diluted.

JONES ENVIRONMENTAL, INC.
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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-13-15.5' 3PV**	**SV-13-15.5' 10PV**	**SV-13-35.5' 1PV**	**SV-13-35.5' 3PV**	**SV-13-35.5' 10PV**		
JEL ID:	**E-0338-29**	**E-0338-30**	**E-0338-31**	**E-0338-32**	**E-0338-33**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	**0.353**	**0.345**	**0.334**	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-13-15.5' 3PV**	**SV-13-15.5' 10PV**	**SV-13-35.5' 1PV**	**SV-13-35.5' 3PV**	**SV-13-35.5' 10PV**		
JEL ID:	**E-0338-29**	**E-0338-30**	**E-0338-31**	**E-0338-32**	**E-0338-33**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	**13.1**	**13.8**	**32.3J**	**31.8J**	**29.8J**	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	**0.289**	**0.291**	**0.219**	**0.209**	**0.207**	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	111	106	109	112	107	75 - 125	%
Toluene-d_8	95	95	100	100	100	75 - 125	%
4-Bromofluorobenzene	91	92	106	108	109	75 - 125	%
	E2-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338	E1-062215-E-0338	E1-062215-E-0338		

ND= Not Detected

J=Estimated concentration. Samples exceed calibration range of analyte. Geosyntec requested sample not be diluted.

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-13-23.5'**	**SV-15-8'**	**SV-15-20'**	**SV-15-33'**	**SV-14-7'**		
JEL ID:	**E-0338-34**	**E-0338-35**	**E-0338-36**	**E-0338-37**	**E-0338-38**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-13-23.5'**	**SV-15-8'**	**SV-15-20'**	**SV-15-33'**	**SV-14-7'**		
JEL ID:	**E-0338-34**	**E-0338-35**	**E-0338-36**	**E-0338-37**	**E-0338-38**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	**14.7**	**3.73**	**4.02**	**10.2**	**1.27**	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	**0.295**	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	**0.766**	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	109	106	108	108	116	75 - 125	%
Toluene-d_8	96	101	94	97	95	75 - 125	%
4-Bromofluorobenzene	90	112	92	102	104	75 - 125	%
	E2-062215-E-0338	E1-062215-E-0338	E2-062215-E-0338	E1-062215-E-0338	E1-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-14-16'**	**SV-14-31'**	**SV-11-8'**	**SV-11-17'**	**SV-11-32'**		
JEL ID:	**E-0338-39**	**E-0338-40**	**E-0339-01**	**E-0339-02**	**E-0339-03**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	**0.063**	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-14-16'**	**SV-14-31'**	**SV-11-8'**	**SV-11-17'**	**SV-11-32'**		
JEL ID:	**E-0338-39**	**E-0338-40**	**E-0339-01**	**E-0339-02**	**E-0339-03**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	**1.17**	**2.85**	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	**0.264**	**0.283**	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	116	102	113	108	105	75 - 125	%
Toluene-d_8	96	96	94	94	97	75 - 125	%
4-Bromofluorobenzene	93	92	89	107	107	75 - 125	%
	E2-062215-E-0338	E2-062215-E-0338	E2-062315-E-0339	E1-062315-E-0339	E1-062315-E-0339		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-12-6' 10PV**	**SV-16-10.5'**	**SV-16-10.5' REP**	**SV-16-15'**	**SV-17-7.5'**		
JEL ID:	**E-0339-04**	**E-0339-05**	**E-0339-06**	**E-0339-07**	**E-0339-08**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-12-6' 10PV**	**SV-16-10.5'**	**SV-16-10.5' REP**	**SV-16-15'**	**SV-17-7.5'**		
JEL ID:	**E-0339-04**	**E-0339-05**	**E-0339-06**	**E-0339-07**	**E-0339-08**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	**25.2J**	**0.325**	**0.342**	**0.266**	**9.77**	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	**0.563**	ND	ND	ND	**0.282**	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	107	108	108	108	113	75 - 125	%
Toluene-d_8	95	95	100	93	95	75 - 125	%
4-Bromofluorobenzene	94	115	105	93	91	75 - 125	%
	E2-062315-E-0339	E1-062315-E-0339	E1-062315-E-0339	E2-062315-E-0339	E2-062315-E-0339		

ND= Not Detected

J=Estimated concentration. Samples exceed calibration range of analyte. Geosyntec requested sample not be diluted.

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-17-15.5'**	**SV-20-5'**	**SV-20-14'**	**SV-20-35'**	**SV-19-5'**		
JEL ID:	**E-0339-09**	**E-0339-10**	**E-0339-11**	**E-0339-12**	**E-0339-13**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-17-15.5'**	**SV-20-5'**	**SV-20-14'**	**SV-20-35'**	**SV-19-5'**		
JEL ID:	**E-0339-09**	**E-0339-10**	**E-0339-11**	**E-0339-12**	**E-0339-13**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	**22.9J**	ND	ND	**0.099**	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	**0.144**	**0.134**	**0.300**	**0.411**	**0.155**	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	**1.42**	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	103	103	113	108	106	75 - 125	%
Toluene-d_8	98	99	91	95	97	75 - 125	%
4-Bromofluorobenzene	105	105	90	93	105	75 - 125	%
	E1-062315-E-0339	E1-062315-E-0339	E2-062315-E-0339	E2-062315-E-0339	E2-062315-E-0339		

ND= Not Detected

J=Estimated concentration. Samples exceed calibration range of analyte. Geosyntec requested sample not be diluted.

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-19-11'**	**SV-19-11' REP**	**SV-18-16.5'**	**SV-18-20.5'**	**SV-18-38'**		
JEL ID:	**E-0339-14**	**E-0339-15**	**E-0339-16**	**E-0339-17**	**E-0339-18**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SV-19-11'**	**SV-19-11' REP**	**SV-18-16.5'**	**SV-18-20.5'**	**SV-18-38'**		
JEL ID:	**E-0339-14**	**E-0339-15**	**E-0339-16**	**E-0339-17**	**E-0339-18**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	**0.825**	**0.471**	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	**0.319**	**0.352**	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	**0.306**	**0.305**	**0.067**	**0.067**	ND	0.008	µg/L
Toluene	ND	ND	**0.299**	**0.345**	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	**0.226**	**0.223**	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	112	108	109	104	112	75 - 125	%
Toluene-d_8	93	93	100	97	91	75 - 125	%
4-Bromofluorobenzene	95	92	106	106	94	75 - 125	%
	E2-062315-E-0339	E2-062315-E-0339	E1-062315-E-0339	E1-062315-E-0339	E2-062315-E-0339		

ND= Not Detected

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(Samples collected from a separate parcel)

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	METHOD BLANK	SAMPLING BLANK	METHOD BLANK	SAMPLING BLANK	METHOD BLANK		
JEL ID:	**E-0337-08**	**E-0337-09**	**E-0337-13**	**E-0337-14**	**E-0338-41**	**Method Detection Limit**	**Units**
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**METHOD BLANK**	**SAMPLING BLANK**	**METHOD BLANK**	**SAMPLING BLANK**	**METHOD BLANK**		
JEL ID:	**E-0337-08**	**E-0337-09**	**E-0337-13**	**E-0337-14**	**E-0338-41**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	106	107	105	118	106	75 - 125	%
Toluene-d_8	100	111	95	90	99	75 - 125	%
4-Bromofluorobenzene	114	109	94	83	112	75 - 125	%
	E1-061915-E-0337	E1-061915-E-0337	E2-061915-E-0337	E2-061915-E-0337	E1-062215-E-0338		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	SAMPLING BLANK	METHOD BLANK	SAMPLING BLANK	METHOD BLANK	SAMPLING BLANK		
JEL ID:	E-0338-42	E-0338-46	E-0338-47	E-0338-39	E-0338-40	Method Detection Limit	Units
Analytes:							
Benzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	ND	ND	ND	0.008	µg/L
Bromoform	ND	ND	ND	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	ND	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Chloroform	ND	ND	ND	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	ND	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**SAMPLING BLANK**	**METHOD BLANK**	**SAMPLING BLANK**	**METHOD BLANK**	**SAMPLING BLANK**		
JEL ID:	**E-0338-42**	**E-0338-46**	**E-0338-47**	**E-0338-39**	**E-0338-40**	**Method Detection Limit**	**Units**
Analytes:							
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Freon 113	ND	ND	ND	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	ND	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	ND	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	ND	ND	ND	0.008	µg/L
Naphthalene	ND	ND	ND	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Styrene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Toluene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	ND	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	ND	ND	ND	0.008	µg/L
Xylenes	ND	ND	ND	ND	ND	0.008	µg/L
MTBE	ND	ND	ND	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	ND	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	ND	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	ND	ND	ND	0.040	µg/L
TIC:							
n-propanol	ND	ND	ND	ND	ND	0.080	µg/L
n-pentane	ND	ND	ND	ND	ND	0.008	µg/L
Dilution Factor	1	1	1	1	1		
Surrogate Recoveries:						**QC Limits**	
Dibromofluoromethane	107	102	102	110	108	75 - 125	%
Toluene-d_8	97	95	95	101	97	75 - 125	%
4-Bromofluorobenzene	107	95	93	109	112	75 - 125	%
	E1-062215-E-0338	E2-062215-E-0338	E2-062215-E-0338	E1-062315-E-0339	E1-062315-E-0339		

ND= Not Detected

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JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**METHOD BLANK**	**SAMPLING BLANK**		
JEL ID:	**E-0338-44**	**E-0338-45**	**Method Detection Limit**	**Units**
Analytes:				
Benzene	ND	ND	0.008	µg/L
Bromobenzene	ND	ND	0.008	µg/L
Bromodichloromethane	ND	ND	0.008	µg/L
Bromoform	ND	ND	0.008	µg/L
n-Butylbenzene	ND	ND	0.008	µg/L
sec-Butylbenzene	ND	ND	0.008	µg/L
tert-Butylbenzene	ND	ND	0.008	µg/L
Carbon tetrachloride	ND	ND	0.008	µg/L
Chlorobenzene	ND	ND	0.008	µg/L
Chloroform	ND	ND	0.008	µg/L
2-Chlorotoluene	ND	ND	0.008	µg/L
4-Chlorotoluene	ND	ND	0.008	µg/L
Dibromochloromethane	ND	ND	0.008	µg/L
1,2-Dibromo-3-chloropropane	ND	ND	0.008	µg/L
1,2-Dibromoethane (EDB)	ND	ND	0.008	µg/L
Dibromomethane	ND	ND	0.008	µg/L
1,2- Dichlorobenzene	ND	ND	0.008	µg/L
1,3-Dichlorobenzene	ND	ND	0.008	µg/L
1,4-Dichlorobenzene	ND	ND	0.008	µg/L
Dichlorodifluoromethane	ND	ND	0.008	µg/L
1,1-Dichloroethane	ND	ND	0.008	µg/L
1,2-Dichloroethane	ND	ND	0.008	µg/L
1,1-Dichloroethene	ND	ND	0.008	µg/L
cis-1,2-Dichloroethene	ND	ND	0.008	µg/L
trans-1,2-Dichloroethene	ND	ND	0.008	µg/L
1,2-Dichloropropane	ND	ND	0.008	µg/L
1,3-Dichloropropane	ND	ND	0.008	µg/L
1,1-Dichloropropene	ND	ND	0.008	µg/L

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample ID:	**METHOD BLANK**	**SAMPLING BLANK**		
JEL ID:	**E-0338-44**	**E-0338-45**	**Method Detection Limit**	**Units**
Analytes:				
cis-1,3-Dichloropropene	ND	ND	0.008	µg/L
trans-1,3-Dichloropropene	ND	ND	0.008	µg/L
Ethylbenzene	ND	ND	0.008	µg/L
Freon 113	ND	ND	0.040	µg/L
Hexachlorobutadiene	ND	ND	0.008	µg/L
Isopropylbenzene	ND	ND	0.008	µg/L
4-Isopropyltoluene	ND	ND	0.008	µg/L
Methylene chloride	ND	ND	0.008	µg/L
Naphthalene	ND	ND	0.008	µg/L
n-Propylbenzene	ND	ND	0.008	µg/L
Styrene	ND	ND	0.008	µg/L
1,1,1,2-Tetrachloroethane	ND	ND	0.008	µg/L
1,1,2,2-Tetrachloroethane	ND	ND	0.008	µg/L
Tetrachloroethylene	ND	ND	0.008	µg/L
Toluene	ND	ND	0.008	µg/L
1,2,3-Trichlorobenzene	ND	ND	0.008	µg/L
1,2,4-Trichlorobenzene	ND	ND	0.008	µg/L
1,1,1-Trichloroethane	ND	ND	0.008	µg/L
1,1,2-Trichloroethane	ND	ND	0.008	µg/L
Trichloroethylene	ND	ND	0.008	µg/L
Trichlorofluoromethane	ND	ND	0.008	µg/L
1,2,3-Trichloropropane	ND	ND	0.008	µg/L
1,2,4-Trimethylbenzene	ND	ND	0.008	µg/L
1,3,5-Trimethylbenzene	ND	ND	0.008	µg/L
Vinyl chloride	ND	ND	0.008	µg/L
Xylenes	ND	ND	0.008	µg/L
MTBE	ND	ND	0.040	µg/L
Ethyl-tert-butylether	ND	ND	0.040	µg/L
Di-isopropylether	ND	ND	0.040	µg/L
tert-amylmethylether	ND	ND	0.040	µg/L
TIC:				
n-propanol	ND	ND	0.080	µg/L
n-pentane	ND	ND	0.008	µg/L
Dilution Factor	1	1		
Surrogate Recoveries:			**QC Limits**	
Dibromofluoromethane	103	111	75 - 125	%
Toluene-d_8	98	85	75 - 125	%
4-Bromofluorobenzene	94	92	75 - 125	%
	E2-062315-E-0339	E2-062315-E-0339		

ND= Not Detected

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample Spiked: Ambient Air **GC#:** E1-061915-E-0337

JEL ID:	**E-0337-11**	**E-0337-12**			**E-0337-10**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Benzene	92	96	4.7	70-130	92	70-130
Bromobenzene	107	112	4.5	70-130	101	70-130
Bromodichloromethane	101	103	1.7	70-130	94	70-130
Bromoform	97	102	5.8	70-130	102	70-130
n-Butylbenzene	77	78	1.7	70-130	111	70-130
sec-Butylbenzene	100	104	3.7	70-130	101	70-130
tert-Butylbenzene	104	104	0.2	70-130	97	70-130
Carbon tetrachloride	59	63	6.4	70-130	79	70-130
Chlorobenzene	100	102	1.7	70-130	96	70-130
Chloroform	103	103	0.2	70-130	96	70-130
2-Chlorotoluene	100	100	0.2	70-130	99	70-130
4-Chlorotoluene	82	83	1.8	70-130	101	70-130
Dibromochloromethane	105	106	0.5	70-130	92	70-130
1,2-Dibromo-3-chloropropane	131	163	21	70-130	161	70-130
1,2-Dibromoethane (EDB)	104	108	3.7	70-130	101	70-130
Dibromomethane	111	108	2.5	70-130	101	70-130
1,2- Dichlorobenzene	114	113	0.4	70-130	85	70-130
1,3-Dichlorobenzene	96	100	4.1	70-130	96	70-130
1,4-Dichlorobenzene	101	105	3.2	70-130	98	70-130
Dichlorodifluoromethane	113	108	4.4	70-130	104	70-130
1,1-Dichloroethane	107	102	4.9	70-130	110	70-130
1,2-Dichloroethane	98	96	1.9	70-130	101	70-130
1,1-Dichloroethene	83	83	0.0	60-140	109	60-140
cis-1,2-Dichloroethene	72	64	11	70-130	96	70-130
trans-1,2-Dichloroethene	125	123	1.8	70-130	117	70-130
1,2-Dichloropropane	103	102	0.7	70-130	101	70-130
1,3-Dichloropropane	72	73	1.4	70-130	86	70-130
1,1-Dichloropropene	70	69	1.3	70-130	83	70-130

QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

JEL ID:	E-0337-11	E-0337-12			E-0337-10	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Ethylbenzene	79	79	0.5	70-130	98	70-130
Freon 113	109	104	5.0	70-130	102	70-130
Hexachlorobutadiene	129	151	16	70-130	123	70-130
Isopropylbenzene	101	100	1.3	70-130	100	70-130
4-Isopropyltoluene	106	108	1.7	70-130	100	70-130
Methylene chloride	93	95	1.9	70-130	88	70-130
Naphthalene	365	477	27	70-130	274	70-130
n-Propylbenzene	99	102	2.9	70-130	108	70-130
Styrene	104	106	2.0	70-130	90	70-130
1,1,1,2-Tetrachloroethane	97	98	1.5	70-130	101	70-130
1,1,2,2-Tetrachloroethane	112	119	5.7	70-130	113	70-130
Tetrachloroethylene	101	102	1.0	70-130	96	70-130
Toluene	101	98	2.3	70-130	100	70-130
1,2,3-Trichlorobenzene	314	368	16	70-130	216	70-130
1,2,4-Trichlorobenzene	186	212	13	70-130	179	70-130
1,1,1-Trichloroethane	96	95	1.1	70-130	93	70-130
1,1,2-Trichloroethane	94	97	3.0	70-130	99	70-130
Trichloroethylene	98	97	1.0	70-130	94	70-130
Trichlorofluoromethane	104	101	3.0	70-130	100	70-130
1,2,3-Trichloropropane	104	111	6.1	70-130	112	70-130
1,2,4-Trimethylbenzene	82	86	5.0	70-130	97	70-130
1,3,5-Trimethylbenzene	91	94	3.1	70-130	99	70-130
Vinyl chloride	124	123	1.4	70-130	118	70-130
Xylenes	95	93	1.4	60-140	105	60-140
MTBE	110	108	1.5	70-130	99	70-130
Ethyl-tert-butylether	100	99	0.9	70-130	92	70-130
Di-isopropylether	105	102	2.8	70-130	102	70-130
tert-amylmethylether	95	93	1.7	70-130	91	70-130
Surrogate Recovery:						
Dibromofluoromethane	101	102		75-125	97	75-125
Toluene-d_8	100	96		75-125	96	75-125
4-Bromofluorobenzene	100	106		75-125	101	75-125

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	E-0337-39 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	6/19&22-23/2015 6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample Spiked: Ambient Air **GC#:** E2-061915-E-0337

JEL ID:	**E-0337-16**	**E-0337-17**			**E-0337-15**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Benzene	105	106	0.9	70-130	93	70-130
Bromobenzene	90	86	4.4	70-130	94	70-130
Bromodichloromethane	98	103	5.2	70-130	99	70-130
Bromoform	93	93	0.2	70-130	96	70-130
n-Butylbenzene	92	92	0.7	70-130	94	70-130
sec-Butylbenzene	91	92	0.8	70-130	93	70-130
tert-Butylbenzene	90	92	2.4	70-130	94	70-130
Carbon tetrachloride	108	108	0.1	70-130	103	70-130
Chlorobenzene	99	99		70-130	96	70-130
Chloroform	113	116	2.5	70-130	113	70-130
2-Chlorotoluene	89	92	3.0	70-130	90	70-130
4-Chlorotoluene	88	91	3.4	70-130	88	70-130
Dibromochloromethane	88	88	0.7	70-130	88	70-130
1,2-Dibromo-3-chloropropane	101	103	2.1	70-130	87	70-130
1,2-Dibromoethane (EDB)	89	92	3.0	70-130	93	70-130
Dibromomethane	111	115	4.2	70-130	102	70-130
1,2- Dichlorobenzene	92	90	1.5	70-130	94	70-130
1,3-Dichlorobenzene	89	93	4.0	70-130	96	70-130
1,4-Dichlorobenzene	90	89	0.6	70-130	93	70-130
Dichlorodifluoromethane	89	89	0.2	70-130	103	70-130
1,1-Dichloroethane	105	107	1.2	70-130	98	70-130
1,2-Dichloroethane	107	111	3.4	70-130	100	70-130
1,1-Dichloroethene	83	83	0.6	60-140	77	60-140
cis-1,2-Dichloroethene	98	99	1.1	70-130	94	70-130
trans-1,2-Dichloroethene	107	107	0.5	70-130	105	70-130
1,2-Dichloropropane	106	108	2.0	70-130	112	70-130
1,3-Dichloropropane	90	91	1.7	70-130	87	70-130
1,1-Dichloropropene	97	98	1.0	70-130	99	70-130

QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

JEL ID:	E-0337-16	E-0337-17			E-0337-15	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Ethylbenzene	87	88	0.4	70-130	88	70-130
Freon 113	103	101	1.9	70-130	102	70-130
Hexachlorobutadiene	89	87	2.3	70-130	86	70-130
Isopropylbenzene	89	90	1.0	70-130	90	70-130
4-Isopropyltoluene	88	90	2.3	70-130	92	70-130
Methylene chloride	102	97	5.8	70-130	89	70-130
Naphthalene	103	105	2.3	70-130	101	70-130
n-Propylbenzene	92	92	0.2	70-130	93	70-130
Styrene	82	83	1.4	70-130	84	70-130
1,1,1,2-Tetrachloroethane	87	85	2.9	70-130	89	70-130
1,1,2,2-Tetrachloroethane	89	90	0.3	70-130	87	70-130
Tetrachloroethylene	86	86	0.7	70-130	81	70-130
Toluene	88	87	1.2	70-130	89	70-130
1,2,3-Trichlorobenzene	92	96	4.0	70-130	95	70-130
1,2,4-Trichlorobenzene	92	88	4.3	70-130	93	70-130
1,1,1-Trichloroethane	106	107	1.3	70-130	105	70-130
1,1,2-Trichloroethane	87	87	0.7	70-130	89	70-130
Trichloroethylene	99	102	2.8	70-130	99	70-130
Trichlorofluoromethane	106	108	1.8	70-130	114	70-130
1,2,3-Trichloropropane	94	94	0.7	70-130	89	70-130
1,2,4-Trimethylbenzene	89	89	0.6	70-130	92	70-130
1,3,5-Trimethylbenzene	88	89	1.3	70-130	91	70-130
Vinyl chloride	97	97	0.1	60-140	99	60-140
Xylenes	89	91	1.8	70-130	90	70-130
MTBE	121	118	2.5	70-130	115	70-130
Ethyl-tert-butylether	121	119	1.3	70-130	109	70-130
Di-isopropylether	118	115	3.2	70-130	106	70-130
tert-amylmethylether	103	102	0.7	70-130	98	70-130
Surrogate Recovery:						
Dibromofluoromethane	100	101		75-125	99	75-125
Toluene-d_8	86	84		75-125	104	75-125
4-Bromofluorobenzene	86	85		75-125	104	75-125

MS = Matrix Spike
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RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample Spiked: Ambient Air **GC#:** E1-062215-E-0338

JEL ID:	**E-0338-44**	**E-0338-45**			**E-0338-43**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Benzene	103	96	6.9	70-130	96	70-130
Bromobenzene	111	111	0.5	70-130	116	70-130
Bromodichloromethane	119	109	8.5	70-130	111	70-130
Bromoform	111	118	5.3	70-130	129	70-130
n-Butylbenzene	82	81	1.2	70-130	87	70-130
sec-Butylbenzene	107	104	2.6	70-130	111	70-130
tert-Butylbenzene	101	105	4.4	70-130	107	70-130
Carbon tetrachloride	91	86	5.0	70-130	89	70-130
Chlorobenzene	109	107	1.9	70-130	108	70-130
Chloroform	111	104	6.8	70-130	106	70-130
2-Chlorotoluene	101	105	3.5	70-130	107	70-130
4-Chlorotoluene	86	83	3.8	70-130	87	70-130
Dibromochloromethane	116	115	1.1	70-130	118	70-130
1,2-Dibromo-3-chloropropane	136	154	13	70-130	232	70-130
1,2-Dibromoethane (EDB)	110	117	6.5	70-130	127	70-130
Dibromomethane	125	118	5.8	70-130	121	70-130
1,2- Dichlorobenzene	118	122	3.9	70-130	136	70-130
1,3-Dichlorobenzene	108	107	1.1	70-130	111	70-130
1,4-Dichlorobenzene	104	112	7.7	70-130	117	70-130
Dichlorodifluoromethane	93	104	12	70-130	103	70-130
1,1-Dichloroethane	120	121	0.9	70-130	108	70-130
1,2-Dichloroethane	112	111	1.3	70-130	113	70-130
1,1-Dichloroethene	81	86	6.0	60-140	79	60-140
cis-1,2-Dichloroethene	72	69	4.3	70-130	64	70-130
trans-1,2-Dichloroethene	131	119	8.9	70-130	121	70-130
1,2-Dichloropropane	125	112	11	70-130	112	70-130
1,3-Dichloropropane	81	88	8.0	70-130	100	70-130
1,1-Dichloropropene	87	75	16	70-130	74	70-130

QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

JEL ID:	E-0338-44	E-0338-45			E-0338-43	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Ethylbenzene	87	81	6.8	70-130	85	70-130
Freon 113	113	107	4.7	70-130	102	70-130
Hexachlorobutadiene	136	190	33	70-130	222	70-130
Isopropylbenzene	104	104	0.3	70-130	105	70-130
4-Isopropyltoluene	109	110	0.8	70-130	112	70-130
Methylene chloride	97	94	3.1	70-130	95	70-130
Naphthalene	362	436	18	70-130	558	70-130
n-Propylbenzene	105	103	1.8	70-130	108	70-130
Styrene	110	108	1.5	70-130	112	70-130
1,1,1,2-Tetrachloroethane	118	117	0.7	70-130	115	70-130
1,1,2,2-Tetrachloroethane	102	118	14	70-130	144	70-130
Tetrachloroethylene	103	103	0.4	70-130	105	70-130
Toluene	103	101	2.3	70-130	102	70-130
1,2,3-Trichlorobenzene	308	368	18	70-130	474	70-130
1,2,4-Trichlorobenzene	183	248	30	70-130	351	70-130
1,1,1-Trichloroethane	111	102	7.7	70-130	101	70-130
1,1,2-Trichloroethane	116	103	11	70-130	111	70-130
Trichloroethylene	112	106	6.0	70-130	104	70-130
Trichlorofluoromethane	111	109	1.8	70-130	110	70-130
1,2,3-Trichloropropane	101	111	9.5	70-130	141	70-130
1,2,4-Trimethylbenzene	87	107	20	70-130	88	70-130
1,3,5-Trimethylbenzene	97	96	1.3	70-130	100	70-130
Vinyl chloride	127	118	6.9	60-140	109	60-140
Xylenes	98	97	1.0	70-130	100	70-130
MTBE	112	115	3.0	70-130	116	70-130
Ethyl-tert-butylether	105	117	11	70-130	101	70-130
Di-isopropylether	106	105	0.5	70-130	103	70-130
tert-amylmethylether	98	102	4.3	70-130	102	70-130
Surrogate Recovery:						
Dibromofluoromethane	106	105		75-125	101	75-125
Toluene-d_8	94	99		75-125	97	75-125
4-Bromofluorobenzene	102	98		75-125	104	75-125

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample Spiked: Ambient Air **GC#:** E2-062215-E-0338

JEL ID:	**E-0338-49**	**E-0338-50**			**E-0338-48**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Benzene	105	105	0.0	70-130	103	70-130
Bromobenzene	91	91	0.3	70-130	79	70-130
Bromodichloromethane	94	99	5.8	70-130	102	70-130
Bromoform	94	96	2.3	70-130	92	70-130
n-Butylbenzene	95	94	0.8	70-130	72	70-130
sec-Butylbenzene	92	92	0.1	70-130	93	70-130
tert-Butylbenzene	92	92	0.3	70-130	90	70-130
Carbon tetrachloride	100	108	7.6	70-130	108	70-130
Chlorobenzene	114	104	9.5	70-130	100	70-130
Chloroform	108	115	6.3	70-130	116	70-130
2-Chlorotoluene	92	92	0.9	70-130	91	70-130
4-Chlorotoluene	91	89	2.0	70-130	86	70-130
Dibromochloromethane	89	90	0.6	70-130	95	70-130
1,2-Dibromo-3-chloropropane	96	101	5.9	70-130	87	70-130
1,2-Dibromoethane (EDB)	89	93	3.8	70-130	87	70-130
Dibromomethane	102	111	7.8	70-130	112	70-130
1,2- Dichlorobenzene	90	91	0.8	70-130	74	70-130
1,3-Dichlorobenzene	93	91	1.5	70-130	72	70-130
1,4-Dichlorobenzene	92	90	2.1	70-130	73	70-130
Dichlorodifluoromethane	77	88	13	70-130	85	70-130
1,1-Dichloroethane	93	104	10	70-130	104	70-130
1,2-Dichloroethane	100	106	6.0	70-130	108	70-130
1,1-Dichloroethene	86	82	4.4	60-140	82	60-140
cis-1,2-Dichloroethene	93	99	6.0	70-130	99	70-130
trans-1,2-Dichloroethene	106	108	2.0	70-130	107	70-130
1,2-Dichloropropane	97	102	4.4	70-130	105	70-130
1,3-Dichloropropane	90	92	2.0	70-130	82	70-130
1,1-Dichloropropene	95	96	1.2	70-130	98	70-130

QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

JEL ID:	E-0338-49	E-0338-50			E-0338-48	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Ethylbenzene	90	88	2.6	70-130	82	70-130
Freon 113	102	102	0.6	70-130	103	70-130
Hexachlorobutadiene	84	87	3.5	70-130	72	70-130
Isopropylbenzene	92	90	2.5	70-130	93	70-130
4-Isopropyltoluene	91	90	1.2	70-130	93	70-130
Methylene chloride	102	102	0.3	70-130	103	70-130
Naphthalene	96	102	5.8	70-130	84	70-130
n-Propylbenzene	95	93	1.6	70-130	93	70-130
Styrene	84	82	1.6	70-130	85	70-130
1,1,1,2-Tetrachloroethane	102	96	6.2	70-130	90	70-130
1,1,2,2-Tetrachloroethane	88	90	2.6	70-130	84	70-130
Tetrachloroethylene	90	88	2.8	70-130	72	70-130
Toluene	92	88	3.9	70-130	70	70-130
1,2,3-Trichlorobenzene	95	96	0.6	70-130	77	70-130
1,2,4-Trichlorobenzene	91	90	1.1	70-130	72	70-130
1,1,1-Trichloroethane	101	107	6.3	70-130	107	70-130
1,1,2-Trichloroethane	91	89	1.4	70-130	81	70-130
Trichloroethylene	96	100	3.7	70-130	100	70-130
Trichlorofluoromethane	98	108	10	70-130	106	70-130
1,2,3-Trichloropropane	91	92	1.7	70-130	86	70-130
1,2,4-Trimethylbenzene	92	90	1.3	70-130	90	70-130
1,3,5-Trimethylbenzene	91	90	0.8	70-130	89	70-130
Vinyl chloride	89	96	8.4	60-140	96	60-140
Xylenes	94	92	2.5	70-130	88	70-130
MTBE	114	120	5.2	70-130	126	70-130
Ethyl-tert-butylether	113	116	2.4	70-130	119	70-130
Di-isopropylether	117	117	0.4	70-130	115	70-130
Surrogate Recovery:						
Dibromofluoromethane	100	103		75-125	102	75-125
Toluene-d_8	95	88		75-125	84	75-125
4-Bromofluorobenzene	94	90		75-125	99	75-125

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample Spiked: Ambient Air **GC#:** E1-062315-E-0339

JEL ID:	**E-0338-42**	**E-0338-43**			**E-0338-41**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Benzene	97	97	0.6	70-130	101	70-130
Bromobenzene	100	106	5.5	70-130	114	70-130
Bromodichloromethane	107	109	1.4	70-130	116	70-130
Bromoform	97	98	0.9	70-130	105	70-130
n-Butylbenzene	62	70	13.2	70-130	80	70-130
sec-Butylbenzene	93	102	8.7	70-130	107	70-130
tert-Butylbenzene	98	103	5.3	70-130	107	70-130
Carbon tetrachloride	88	87	0.9	70-130	87	70-130
Chlorobenzene	106	102	3.8	70-130	107	70-130
Chloroform	109	107	1.7	70-130	113	70-130
2-Chlorotoluene	94	96	2.0	70-130	104	70-130
4-Chlorotoluene	76	74	2.2	70-130	86	70-130
Dibromochloromethane	101	107	6.0	70-130	111	70-130
1,2-Dibromo-3-chloropropane	63	92	38	70-130	110	70-130
1,2-Dibromoethane (EDB)	89	100	12	70-130	106	70-130
Dibromomethane	106	112	5.5	70-130	115	70-130
1,2- Dichlorobenzene	101	109	7.2	70-130	116	70-130
1,3-Dichlorobenzene	92	100	9.0	70-130	107	70-130
1,4-Dichlorobenzene	89	102	14	70-130	107	70-130
Dichlorodifluoromethane	102	101	1.0	70-130	104	70-130
1,1-Dichloroethane	118	115	2.7	70-130	127	70-130
1,2-Dichloroethane	98	106	8.0	70-130	106	70-130
1,1-Dichloroethene	89	77	14	60-140	90	60-140
cis-1,2-Dichloroethene	75	75	0.7	70-130	74	70-130
trans-1,2-Dichloroethene	119	116	3.1	70-130	135	70-130
1,2-Dichloropropane	112	110	1.8	70-130	121	70-130
1,3-Dichloropropane	72	74	3.6	70-130	76	70-130
1,1-Dichloropropene	77	74	2.9	70-130	80	70-130

QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

JEL ID:	E-0338-42	E-0338-43			E-0338-41	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Ethylbenzene	86	80	6.9	70-130	85	70-130
Freon 113	102	106	3.2	70-130	109	70-130
Hexachlorobutadiene	122	128	5.0	70-130	158	70-130
Isopropylbenzene	98	98	0.4	70-130	105	70-130
4-Isopropyltoluene	97	103	5.5	70-130	109	70-130
Methylene chloride	91	89	2.2	70-130	96	70-130
Naphthalene	230	271	17	70-130	377	70-130
n-Propylbenzene	100	99	1.0	70-130	60	70-130
Styrene	109	106	2.8	70-130	108	70-130
1,1,1,2-Tetrachloroethane	112	109	2.6	70-130	115	70-130
1,1,2,2-Tetrachloroethane	85	93	8.9	70-130	99	70-130
Tetrachloroethylene	107	99	6.9	70-130	110	70-130
Toluene	104	99	5.2	70-130	103	70-130
1,2,3-Trichlorobenzene	234	268	13	70-130	340	70-130
1,2,4-Trichlorobenzene	139	173	22	70-130	217	70-130
1,1,1-Trichloroethane	104	105	1.0	70-130	111	70-130
1,1,2-Trichloroethane	97	98	0.6	70-130	99	70-130
Trichloroethylene	108	107	0.8	70-130	115	70-130
Trichlorofluoromethane	104	111	6.0	70-130	114	70-130
1,2,3-Trichloropropane	73	84	14	70-130	90	70-130
1,2,4-Trimethylbenzene	75	81	8.2	70-130	85	70-130
1,3,5-Trimethylbenzene	89	90	0.5	70-130	96	70-130
Vinyl chloride	113	111	1.5	60-140	116	60-140
Xylenes	100	92	8.5	70-130	99	70-130
MTBE	104	110	5.7	70-130	113	70-130
Ethyl-tert-butylether	96	100	4.0	70-130	103	70-130
Di-isopropylether	95	99	3.4	70-130	102	70-130
tert-amylmethylether	93	98	6.1	70-130	98	70-130
Surrogate Recovery:						
Dibromofluoromethane	99	107		75-125	104	75-125
Toluene-d_8	101	97		75-125	100	75-125
4-Bromofluorobenzene	109	103		75-125	102	75-125

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.
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(714) 449-9937 | FAX (714) 449-9685

JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	6/23/2015
Client Address:	2100 Main Street, Suite 150 Huntington Beach, CA 92648	**JEL Ref. No.:**	E-0337-39
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	6/19&22-23/2015
		Date Received:	6/19&22-23/2015
Project:	Former MCAS	**Date Analyzed:**	6/19&22-23/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

Sample Spiked: Ambient Air **GC#:** E2-062315-E-0339

JEL ID:	**E-0337-47**	**E-0337-48**			**E-0337-46**	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Benzene	108	106	1.7	70-130	111	70-130
Bromobenzene	97	93	3.7	70-130	100	70-130
Bromodichloromethane	98	92	6.2	70-130	99	70-130
Bromoform	100	94	5.9	70-130	103	70-130
n-Butylbenzene	99	93	5.3	70-130	102	70-130
sec-Butylbenzene	99	93	5.6	70-130	103	70-130
tert-Butylbenzene	97	93	4.5	70-130	103	70-130
Carbon tetrachloride	108	104	3.8	70-130	108	70-130
Chlorobenzene	116	111	4.2	70-130	122	70-130
Chloroform	114	111	2.6	70-130	115	70-130
2-Chlorotoluene	97	91	6.0	70-130	99	70-130
4-Chlorotoluene	94	89	5.4	70-130	97	70-130
Dibromochloromethane	95	86	9.0	70-130	93	70-130
1,2-Dibromo-3-chloropropane	112	106	5.3	70-130	114	70-130
1,2-Dibromoethane (EDB)	95	89	6.7	70-130	97	70-130
Dibromomethane	109	104	4.8	70-130	109	70-130
1,2- Dichlorobenzene	94	89	5.3	70-130	97	70-130
1,3-Dichlorobenzene	96	92	3.8	70-130	99	70-130
1,4-Dichlorobenzene	94	89	5.2	70-130	96	70-130
Dichlorodifluoromethane	84	82	1.8	70-130	90	70-130
1,1-Dichloroethane	103	100	2.9	70-130	102	70-130
1,2-Dichloroethane	109	105	3.6	70-130	109	70-130
1,1-Dichloroethene	82	79	3.9	60-140	108	60-140
cis-1,2-Dichloroethene	98	94	4.4	70-130	99	70-130
trans-1,2-Dichloroethene	106	106	0.5	70-130	110	70-130
1,2-Dichloropropane	104	99	4.7	70-130	108	70-130
1,3-Dichloropropane	94	89	5.7	70-130	96	70-130
1,1-Dichloropropene	100	96	3.5	70-130	98	70-130

QUALITY CONTROL INFORMATION

EPA 8260B-Volatile Organics by GC/MS + Oxygenates

JEL ID:	E-0337-47	E-0337-48			E-0337-46	
Parameter	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Acceptability Range (%)	LCS (%)	Acceptability Range (%)
Ethylbenzene	94	88	6.4	70-130	95	70-130
Freon 113	102	102	0.3	70-130	108	70-130
Hexachlorobutadiene	91	86	5.7	70-130	90	70-130
Isopropylbenzene	98	92	6.2	70-130	101	70-130
4-Isopropyltoluene	97	90	7.3	70-130	100	70-130
Methylene chloride	102	102	0.2	70-130	108	70-130
Naphthalene	111	103	7.4	70-130	114	70-130
n-Propylbenzene	99	94	5.8	70-130	103	70-130
Styrene	85	81	4.1	70-130	87	70-130
1,1,1,2-Tetrachloroethane	102	95	7.5	70-130	104	70-130
1,1,2,2-Tetrachloroethane	98	92	7.1	70-130	99	70-130
Tetrachloroethylene	92	89	3.2	70-130	95	70-130
Toluene	94	89	6.1	70-130	97	70-130
1,2,3-Trichlorobenzene	98	92	6.2	70-130	99	70-130
1,2,4-Trichlorobenzene	93	87	7.1	70-130	93	70-130
1,1,1-Trichloroethane	107	104	3.4	70-130	108	70-130
1,1,2-Trichloroethane	94	90	4.9	70-130	97	70-130
Trichloroethylene	100	97	2.6	70-130	103	70-130
Trichlorofluoromethane	105	100	5.3	70-130	109	70-130
1,2,3-Trichloropropane	97	91	5.9	70-130	104	70-130
1,2,4-Trimethylbenzene	95	89	6.9	70-130	98	70-130
1,3,5-Trimethylbenzene	95	89	6.8	70-130	99	70-130
Vinyl chloride	98	94	4.0	60-140	100	60-140
Xylenes	97	91	6.3	70-130	99	70-130
MTBE	118	116	1.2	70-130	124	70-130
Ethyl-tert-butylether	117	116	1.0	70-130	120	70-130
Di-isopropylether	116	115	1.4	70-130	123	70-130
tert-amylmethylether	98	94	3.7	70-130	102	70-130
Surrogate Recovery:						
Dibromofluoromethane	99	100		75-125	97	75-125
Toluene-d_8	95	93		75-125	97	75-125
4-Bromofluorobenzene	91	90		75-125	96	75-125

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.
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Chain-of-Custody Record

Client: GEOSYNTEC CONSULTANTS
Date: 6/19/15
Project Name: EL TORO
Client Project #: HR-1462-10
Project Address: SAND CANYON & MARINE WAY, IRVINE, CA
Project Contact: MATT THOMAS

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☐ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer:
- ☐ n-propanol
- ☑ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: E-0337
Page 1 of 1
Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☑ no
Sealed ☑ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	EPA 8260				Magnehelic Vacuum (in/H_2O)	Number of Containers	Remarks/Special Instructions
SV-1-40' 1PV	1	615	6/19/15	12:44	12:45	E-0337-01	SG	X				<2	2	
SV-1-40' 3PV	3	1844	6/19/15	13:00	13:03	E-0337-02	SG	X				<2	2	
SV-1-40' 10PV	10	6148	6/19/15	13:21	13:21	E-0337-03	SG	X				<2	2	
SV-1-14' 1PV	1	473	6/19/15	12:51	12:51	E-0337-04	SG	X				<2	2	
SV-1-14' 3PV	3	1419	6/19/15	13:07	13:09	E-0337-05	SG	X				<2	2	
SV-1-14' 10PV	10	4729	6/19/15	13:28	13:28	E-0337-06	SG	X				<2	2	
SV-1-5'	3	1271	6/19/15	13:38	13:39	E-0337-07	SG	X				<2	2	

❶ Relinquished by (signature)	Date	❷ Received by (signature)	Date	Total Number of Containers
Zahra [signature]	6/23/15	[signature]	6/23/15	
Company	Time	Company: JONES	Time	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

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www.joneseny.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Date: 06/22/2015
Project Name: Former MCAS
Client Project #: HR-1462-10
Project Address: Sand Canyon & Marine Way, Irvine, CA
Project Contact: Matt Thomas

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: E-0338
Page 1 of 4

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested: CPA 8260B (VOCs)

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	CPA 8260B (VOCs)				Magnehelic Vacuum (in H_2O)	Number of Containers	Remarks/Special Instructions
SV-2-6'	3	1288	6/22	0739	0739	E-0338-01	SG	x				<2	2	glass gastight syringe
SV-2-14'	3	1419	6/22	0742	0743	E-0338-02	SG	x				<2	2	
SV-3-5'	3	1271	6/22	0755	0758	E-0338-03	SG	x				<2	2	
SV-3-13.5'	3	1410	6/22	0801	0801	E-0338-04	SG	x				<2	2	
SV-5-6'	3	1288	6/22	0816	0816	E-0338-05	SG	x				<2	2	
SV-5-15'	3	1435	6/22	0820	0820	E-0338-06	SG	x				<2	2	
SV-5-15' REP	3	1435	6/22	0832	0832	E-0338-07	SG	x				<2	2	
SV-5-34'	3	1746	6/22	0837	0837	E-0338-08	SG	x				<2	2	
SV-7-7'	3	1304	6/22	0854	0854	E-0338-09	SG	x				<2	2	
SV-7-14'	3	1419	6/22	0858	0858	E-0338-10	SG	x				2	2	

❶ Relinquished by (signature) [signature]	Date 6/23/15	❷ Received by (signature) [signature]	Date 6/23/15	Total Number of Containers 20
Company	Time	Company JONES	Time	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

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Santa Fe Springs, CA 90670
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www.jonesenv.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Date: 06/22/2015
Project Name: Former MCAS
Client Project #: HR-1462-10
Project Address: Sand Canyon & Marine Way, Irvine, CA
Project Contact: Matt Thomas

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: ~200 cc/min
Shut in Test (Y) / N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: E-0338
Page 2 of 4

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	EPA 8260B (VOCs)				Magnehelic Vacuum (in/H_2O)	Number of Containers	Remarks/Special Instructions
SV-9-9'	3	1337	6/22	0916	0917	E-0338-11	SG	x				<2	2	glass gastight syringe
SV-9-23'	3	1566	6/22	0921	0921	E-0338-12	SG	x				<2	2	
SV-9-37'	3	1795	6/22	0925	0932	E-0338-13	SG	x				<2	2	
SV-10-5'	3	1271	6/22	0946	0949	E-0338-14	SG	x				<2	2	
SV-10-5' REP	3	1271	6/22	0952	1008	E-0338-15	SG	x				<2	2	
SV-10-10.5'	3	1433	6/22	~~0957~~ 1957	~~0958~~ 1028	E-0338-16	SG	x				2	2	
SV-8-6.5'	3	1296	6/22	1006	1006	E-0338-17	SG	x				<2	2	
SV-8-20'	3	1517	6/22	1022	1026	E-0338-18	SG	x				2	2	
SV-6-8'	3	1320	6/22	1039	1039	E-0338-19	SG	x				<2	2	
SV-6-12.5'	3	1394	6/22	1043	1044	E-0338-20	SG	x					2	

❶ Relinquished by (signature): Zahra [signature]	Date: 6/23/15	❷ Received by (signature): [signature]	Date: 6/23/15
Company	Time	Company: Jones	Time
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date
Company	Time	Company	Time

Total Number of Containers: 20

The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

☐ EDD ☐ EDF

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(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Date: 06/22/2015
Project Name: Former MCAS
Client Project #: 1-R-146210
Project Address: Sand Canyon & Marine Way, Irvine, CA
Project Contact: Matt Thomas

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☐ 3P ☐ 7P ☐ 10P
Purge Rate: ~200 cc/min
Shut in Test (Y) / N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: C-0338
Page 3 of 4

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	CPA 8260B (VOCs)				Magnehelic Vacuum (in H_2O)	Number of Containers	Remarks/Special Instructions
SV-4-12'	3	1386	6/22	1105	1105	C-0338-21	SG	x				<2	2	glass gastight syringe
SV-4-22.5'	3	1558	6/22	1118	1120	C-0338-22	SG	x				2	2	
SV-4-36.5'	3	1787	6/22	1102	1102	C-0338-23	SG	x				4	2	
SV-4-36.5' REP	3	1787	6/22	1109	1116	C-0338-24	SG	x				4	2	
SV-12-6'	3	1288	6/22	1143	1145	C-0338-25	SG	x				2	2	
SV-12-20'	3	1517	6/22	1149	1151	C-0338-26	SG	x				2	2	
SV-12-39'	3	1828	6/22	1225	1226	C-0338-27	SG	x				94	2	LOW FLOW
SV-13-15.5 1PV	1	481	6/22	1244	1245	C-0338-28	SG	x				<2	2	
SV-13-15.5 3PV	3	1443	6/22	1252	1300	C-0338-29	SG	x				<2	2	
SV-13-15.5 10PV	10	4811	6/22	1310	1317	C-0338-30	SG	x				<2	2	

❶ Relinquished by (signature)	Date 6/23/15	❷ Received by (signature)	Date 6/22/15	Total Number of Containers 20
Company	Time	Company Jones	Time	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

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(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Project Name: Former MCAS
Project Address: Sand Canyon + Marine Way, Irvine, CA
Project Contact: Matt Thomas

Date: 06/22/2015
Client Project #: HR 1462-10

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☒ 1P ☒ 3P ☐ 7P ☒ 10P
Purge Rate: ~200 cc/min
Shut in Test (Y) / N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: C-0338
Page 4 of 4

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	CPA 8260B (VOCs)				Magnehelic Vacuum (in/H_2O)	Number of Containers	Remarks/Special Instructions
SV-13-35.5' 1PV	1	554	6/22	1303	1304	C-0338-31	SG	X				8	2	glass gastight syringe
SV-13-35.5' 3PV	3	1662	6/22	1319	1320	C-0338-32	SG	X				8	2	
SV-13-35.5' 10PV	10	5539	6/22	1340	1341	C-0338-33	SG	X				8	2	
SV-13-23.5'	~~10~~ 1	~~5249~~ 525	6/22	1411	1412	C-0338-34	SG	X				4	2	
SV-15-8'	10	4401	6/22	1422	1423	C-0338-35	SG	X				<2	2	
SV-15-20'	1	506	6/22	1428	1429	C-0338-36	SG	X				2	2	
SV-15-33'	1	543	6/22	1433	1434	C-0338-37	SG	X				4	2	
SV-14-7'	10	4345	6/22	1457	1457	C-0338-38	SG	X				<2	2	
SV-14-16'	10	4836	6/22	1507	1507	C-0338-39	SG	X				2	2	
SV-14-31'	1	506	6/22	1443	1444	C-0338-40	SG	X				6	2	

❶ Relinquished by (signature): Zahra	Date: 6/23/15	❷ Received by (signature): [signature]	Date: 6/23/15	Total Number of Containers: 20
Company	Time	Company: Jones	Time	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

JONES ENVIRONMENTAL, INC.
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(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Project Name: Former MCAS
Project Address: Sand Canyon + Marine Way, Irvine, CA
Project Contact: Matt Thomas

Date: 06/23/2015
Client Project #: HR-1462-10

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☒ 1P ☐ 3P ☐ 7P ☒ 10P
Purge Rate: ~200 cc/min
Shut in Test (Y) N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: E-0339
Page 1 of 4

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	EPA 8260B (VOCs)				Magnehelic Vacuum (in/H2O)	Number of Containers	Remarks/Special Instructions
SV-11-8'	10	4401	6/23	0758	0800	E-0339-01	SG	x				<5	2	glass gastight syringe
SV-11-17'	10	4893	6/23	0756	0757	E-0339-02	SG	x				<5	2	
SV-11-32'	1	571	6/23	0740	0741	E-0339-03	SG	x				<5	2	
SV-12-6' 10PV	10	4292	6/23	0820	0826	E0339-04	SG	x				<5	2	
SV-16-10.5'	10	4538	6/23	0830	0832	E0339-05	SG	x				<5	2	
SV-16-10.5' REP	10	4538	6/22	0831	0843	E0339-06	SG	X				<5	2	
SV-16-15'	10	4783	6/23	0848	0850	E0339-07	SG	x				<5	2	
SV-17-7.5'	10	4374	6/23	0913	0915	E0339-08	SG	x				<5	2	
SV-17-15.5'	10	4811	6/23	0917	0918	E0339-09	SG	x				25	2	
SV-20-5	10	4238	6/23	0949	0950	E0339-10	SG	x				<5	2	

❶ Relinquished by (signature): Zahra	Date: 6/23/15	❷ Received by (signature): [signature]	Date: 6/23/15
Company	Time	Company: Jones Environmental	Time
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date
Company	Time	Company	Time

Total Number of Containers

The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

☐ EDD ☐ EDF

JONES ENVIRONMENTAL, INC.
11007 Forest Place
Santa Fe Springs, CA 90670
(714) 449-9937
(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Project Name: Former MCAS
Project Address: Sand Canyon + Marine Way, Irvine, CA
Project Contact: Matt Thomas

Date: 06.23.15
Client Project #: HR-1462-10

Turn Around Requested:
- ☐ Immediate Attention
- ☐ Rush 24-48 Hours
- ☐ Rush 72-96 Hours
- ☐ Normal
- ☒ Mobile Lab

SOIL GAS
Purge Number: ☒ 1P ☐ 3P ☐ 7P ☒ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer:
- ☒ n-propanol
- ☒ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

Analysis Requested

JEL Project #: E-0339
Page 2 of 4

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	EPA 8260B (VOCs+oxy)				Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SV-20-14	10	4725	6/23	0955	0955	E-0339-11	SG	X				<5	2	gas tight glass syringe
SV-20-35	1	588	6/23	0934	0935	E-0339-12	SG	X				<5	2	
SV-19-5	10	4338	6/23	1022	1023	E-0339-13	SG	X				<5	2	
SV-19-11	10	4565	6/23	1011	1013	E-0339-14	SG	X				<5	2	
SV-19-11 REP	10	4565	6/23	1012	1031	E-0339-15	SG	X				<5	2	
SV-18-16.5	10	4865	6/23	1054	1055	E-0339-16	SG	X				10	2	
SV-18-20.5	1	508	6/23	1035	1036	E-0339-17	SG	X				<5	2	
SV-18-38	1	604	6/23	1042	1049	E-0339-18	SG	X				<5	2	

Total Number of Containers

❶ Relinquished by (signature)	Date	❷ Received by (signature)	Date
Zahra [signature]	6/23/15	[signature]	6/23/15
Company	Time	Company: Jones Environmental	Time
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date
Company	Time	Company	Time

The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

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APPENDIX C

SOIL GAS METHANE ANALYTICAL LABORATORY REPORTS

JONES ENVIRONMENTAL, INC.
P.O. BOX 5387 | FULLERTON, CA 92838
(714) 449-9937 | FAX (714) 449-9685

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/29/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No:**	ST-8726 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/29/2015 9/29/2015
Project:	Former MCAS	**Date Analyzed:**	9/29/2019
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. ASTM D1946- Fixed Gases

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager

JONES ENVIRONMENTAL, INC.
P.O. Box 5387 | FULLERTON, CA 92838
(714) 449-9937 | Fax (714) 449-9685

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/29/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8726 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/29/2015 9/29/2015
Project:	Former MCAS	**Date Analyzed:**	9/29/2019
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**SV-1-5**	**SV-1-14**	**SV-3-5**	**SV-3-13.5**	**SV-5-6**		
JEL ID:	**ST-8726-01**	**ST-8726-02**	**ST-8726-03**	**ST-8726-04**	**ST-8726-05**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**1.05**	**1.3**	**0.50**	**0.51**	**0.76**	0.01	%
Oxygen (O_2)	**17.8**	**17.7**	**18.2**	**18.1**	**18.2**	0.01	%
Nitrogen (N_2)	**78.6**	**78.8**	**78.6**	**78.2**	**78.5**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	092915_2	092915_2	092915_2	092915_2	092915_2		

Sample ID:	**SV-5-15**	**SV-5-15 REP**	**SV-7-7**	**SV-7-14**	**SV-9-9**		
JEL ID:	**ST-8726-06**	**ST-8726-07**	**ST-8726-08**	**ST-8726-09**	**ST-8726-10**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**0.95**	**0.97**	ND	**1.02**	**0.95**	0.01	%
Oxygen (O_2)	**18.2**	**18.2**	**18.8**	**17.9**	**17.9**	0.01	%
Nitrogen (N_2)	**78.5**	**78.6**	**78.8**	**78.6**	**78.9**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	092915_2	092915_2	092915_2	092915_2	092915_2		

ND = Not Detected

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/29/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8726 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/29/2015 9/29/2015
Project:	Former MCAS	**Date Analyzed:**	9/29/2019
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**SV-9-9 REP**	**SV-9-23**	**SV-8-6.5**	**SV-8-20**	**SV-6-8**		
JEL ID:	**ST-8726-11**	**ST-8726-12**	**ST-8726-13**	**ST-8726-14**	**ST-8726-15**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**0.96**	**1.08**	ND	**0.90**	**0.47**	0.01	%
Oxygen (O_2)	**17.9**	**17.7**	**18.4**	**18.2**	**18.4**	0.01	%
Nitrogen (N_2)	**78.9**	**79.1**	**78.8**	**78.5**	**78.7**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	092915_2	092915_2	092915_2	092915_2	092915_2		

Sample ID:	**SV-6-12.5**	**SV-4-12**	**SV-4-22.5**	**SV-2-6**	**SV-2-14**		
JEL ID:	**ST-8726-16**	**ST-8726-17**	**ST-8726-18**	**ST-8726-19**	**ST-8726-20**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**0.54**	**0.77**	**1.23**	**0.60**	**0.60**	0.01	%
Oxygen (O_2)	**18.4**	**18.3**	**18.3**	**18.5**	**18.4**	0.01	%
Nitrogen (N_2)	**78.7**	**78.6**	**78.4**	**78.8**	**78.7**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	092915_2	092915_2	092915_2	092915_2	092915_2		

ND = Not Detected

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/29/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8726 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/29/2015 9/29/2015
Project:	Former MCAS	**Date Analyzed:**	9/29/2019
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**METHOD BLANK**		
JEL ID:	**ST-8726-21**	**Reporting Limits**	**Units**
Analytes:			
Carbon Dioxide (CO_2)	ND	0.01	%
Oxygen (O_2)	**18.8**	0.01	%
Nitrogen (N_2)	**78.8**	0.01	%
Methane (CH_4)	ND	0.01	%
Carbon Monoxide (CO)	ND	0.01	%
	092915_2		

ND = Not Detected

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	9/29/2015
Client Address:	2100 Main Street #150	**JEL Ref. No.:**	ST-8726
	Huntington Beach, CA 92648	**Client Ref. No.:**	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	9/29/2015
		Date Received:	9/29/2015
Project:	Former MCAS	**Date Analyzed:**	9/29/2019
Project Address:	Sand Canyon & Marine Way	**Physical State:**	Soil Gas
	Irvine, CA		

ASTM D1946 - Fixed Gases

GC#: 092915_2

JEL ID:	**ST-8726-22**	**ST-8726-23**		
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)
Carbon Dioxide (CO_2)	95%	100%	5.4%	60-140
Oxygen (O_2)	112%	112%	0.4%	60-140
Nitrogen (N_2)	101%	102%	0.2%	60-140
Methane (CH_4)	99%	100%	0.2%	60-140
Carbon Monoxide (CO)	99%	99%	0.1%	60-140

LCS = Lab Control Sample
LCSD = Lab Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.

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Chain-of-Custody Record

Client: Geosyntec Consultants
Date: Sep 29 2015
Project Name: Former MCAS
Client Project #: HR-1462-10
Project Address: Sand Canyon + Marine Way, Irvine, CA
Turn Around Requested: ☒ Immediate Attention; Rush: ☐ 24 ☐ 48 ☐ 72; ☐ Normal; ☐ Mobile Lab
Project Contact: Matt Thomas

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test: (Y) / N
Tracer: ☐ n-propanol ☐ n-pentane ☐ 1,1-DFA ☐ Helium ☐ _____

JEL Project #: ST-8726
Page 1 of 2
Lab Use Only
Sample Condition as Received: Chilled ☐ yes ☒ no; Sealed ☒ yes ☐ no

Analysis Requested: ASTM D 1946

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)					Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SV-1-5	3	1271	9/29	11:17		ST-8726-01	SG	X				5	1	TEDLAR
SV-1-14	3	1419	9/29	11:20		-02	SG	X				5	1	TEDLAR
SV-3-5	3	1271	9/29	11:35		-03	SG	X				5	1	TEDLAR
SV-3-13.5	3	1410	9/29	11:39		-04	SG	X				5	1	TEDLAR
SV-5-6	3	1288	9/29	11:54		-05	SG	X				5	1	TEDLAR
SV-5-15	3	1435	9/29	12:00		-06	SG	X				5	1	TEDLAR
SV-5-15 REP	3	1435	9/29	12:00		-07	SG	X				5	1	TEDLAR
SV-7-7	3	1304	9/29	12:18		-08	SG	X				5	1	TEDLAR
SV-7-14	3	1419	9/29	12:22		-09	SG	X				5	1	TEDLAR
SV-9-9	3	1337	9/29	12:43		-10	SG	X				5	1	TEDLAR

❶ Relinquished by (signature): Zahra A	Date: 9/29/15	❷ Received by (signature): Holly Lin	Date: 9/29/15	Total Number of Containers: 10
Company: Geosyntec	Time: 14:00	Company: Jones Environmental Inc	Time: 14:00	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

JONES ENVIRONMENTAL, INC.

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(714) 449-9937
(562) 646-1611
www.jonesenv.com

Chain-of-Custody Record

Client: Geosyntec Consultants
Date: Sep 29 2015
Project Name: Former MCAS
Client Project #: HR-1462-10
Project Address: Sand Canyon + Marine Way, Irvine, CA
Turn Around Requested: [X] Immediate Attention; Rush: ☐ 24 ☐ 48 ☐ 72; ☐ Normal; ☐ Mobile Lab
Project Contact: Matt Thomas

SOIL GAS
Purge Number: ☐ 1P [X] 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer: ☐ n-propanol ☐ n-pentane ☐ 1,1-DFA ☐ Helium ☐ _____

JEL Project #: ST-8726
Page 2 of 2
Lab Use Only
Sample Condition as Received: Chilled ☐ yes [X] no; Sealed [X] yes ☐ no

Analysis Requested: ASTM D 1946

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	ASTM D 1946				Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SV-9-9 REP	3	1337	9/29	12:43		ST-8726 -11	SG	X				5	1	TEDLAR
SV-9-23	3	1566	9/29	12:45		-12	SG	X				5	1	TEDLAR
SV-8-6.5	3	1286	9/29	12:56		-13	SG	X				5	1	TEDLAR
SV-8-20	3	1517	9/29	13:00		-14	SG	X				5	1	TEDLAR
SV-6-8	3	1320	9/29	13:16		-15	SG	X				5	1	TEDLAR
SV-6-12.5	3	1394	9/29	13:20		-16	SG	X				5	1	TEDLAR
SV-4-12	3	1386	9/29	13:35		-17	SG	X				5	1	TEDLAR
SV-4-22.5	3	1558	9/29	13:38		-18	SG	X				5	1	TEDLAR
SV-2-6	3	1288	9/29	13:49		-19	SG	X				5	1	TEDLAR
SV-2-14	3	1419	9/29	13:53		-20	SG	X				5	1	TEDLAR

1 Relinquished by (signature): Zahra A	Date: 9/29/15	2 Received by (signature): Patty Lee Wu	Date: 9/29/15	Total Number of Containers: 10
Company: Geosyntec	Time: 14:00	Company: Jones Environmental Inc	Time: 14:00	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
3 Relinquished by (signature)	Date	4 Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

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(714) 449-9937 | FAX (714) 449-9685

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/30/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No:**	ST-8728 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/30/2015 9/30/2015
Project:	Former MCAS	**Date Analyzed:**	9/30/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. ASTM D1946- Fixed Gases

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager

JONES ENVIRONMENTAL, INC.
P.O. Box 5387 | FULLERTON, CA 92838
(714) 449-9937 | Fax (714) 449-9685

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/30/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8728 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/30/2015 9/30/2015
Project:	Former MCAS	**Date Analyzed:**	9/30/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**SV-11-8**	**SV-11-8 REP**	**SV-11-17**	**SV-10-5**	**SV-10-10.5**		
JEL ID:	**ST-8728-01**	**ST-8728-02**	**ST-8728-03**	**ST-8728-04**	**ST-8728-05**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**3.76**	**3.26**	ND	**0.45**	**0.61**	0.01	%
Oxygen (O_2)	**15.3**	**13.3**	**15.8**	**17.1**	**14.2**	0.01	%
Nitrogen (N_2)	**79.4**	**68.9**	**66.2**	**73.3**	**61.0**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	093015	093015	093015	093015	093015		

Sample ID:	**SV-12-6**	**SV-12-20**	**SV-13-15.5**	**SV-13-23.5**	**SV-15-8**		
JEL ID:	**ST-8728-06**	**ST-8728-07**	**ST-8728-08**	**ST-8728-09**	**ST-8728-10**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**3.42**	**2.30**	**5.43**	**4.75**	ND	0.01	%
Oxygen (O_2)	**15.7**	**16.5**	**13.8**	**14.2**	**14.0**	0.01	%
Nitrogen (N_2)	**77.8**	**79.0**	**79.2**	**79.5**	**79.2**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	093015	093015	093015	093015	093015		

ND = Not Detected

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(714) 449-9937 | Fax (714) 449-9685

JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/30/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8728 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/30/2015 9/30/2015
Project:	Former MCAS	**Date Analyzed:**	9/30/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**SV-15-20**	**SV-15-20 REP**	**SV-14-7**	**SV-14-16**	**SV-16-10.5**		
JEL ID:	**ST-8728-11**	**ST-8728-12**	**ST-8728-13**	**ST-8728-14**	**ST-8728-15**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**3.60**	**3.55**	**2.30**	**2.60**	**3.63**	0.01	%
Oxygen (O_2)	**14.9**	**14.8**	**12.9**	**16.3**	**15.9**	0.01	%
Nitrogen (N_2)	**80.1**	**79.3**	**62.4**	**77.9**	**78.0**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	093015	093015	093015	093015	093015		

Sample ID:	**SV-16-15**	**SV-17-7.5**	**SV-17-15.5**	**SV-20-5**	**SV-20-14**		
JEL ID:	**ST-8728-16**	**ST-8728-17**	**ST-8728-18**	**ST-8728-19**	**ST-8728-20**	**Reporting Limits**	**Units**
Analytes:							
Carbon Dioxide (CO_2)	**3.49**	**2.34**	**2.56**	**1.56**	**1.94**	0.01	%
Oxygen (O_2)	**16.1**	**15.9**	**15.6**	**17.3**	**17.1**	0.01	%
Nitrogen (N_2)	**78.2**	**76.9**	**79.6**	**78.4**	**78.1**	0.01	%
Methane (CH_4)	ND	ND	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	ND	ND	0.01	%
	093015	093015	093015	093015	093015		

ND = Not Detected

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	9/30/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8728 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	9/30/2015 9/30/2015
Project:	Former MCAS	**Date Analyzed:**	9/30/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**METHOD BLANK**		
JEL ID:	**ST-8728-21**	**Reporting Limits**	**Units**
Analytes:			
Carbon Dioxide (CO_2)	**0.01**	0.01	%
Oxygen (O_2)	**18.4**	0.01	%
Nitrogen (N_2)	**79.0**	0.01	%
Methane (CH_4)	ND	0.01	%
Carbon Monoxide (CO)	ND	0.01	%
	093015		

ND = Not Detected

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	9/30/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:**	ST-8728
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	9/30/2015
		Date Received:	9/30/2015
Project:	Former MCAS	**Date Analyzed:**	9/30/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

GC#: 093015

JEL ID:	**ST-8729-22**	**ST-8729-23**		
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)
Carbon Dioxide (CO_2)	102%	104%	2.1%	60-140
Oxygen (O_2)	111%	111%	0.5%	60-140
Nitrogen (N_2)	102%	102%	0.5%	60-140
Methane (CH_4)	101%	100%	0.7%	60-140
Carbon Monoxide (CO)	101%	100%	0.4%	60-140

LCS = Lab Control Sample
LCSD = Lab Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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Chain-of-Custody Record

Client: Geosyntec Consultants
Project Name: Former MCAS
Project Address: Sand Canyon + Marine Way, Irvine CA
Project Contact: Matt Thomas

Date: Sep 30 2015
Client Project #: HR-14662-10

Turn Around Requested:
- [x] Immediate Attention
- Rush: ☐ 24 ☐ 48 ☐ 72
- ☐ Normal
- ☐ Mobile Lab

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer:
- ☐ n-propanol
- ☐ n-pentane
- ☐ 1,1-DFA
- ☐ Helium
- ☐ _____

JEL Project #: ST-8728

Page 1 of 2

Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested: ASTM D 1946

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)					Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SV-11-8	3	1320	9/30	10:02		ST-8728-01	SG	X				5	1	TEDLAR
SV-11-8 REP	3	1320	9/30	10:02		ST-8728-02	SG	X				5	1	TEDLAR
SV-11-[illegible]	3	1468	9/30	10:04		ST-8728-03	SG	X				5	1	TEDLAR
SV-10-5	3	1271	9/30	10:34		ST-8728-04	SG	X				5	1	TEDLAR
SV-10-10.5	3	1433	9/30	10:22		ST-8728-05	SG	X				5	1	TEDLAR
SV-12-6	3	1287	9/30	10:53		ST-8728-06	SG	X				5	1	TEDLAR
SV-12-20	3	1517	9/30	10:58		ST-8728-07	SG	X				5	1	TEDLAR
SV-13-15.5	3	1443	9/30	11:18		ST-8728-08	SG	X				5	1	TEDLAR
SV-13-23.5	3	1575	9/30	11:20		ST-8728-09	SG	X				5	1	TEDLAR
SV-15-8	3	1320	9/30	11:38		ST-8728-10	SG	X				5	1	TEDLAR

1 Relinquished by (signature): Zahra A	Date: 9/30/15	2 Received by (signature): Billy L W	Date: 9/30/15	10 Total Number of Containers
Company	Time: 13:06	Company: Jones Environmental Inc	Time	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
3 Relinquished by (signature)	Date	4 Received by Laboratory (signature)	Date	
Company	Time	Company	Time	☐ EDD ☐ EDF

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Chain-of-Custody Record

Client: Ecosystem Consultants
Date:
Project Name: FORMER MCAS
Client Project #: HR-1462-10
Project Address: Sand Canyon & Marine Way, Irvine CA
Turn Around Requested: ☒ Immediate Attention; Rush: ☐ 24 ☐ 48 ☐ 72; ☐ Normal; ☐ Mobile Lab
Project Contact: Matt Thomas

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer: ☐ n-propanol ☒ n-pentane ☐ 1,1-DFA ☐ Helium ☐ _____

JEL Project #: ST-8728
Page 2 of 2
Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested: ASTM D 1946

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)	ASTM D 1946				Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SV-15-20	3	1518	9/30	11:42		ST-8728-01	SG	X				5	1	TEDLAR
SV-15-20 REP	3	1518	9/30	11:42		ST-8728-02	SG	X				5	1	TEDLAR
SV-14-7	3	1304	9/30	11:59		ST-8728-03	SG	X				5	1	TEDLAR
SV-14-16	3	1451	9/30	12:02		ST-8728-04	SG	X				5	1	TEDLAR
SV-16-10.5	3	1361	9/30	12:14		ST-8728-05	SG	X				5	1	TEDLAR
SV-16-15	3	1435	9/30	12:17		ST-8728-06	SG	X				5	1	TEDLAR
SV-17-7.5	3	1312	9/30	12:32		ST-8728-07	SG	X				5	1	TEDLAR
SV-17-15.5	3	1443	9/30	12:36		ST-8728-08	SG	X				5	1	TEDLAR
SV-20-5	3	1271	9/30	13:02		ST-8728-09	SG	X				5	1	TEDLAR
SV-20-14	3	1418	9/30	13:05		ST-8728-20	SG	X				5	1	TEDLAR

❶ Relinquished by (signature): Zahra H	Date: 9/30/13	❷ Received by (signature): [signature]	Date: 9/30/13	Total Number of Containers: 10
Company	Time: 13:07	Company: Jones Environmental Inc	Time	
❸ Relinquished by (signature)	Date	❹ Received by Laboratory (signature)	Date	
Company	Time	Company	Time	

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	10/1/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No:**	ST-8732 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	10/1/2015 10/1/2015
Project:	Former MCAS	**Date Analyzed:**	10/1/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. ASTM D1946- Fixed Gases

Approval: _____

Steve Jones, Ph.D.
Laboratory Manager

JONES ENVIRONMENTAL, INC.

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	10/1/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8732 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	10/1/2015 10/1/2015
Project:	Former MCAS	**Date Analyzed:**	10/1/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**SV-19-5**	**SV-19-5 REP**	**SV-19-11**		
JEL ID:	**ST-8732-01**	**ST-8732-02**	**ST-8732-03**	**Reporting Limits**	**Units**
Analytes:					
Carbon Dioxide (CO_2)	ND	**4.27**	**3.63**	0.01	%
Oxygen (O_2)	**15.0**	**15.3**	**13.4**	0.01	%
Nitrogen (N_2)	**78.2**	**78.6**	**67.4**	0.01	%
Methane (CH_4)	ND	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	ND	0.01	%
	100515_1	100515_1	100515_1		

Pages 3-4 Purposely Blank

(Samples collected from a separate parcel)

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Geosyntec Consultants	**Report date:**	10/1/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:** **Client Ref. No.:**	ST-8732 HR-1462-10
Attn:	Matt Thomas	**Date Sampled:** **Date Received:**	10/1/2015 10/1/2015
Project:	Former MCAS	**Date Analyzed:**	10/1/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

Sample ID:	**METHOD BLANK**	**METHOD BLANK**		
JEL ID:	**ST-8732-25**	**ST-8732-26**	**Reporting Limits**	**Units**
Analytes:				
Carbon Dioxide (CO_2)	ND	ND	0.01	%
Oxygen (O_2)	**18.4**	**18.6**	0.01	%
Nitrogen (N_2)	**78.6**	**78.7**	0.01	%
Methane (CH_4)	ND	ND	0.01	%
Carbon Monoxide (CO)	ND	ND	0.01	%
	100515_1	100515_2		

ND = Not Detected

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	10/1/2015
Client Address:	2100 Main Street #150	**JEL Ref. No.:**	ST-8732
	Huntington Beach, CA 92648	**Client Ref. No.:**	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	10/1/2015
		Date Received:	10/1/2015
Project:	Former MCAS	**Date Analyzed:**	10/1/2015
Project Address:	Sand Canyon & Marine Way	**Physical State:**	Soil Gas
	Irvine, CA		

ASTM D1946 - Fixed Gases

GC#: 100515_1

JEL ID:	**ST-8732-27**	**ST-8732-28**		
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)
Carbon Dioxide (CO_2)	98%	96%	2.5%	60-140
Oxygen (O_2)	112%	112%	0.2%	60-140
Nitrogen (N_2)	102%	102%	0.1%	60-140
Methane (CH_4)	100%	100%	0.2%	60-140
Carbon Monoxide (CO)	100%	100%		60-140

LCS = Lab Control Sample
LCSD = Lab Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Geosyntec Consultants	**Report date:**	10/1/2015
Client Address:	2100 Main Street #150 Huntington Beach, CA 92648	**JEL Ref. No.:**	ST-8732
		Client Ref. No.:	HR-1462-10
Attn:	Matt Thomas	**Date Sampled:**	10/1/2015
		Date Received:	10/1/2015
Project:	Former MCAS	**Date Analyzed:**	10/1/2015
Project Address:	Sand Canyon & Marine Way Irvine, CA	**Physical State:**	Soil Gas

ASTM D1946 - Fixed Gases

GC#: 100515_2

JEL ID:	**ST-8732-29**	**ST-8732-30**		
Parameter	LCS Recovery (%)	LCSD Recovery (%)	RPD	Acceptability Range (%)
Carbon Dioxide (CO_2)	101%	97%	3.6%	60-140
Oxygen (O_2)	85%	88%	2.9%	60-140
Nitrogen (N_2)	101%	100%	0.3%	60-140
Methane (CH_4)	101%	100%	0.9%	60-140
Carbon Monoxide (CO)	100%	100%	0.7%	60-140

LCS = Lab Control Sample
LCSD = Lab Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

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Chain-of-Custody Record

Client: Geosyntec Consultants
Date: 10-1-15
Project Name: Former MCAS
Client Project #: HR-1462-10
Project Address: Sand Canyon & Marine Way, Irvine, CA
Turn Around Requested: ☒ Immediate Attention; Rush: ☐ 24 ☐ 48 ☐ 72; ☐ Normal; ☐ Mobile Lab
Project Contact: Matt Thomas

SOIL GAS
Purge Number: ☐ 1P ☒ 3P ☐ 7P ☐ 10P
Purge Rate: 200 cc/min
Shut in Test (Y) / N
Tracer: ☐ n-propanol ☐ n-pentane ☐ 1,1-DFA ☐ Helium ☐ _____

JEL Project #: ST-8732
Page 1 of 3
Lab Use Only
Sample Condition as Received:
Chilled ☐ yes ☒ no
Sealed ☒ yes ☐ no

Analysis Requested: ASTM D 1946

Sample ID	Purge Number	Purge Volume	Date	Sample Collection Time	Sample Analysis Time	Laboratory Sample Number	Sample Matrix: Soil (S), Sludge (SL), Aqueous (A), Soil Gas (SG)					Magnehelic Vacuum (In/H_2O)	Number of Containers	Remarks/Special Instructions
SV-19-5	3	1271	10/1	10:05		ST-8732-01	SG	X				5	4	
SV-19-5 REP	3	1271	10/1	10:05		-02	SG	X				5	1	
SV-19-11	3	1370	10/1	10:10		-03	SG	X				5	1	
SV-18-16.5			10/1			-04								NO FLOW
SV-18-20.5			10/1			-05								NO FLOW
SV-18-38	CW 3	CW ~~1870~~	10/1			-06	CW ~~SG~~	CW X				CW 5	CW 4	NO FLOW

1 Relinquished by (signature): Zahra	Date: 10/1/15	2 Received by (signature):	Date: 10-1-15	Total Number of Containers: 7
Company:	Time: 13:13	Company: JEL	Time: 1313	The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.
3 Relinquished by (signature):	Date:	4 Received by Laboratory (signature):	Date:	
Company:	Time:	Company:	Time:	☐ EDD ☐ EDF

Radiological Survey Report

Warehouse Building #317

Former Marine Corps Air Station (MCAS) El Toro

Irvine, California 92618

Prepared By

Don Wadsworth, M.S.H.P.

New World Environmental Inc.

448 Commerce Way

Livermore, California 94551

925-443-7967

Prepared For

Geosyntec Consultants

&

Lowe Enterprises

8001 Irvine Center Drive, Suite 1460

Irvine California 92618

September 9th, 2014

Job No: HR1462-02

List of Acronyms and Abbreviations

^{241}Am	Americium-241
^{14}C	Carbon-14
CA	California
CFR	Code of Federal Regulations
CHP	Certified by American Board of Health Physics
cm^2	square centimeter
cpm	counts per minute
DCGL	Derived Concentration Guideline Levels
DPH	Department of Public Health
dpm	disintegrations per minute
DQO	data quality objective
FSS	Final status survey
FSSP	Final status survey plan
FSSR	Final status survey report
GCPM	Gross Counts Per Minute
^{3}H	Tritium
IL	Investigational Level
HRA	Historical Radiological Assessment
LBGR	Lower Bound of the Gray Region
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MARSAME	Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual
M&E	Materials and Equipment
MDA	minimum detectable activity
MDC	minimum detectable count or concentration
MDCR	minimum detectable count rate
NRC	Nuclear Regulatory Commission
NUREG	NRC nuclear regulation document
PPE	Personnel Protective Equipment
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCAP	Radiological Confirmatory Action Plan
RML	Radioactive Materials License
RSSP	Radiological Survey and Sampling Plan
RCOC	Radionuclide Contaminants of Concern
RSO	Radiation Services Organization, Inc.
^{90}Sr	Strontium-90
St Dev	Standard Deviation
SU	survey unit
^{99}Tc	Technecium-99
n_X	The number of nucleons is denoted as a superscripted prefix to the chemical symbol (e.g. ^{3}He, ^{12}C, ^{13}C, ^{131}I, and ^{238}U).

EXECUTIVE SUMMARY

This document presents the results of radiological surveys conducted by New World Environmental Inc. (NWE) for Lowe Enterprises (Lowe), at warehouse Building #317 (B-317) located on the former Marine Corps Air Station (MCAS) El Toro in Irvine, California. This building is a wood frame former warehouse enclosing approximately 126,000 square feet. It is located on the southwest side of the base (33°39'48.13" N, 117 °44'19.49" W) just east of the Irvine Technology Center.

The survey was planned and conducted with guidance from the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)[1] for "Scenario B" (i.e., indistinguishable from background) for the "free release" of the buildings.

The radionuclides contaminants of concern were identified in the Historical Radiological Assessment completed by NWE in October 2000[2].

NWE conducted the Radiological final status survey (FSS) during the period of June 24th through the 30th of 2014. The FSS included:

a) Establishment of a background reference area from an area that had similar construction materials to those being surveyed.
b) A minimum of 10% of B-317 was surveyed.
c) Measurement locations were random for static measurements. Survey personnel used professional judgment for bias/sentinel measurements.
d) Scans and static measurements for α and β radiations were performed with a Ludlum 43-37 (584 cm^2) probe.
e) A response check form or instrument control log was used to keep track of background counts and response checks on a daily basis during work activities. Daily response checks were within +/- 20% of the established baseline.
f) For static measurements, instrument minimum detectable counts or concentrations (MDCs) were less than 50% of Table 1 from RegGuide 1.86[3] maximum surface release criteria. The investigation level (IL) for static measurements were measurements that exceeded the MDC.
g) For scan measurements, instrument MDCs were less than RegGuide 1.86's maximum surface release criteria.

All Data Quality Objectives (DQOs) of the survey were met; data and statistical analyses for individual measurements and individual survey unit summaries are provided. The IL for this survey was any measurement distinguishable from background. Survey instruments and counting times were selected and calculated to provide minimum detectable count rates (MDCR) below the acceptable surface contamination levels of the Nuclear Regulatory Commission (NRC) and the State of California.

No levels of radiation and radioactive material distinguishable from natural background were detected during fixed measurements and scanning that exceeded the IL; and therefore, no discussion regarding this type of anomalous data is provided in the individual survey unit summaries.

In summary, no residual contamination levels were identified and the facility meets the California CDPH RHB requirement for unrestricted release.

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Appendix A. B-317 Survey Map identifying Survey Units within the building

Appendix B. Instrument Calibration Certificates

Appendix C. Scan Data

Appendix D. Static Data

Appendix E. Swipe Data

Appendix F. Minimum Detectable Activity/Minimum Detectable Count Rate Calculations

1.0 Introduction and Background

New World Environmental (NWE) was contracted to conduct a radiological survey in Building #317 (B-317) at the former Marine Corps Air Station (MCAS) El Toro, in Irvine, California (Figure 1). This building is a wood frame former warehouse enclosing approximately 126,000 square feet. It is located on the southwest side of the base (33º39'48.13" N, 117 º44'19.49" W) just east of the Irvine Technology Center (Figure 2).

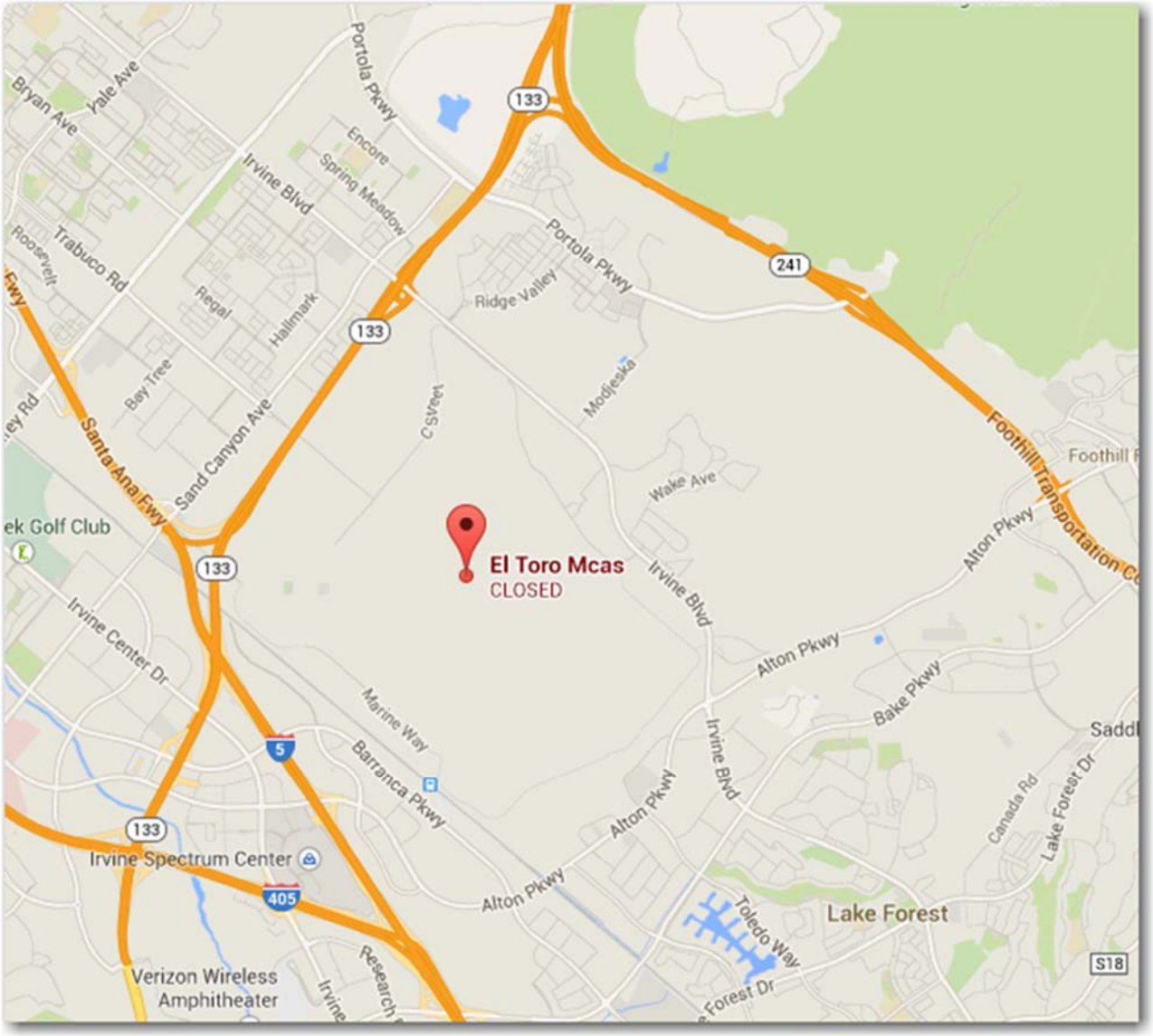

Figure 1. Map of location of former MCAS El Toro, Irvine California

1.1 Site History/Description

MCAS El Toro was a military installation that encompassed approximately 4,738 acres near the City of Irvine in Orange County, California and is undergoing closeout and transfer under Base Realignment and Closure (BRAC). The installation is generally bounded by Interstate 5 on the southwest, State Route 133 on the northwest, Irvine Blvd.

on the northeast, and Alton Parkway on the southeast. Figures 3 and 4 are photographs of the interior of the B-317 warehouse showing its wood frame on a concrete slab construction, which measures approximately 126,000 square feet (2.9 acres). The building originally served as a major supply building used in receipt, storage, and shipment of materials and equipment associated with operation of MCAS El Toro. The Historical Radiological Assessment (HRA)[2] of MCAS El Toro listed B-317 as a non-impacted area based on historical records of its use (i.e., it was not considered to have contained radioactive materials in the past). However, the HRA identified Buildings B-360 and B-319 (i.e., similarly constructed buildings in the vicinity of B-317) as sites where radioactive aircraft components may have been stored. A Class 3 release survey (a minimal requirement for areas with a remote possibility of radiological contamination) was conducted in these warehouse buildings in September of 2000 in accordance with NUREG-1575, MARSSIM as part of the BRAC process.

Figure 2. B-317 location (33°39'48.13" N, 117 °44'19.49" W)

Figure 3. Building B-317 warehouse southeast end looking northwest, down center of warehouse.

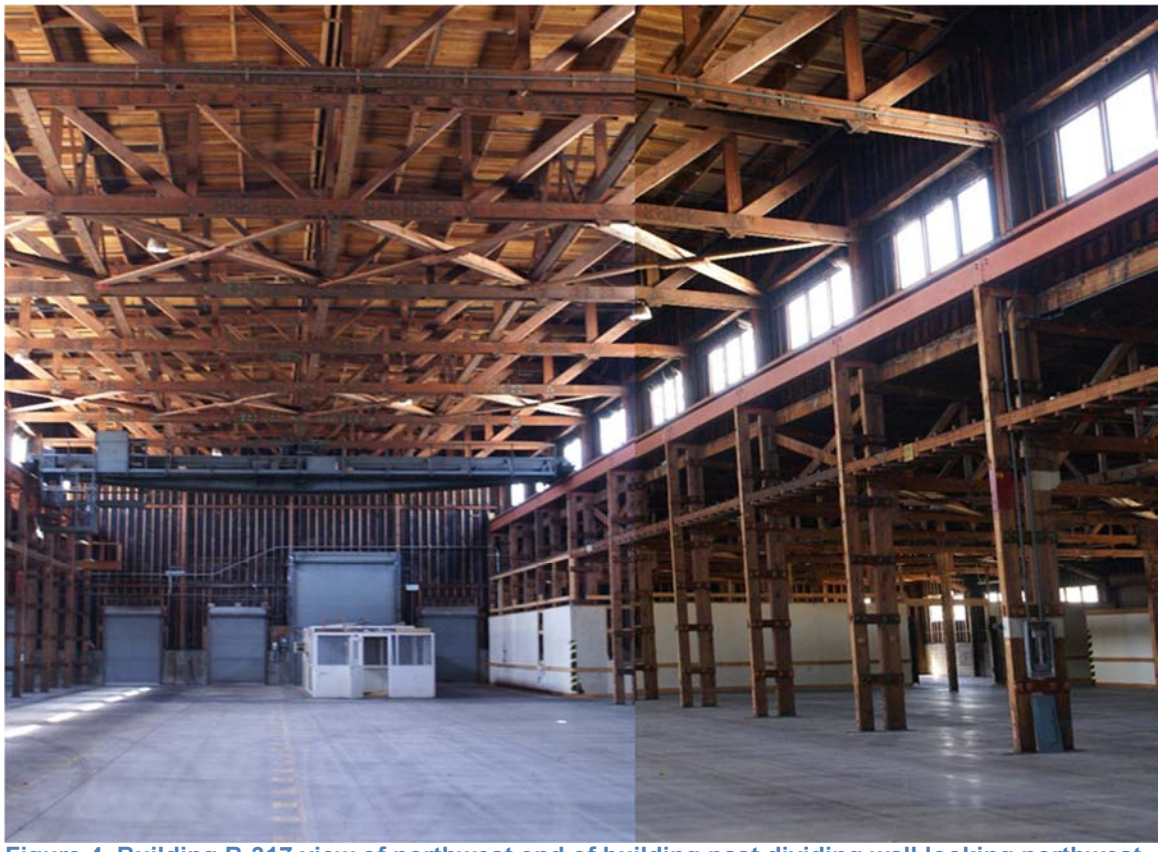

Figure 4. Building B-317 view of northwest end of building past dividing wall looking northwest.

Although there has been no newly discovered historical documentation contrary to that contained in the HRA, due to the potential renovation and reuse of B-317 and because B-319 and B-360 were documented as potentially impacted, a scan of B-317 following the guidance of MARSSIM for a Class 3 area was performed.

1.2 Radionuclide Contaminants of Concern

Table 1 below contains the list of potential radioactive isotopes identified during the HRA.

Table 1. B-317 potential radioisotopes of concern identified in the HRA

Isotope	Radiation	Half Life (yr.)
Sr-90	Beta	28.2
Am-241	Alpha, gamma	432.2
Cs-137	Beta, gamma	30
Depleted Uranium (DU)	Alpha, beta, gamma	4.5×10^9
Pm-147	Alpha, beta, gamma	2.6
Kr-85	Beta	10.8
Ra-226	Alpha, beta, gamma	1600
H-3	Beta	12.3
Co-60	Beta, gamma	5.3
MgTh (Magnesium-Thorium)	Alpha, beta, gamma	14×10^9
Th-232	Alpha, beta, gamma	14×10^9

While performing the final status survey (FSS) of B-317, NWE personnel looked for other signs that might indicate whether the building was ever used to house radioactive materials. No signs, labels, stickers or other documents that are required by the Nuclear Regulatory Commission or the Navy to be posted where radioactive materials are stored or kept were observed.

2.0 SURVEY UNITS AND CLASSIFICATION

MARSSIM provides detailed guidance for planning, implementing, and evaluating environmental and facility radiological surveys. After classifying areas by contamination potential they are delineated into Survey Units (SU). The SU is defined as a physical area consisting of structures or land areas of specified size and shape in which there were similar uses and types of radioactive materials. In B-317 there was no indication of prior use or storage of radioactive materials which led to the decision to perform a MARSSIM Class 3 survey design to ensure that the survey data points were relatively uniformly distributed among areas of similar contamination potential, the building floor

was divided into SUs that were naturally distinguishable from other portions of the building. Based on the subsequent survey data there was no change to the SU classification.

2.1 Survey Unit Designation

During the initial walkthrough of the building NWE noticed that the building had an existing alphanumeric system identifying its wooden support columns, which increased in number from “1” on the northwest end to “31” on the southeast end of the building, and used successive letters of the alphabet starting from “A” on the northeast side to “F” on the southeast side. Each column was labeled with its corresponding number followed by a comma and its corresponding letter (e.g., “1, A”, etc.). The columns were uniformly spaced approximately 20 feet apart along the length of the building and 33.5 feet apart across the width of the building, with the exception of the center span (corresponding to the higher roof), where the columns were 67 feet apart. The columns served to naturally divide the floor space of the building into a grid of separate areas such that each area defined by 4 adjacent columns at the corners enclosed an area approximately 33.5 feet by 20 feet (670 ft^2), with the exception of those in the center span of the building, which were 67 feet by 20 feet (1340 ft^2).

For the purposes of this survey, each of these areas was identified by adopting the name of the column in the northernmost corner of the area as shown in Figure 5. Thirty (30) of the areas were selected as Survey Units (SUs), designated SU1 through SU30, corresponding to the existing naming convention as shown in Table 2. Since there were no indications in the building to bias selection of areas as SUs, a meandering pattern across the width and along the length of the building was adopted to distribute SUs across the entire floor space, starting at area A,1 in the northernmost corner of the northwest end of the building.

A MARSSIM Class 3 survey was to cover at least 10% of the floor area (12,600 ft^2). Areas selected for survey designated with A, B, D, and E (23 areas) at 670 ft^2 cover a total of 15,410 ft^2. Areas selected for survey designated with C (7 area) at 1,340 ft^2 cover a total of 9,380 ft^2. The total area covered by SU1 through SU30 is 24,790 ft^2 or approximately 20% of the floor space of the warehouse. Figure 6 shows the general scanning pattern for all Survey Units grids A, 1 through D,30.

	Y				
X	E	D	C	B	A
1					A,1
2				B,2	
3			C,3		
4		D,4			
5	E,5				
6		D,6			
7			C,7		
8				B,8	
9					A,9
10				B,10	
11			C,11		
12		D,12			
13	E,13				
14		D,14			
15			C,15		
16				B,16	
17					A,17
18				B,18	
19			C,19		
20		D,20			
21	E,21				
22		D,22			
23			C,23		
24				B,24	
25					A,25
26				B,26	
27			C,27		
28		D,28			
29	E, 29				
30		D,30			
	E	D	C	B	A

Figure 5. B-317 Area Grid Pattern and General Survey Units 1 through 30 (see Table 2).

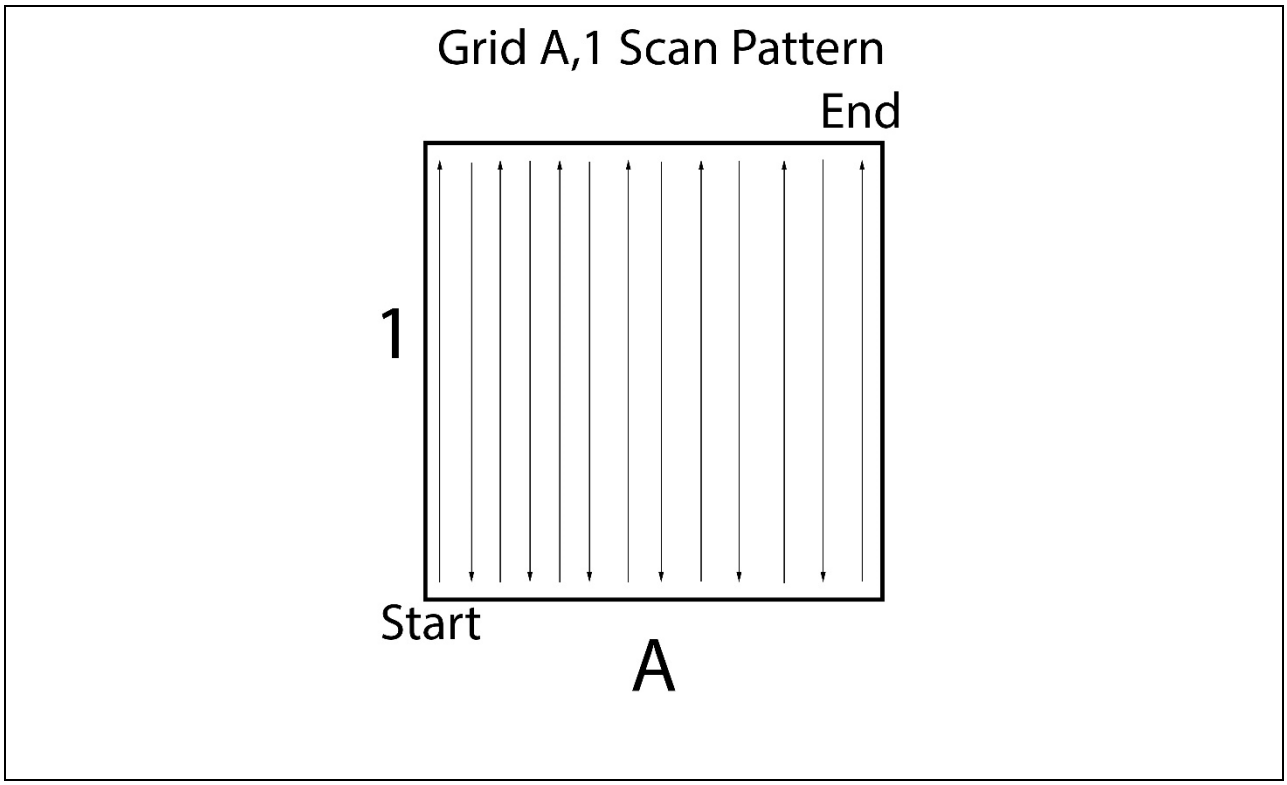

Figure 6. B-317 General scanning pattern for all Survey Units grids A,1 through D,30. Scan starts in northernmost corner and ends in southernmost corner of grid.

Table 2. Survey Unit Numbers and X/Y locations surveyed and sampling areas

SU #	Grid	SU #	Grid	SU #	Grid
1	A,1	11	C,11	21	E,21
2	B,2	12	D,12	22	D,22
3	C,3	13	E,13	23	C,23
4	D,4	14	D,14	24	B,24
5	E,5	15	C,15	25	A,25
6	D,6	16	B,16	26	B,26
7	C,7	17	A,17	27	C,27
8	B,8	18	B,18	28	D,28
9	A,9	19	C,19	29	E,29
10	B,10	20	D,20	30	D,30

2.2 Survey Unit Classification

Sufficient evidence suggested that initially B-317 could be classified as MARSSIM Class 3 and that levels exceeding a fraction of the DCGL were not likely.

3.0 Mechanism of Release

The values presented in United States Nuclear Regulatory Commission, Regulatory Guide[3] 1.86, Table 1, were used in the development of the Radiological Survey and

Sampling Plan (RSSP), Data Quality Objectives[3] (DQOs), instrument performance requirements, and the Derived Concentration Guideline Levels (DCGLs) as the measurement criteria to demonstrate the absence of residual low levels of previously licensed radioactive materials. The developed information was used to design and implement its surveys in accordance with the MARSSIM NUREG-1575, EPA 402-R-97-016 and Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (MARSAME)[4] NUREG-1575, Sup.1, EPA 402-R-06-002, DOE/EH-707. This is to ensure that decommissioned materials (materials with low residual levels of previously licensed radioactivity) were disposed to licensed radioactive materials treatment or disposal facilities.

4.0 Background Determination

The Building #320 (B-320) loading dock, directly across the railroad tracks to the northeast of B-317, was chosen as a background reference area for this survey. The instruments used in conducting the survey were taken to B-320 at the start of the project. Background readings were established for these instruments prior to initiating surveys. The background reference data is integrated in the survey data minimum detectable activity (MDA) calculations.

For comparability of results, survey measurements were collected from the reference area background survey unit using the same instruments and survey techniques employed in the survey unit areas.

5.0 Site Survey Techniques

Site Survey requirements were designed and performed to demonstrate a high level of confidence (95%) that building B-317 survey units do not contain detectable levels of previously licensed residual radioactivity.

5.1 Scanning Surveys

Scanning is the process by which the operator uses portable radiation detection instruments to detect the presence of radionuclides on a specific surface (i.e., ground, wall, floor, equipment). The term scanning survey is used to describe the process of moving portable radiation detectors across a suspect surface with the intent of locating radionuclide contamination. The investigation levels for scanning surveys were followed during the survey to identify areas with radiation levels detectable above the ambient background. Scanning surveys were performed to locate radiation anomalies indicating detectable gross activity that may require further investigation or action.

Small areas of elevated activity typically represent a small portion of the site or survey unit. Thus, random or systematic direct measurements or samples generally have a low probability of identifying such small areas. Scanning surveys cover large portions of the areas to be surveyed, have a higher probability of identifying small areas of elevated activity, and are relatively quick and inexpensive to perform. For these reasons, scanning surveys were performed before direct measurements or sampling. Scanning surveys were capable of detecting the radionuclide contaminants of concern (RCOCs) identified in the HRA on the types of surfaces surveyed and meeting survey design objectives.

Scanning results and observations from the field were documented.

Scanning survey results were monitored as they were collected by the Health Physicist performing the survey and the individual scan measurements were logged. In addition, a post-survey technical review of the scan data was performed to determine if any areas of radioactivity above background were detected.

5.1.1 Scanning for Alpha Emitting Radionuclides

The Ludlum 43-37 (584 cm^2) detector used in this project (SN: PR148504) is a thin window gas-flow proportional counter of the type typically used for performing alpha and beta radiation contamination surveys. This large area detector when connected to an instrument such as the Ludlum Model 2360 allows for the simultaneous collection of alpha and beta radiation due to the differences in signal pulse heights for the different radiations.

Alpha radiation has a very limited range and is significantly affected by surface conditions. For this reason, alpha scans are generally performed on relatively smooth, impermeable surfaces (e.g., concrete, metal, and drywall) and not on porous material (e.g., wood) or for volumetric contamination (e.g., soil, water). Instrumentation is kept as close to the surface as practical while scanning for alpha radiation, typically less than 1 centimeter (0.4 inches). In most cases, porous and volumetric contamination cannot be detected by scanning for alpha activity and meet the objectives of the survey because of high detection sensitivities.

The alpha scanning process was performed in two stages: continuous monitoring and stationary (static) monitoring (pausing). During the continuous monitoring, the surveyor listened to the pattern of audible clicks. Because the instrument background for alpha is low, a single count gave the surveyor cause to stop and investigate further by pausing for an additional few seconds. The scan MDC for alpha contamination was based on the continuous monitoring stage.

5.1.2 Scanning for Beta Emitting Radionuclides

High-energy beta radiation is easier to measure than alpha radiation because the beta particles are smaller and have less charge, which increases their range in air. Low-energy (<100 keV) beta emitters are subject to the same interferences and self-absorption problems found with alpha emitting radionuclides. Since the beta emissions from ^{3}H are so low (6 keV average), any detector with a window will not detect the beta emissions from tritium.

The beta scanning process was performed in two stages: continuous monitoring and stationary sampling (pausing). During the continuous monitoring, the surveyor listened to the pattern and number of audible clicks. Because the instrument background for beta is higher than the instrument background for alpha, the surveyor listened for an increased count rate relative to instrument background. An increased count rate was cause to stop and investigate further by pausing for an additional few seconds. The scan MDC for beta contamination was based on the continuous monitoring stage.

5.2 Static Measurements

5.2.1 Static measurements for alpha-emitting radionuclides

Static measurements for alpha-emitting radionuclides were performed by placing the detector on the surface to be measured and collecting a measurement without moving the detector. The limited range of alpha particles means that these measurements are generally restricted to relatively smooth, impermeable surfaces such as concrete, metal, or drywall where the activity is present as surface contamination. Because there were no indications of elevated counts during scanning surveys, direct measurements were performed at one random location in each survey unit.

5.2.2 Static Measurements for Beta Emitting Radionuclides

Direct measurements for beta emitting radionuclides were performed by placing the detector on the surface to be measured and collecting a measurement without moving the detector. These measurements are more reliable on relatively smooth, impermeable surfaces where the activity is present as surface contamination. Direct measurements for beta radiation were performed at the locations where alpha direct measurements were performed.

5.2.3 Static Measurements for Gamma Emitting Radionuclides

Direct measurements for gamma emitting radionuclides were performed with a Ludlum Model 44-10 2”x2” Sodium Iodide (NaI) detector in conjunction with a Ludlum Model 2350-1 data logging instrument. Measurements were collected by holding the detector one foot above the floor and collecting a measurement without moving the detector. Direct measurements for gamma radiation were performed at the locations where alpha and beta direct measurements were performed.

5.3 Swipe Surveys

Swipe samples can be taken as an indication of removable surface activity. The percentage of removable activity assumed in the exposure pathway models has a significant impact on dose calculations. However, measurements of swipes are difficult to interpret quantitatively. MARSSIM indicates that the results of swipe samples should not be used for determining compliance. Rather, they should be used as a diagnostic tool to determine if further investigation is necessary. Swipe samples were collected at the locations where direct measurements were performed.

5.4 Instrumentation

NWE performed the specified radiation scan and static measurements using a Ludlum probe Model 43-37 utilizing P-10 counting gas (10% methane, 90% argon). The detectors were used in conjunction with Ludlum Model 2360 data loggers. The 43-37 probe was calibrated using ^{14}C, ^{99}Tc, and ^{230}Th NIST traceable sources. Certificates of calibration are provided in Appendix B for the instruments used by NWE in the course of this project. Table 3 provides the average efficiencies for the data loggers and probes.

Table 3. Detectors used and typical efficiencies for different radioisotopes

Probe Model	Isotope	2 π Efficiency	Surface Efficiency	Total Efficiency
43-37 α/β	Th-230	0.36	0.25	0.10
	C-14	0.26	0.25	0.07
	Tc-99	0.33	0.50	0.13
44-10 γ	Cs-137	0.058	1	0.059

Static measurements were continually recorded on a Ludlum data logger Model 2360. Static measurements were collected and recorded directly into the data management system, linking the location, survey unit, and instrument data for automated data evaluation and reporting. This approach provided automated survey records, and did not rely on the user alone for identifying elevated measurements.

6.0 Minimum Detectable Activity Determinations

NUREG-1507[5] provides a rigorous derivation of the expression for instrument sensitivity, typically stated as the minimum detectable concentration (MDC). The MDC equations and example values for both static measurements and swipe analysis are presented in this section.

6.1 Static Minimum Detectable Activity

For static measurements, thirty individual one minute background measurements were made for the Ludlum 43-37 for a total 30 minute background counts. The following equation for the MDC from NUREG-1507, Equation 3-10, as modified, applies:

$$StaticMDC = \frac{3 + 4.65\sqrt{C_b}}{(\varepsilon_s)(\varepsilon_i)T_s\left(\frac{a}{100cm^2}\right)}$$

Equation 1. Static Minimum Detectable Concentration MDC

where:

C_b = Background count in analysis time

where:

$$C_b = R_b * T_s * \left(1 + \frac{T_s}{T_b}\right)$$

R_b = background count rate (cpm);

T_b = background count time (min);

T_s = sample count time (min);

ε_i = Intrinsic instrument efficiency;

ε_s = Surface efficiency; and

a = probe area in cm^2.

Example: Calculate the Static MDC for ^{14}C, R_b 1,110 cpm for the Ludlum 43-37 detector with the following:

R_b = 1,102 (cpm);

T_b = 30 (min);

T_s = 1 (min);

ε_i = Intrinsic instrument efficiency = 0.26;

ε_s = Surface efficiency = 0.25;

a = Ludlum 43-37 probe area in cm^2 = 585 cm^2.

$$C_b = 1{,}102*1*\left(1+\frac{1}{30}\right)$$

$$C_b = 1{,}102*1*1.033 = 1{,}138$$

$$StaticMDC = \frac{3+4.65\sqrt{1{,}138}}{0.25*0.26*\left(\frac{585cm^2}{100cm^2}\right)} = 420\ dpm/100cm^2$$

Field measurements are in CPM when they are collected, and must be converted to disintegrations per minute (dpm) values to check against Table I of NRC RegGuide 1.86 (See Table 4).

Table 4. From NRC RegGuide 1.86, Table I, "Acceptable Surface Contamination Levels", June 1974

NUCLIDE*	AVERAGE*	MAXIMUM*	REMOVABLE*
U-nat, U-235, U-238, and associated decay products except Ra-226, Th-230, Ac-227, and Pa-231	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm /100 cm^2	300 dpm /100 cm^2	20 dpm /100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm /100 cm^2	3000 dpm /100 cm^2	200 dpm /100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5,000 dpm β–γ/100 cm^2	15,000 dpm β–γ/100 cm^2	1,000 dpm β–γ/100 cm^2

* For associated notes, please see RegGuide 1.86.

Table 5 provides the calculated static MDCs for both alpha and beta radiation for bare concrete.

Table 5. Alpha Beta Static MDCs of concrete for the Ludlum Probe 43-37

Material	Alpha/Beta (43-37)		
	Background (cpm)	MDC (cpm)	(dpm/100cm^2)
Alpha Unpainted Concrete Th-230 MDC	20	24	67
Beta Unpainted Concrete Tc-99 MDC	1102	157	461

6.2 Swipe Minimum Detectable Activity

The analyses being performed on swipe samples submitted to the NWE laboratory met the required sensitivity below the NRC RegGuide 1.86 screening values (Table 4). The following list provides the MDAs as indicated by the laboratory (see tables 6 and 7).

Counter Number 1, Protean WPC 9550, Gas Proportional Counter:

- The gross alpha MDA is approximately 5 dpm for a 2-minute count with an alpha efficiency of 51%.
- The gross beta MDA is approximately 29 dpm for a 2-minute count with a beta efficiency of 42%.

Counter Number 2, Beckman 6500, Liquid Scintillation Counter (LSC)

- The H-3 MDA is 12 dpm for a 3-minute count with a measured beta efficiency of 50%.

As shown in Table 6 and Table 7, the primary analytical laboratory DQO of 50% of the RegGuide 1.86 criteria was met (Table 4).

$$MDA = \frac{3 + 4.65\sqrt{R_b * T_s * \left(1 + \frac{T_s}{T_b}\right)}}{(\varepsilon_s)(\varepsilon_i)T_s}$$

Equation 2 Swipe Minimum Detectable Activity

where:

R_b = background count rate (cpm),

T_b = background count time (min),

T_s = sample count time (min).

ε_i = Intrinsic instrument efficiency

ε_s= Surface efficiency

Table 6. Calculated MDAs for Counter #1 WPC 9550 analysis of smear tests based on RegGuide 1.86

Analyte	DCGL (removable)	MDA (dpm)	MDA Fraction of DCGL
Gross Alpha	20 dpm α/100 cm^2	5	0.25
Gross Beta	200 dpm/ 100 cm^2	29	0.15

Table 7. Calculated MDAs for Counter #2, Beckman LSC analysis of smear tests Based on RegGuide 1.86

Analyte	DCGL (removable)	MDA (dpm)	MDA Fraction of DCGL
H-3	1000 dpm β-γ /100 cm^2	12	0.012

6.3 Scanning Minimum Detectable Count Rate

The formula derived from MARSSIM for beta scan MDCs in dpm/100cm^2 is presented as:

$$ScanMDC = \frac{1.38 * \sqrt{b_i} * \frac{60}{i}}{\sqrt{0.5}(\varepsilon_s)(\varepsilon_i)\left(\frac{a}{100cm^2}\right)}$$

Equation 3. Scanning Minimum Detectable Count Rate

where:

1.38 = a desired performance proportions level of 0.95 for true positive results and a level 0.4 false positives;

b_i = Background counts during the observation interval;

i = observation interval in seconds; and

$\sqrt{0.5}$ = MARSSIM determined level of performance for the surveyor.

R_B = Background rate in cpm.

$$ScanMDC = \frac{1.38 * 60\sqrt{\frac{R_B}{60}}}{\sqrt{0.5}(\varepsilon_s)(\varepsilon_i)\left(\frac{a}{100cm^2}\right)}$$

Equation 4. Scanning Minimum Detectable Rate for β^-

Due to their low probability of detection scanning MDCs for alpha emitters are derived

differently than scanning for beta and gamma emitters. MARSSIM has formulas and probability concepts for scanning alpha contamination when the background is less than 3 cpm. Appendix J in MARSSIM provides a complete derivation of the formula used to determine the probability of observing a single count:

$$P(n \geq 1) = 1 - e^{\left(\frac{(-G)(\varepsilon_i)(d)}{(60)(v)}\right)}$$

Equation 5. Scan Probability for a Detectable Count Rate for α^{++}

Where:

$P(n \geq 1)$ = the probability of observing a single count

G = the elevated area activity (dpm)

ε_i = the detector efficiency (4π); and

v = scan speed (inches/second)

d = Probe width (inches)

The scan process must be in two stages: continuous monitoring and stationary sampling (pausing). During the continuous monitoring, the surveyor listens to the number of clicks.

The scan MDC for alpha contamination must be based on the continuous monitoring stage which is illustrated as follows.

Setting the $P(n \geq 1)$ at the 95% level (0.95) and solving for G which is now defined as the alpha scan MDC.

$$0.95 = 1 - e^{\left(\frac{(-G)(0.3553)(4)}{(60)(1)}\right)}$$

$$G = 126 dpm / 100^2$$

Probability of 95% Detectable Count Rate for α^{++}

The scan MDCs for alpha and Tc-99 for the Ludlum Probe Model 43-37 are presented in Table 9. The scan rate for alpha was selected to be a 4 second interval; additional time does not reduce the MDC appreciably.

Table 8. Scan MDCR(cpm) and Scanning MDC(dpm) for Alpha and Beta, using M-43-37

	$MDCR_{scanning}$(cpm)	$MDC_{scanning}$(dpm)
Alpha	24	65
Beta	177	529

The beta scan MDCs do not exceed the RegGuide 1.86 maximum values of 15,000 dpm β-γ /100 cm^2 for H-3, C-14.

The alpha scan MDCs do not exceed the RegGuide 1.86 maximum value of 300 dpm α/ 100 cm^2. Note that background rates for unpainted concrete are not anticipated to be low (<3 cpm) and use of the two stage process might mean the process would never be completed. For example, unpainted concrete has a background rate of 20 cpm which means that a count could be observed every 7.5 seconds and be very much below the scan MDC of 65 dpm.

7.0 Data Interpretation Procedures

After the survey had been performed it was necessary to evaluate the data to demonstrate compliance with the release criteria. For California the release criteria is that the facility is statistically indistinguishable from normal background.

During the direct monitoring data collection the Surveyor did not notice any significant levels of activity. However additional conditions must be met before the determination can be made that all of the survey units meet the release criteria of being "indistinguishable from natural background."

This determination was made by comparing the measurements in the survey units to the reference background measurements and performing statistical tests.

The number of measurements in each survey unit was sufficient to ensure that there is at least 95% confidence that the correct decision regarding the presence of residual radioactivity has been made.

7.1 Static Measurements

The review for acceptability of SU static measurements included:

- Thirty measurements were performed at random locations.
- Instruments used were calibrated to radionuclide emissions to be measured.
- Daily QC checks were performed and instruments passed at the +/- 10% level for response to background and check source.
- Measurement results were transferred electronically and not manually recorded.
- Survey results show SU, SU description, date of survey, type or description of surface material, survey measurement location referenced to a drawing or photograph, survey instrument and MDCR for material is referenced or noted.

The review for acceptability of bias static measurements included all of the above criteria except that individual survey locations were determined by professional judgment.

7.2 Scanning Data

The review for acceptability of SU scan measurements included:

- At least 10% of B-317 was scanned, with scans recorded at a frequency of 1 data point per 2 seconds, at a specified scan rate, so there was a minimum time period per scan, and per survey unit.
- Instrument used was calibrated to radionuclide emissions to be measured.
- Daily QC checks were performed and instruments passed at the +/- 10% level for response to background and check source.
- Measurement results were transferred electronically and not manually recorded.
- Survey results show SU, SU description, date of survey, type or description of surface material, survey measurement location referenced to a drawing or photograph, survey instrument and MDCR for material is referenced or noted.

7.3 Swipe Sample Results

The review for acceptability of SU swipe measurements included:

- Required minimum number of swipe measurements was met; one per each static measurement.
- A record of samples collected was maintained in site sample log.
- A blind blank sample in sequence not known to the lab submitted with each batch of swipes for a SU; each blank was determined to be less than the MDC.
- Instrument MDCs were less than 50% of the removable activity release criteria.
- Laboratory personnel initialed or signed off the report as being acceptable.

7.4 Data Quality Objective Review

The primary objective of the survey was to determine if there was any evidence of radioactive contamination in B-317. Since there were no records of radioactive material use in B-317 the HRA for nearby Buildings B-319 and B-360 was used to identify radionuclide contaminants of concern (RCOCs) for B-317.

To insure the project purpose was met the Data Quality Objectives were developed using the Guidance for the Data Quality Objectives Process for Hazardous Waste Site Investigations (EPA QA/G-4HW, 2000a), Guidance for the Data Quality Objectives Process (EPA QA/G-4, 2000b), EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5, 2001a), EPA Guidance for Quality Assurance Project Plans (EPA QA/G-5, 2002), and Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM; NUREG-1575 Rev. 1/EPA 402-R-97-016 Rev. 1/DOE/EH-0624, Rev. 1, 2000).

The DQOs defined the criteria that the survey design should satisfy, including when and where to perform measurements, the types of measurements to be performed, the instruments used to perform the measurements, the detection and quantification

capabilities of the instruments (as described in MARSSIM), the level of decision errors (Type I and Type II) for the survey, and how many measurements to perform:

- The values presented in United States Nuclear Regulatory Commission, RegGuide 1.86, Table 1 were used as the measurement criteria to demonstrate the absence of residual low levels of previously licensed radioactive materials.

- The design and implementation of the survey was in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) NUREG-1575, EPA 402-R-97-016 and Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (MARSAME) NUREG-1575, Sup.1, EPA 402-R-06-002, DOE/EH-707.

The surveys and analytical data collected were of sufficient detail to meet all of the requirements.

8.0 Survey Results

All of the survey results collected are below the investigation level and there was no residual radioactivity detected at Building B317.

8.1 Scanning Survey Data

The maximum recorded scanning results for each survey unit are presented in the following tables. None of the measurements exceed the indicated MDCR for the material measured.

Table 9. Building 317 Survey Units 1 through 30

Alpha Gross CPM					
Location	Number of Records	Minimum	Maximum	Average	STDEV
SU01	198	0	36	10	8
SU02	155	0	35	10	8
SU03	261	0	41	12	8
SU04	154	0	42	10	8
SU05	151	0	43	14	8
SU06	114	0	28	8	8
SU07	165	0	34	11	8
SU08	65	1	43	21	10
SU09	77	0	41	11	10
SU10	105	0	41	15	9
SU11	141	0	43	14	10
SU12	71	0	28	10	7
SU13	81	0	33	11	8
SU14	140	0	39	12	8
SU15	190	0	41	11	8
SU16	133	3	43	26	10
SU17	110	5	43	26	11
SU18	92	0	43	13	10
SU19	181	3	43	31	10
SU20	99	3	43	21	9
SU21	131	0	43	22	11
SU22	112	3	43	27	11
SU23	140	0	42	15	9
SU24	105	2	43	26	10

Alpha Background Bare Concrete			
Minimum	Maximum	Average	STDEV
0	41	13	9

Alpha Gross CPM					
Location	Number of Records	Minimum	Maximum	Average	STDEV
SU25	82	0	31	10	7
SU26	82	8	43	29	9
SU27	191	5	43	29	9
SU28	113	3	43	25	10
SU29	110	5	43	25	11
SU30	94	3	43	26	11

Alpha Background Bare Concrete			
Minimum	Maximum	Average	STDEV
0	41	13	9

Table 10. B-317 Gross beta scan, SU-01 through SU-30

Beta Gross CPM					
Location	Number of Records	Minimum	Maximum	Average	STDEV
SU01	189	665	1068	873	78
SU02	146	678	1143	870	90
SU03	261	638	1005	818	79
SU04	154	632	1095	840	82
SU05	151	669	1064	838	70
SU06	114	661	987	804	75
SU07	165	631	1196	811	106
SU08	65	652	1207	885	114
SU09	77	713	1040	860	71
SU10	105	670	1161	810	72
SU11	141	670	1184	860	95
SU12	71	680	1161	817	82
SU13	81	709	965	847	63
SU14	140	660	1075	883	85

Beta Background Bare Concrete			
Minimum	Maximum	Average	STDEV
996	1188	1102	58

Beta Gross CPM					
Location	Number of Records	Minimum	Maximum	Average	STDEV
SU15	190	660	1151	877	81
SU16	133	783	1178	973	71
SU17	110	761	1194	957	85
SU18	92	694	1043	881	75
SU19	181	727	1148	920	73
SU20	99	717	1081	878	78
SU21	131	831	1153	993	67
SU22	112	723	1085	910	81
SU23	140	693	1161	891	89
SU24	105	690	1159	913	86
SU25	82	770	1029	901	47
SU26	82	802	1225	1003	85
SU27	191	721	1170	952	80
SU28	113	805	1150	937	68
SU29	110	761	1194	957	85
SU30	94	847	1169	998	63

Beta Background Bare Concrete			
Minimum	Maximum	Average	STDEV
697	1188	1102	58

8.2 Static Measurement Data

Approximately 30 static measurements were made (one in each SU). None of the measurements exceeded the MDC.

8.3 Swipe Measurement Data

The DQOs required that swipe samples be taken in the survey units as an indication of removable surface activity. The percentage of removable activity assumed in the exposure pathway models has a great impact on dose calculations. MARSSIM cautions that measurements of swipes are very difficult to interpret quantitatively and therefore, the results of swipe samples should not be used for determining compliance. MARSSIM indicates that swipes should be used as a diagnostic tool to determine if further investigation is necessary.

Swipes were used during this survey and a total of 30 swipes were collected and analyzed for ^{3}H, and gross Alpha/Beta by liquid scintillation and gas proportional counting. The analysis for these swipes generated 90 data points for removable contamination in the 30 survey units.

Swipes were collected using a paper medium. A surface area of 100 cm^2 (approximately 4”x4”) was swiped. Swipes for liquid scintillation counting were immediately placed in 7 ml poly vials and capped. At the completion of daily activities 6 ml of liquid scintillation cocktail was added to each vial. Vials were then sealed and prepared for shipment. Swipes for gas proportional counting were placed in Ziploc bags.

The results of the swipe test data are presented in Appendix E. No swipes results exceed background reference area swipes.

9.0 Conclusions and Recommendations

A radiological survey was performed in Building 317 at the former MCAS El Toro to determine if it met the criteria for free release using USNRC RegGuide 1.86 as a basis to determine DCGLs and MDC limits for surveys. No radioactivity above background was detected on any building surfaces or materials remaining in the facility.

The primary objective of the FSS was to identify radioactivity exceeding background. Minimum detectable concentrations and minimum detectable count rates at the 95% confidence level were used as investigation levels.

The building was classified and surveyed as MARSSIM Class 3. No specific impacted areas were identified in the HRA or during the initial site inspection.

Potential radionuclide contaminants of concern were identified based on the HRA. The building was divided into 30 survey units that encompassed at least 10% of the building. Scanning surveys and direct measurements were performed and swipe samples collected for gross alpha radiation, gross beta radiation, and low-energy beta radiation

(i.e., ^{3}H) in each survey unit. None of the swipe samples exceeded background levels.

Survey instruments were calibrated for the radionuclide contaminants of concern. The instruments were inspected and response checked prior to data collection and at the conclusion of data collection for validation using sources with like kind energies to the radionuclides of interest.

All measurement results were less than the investigation levels and were indistinguishable from background reference data. All instruments operated within the criteria established. All data quality objectives for the FSS were met. No radioactivity was detected at levels exceeding background. The measurements were of sufficient quantity and quality to support the survey objectives. Data and statistical analyses for individual measurements and individual survey unit summaries are provided in the appendices.

In summary, no radiation levels above background were detected and Building 317 meets the California requirements recommended for unrestricted release.

10. References

1. Multi-Agency Radiation Survey and Site Investigation Manual, EPA/402/R-97-016, Revision 1. NUREG-1575, U.S. NRC, August, 2000.
2. Final Historical Radiological Assessment, Marine Corps Air Station, El Toro. Roy F. Weston, Inc., Vallejo, California. May 2000.
3. Termination of Operating Licenses for Nuclear Reactors, RegGuide 1.86, US NRC, June 1974
4. Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (MARSAME) NUREG-1575, Sup.1, EPA 402-R-06-002, DOE/EH-707, Dec, 2008
5. Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions, NUREG 1507, U.S. NRC, June, 1998.

Appendices

Appendix	A.	B-317 Survey Map identifying Survey Units within the building
Appendix	B.	Instrument Calibration Certificates
Appendix	C.	Scan Data
Appendix	D.	Static Data
Appendix	E.	Swipe Data
Appendix	F.	Minimum Detectable Activity/Minimum Detectable Count Rate Calculations

Appendix A. B-317 Survey Map identifying Survey Units within the building

	Y				
X	E	D	C	B	A
1					A,1
2				B,2	
3			C,3		
4		D,4			
5	E,5				
6		D,6			
7			C,7		
8				B,8	
9					A,9
10				B,10	
11			C,11		
12		D,12			
13	E,13				
14		D,14			
15			C,15		
16				B,16	
17					A,17
18				B,18	
19			C,19		
20		D,20			
21	E,21				
22		D,22			
23			C,23		
24				B,24	
25					A,25
26				B,26	
27			C,27		
28		D,28			
29	E, 29				
30		D,30			
	E	D	C	B	A

Appendix B. Instrument Calibration Certificates

New World Environmental Inc.

Phone: 925-443-7967 **Fax**: 925-443-0119

Certificate of Calibration

Customer: NWE Geosyntec Consultants, Order No: HR1462-02

Mfg: Ludlum Model: 2360 Serial No: 164685

Mfg: Ludlum Det. Model: 43-37 Serial No: PR148504

Cal. Date: 6/23/14 Due 6/23/15 Interval: 1 year

					Input V1	
Det. Bkg:		cpm	Det. Voltage:	1675	Input V2	
Temp.:	72	Hum 35%	Reset:	n/a	Threshold 1	120 mV α
Bat. Check:	ok		Audio:	ok	Threshold 2	4 mV β
Threshold:	5 mV		Bat. Voltage:	2.2	Window 1	50 mV β window
HV set:	1810	1810	Mechanical:	OK	Window 2	
HV reading:	900	900	Bkg Subtract:	NA		
Alarm Check:	off					

Check mark applies to applicable instrument and or detector.

Instrument Received: X Within Tolerance (+/- 10%) [X] 10 to 20% [ ] Out of Tolerance [ ] Requires Repair [ ]

Comments: Hard reset performed. Voltage reset @900V. Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM		Additional CPM	Data BKG	
1	100	100			1031	β
1	400	400			1	α
10	1,000	1,000				
10	4,000	4,000				
100	10,000	10,000				
100	40,000	40,000				
1000	100,000	100,000				
1000	400,000	400,000				
Th-230 Eff:	35.53%	19,577				
Tc-99 Eff.:	32.46%	20,750				
	NWT Procedure:	2350			PASS	

Sources & Instruments:

X	Gamma sn:		X	Beta SN	G4-411	[ ]	Other:
	Alpha sn:	A7-266 (Th-230)					
X	Pulser sn:	81071		Oscilloscope		[ ]	Multimeter:

Calibrated by: D. Wadsworth Date: 6/23/14

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.

New World Environmental Inc.

Phone: 925-443-7967 **Fax**: 925-443-0119

Certificate of Calibration

Customer: NWE Geosyntec Consultants, Order No: HR1462-02

Mfg: Ludlum Model: 2350 Serial No: 95338

Mfg: Ludlum Det. Model: 44-10 Serial No: PR085041

Cal. Date: 6/23/14 Due 6/23/15 Interval: 1 year

					Input V1	
Det. Bkg:	4423	cpm	Det. Voltage:	900	Input V2	
Temp.:	72	Hum 35%	Reset:	n/a	Threshold 1	100
Bat. Check:	ok		Audio:	ok	Threshold 2	
Threshold:	25 mV		Bat. Voltage:	6.2	Window 1	OFF
HV set:	1810	1810	Mechanical:	OK	Window 2	
HV reading:	900	900	Bkg Subtract:	NA		
Alarm Check:	off					

Check mark applies to applicable instrument and or detector.

Instrument Received: X Within Tolerance (+/- 10%) [X] 10 to 20% [ ] Out of Tolerance [ ] Requires Repair [ ]

Comments: Hard reset performed. Voltage reset @900V. Calibrates OK

Range Multiplier	Reference Point PPM	Instrument Reading CPM		Additional CPM	Data BKG	
AUTO	100	100	1	7525	3975	
			2	7350		
	1000	1000	3	7519		
			4	7413		
	10,000	10,000	5	7480		
			6	7548		
	100,000	100,000	7	7381		
			8	7483		
			9	7457		
Cs-137 Eff.:	5.9%		10	7416		
	NWT Procedure:	2350-1	$\chi^2 =$	21.01	PASS	

Sources & Instruments:

X	Gamma sn:	A7-274 (Cs-137)	X	Beta SN		Other:	
	Alpha sn:						
X	Pulser sn:	81071		Oscilloscope		Multimeter:	

Calibrated by: D. Wadsworth Date: 6/23/14

NWE certifies that the above instrument has been calibrated by instruments and standards traceable to NIST or to the calibration facilities of other International Standards Organization members or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of MIL-STD-45662A and ANSI N323-1978.

CERTIFICATE OF CALIBRATION

Customer:	New World Environmental, Inc.	Address	448 Commerce Way, Livermore CA 94551		
Contact:		PO #:		Phone #:	
Comments:				FAX #:	

INSTRUMENT IDENTIFICATION

Mfg: Protean	Model #: 9550	S/N: 0615068	Cal Date: 4-15-14	Next Cal Due: 4-15-15

CALIBRATION OPERATIONAL CHECKS

High Voltage:	Threshold:	Zero Reset Ck:
Alarm Setting:	F/S Resp.Ck:	Audio Ck: n/a
Bat. Ck: n/a	Bat. Voltage: line	Mechanical Ck:

PROBE IDENTIFICATION

Mfg: Internal PM tubes	Model #:	S/N:	Model:	S/N:

ENVIRONMENTAL CONDITIONS

Temperature: 67	Humidity: 31%	Background Reading:

MEASUREMENT & TEST EQUIPMENT

Gamma sn:	Beta sn: A7-277	Other:
Alpha sn: A7-271	Beta sn:	
Pulser sn: 81071	Oscillosope sn:	Multimeter:

CALIBRATION & TEST MEASUREMENTS

Range Multiplier	Reference Point	As-Found Reading	As-Calibrated Reading	Comments
Alpha (Th-230)	50,295.10	25,569.50	effy. 50.8%	
Beta (C-14)	26,795.70	11,314.50	effy. 42.2%	

Calibrated by:	Date: 4-15-14

This Certificate of Calibration shall not be reproduced except in full, without the written approval of New World Environmental, Inc.. Results relate only to items calibrated. Uncertainty of measurement was estimated at approcimately 95% confidence level, (k=2). All reference standards used are traceable to NIST. New World Environmental, Inc. maintains a quality system (Quality Assurance Management plan) that meets or exceeds the requirements set forth in the following documents: ANSI/NGSL Z540-1 1994 and IS/IEC 17025.

CERTIFICATE OF CALIBRATION

Customer:	New World Environmental, Inc.	Address	448 Commerce Way, Livermore CA 94551		
Contact:		PO #:		Phone #:	
Comments:				FAX #:	

INSTRUMENT IDENTIFICATION

Mfg: Beckman	Model #: LS6500	S/N: 7067849	Cal Date: 1-14-14	Next Cal Due: 1-14-15

CALIBRATION OPERATIONAL CHECKS

High Voltage:	Threshold:	Zero Reset Ck:
Alarm Setting:	F/S Resp.Ck:	Audio Ck: n/a
Bat. Ck: n/a	Bat. Voltage: line	Mechanical Ck:

PROBE IDENTIFICATION

Mfg: Internal PM tubes	Model #:	S/N:	Model:	S/N:

ENVIRONMENTAL CONDITIONS

Temperature: 67	Humidity: 31%	Background Reading: 25dpm

MEASUREMENT & TEST EQUIPMENT

Gamma sn:	Beta sn:	Other: Manufacturer's procedure
Alpha sn:	Beta sn:	
Pulser sn: N/A	Oscillosope sn:	Multimeter:

CALIBRATION & TEST MEASUREMENTS

Range Multiplier	Reference Point	As-Found Reading	As-Calibrated Reading	Comments
				Autocalibrate run for each batch per manufacturer's instructions.
Tritium (H-3)		65,880.06	effy. 45.4%	
Carbon 14 (C-14)		15,911.46	effy.44.93%%	

Calibrated by:	Date: 1-14-14

This Certificate of Calibration shall not be reproduced except in full, without the written approval of New World Environmental, Inc.. Results relate only to items calibrated. Uncertainty of measurement was estimated at approcimately 95% confidence level, (k=2). All reference standards used are traceable to NIST. New World Environmental, Inc. maintains a quality system (Quality Assurance Management plan) that meets or exceeds the requirements set forth in the following documents: ANSI/NGSL Z540-1 1994 and IS/IEC 17025.

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOURCE

Radionuclide: Th-230
Half-life: (7.54 ± 0.03)E+04 years
Catalog No.: LDS-230-100MM
Source No.: A7-266

Customer: NEW WORLD TECHNOLOGY
P.O. No.: 20400
Reference Date: 1-Sep-02 12:00 PST
Contained Radioactivity: 51.71 **nCi** 1913 **Bq**
Contained Radioactivity: 114800 **dpm**
(Total Alpha)

Physical description:

A. Capsule type: LDS (12.1 cm x 12.1 cm)
B. Nature of active deposit: Electroplated and diffusion bonded oxide
C. Active Diameter: 10 cm x 10 cm
D. Backing: Stainless steel
E. Cover: None

Radioimpurities:

Ra-226 = 0.400% and Am-241 = 0.110% on 1 Sep 02.

CAUTION!
DELICATE SURFACE
DO NOT WIPE
ACTIVE AREA

Method of Calibration:

This source was assayed using a windowless internal gas flow proportional counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty: ± 0.5 %
B. Type B (systematic) uncertainty: ± 3.0 %
C. Uncertainty in aliquot weighing: ± 0.0 %
D. Total uncertainty at the 99% confidence level: ± 3.0 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from "Table of Radioactive Isotopes", edited by Virginia Shirley, 1986.
- This source has a working life of 2 years.
- This source had a total alpha surface emission rate of 55100 α/min in 2π on 20 Aug 02.

Quality Control

21-Aug-02
Date Signed

IPL Ref. No.: 943-61

Eckert & Ziegler
Isotope Products

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
BETA STANDARD SOURCE

Radionuclide:	Tc-99	**Customer:**	NEW WORLD TECHNOLOGY
Half-life:	(2.13 ± 0.05)E+05 years	**P.O. No.:**	90162
Catalog No.:	LDS-099-100MM	**Reference Date:**	1-Oct-09 12:00 PST
Source No.:	G4-411	**Contained Radioactivity:**	53.40 **nCi** 1976 **Bq**

Physical Description:

A. Capsule type: LDS (12.1 cm x 12.1 cm)
B. Nature of active deposit: Electrodeposited and diffusion bonded Technetium metal
C. Active diameter/volume: 100 mm x 100 mm
D. Backing: Stainless steel
E. Cover: None

CAUTION!
DELICATE SURFACE
DO NOT WIPE
ACTIVE AREA

Radioimpurities:

None detected

Method of Calibration:

This source was assayed using a windowless internal gas flow proportional counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty: ± 0.3 %
B. Type B (systematic) uncertainty: ± 3.0 %
C. Uncertainty in aliquot weighing: ± 0.0 %
D. Total uncertainty at the 99% confidence level: ± 3.0 %

Notes:

- See reverse side for leak test(s) performed on this source.
- EZIP participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (as in NRC Regulatory Guide 4.15).
- Nuclear data was taken from "Table of Radioactive Isotopes", edited by Virginia Shirley, 1986.
- This source has a working life of 2 years.
- This source had a surface emission rate of 63930 β/min in 2π on 1-Sep-09.

Daniel James Van Dalsem
Quality Control

2-Sep-09
Date

EZIP Ref. No.: 1389-50

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
BETA STANDARD SOURCE

Radionuclide:	Cs-137	**Customer:**	NEW WORLD TECHNOLOGY
Half-life:	30.17 ± 0.16 years	**P.O. No.:**	20400
Catalog No.:	EAB-137-47LB	**Reference Date:**	15-Sep-02 12:00 PST
Source No.:	A7-274	**Contained Radioactivity:**	46.35 **nCi** 1715 **Bq**
			102900 **dpm**

Physical description:

A. Capsule type:	EAB-LB (47 mm OD x 3.18 mm THK)
B. Nature of active deposit:	Distributed and evaporated metallic salt on polymeric membrane
C. Active Diameter:	41 mm
D. Backing:	Stainless steel
E. Cover:	0.9 mg/cm² aluminized mylar

Radioimpurities:

None detected

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using gamma ray spectrometry.

Peak energy used for integration:	661.7 keV
Branching ratio used:	0.851 gammas per decay

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 0.5 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.6 %
D. Total uncertainty at the 99% confidence level:	± 3.1 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from IAEA-TECDOC-619, 1991.
- This source has a working life of 2 years.
- This source had a surface emission rate of 56190 β/min in 2π on 20 Aug 02.

Tiffany Cattum
Quality Control

26 Aug 02
Date Signed

IPL Ref. No.: 941-83

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOURCE

Radionuclide:	Th-230	**Customer:**	NEW WORLD TECHNOLOGY				
Half-life:	(7.54 ± 0.03)E+04 years	**P.O. No.:**	20400				
Catalog No.:	EAB-230-47LB	**Reference Date:**	1-Sep-02	12:00	PST		
Source No.:	A7-271	**Contained Radioactivity:**	45.32	**nCi**	1677	**Bq**	
		Contained Radioactivity: (Total Alpha)	100600	**dpm**			

Physical description:

A. Capsule type: EAB-LB (47 mm OD x 3.18 mm THK)
B. Nature of active deposit: Electrodeposited and diffusion bonded oxide
C. Active Diameter: 41 mm
D. Backing: Stainless steel
E. Cover: None

Radioimpurities:

Ra-226 = 0.400% and Am-241 = 0.110% on 1 Sep 02.

CAUTION!
DELICATE SURFACE
DO NOT WIPE
ACTIVE AREA

Method of Calibration:

This source was assayed using a windowless internal gas flow proportional counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty: ± 0.3 %
B. Type B (systematic) uncertainty: ± 3.0 %
C. Uncertainty in aliquot weighing: ± 0.0 %
D. Total uncertainty at the 99% confidence level: ± 3.0 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from "Table of Radioactive Isotopes", edited by Virginia Shirley, 1986.
- This source has a working life of 2 years.
- This source had a total alpha surface emission rate of 50300 α/min in 2π on 20 Aug 02.

Quality Control

21-Aug 02
Date Signed

IPL Ref. No.: 943-61

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

CERTIFICATE OF CALIBRATION
BETA STANDARD SOURCE

Radionuclide:	C-14	**Customer:**	NEW WORLD TECHNOLOGY
Half-life:	5730 ± 40 years	**P.O. No.:**	20400
Catalog No.:	EAB-014-47LB	**Reference Date:**	15-Sep-02 12:00 PST
Source No.:	A7-277	**Contained Radioactivity:**	44.80 **nCi** 1658 **Bq**
			99460 **dpm**

Physical description:

A. Capsule type:	EAB-LB (47 mm OD x 3.18 mm THK)
B. Nature of active deposit:	Distributed and evaporated carbon compound on polymeric membrane
C. Active Diameter:	41 mm
D. Backing:	Stainless steel
E. Cover:	0.9 mg/cm² aluminized mylar

Radioimpurities:

None detected

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using a liquid scintillation counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 1.8 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.5 %
D. Total uncertainty at the 99% confidence level:	± 3.5 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from NCRP Report No. 58, 1985.
- This source has a working life of 2 years.
- This source had a surface emission rate of 26830 β/min in 2π on 20 Aug 02.

Tiffany Cattum
Quality Control

26 Aug 02
Date Signed

IPL Ref. No.: 941-83

6. Use necessary precautions to prevent contamination of the laboratory and equipment (e.g., absorbent material on work surfaces, disposable lab ware).
7. Do not pipette by mouth.
8. Handle all sealed radioactive sources with care so as not to disturb the physical integrity of the capsule or ampoule.
9. Exempt quantity radioactive organic liquids may be disposed of in the same manner as their non-radioactive chemical equivalents, through normal laboratory methods. Water soluble radioactive materials may be disposed of through the sanitary sewer when flushed with copious amounts of water.
10. **These precautions are applicable to the handling and disposal of exempt quantity radioactive materials and may not be adequate for other kinds, quantities, or uses of radioactive material.**

Beckman Instruments, Inc., Fullerton, CA 92634
March 1982 820079 015-245208 Printed in U.S.A.

BECKMAN

594946
LIQUID SCINTILLATION STANDARDS SET

PRODUCT DESCRIPTION

The 594946 Liquid Scintillation Standards Set consists of precisely calibrated, sealed, unquenched samples of carbon-14 (^{14}C), tritium (^{3}H), labeled toluene in scintillation solution, and an unquenched scintillation blank. The scintillation solutions used contain 4 grams of PPO (2,5-diphenyloxazole) and 0.05 gram of POPOP (p-bis[2-(5-phenyloxazolyl)] benzene) per liter of toluene, which has been purified by distillation from sodium under high-purity nitrogen. Both the PPO and POPOP are scintillation-grade fluors. All standards are furnished in 7-milliliter, low-potassium glass ampoules and sealed under nitrogen, with special precautions taken to exclude oxygen and moisture, which cause quenching. The radioactive standards are prepared by dispensing 5 milliliters of a ^{14}C or ^{3}H master solution into a 7-milliliter ampoule and flame-sealing it immediately. After leak-testing, a titanium dioxide-based paint isapplied to the top of the ampoule, and an aluminum cap is attached. The blank standard is prepared in a similar way.

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Irvine, California 92713

ACTIVITY CALIBRATION AND ERROR ANALYSIS

The ^{14}C and ^{3}H standards have been assayed for activity by comparison with the National Bureau of Standards (NBS) carbon-14 solution standard, Standard Reference Material (SRM) No. 4925, benzoic acid in toluene, and tritium solution standard SRM No. 4947, tritiated toluene in toluene. The method of calibration was liquid scintillation sample channels ratio (SCR) quench correction using secondary standards prepared from the NBS standards. The estimated activities for the activity standards and the reference dates for all standards are as follows:

^{3}H 103000 dpm 20 Dec 86 Ref. Date

^{14}C 45300 dpm 20 Dec 86 Ref. Date

Blank 20 Dec 86 Ref. Date

The ^{3}H is from Production Lot No. HBX0402;

the ^{14}C is from Production Lot No. CBX02703;

and the Blank is from Production Lot No. BBX3116.

The overall uncertainties associated with the activity values are estimated to be less than ± 3.0 % for the ^{3}H and ± 3.0 % for the ^{14}C. These estimates are determined in accordance with error analysis procedures recommended by the International Commission on Radiation Units and Measurements (ICRU Report 12). The limits are calculated by arithmetically summing the uncertainty due to random errors at the 99% confidence level with the assessable systematic errors. Random errors arise from production and assay procedures such as dispensing, weighing and counting. Systematic errors consist of uncertainty in the activity of the NBS-based secondary standards, overall uncertainty of the NBS SRM No. 4947 as a function of time (assuming a half-life of 12.26 years and a half-life uncertainty of 0.5%), uncertainties in the standard weights used for calibrating the balances used in gravimetric determinations, losses of activity by evaporation and uncertainties in corrections applied for the effects of radio-active impurities.

RECOMMENDATIONS FOR USE

Unquenched standards can be used to: (1) measure day-to-day ^{3}H and ^{14}C counting efficiencies for comparison with original factory specifications and for verifying stable system performances; (2) measure E^2/B ratios for low level activity counting; and, (3) measure ^{3}H and ^{14}C "spillover" in dual-label counting channels. The instrument operator manual should be consulted for specific instructions on use of these standards with a given liquid scintillation system.

LIMITATIONS ON USE

Unquenched standards should not be used to construct quench correction curves for calibration of quenched samples.

PRECAUTIONS ON STORAGE AND USE

The 594946 Standards are prepared taking great care to exclude moisture, oxygen, and organic impurities which might affect their long-term stability. The fluors which they contain, however, are susceptible to photochemical degradation, and excessive exposure to sunlight or fluorescent lighting may result in their deterioration. File samples of the manufacture are stored in the dark at room temperature and, when in use, exposed only to incandescent lighting. This treatment has resulted in long-term stability—at least three years—and is recommended for standards in active use.

PRECAUTIONS AND THE SAFE USE OF EXEMPT QUANTITY RADIOACTIVE MATERIALS

1. The accompanying radioactive material is exempt from the licensing requirements of the U.S. Nuclear Regulatory Commission or of any agreement state.
2. Radioactive material—not for human use—introduction into foods, beverages, cosmetics, drugs, or medicinals, or into products manufactured for commercial distribution is prohibited—exempt quantities should not be combined.
3. Radioactive material should be stored in a designated area in its original shipping container or labeled inner package.
4. Do not eat, drink, smoke, apply cosmetics, store, or prepare food in any area where radioactive materials are used.
5. Avoid direct contact with all radioactive materials by use of protective articles, such as disposable gloves and lab coats.

Appendix C. Scan Data

Appendix C. Alpha Scan Data

Appendix C. Beta Scan Data

Appendix C. Alpha Scan Data

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	5	-15	14	PASS	SU-1 A,1
2	3	-17	8	PASS	SU-1 A,1
3	2	-18	6	PASS	SU-1 A,1
4	2	-18	6	PASS	SU-1 A,1
5	1	-19	3	PASS	SU-1 A,1
6	0	-20	0	PASS	SU-1 A,1
7	9	-11	25	PASS	SU-1 A,1
8	6	-14	17	PASS	SU-1 A,1
9	4	-16	11	PASS	SU-1 A,1
10	2	-18	6	PASS	SU-1 A,1
11	1	-19	3	PASS	SU-1 A,1
12	11	-9	31	PASS	SU-1 A,1
13	18	-2	51	PASS	SU-1 A,1
14	12	-8	34	PASS	SU-1 A,1
15	8	-12	23	PASS	SU-1 A,1
16	5	-15	14	PASS	SU-1 A,1
17	13	-7	37	PASS	SU-1 A,1
18	8	-12	23	PASS	SU-1 A,1
19	5	-15	14	PASS	SU-1 A,1
20	15	-5	42	PASS	SU-1 A,1
21	10	-10	28	PASS	SU-1 A,1
22	6	-14	17	PASS	SU-1 A,1
23	4	-16	11	PASS	SU-1 A,1
24	3	-17	8	PASS	SU-1 A,1
25	2	-18	6	PASS	SU-1 A,1
26	1	-19	3	PASS	SU-1 A,1
27	9	-11	25	PASS	SU-1 A,1
28	6	-14	17	PASS	SU-1 A,1
29	4	-16	11	PASS	SU-1 A,1
30	2	-18	6	PASS	SU-1 A,1
31	1	-19	3	PASS	SU-1 A,1
32	11	-9	31	PASS	SU-1 A,1
33	7	-13	20	PASS	SU-1 A,1
34	4	-16	11	PASS	SU-1 A,1
35	4	-16	11	PASS	SU-1 A,1
36	2	-18	6	PASS	SU-1 A,1
37	1	-19	3	PASS	SU-1 A,1
38	1	-19	3	PASS	SU-1 A,1

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	0	-20	0	PASS	SU-1 A,1
40	11	-9	31	PASS	SU-1 A,1
41	7	-13	20	PASS	SU-1 A,1
42	4	-16	11	PASS	SU-1 A,1
43	3	-17	8	PASS	SU-1 A,1
44	25	5	70	PASS	SU-1 A,1
45	16	-4	45	PASS	SU-1 A,1
46	10	-10	28	PASS	SU-1 A,1
47	7	-13	20	PASS	SU-1 A,1
48	13	-7	37	PASS	SU-1 A,1
49	8	-12	23	PASS	SU-1 A,1
50	5	-15	14	PASS	SU-1 A,1
51	3	-17	8	PASS	SU-1 A,1
52	12	-8	34	PASS	SU-1 A,1
53	8	-12	23	PASS	SU-1 A,1
54	5	-15	14	PASS	SU-1 A,1
55	12	-8	34	PASS	SU-1 A,1
56	8	-12	23	PASS	SU-1 A,1
57	15	-5	42	PASS	SU-1 A,1
58	9	-11	25	PASS	SU-1 A,1
59	36	16	101	PASS	SU-1 A,1
60	23	3	65	PASS	SU-1 A,1
61	25	5	70	PASS	SU-1 A,1
62	16	-4	45	PASS	SU-1 A,1
63	22	2	62	PASS	SU-1 A,1
64	15	-5	42	PASS	SU-1 A,1
65	22	2	62	PASS	SU-1 A,1
66	19	-1	53	PASS	SU-1 A,1
67	21	1	59	PASS	SU-1 A,1
68	14	-6	39	PASS	SU-1 A,1
69	9	-11	25	PASS	SU-1 A,1
70	25	5	70	PASS	SU-1 A,1
71	16	-4	45	PASS	SU-1 A,1
72	11	-9	31	PASS	SU-1 A,1
73	18	-2	51	PASS	SU-1 A,1
74	11	-9	31	PASS	SU-1 A,1
75	7	-13	20	PASS	SU-1 A,1
76	5	-15	14	PASS	SU-1 A,1

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Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	14	-6	39	PASS	SU-1 A,1
78	9	-11	25	PASS	SU-1 A,1
79	6	-14	17	PASS	SU-1 A,1
80	4	-16	11	PASS	SU-1 A,1
81	12	-8	34	PASS	SU-1 A,1
82	8	-12	23	PASS	SU-1 A,1
83	5	-15	14	PASS	SU-1 A,1
84	3	-17	8	PASS	SU-1 A,1
85	2	-18	6	PASS	SU-1 A,1
86	1	-19	3	PASS	SU-1 A,1
87	1	-19	3	PASS	SU-1 A,1
88	11	-9	31	PASS	SU-1 A,1
89	7	-13	20	PASS	SU-1 A,1
90	15	-5	42	PASS	SU-1 A,1
91	10	-10	28	PASS	SU-1 A,1
92	6	-14	17	PASS	SU-1 A,1
93	4	-16	11	PASS	SU-1 A,1
94	3	-17	8	PASS	SU-1 A,1
95	2	-18	6	PASS	SU-1 A,1
96	1	-19	3	PASS	SU-1 A,1
97	1	-19	3	PASS	SU-1 A,1
98	12	-8	34	PASS	SU-1 A,1
99	20	0	56	PASS	SU-1 A,1
100	13	-7	37	PASS	SU-1 A,1
101	28	8	79	PASS	SU-1 A,1
102	18	-2	51	PASS	SU-1 A,1
103	12	-8	34	PASS	SU-1 A,1
104	8	-12	23	PASS	SU-1 A,1
105	15	-5	42	PASS	SU-1 A,1
106	9	-11	25	PASS	SU-1 A,1
107	16	-4	45	PASS	SU-1 A,1
108	10	-10	28	PASS	SU-1 A,1
109	7	-13	20	PASS	SU-1 A,1
110	13	-7	37	PASS	SU-1 A,1
111	17	-3	48	PASS	SU-1 A,1
112	11	-9	31	PASS	SU-1 A,1
113	7	-13	20	PASS	SU-1 A,1
114	5	-15	14	PASS	SU-1 A,1

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Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

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Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

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Pass = **189**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	3	-17	8	PASS	SU-1 A,1
116	2	-18	6	PASS	SU-1 A,1
117	1	-19	3	PASS	SU-1 A,1
118	13	-7	37	PASS	SU-1 A,1
119	20	0	56	PASS	SU-1 A,1
120	13	-7	37	PASS	SU-1 A,1
121	19	-1	53	PASS	SU-1 A,1
122	25	5	70	PASS	SU-1 A,1
123	16	-4	45	PASS	SU-1 A,1
124	10	-10	28	PASS	SU-1 A,1
125	7	-13	20	PASS	SU-1 A,1
126	15	-5	42	PASS	SU-1 A,1
127	19	-1	53	PASS	SU-1 A,1
128	33	13	93	PASS	SU-1 A,1
129	27	7	76	PASS	SU-1 A,1
130	18	-2	51	PASS	SU-1 A,1
131	11	-9	31	PASS	SU-1 A,1
132	28	8	79	PASS	SU-1 A,1
133	18	-2	51	PASS	SU-1 A,1
134	12	-8	34	PASS	SU-1 A,1
135	8	-12	23	PASS	SU-1 A,1
136	5	-15	14	PASS	SU-1 A,1
137	3	-17	8	PASS	SU-1 A,1
138	2	-18	6	PASS	SU-1 A,1
139	1	-19	3	PASS	SU-1 A,1
140	10	-10	28	PASS	SU-1 A,1
141	7	-13	20	PASS	SU-1 A,1
142	13	-7	37	PASS	SU-1 A,1
143	8	-12	23	PASS	SU-1 A,1
144	5	-15	14	PASS	SU-1 A,1
145	15	-5	42	PASS	SU-1 A,1
146	10	-10	28	PASS	SU-1 A,1
147	6	-14	17	PASS	SU-1 A,1
148	4	-16	11	PASS	SU-1 A,1
149	3	-17	8	PASS	SU-1 A,1
150	2	-18	6	PASS	SU-1 A,1
151	1	-19	3	PASS	SU-1 A,1
152	0	-20	0	PASS	SU-1 A,1

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Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	0	-20	0	PASS	SU-1 A,1
154	0	-20	0	PASS	SU-1 A,1
155	0	-20	0	PASS	SU-1 A,1
156	10	-10	28	PASS	SU-1 A,1
157	6	-14	17	PASS	SU-1 A,1
158	4	-16	11	PASS	SU-1 A,1
159	3	-17	8	PASS	SU-1 A,1
160	2	-18	6	PASS	SU-1 A,1
161	13	-7	37	PASS	SU-1 A,1
162	9	-11	25	PASS	SU-1 A,1
163	6	-14	17	PASS	SU-1 A,1
164	12	-8	34	PASS	SU-1 A,1
165	8	-12	23	PASS	SU-1 A,1
166	17	-3	48	PASS	SU-1 A,1
167	22	2	62	PASS	SU-1 A,1
168	35	15	99	PASS	SU-1 A,1
169	23	3	65	PASS	SU-1 A,1
170	15	-5	42	PASS	SU-1 A,1
171	10	-10	28	PASS	SU-1 A,1
172	18	-2	51	PASS	SU-1 A,1
173	12	-8	34	PASS	SU-1 A,1
174	8	-12	23	PASS	SU-1 A,1
175	5	-15	14	PASS	SU-1 A,1
176	26	6	73	PASS	SU-1 A,1
177	29	9	82	PASS	SU-1 A,1
178	29	9	82	PASS	SU-1 A,1
179	18	-2	51	PASS	SU-1 A,1
180	12	-8	34	PASS	SU-1 A,1
181	8	-12	23	PASS	SU-1 A,1
182	5	-15	14	PASS	SU-1 A,1
183	3	-17	8	PASS	SU-1 A,1
184	2	-18	6	PASS	SU-1 A,1
185	1	-19	3	PASS	SU-1 A,1
186	1	-19	3	PASS	SU-1 A,1

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
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Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
187	33	13	93	PASS	SU-1 A,1
188	21	1	59	PASS	SU-1 A,1
189	14	-6	39	PASS	SU-1 A,1

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
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Pass = **146**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	8	-12	23	PASS	SU-2 B,2
2	17	-3	48	PASS	SU-2 B,2
3	14	-6	39	PASS	SU-2 B,2
4	21	1	59	PASS	SU-2 B,2
5	14	-6	39	PASS	SU-2 B,2
6	9	-11	25	PASS	SU-2 B,2
7	6	-14	17	PASS	SU-2 B,2
8	3	-17	8	PASS	SU-2 B,2
9	2	-18	6	PASS	SU-2 B,2
10	1	-19	3	PASS	SU-2 B,2
11	1	-19	3	PASS	SU-2 B,2
12	12	-8	34	PASS	SU-2 B,2
13	20	0	56	PASS	SU-2 B,2
14	22	2	62	PASS	SU-2 B,2
17	31	11	87	PASS	SU-2 B,2
18	20	0	56	PASS	SU-2 B,2
19	13	-7	37	PASS	SU-2 B,2
20	17	-3	48	PASS	SU-2 B,2
21	11	-9	31	PASS	SU-2 B,2
22	7	-13	20	PASS	SU-2 B,2
23	5	-15	14	PASS	SU-2 B,2
24	3	-17	8	PASS	SU-2 B,2
25	2	-18	6	PASS	SU-2 B,2
26	1	-19	3	PASS	SU-2 B,2
27	0	-20	0	PASS	SU-2 B,2
28	0	-20	0	PASS	SU-2 B,2
29	0	-20	0	PASS	SU-2 B,2
30	0	-20	0	PASS	SU-2 B,2
31	0	-20	0	PASS	SU-2 B,2
32	10	-10	28	PASS	SU-2 B,2
33	6	-14	17	PASS	SU-2 B,2
34	4	-16	11	PASS	SU-2 B,2
35	3	-17	8	PASS	SU-2 B,2
36	2	-18	6	PASS	SU-2 B,2
37	1	-19	3	PASS	SU-2 B,2
38	1	-19	3	PASS	SU-2 B,2
39	0	-20	0	PASS	SU-2 B,2
40	0	-20	0	PASS	SU-2 B,2

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Pass = **146**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
41	0	-20	0	PASS	SU-2 B,2
42	0	-20	0	PASS	SU-2 B,2
43	11	-9	31	PASS	SU-2 B,2
44	29	9	82	PASS	SU-2 B,2
45	18	-2	51	PASS	SU-2 B,2
46	22	2	62	PASS	SU-2 B,2
47	35	15	99	PASS	SU-2 B,2
48	23	3	65	PASS	SU-2 B,2
49	15	-5	42	PASS	SU-2 B,2
50	10	-10	28	PASS	SU-2 B,2
51	6	-14	17	PASS	SU-2 B,2
52	27	7	76	PASS	SU-2 B,2
53	26	6	73	PASS	SU-2 B,2
54	17	-3	48	PASS	SU-2 B,2
55	11	-9	31	PASS	SU-2 B,2
56	7	-13	20	PASS	SU-2 B,2
57	4	-16	11	PASS	SU-2 B,2
58	3	-17	8	PASS	SU-2 B,2
59	2	-18	6	PASS	SU-2 B,2
60	1	-19	3	PASS	SU-2 B,2
61	25	5	70	PASS	SU-2 B,2
62	16	-4	45	PASS	SU-2 B,2
63	10	-10	28	PASS	SU-2 B,2
64	19	-1	53	PASS	SU-2 B,2
65	12	-8	34	PASS	SU-2 B,2
66	11	-9	31	PASS	SU-2 B,2
67	7	-13	20	PASS	SU-2 B,2
68	4	-16	11	PASS	SU-2 B,2
69	3	-17	8	PASS	SU-2 B,2
70	2	-18	6	PASS	SU-2 B,2
71	13	-7	37	PASS	SU-2 B,2
72	8	-12	23	PASS	SU-2 B,2
73	5	-15	14	PASS	SU-2 B,2
74	15	-5	42	PASS	SU-2 B,2
75	19	-1	53	PASS	SU-2 B,2
77	34	14	96	PASS	SU-2 B,2
78	31	11	87	PASS	SU-2 B,2
79	20	0	56	PASS	SU-2 B,2

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 146
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
80	13	-7	37	PASS	SU-2 B,2
81	8	-12	23	PASS	SU-2 B,2
82	5	-15	14	PASS	SU-2 B,2
83	3	-17	8	PASS	SU-2 B,2
84	14	-6	39	PASS	SU-2 B,2
85	9	-11	25	PASS	SU-2 B,2
86	18	-2	51	PASS	SU-2 B,2
87	12	-8	34	PASS	SU-2 B,2
88	7	-13	20	PASS	SU-2 B,2
89	14	-6	39	PASS	SU-2 B,2
90	9	-11	25	PASS	SU-2 B,2
91	15	-5	42	PASS	SU-2 B,2
92	10	-10	28	PASS	SU-2 B,2
93	6	-14	17	PASS	SU-2 B,2
94	14	-6	39	PASS	SU-2 B,2
95	9	-11	25	PASS	SU-2 B,2
96	15	-5	42	PASS	SU-2 B,2
97	13	-7	37	PASS	SU-2 B,2
98	28	8	79	PASS	SU-2 B,2
99	18	-2	51	PASS	SU-2 B,2
100	12	-8	34	PASS	SU-2 B,2
101	16	-4	45	PASS	SU-2 B,2
102	19	-1	53	PASS	SU-2 B,2
103	12	-8	34	PASS	SU-2 B,2
104	19	-1	53	PASS	SU-2 B,2
105	12	-8	34	PASS	SU-2 B,2
106	18	-2	51	PASS	SU-2 B,2
107	11	-9	31	PASS	SU-2 B,2
108	7	-13	20	PASS	SU-2 B,2
109	5	-15	14	PASS	SU-2 B,2
110	3	-17	8	PASS	SU-2 B,2
111	2	-18	6	PASS	SU-2 B,2
112	1	-19	3	PASS	SU-2 B,2
113	1	-19	3	PASS	SU-2 B,2
114	10	-10	28	PASS	SU-2 B,2
115	15	-5	42	PASS	SU-2 B,2
116	21	1	59	PASS	SU-2 B,2
117	13	-7	37	PASS	SU-2 B,2

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **146**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
118	9	-11	25	PASS	SU-2 B,2
119	6	-14	17	PASS	SU-2 B,2
120	3	-17	8	PASS	SU-2 B,2
121	2	-18	6	PASS	SU-2 B,2
122	1	-19	3	PASS	SU-2 B,2
123	1	-19	3	PASS	SU-2 B,2
124	0	-20	0	PASS	SU-2 B,2
125	0	-20	0	PASS	SU-2 B,2
126	11	-9	31	PASS	SU-2 B,2
127	18	-2	51	PASS	SU-2 B,2
128	14	-6	39	PASS	SU-2 B,2
129	10	-10	28	PASS	SU-2 B,2
130	7	-13	20	PASS	SU-2 B,2
131	4	-16	11	PASS	SU-2 B,2
132	3	-17	8	PASS	SU-2 B,2
133	14	-6	39	PASS	SU-2 B,2
134	18	-2	51	PASS	SU-2 B,2
135	21	1	59	PASS	SU-2 B,2
136	14	-6	39	PASS	SU-2 B,2
137	9	-11	25	PASS	SU-2 B,2
138	18	-2	51	PASS	SU-2 B,2
139	11	-9	31	PASS	SU-2 B,2
140	7	-13	20	PASS	SU-2 B,2
141	5	-15	14	PASS	SU-2 B,2
142	3	-17	8	PASS	SU-2 B,2
143	2	-18	6	PASS	SU-2 B,2
144	1	-19	3	PASS	SU-2 B,2
145	9	-11	25	PASS	SU-2 B,2
146	26	6	73	PASS	SU-2 B,2
147	17	-3	48	PASS	SU-2 B,2
148	11	-9	31	PASS	SU-2 B,2
149	7	-13	20	PASS	SU-2 B,2

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 261
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	15	-5	42	PASS	SU-3 C,3
2	13	-7	37	PASS	SU-3 C,3
3	9	-11	25	PASS	SU-3 C,3
4	6	-14	17	PASS	SU-3 C,3
5	24	4	68	PASS	SU-3 C,3
6	16	-4	45	PASS	SU-3 C,3
7	10	-10	28	PASS	SU-3 C,3
8	7	-13	20	PASS	SU-3 C,3
9	4	-16	11	PASS	SU-3 C,3
10	3	-17	8	PASS	SU-3 C,3
11	2	-18	6	PASS	SU-3 C,3
12	11	-9	31	PASS	SU-3 C,3
13	29	9	82	PASS	SU-3 C,3
14	18	-2	51	PASS	SU-3 C,3
15	12	-8	34	PASS	SU-3 C,3
16	18	-2	51	PASS	SU-3 C,3
17	12	-8	34	PASS	SU-3 C,3
18	8	-12	23	PASS	SU-3 C,3
19	15	-5	42	PASS	SU-3 C,3
20	19	-1	53	PASS	SU-3 C,3
21	12	-8	34	PASS	SU-3 C,3
22	8	-12	23	PASS	SU-3 C,3
23	5	-15	14	PASS	SU-3 C,3
24	14	-6	39	PASS	SU-3 C,3
25	29	9	82	PASS	SU-3 C,3
26	18	-2	51	PASS	SU-3 C,3
27	12	-8	34	PASS	SU-3 C,3
28	17	-3	48	PASS	SU-3 C,3
29	11	-9	31	PASS	SU-3 C,3
30	17	-3	48	PASS	SU-3 C,3
31	11	-9	31	PASS	SU-3 C,3
32	7	-13	20	PASS	SU-3 C,3
33	6	-14	17	PASS	SU-3 C,3
34	15	-5	42	PASS	SU-3 C,3
35	18	-2	51	PASS	SU-3 C,3
36	12	-8	34	PASS	SU-3 C,3
37	8	-12	23	PASS	SU-3 C,3
38	17	-3	48	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	11	-9	31	PASS	SU-3 C,3
40	7	-13	20	PASS	SU-3 C,3
41	4	-16	11	PASS	SU-3 C,3
42	15	-5	42	PASS	SU-3 C,3
43	10	-10	28	PASS	SU-3 C,3
44	6	-14	17	PASS	SU-3 C,3
45	27	7	76	PASS	SU-3 C,3
46	17	-3	48	PASS	SU-3 C,3
47	11	-9	31	PASS	SU-3 C,3
48	7	-13	20	PASS	SU-3 C,3
49	5	-15	14	PASS	SU-3 C,3
50	15	-5	42	PASS	SU-3 C,3
51	19	-1	53	PASS	SU-3 C,3
52	21	1	59	PASS	SU-3 C,3
53	26	6	73	PASS	SU-3 C,3
54	26	6	73	PASS	SU-3 C,3
55	17	-3	48	PASS	SU-3 C,3
56	21	1	59	PASS	SU-3 C,3
57	22	2	62	PASS	SU-3 C,3
58	14	-6	39	PASS	SU-3 C,3
59	30	10	84	PASS	SU-3 C,3
60	29	9	82	PASS	SU-3 C,3
61	19	-1	53	PASS	SU-3 C,3
62	12	-8	34	PASS	SU-3 C,3
63	17	-3	48	PASS	SU-3 C,3
64	12	-8	34	PASS	SU-3 C,3
65	10	-10	28	PASS	SU-3 C,3
66	6	-14	17	PASS	SU-3 C,3
67	4	-16	11	PASS	SU-3 C,3
68	13	-7	37	PASS	SU-3 C,3
69	30	10	84	PASS	SU-3 C,3
70	29	9	82	PASS	SU-3 C,3
71	41	21	115	PASS	SU-3 C,3
72	27	7	76	PASS	SU-3 C,3
73	18	-2	51	PASS	SU-3 C,3
74	11	-9	31	PASS	SU-3 C,3
75	7	-13	20	PASS	SU-3 C,3
76	5	-15	14	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	3	-17	8	PASS	SU-3 C,3
78	2	-18	6	PASS	SU-3 C,3
79	10	-10	28	PASS	SU-3 C,3
80	6	-14	17	PASS	SU-3 C,3
81	15	-5	42	PASS	SU-3 C,3
82	10	-10	28	PASS	SU-3 C,3
83	17	-3	48	PASS	SU-3 C,3
84	11	-9	31	PASS	SU-3 C,3
85	17	-3	48	PASS	SU-3 C,3
86	11	-9	31	PASS	SU-3 C,3
87	7	-13	20	PASS	SU-3 C,3
88	4	-16	11	PASS	SU-3 C,3
89	3	-17	8	PASS	SU-3 C,3
90	2	-18	6	PASS	SU-3 C,3
91	1	-19	3	PASS	SU-3 C,3
92	0	-20	0	PASS	SU-3 C,3
93	12	-8	34	PASS	SU-3 C,3
94	8	-12	23	PASS	SU-3 C,3
95	5	-15	14	PASS	SU-3 C,3
96	4	-16	11	PASS	SU-3 C,3
97	22	2	62	PASS	SU-3 C,3
98	15	-5	42	PASS	SU-3 C,3
99	32	12	90	PASS	SU-3 C,3
100	32	12	90	PASS	SU-3 C,3
101	21	1	59	PASS	SU-3 C,3
102	14	-6	39	PASS	SU-3 C,3
103	9	-11	25	PASS	SU-3 C,3
104	6	-14	17	PASS	SU-3 C,3
105	14	-6	39	PASS	SU-3 C,3
106	9	-11	25	PASS	SU-3 C,3
107	6	-14	17	PASS	SU-3 C,3
108	4	-16	11	PASS	SU-3 C,3
109	2	-18	6	PASS	SU-3 C,3
110	1	-19	3	PASS	SU-3 C,3
111	13	-7	37	PASS	SU-3 C,3
112	8	-12	23	PASS	SU-3 C,3
113	5	-15	14	PASS	SU-3 C,3
114	12	-8	34	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	8	-12	23	PASS	SU-3 C,3
116	5	-15	14	PASS	SU-3 C,3
117	3	-17	8	PASS	SU-3 C,3
118	2	-18	6	PASS	SU-3 C,3
119	1	-19	3	PASS	SU-3 C,3
120	1	-19	3	PASS	SU-3 C,3
121	0	-20	0	PASS	SU-3 C,3
122	0	-20	0	PASS	SU-3 C,3
123	0	-20	0	PASS	SU-3 C,3
124	10	-10	28	PASS	SU-3 C,3
125	16	-4	45	PASS	SU-3 C,3
126	10	-10	28	PASS	SU-3 C,3
127	9	-11	25	PASS	SU-3 C,3
128	17	-3	48	PASS	SU-3 C,3
129	11	-9	31	PASS	SU-3 C,3
130	7	-13	20	PASS	SU-3 C,3
131	4	-16	11	PASS	SU-3 C,3
132	3	-17	8	PASS	SU-3 C,3
133	11	-9	31	PASS	SU-3 C,3
134	7	-13	20	PASS	SU-3 C,3
135	14	-6	39	PASS	SU-3 C,3
136	9	-11	25	PASS	SU-3 C,3
137	6	-14	17	PASS	SU-3 C,3
138	4	-16	11	PASS	SU-3 C,3
139	2	-18	6	PASS	SU-3 C,3
140	1	-19	3	PASS	SU-3 C,3
141	1	-19	3	PASS	SU-3 C,3
142	23	3	65	PASS	SU-3 C,3
143	15	-5	42	PASS	SU-3 C,3
144	21	1	59	PASS	SU-3 C,3
145	13	-7	37	PASS	SU-3 C,3
146	9	-11	25	PASS	SU-3 C,3
147	6	-14	17	PASS	SU-3 C,3
148	3	-17	8	PASS	SU-3 C,3
149	2	-18	6	PASS	SU-3 C,3
150	10	-10	28	PASS	SU-3 C,3
151	7	-13	20	PASS	SU-3 C,3
152	4	-16	11	PASS	SU-3 C,3

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	3	-17	8	PASS	SU-3 C,3
154	11	-9	31	PASS	SU-3 C,3
155	7	-13	20	PASS	SU-3 C,3
156	5	-15	14	PASS	SU-3 C,3
157	3	-17	8	PASS	SU-3 C,3
158	13	-7	37	PASS	SU-3 C,3
159	9	-11	25	PASS	SU-3 C,3
160	6	-14	17	PASS	SU-3 C,3
161	4	-16	11	PASS	SU-3 C,3
162	2	-18	6	PASS	SU-3 C,3
163	1	-19	3	PASS	SU-3 C,3
164	1	-19	3	PASS	SU-3 C,3
165	0	-20	0	PASS	SU-3 C,3
166	12	-8	34	PASS	SU-3 C,3
167	8	-12	23	PASS	SU-3 C,3
168	5	-15	14	PASS	SU-3 C,3
169	3	-17	8	PASS	SU-3 C,3
170	2	-18	6	PASS	SU-3 C,3
171	1	-19	3	PASS	SU-3 C,3
172	1	-19	3	PASS	SU-3 C,3
173	0	-20	0	PASS	SU-3 C,3
174	11	-9	31	PASS	SU-3 C,3
175	7	-13	20	PASS	SU-3 C,3
176	4	-16	11	PASS	SU-3 C,3
177	12	-8	34	PASS	SU-3 C,3
178	16	-4	45	PASS	SU-3 C,3
179	11	-9	31	PASS	SU-3 C,3
180	18	-2	51	PASS	SU-3 C,3
181	11	-9	31	PASS	SU-3 C,3
182	7	-13	20	PASS	SU-3 C,3
183	14	-6	39	PASS	SU-3 C,3
184	9	-11	25	PASS	SU-3 C,3
185	6	-14	17	PASS	SU-3 C,3
186	3	-17	8	PASS	SU-3 C,3
187	2	-18	6	PASS	SU-3 C,3
188	11	-9	31	PASS	SU-3 C,3
189	8	-12	23	PASS	SU-3 C,3
190	18	-2	51	PASS	SU-3 C,3

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 261
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
191	24	4	68	PASS	SU-3 C,3
192	15	-5	42	PASS	SU-3 C,3
193	10	-10	28	PASS	SU-3 C,3
194	17	-3	48	PASS	SU-3 C,3
195	11	-9	31	PASS	SU-3 C,3
196	7	-13	20	PASS	SU-3 C,3
197	5	-15	14	PASS	SU-3 C,3
198	3	-17	8	PASS	SU-3 C,3
199	2	-18	6	PASS	SU-3 C,3
200	12	-8	34	PASS	SU-3 C,3
201	18	-2	51	PASS	SU-3 C,3
202	12	-8	34	PASS	SU-3 C,3
203	8	-12	23	PASS	SU-3 C,3
204	14	-6	39	PASS	SU-3 C,3
205	9	-11	25	PASS	SU-3 C,3
206	15	-5	42	PASS	SU-3 C,3
207	9	-11	25	PASS	SU-3 C,3
208	6	-14	17	PASS	SU-3 C,3
209	4	-16	11	PASS	SU-3 C,3
210	2	-18	6	PASS	SU-3 C,3
211	1	-19	3	PASS	SU-3 C,3
212	1	-19	3	PASS	SU-3 C,3
213	0	-20	0	PASS	SU-3 C,3
214	10	-10	28	PASS	SU-3 C,3
215	6	-14	17	PASS	SU-3 C,3
216	14	-6	39	PASS	SU-3 C,3
217	20	0	56	PASS	SU-3 C,3
218	33	13	93	PASS	SU-3 C,3
219	33	13	93	PASS	SU-3 C,3
220	21	1	59	PASS	SU-3 C,3
221	19	-1	53	PASS	SU-3 C,3
222	12	-8	34	PASS	SU-3 C,3
223	8	-12	23	PASS	SU-3 C,3
224	5	-15	14	PASS	SU-3 C,3
225	3	-17	8	PASS	SU-3 C,3
226	2	-18	6	PASS	SU-3 C,3
227	1	-19	3	PASS	SU-3 C,3
228	1	-19	3	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
229	0	-20	0	PASS	SU-3 C,3
230	0	-20	0	PASS	SU-3 C,3
231	10	-10	28	PASS	SU-3 C,3
232	16	-4	45	PASS	SU-3 C,3
233	10	-10	28	PASS	SU-3 C,3
234	7	-13	20	PASS	SU-3 C,3
235	4	-16	11	PASS	SU-3 C,3
236	3	-17	8	PASS	SU-3 C,3
237	2	-18	6	PASS	SU-3 C,3
238	1	-19	3	PASS	SU-3 C,3
239	0	-20	0	PASS	SU-3 C,3
240	0	-20	0	PASS	SU-3 C,3
241	0	-20	0	PASS	SU-3 C,3
242	0	-20	0	PASS	SU-3 C,3
243	0	-20	0	PASS	SU-3 C,3
244	0	-20	0	PASS	SU-3 C,3
245	0	-20	0	PASS	SU-3 C,3
246	0	-20	0	PASS	SU-3 C,3
247	0	-20	0	PASS	SU-3 C,3
248	9	-11	25	PASS	SU-3 C,3
249	18	-2	51	PASS	SU-3 C,3
250	11	-9	31	PASS	SU-3 C,3
251	18	-2	51	PASS	SU-3 C,3
252	28	8	79	PASS	SU-3 C,3
253	30	10	84	PASS	SU-3 C,3
254	20	0	56	PASS	SU-3 C,3
255	13	-7	37	PASS	SU-3 C,3
256	19	-1	53	PASS	SU-3 C,3
257	12	-8	34	PASS	SU-3 C,3
258	8	-12	23	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
259	5	-15	14	PASS	SU-3 C,3
260	3	-17	8	PASS	SU-3 C,3
261	2	-18	6	PASS	SU-3 C,3

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 154
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1	-19	3	PASS	SU-4 D,4
2	1	-19	3	PASS	SU-4 D,4
3	0	-20	0	PASS	SU-4 D,4
4	0	-20	0	PASS	SU-4 D,4
5	0	-20	0	PASS	SU-4 D,4
6	9	-11	25	PASS	SU-4 D,4
7	14	-6	39	PASS	SU-4 D,4
8	9	-11	25	PASS	SU-4 D,4
9	6	-14	17	PASS	SU-4 D,4
10	4	-16	11	PASS	SU-4 D,4
11	2	-18	6	PASS	SU-4 D,4
12	1	-19	3	PASS	SU-4 D,4
13	1	-19	3	PASS	SU-4 D,4
14	0	-20	0	PASS	SU-4 D,4
15	9	-11	25	PASS	SU-4 D,4
16	6	-14	17	PASS	SU-4 D,4
17	21	1	59	PASS	SU-4 D,4
18	26	6	73	PASS	SU-4 D,4
19	17	-3	48	PASS	SU-4 D,4
20	11	-9	31	PASS	SU-4 D,4
21	7	-13	20	PASS	SU-4 D,4
22	4	-16	11	PASS	SU-4 D,4
23	3	-17	8	PASS	SU-4 D,4
24	2	-18	6	PASS	SU-4 D,4
25	1	-19	3	PASS	SU-4 D,4
26	0	-20	0	PASS	SU-4 D,4
27	10	-10	28	PASS	SU-4 D,4
28	6	-14	17	PASS	SU-4 D,4
29	4	-16	11	PASS	SU-4 D,4
30	3	-17	8	PASS	SU-4 D,4
31	2	-18	6	PASS	SU-4 D,4
32	10	-10	28	PASS	SU-4 D,4
33	9	-11	25	PASS	SU-4 D,4
34	6	-14	17	PASS	SU-4 D,4
35	3	-17	8	PASS	SU-4 D,4
36	2	-18	6	PASS	SU-4 D,4
37	1	-19	3	PASS	SU-4 D,4
38	1	-19	3	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **154**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	9	-11	25	PASS	SU-4 D,4
40	18	-2	51	PASS	SU-4 D,4
41	12	-8	34	PASS	SU-4 D,4
42	19	-1	53	PASS	SU-4 D,4
43	22	2	62	PASS	SU-4 D,4
44	15	-5	42	PASS	SU-4 D,4
45	9	-11	25	PASS	SU-4 D,4
46	17	-3	48	PASS	SU-4 D,4
47	11	-9	31	PASS	SU-4 D,4
48	7	-13	20	PASS	SU-4 D,4
49	4	-16	11	PASS	SU-4 D,4
50	12	-8	34	PASS	SU-4 D,4
51	7	-13	20	PASS	SU-4 D,4
52	5	-15	14	PASS	SU-4 D,4
53	3	-17	8	PASS	SU-4 D,4
54	2	-18	6	PASS	SU-4 D,4
55	12	-8	34	PASS	SU-4 D,4
56	8	-12	23	PASS	SU-4 D,4
57	16	-4	45	PASS	SU-4 D,4
58	10	-10	28	PASS	SU-4 D,4
59	16	-4	45	PASS	SU-4 D,4
60	11	-9	31	PASS	SU-4 D,4
61	7	-13	20	PASS	SU-4 D,4
62	4	-16	11	PASS	SU-4 D,4
63	14	-6	39	PASS	SU-4 D,4
64	12	-8	34	PASS	SU-4 D,4
65	8	-12	23	PASS	SU-4 D,4
66	14	-6	39	PASS	SU-4 D,4
67	9	-11	25	PASS	SU-4 D,4
68	6	-14	17	PASS	SU-4 D,4
69	4	-16	11	PASS	SU-4 D,4
70	24	4	68	PASS	SU-4 D,4
71	15	-5	42	PASS	SU-4 D,4
72	10	-10	28	PASS	SU-4 D,4
73	7	-13	20	PASS	SU-4 D,4
74	4	-16	11	PASS	SU-4 D,4
75	3	-17	8	PASS	SU-4 D,4
76	12	-8	34	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 154
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	8	-12	23	PASS	SU-4 D,4
78	25	5	70	PASS	SU-4 D,4
79	16	-4	45	PASS	SU-4 D,4
80	10	-10	28	PASS	SU-4 D,4
81	7	-13	20	PASS	SU-4 D,4
82	26	6	73	PASS	SU-4 D,4
83	17	-3	48	PASS	SU-4 D,4
84	23	3	65	PASS	SU-4 D,4
85	15	-5	42	PASS	SU-4 D,4
86	10	-10	28	PASS	SU-4 D,4
87	26	6	73	PASS	SU-4 D,4
88	17	-3	48	PASS	SU-4 D,4
89	42	22	118	PASS	SU-4 D,4
90	37	17	104	PASS	SU-4 D,4
91	24	4	68	PASS	SU-4 D,4
92	16	-4	45	PASS	SU-4 D,4
93	10	-10	28	PASS	SU-4 D,4
94	7	-13	20	PASS	SU-4 D,4
95	5	-15	14	PASS	SU-4 D,4
96	4	-16	11	PASS	SU-4 D,4
97	2	-18	6	PASS	SU-4 D,4
98	1	-19	3	PASS	SU-4 D,4
99	1	-19	3	PASS	SU-4 D,4
100	11	-9	31	PASS	SU-4 D,4
101	16	-4	45	PASS	SU-4 D,4
102	10	-10	28	PASS	SU-4 D,4
103	28	8	79	PASS	SU-4 D,4
104	18	-2	51	PASS	SU-4 D,4
105	12	-8	34	PASS	SU-4 D,4
106	8	-12	23	PASS	SU-4 D,4
107	5	-15	14	PASS	SU-4 D,4
108	3	-17	8	PASS	SU-4 D,4
109	11	-9	31	PASS	SU-4 D,4
110	19	-1	53	PASS	SU-4 D,4
111	12	-8	34	PASS	SU-4 D,4
112	8	-12	23	PASS	SU-4 D,4
113	15	-5	42	PASS	SU-4 D,4
114	18	-2	51	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **154**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	12	-8	34	PASS	SU-4 D,4
116	8	-12	23	PASS	SU-4 D,4
117	27	7	76	PASS	SU-4 D,4
118	17	-3	48	PASS	SU-4 D,4
119	11	-9	31	PASS	SU-4 D,4
120	7	-13	20	PASS	SU-4 D,4
121	13	-7	37	PASS	SU-4 D,4
122	9	-11	25	PASS	SU-4 D,4
123	6	-14	17	PASS	SU-4 D,4
124	3	-17	8	PASS	SU-4 D,4
125	2	-18	6	PASS	SU-4 D,4
126	2	-18	6	PASS	SU-4 D,4
127	1	-19	3	PASS	SU-4 D,4
128	11	-9	31	PASS	SU-4 D,4
129	19	-1	53	PASS	SU-4 D,4
130	13	-7	37	PASS	SU-4 D,4
131	8	-12	23	PASS	SU-4 D,4
132	5	-15	14	PASS	SU-4 D,4
133	3	-17	8	PASS	SU-4 D,4
134	11	-9	31	PASS	SU-4 D,4
135	18	-2	51	PASS	SU-4 D,4
136	11	-9	31	PASS	SU-4 D,4
137	16	-4	45	PASS	SU-4 D,4
138	19	-1	53	PASS	SU-4 D,4
139	12	-8	34	PASS	SU-4 D,4
140	8	-12	23	PASS	SU-4 D,4
141	17	-3	48	PASS	SU-4 D,4
142	11	-9	31	PASS	SU-4 D,4
143	7	-13	20	PASS	SU-4 D,4
144	5	-15	14	PASS	SU-4 D,4
145	14	-6	39	PASS	SU-4 D,4
146	28	8	79	PASS	SU-4 D,4
147	18	-2	51	PASS	SU-4 D,4
148	22	2	62	PASS	SU-4 D,4
149	14	-6	39	PASS	SU-4 D,4
150	9	-11	25	PASS	SU-4 D,4
151	6	-14	17	PASS	SU-4 D,4
152	4	-16	11	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **154**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	8	-12	23	PASS	SU-4 D,4
154	5	-15	14	PASS	SU-4 D,4

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **151**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	21	1	59	PASS	SU-5 E,5
2	14	-6	39	PASS	SU-5 E,5
3	9	-11	25	PASS	SU-5 E,5
4	18	-2	51	PASS	SU-5 E,5
5	21	1	59	PASS	SU-5 E,5
6	14	-6	39	PASS	SU-5 E,5
7	20	0	56	PASS	SU-5 E,5
8	13	-7	37	PASS	SU-5 E,5
9	8	-12	23	PASS	SU-5 E,5
10	16	-4	45	PASS	SU-5 E,5
11	11	-9	31	PASS	SU-5 E,5
12	7	-13	20	PASS	SU-5 E,5
13	16	-4	45	PASS	SU-5 E,5
14	21	1	59	PASS	SU-5 E,5
15	23	3	65	PASS	SU-5 E,5
16	15	-5	42	PASS	SU-5 E,5
17	13	-7	37	PASS	SU-5 E,5
18	18	-2	51	PASS	SU-5 E,5
19	21	1	59	PASS	SU-5 E,5
20	13	-7	37	PASS	SU-5 E,5
21	9	-11	25	PASS	SU-5 E,5
22	18	-2	51	PASS	SU-5 E,5
23	20	0	56	PASS	SU-5 E,5
24	13	-7	37	PASS	SU-5 E,5
25	8	-12	23	PASS	SU-5 E,5
26	26	6	73	PASS	SU-5 E,5
27	26	6	73	PASS	SU-5 E,5
28	17	-3	48	PASS	SU-5 E,5
29	23	3	65	PASS	SU-5 E,5
30	26	6	73	PASS	SU-5 E,5
31	17	-3	48	PASS	SU-5 E,5
32	20	0	56	PASS	SU-5 E,5
33	32	12	90	PASS	SU-5 E,5
34	21	1	59	PASS	SU-5 E,5
35	34	14	96	PASS	SU-5 E,5
36	43	23	121	PASS	SU-5 E,5
37	28	8	79	PASS	SU-5 E,5
38	18	-2	51	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 151
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	29	9	82	PASS	SU-5 E,5
40	19	-1	53	PASS	SU-5 E,5
41	12	-8	34	PASS	SU-5 E,5
42	19	-1	53	PASS	SU-5 E,5
43	12	-8	34	PASS	SU-5 E,5
44	8	-12	23	PASS	SU-5 E,5
45	14	-6	39	PASS	SU-5 E,5
46	19	-1	53	PASS	SU-5 E,5
47	12	-8	34	PASS	SU-5 E,5
48	10	-10	28	PASS	SU-5 E,5
49	7	-13	20	PASS	SU-5 E,5
50	4	-16	11	PASS	SU-5 E,5
51	3	-17	8	PASS	SU-5 E,5
52	2	-18	6	PASS	SU-5 E,5
53	1	-19	3	PASS	SU-5 E,5
54	0	-20	0	PASS	SU-5 E,5
55	21	1	59	PASS	SU-5 E,5
56	14	-6	39	PASS	SU-5 E,5
57	18	-2	51	PASS	SU-5 E,5
58	12	-8	34	PASS	SU-5 E,5
59	8	-12	23	PASS	SU-5 E,5
60	15	-5	42	PASS	SU-5 E,5
61	20	0	56	PASS	SU-5 E,5
62	22	2	62	PASS	SU-5 E,5
63	14	-6	39	PASS	SU-5 E,5
64	20	0	56	PASS	SU-5 E,5
65	13	-7	37	PASS	SU-5 E,5
66	8	-12	23	PASS	SU-5 E,5
67	17	-3	48	PASS	SU-5 E,5
68	11	-9	31	PASS	SU-5 E,5
69	7	-13	20	PASS	SU-5 E,5
70	17	-3	48	PASS	SU-5 E,5
71	21	1	59	PASS	SU-5 E,5
72	25	5	70	PASS	SU-5 E,5
73	17	-3	48	PASS	SU-5 E,5
74	11	-9	31	PASS	SU-5 E,5
75	16	-4	45	PASS	SU-5 E,5
76	21	1	59	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **151**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	14	-6	39	PASS	SU-5 E,5
78	21	1	59	PASS	SU-5 E,5
79	15	-5	42	PASS	SU-5 E,5
80	12	-8	34	PASS	SU-5 E,5
81	29	9	82	PASS	SU-5 E,5
82	18	-2	51	PASS	SU-5 E,5
83	21	1	59	PASS	SU-5 E,5
84	14	-6	39	PASS	SU-5 E,5
85	9	-11	25	PASS	SU-5 E,5
86	6	-14	17	PASS	SU-5 E,5
87	13	-7	37	PASS	SU-5 E,5
88	9	-11	25	PASS	SU-5 E,5
89	15	-5	42	PASS	SU-5 E,5
90	10	-10	28	PASS	SU-5 E,5
91	26	6	73	PASS	SU-5 E,5
92	17	-3	48	PASS	SU-5 E,5
93	22	2	62	PASS	SU-5 E,5
94	25	5	70	PASS	SU-5 E,5
95	16	-4	45	PASS	SU-5 E,5
96	19	-1	53	PASS	SU-5 E,5
97	12	-8	34	PASS	SU-5 E,5
98	30	10	84	PASS	SU-5 E,5
99	19	-1	53	PASS	SU-5 E,5
100	13	-7	37	PASS	SU-5 E,5
101	8	-12	23	PASS	SU-5 E,5
102	5	-15	14	PASS	SU-5 E,5
103	3	-17	8	PASS	SU-5 E,5
104	11	-9	31	PASS	SU-5 E,5
105	19	-1	53	PASS	SU-5 E,5
106	12	-8	34	PASS	SU-5 E,5
107	17	-3	48	PASS	SU-5 E,5
108	11	-9	31	PASS	SU-5 E,5
109	7	-13	20	PASS	SU-5 E,5
110	4	-16	11	PASS	SU-5 E,5
111	4	-16	11	PASS	SU-5 E,5
112	23	3	65	PASS	SU-5 E,5
113	27	7	76	PASS	SU-5 E,5
114	18	-2	51	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 151
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	11	-9	31	PASS	SU-5 E,5
116	7	-13	20	PASS	SU-5 E,5
117	17	-3	48	PASS	SU-5 E,5
118	23	3	65	PASS	SU-5 E,5
119	25	5	70	PASS	SU-5 E,5
120	16	-4	45	PASS	SU-5 E,5
121	10	-10	28	PASS	SU-5 E,5
122	7	-13	20	PASS	SU-5 E,5
123	4	-16	11	PASS	SU-5 E,5
124	3	-17	8	PASS	SU-5 E,5
125	11	-9	31	PASS	SU-5 E,5
126	7	-13	20	PASS	SU-5 E,5
127	15	-5	42	PASS	SU-5 E,5
128	10	-10	28	PASS	SU-5 E,5
129	18	-2	51	PASS	SU-5 E,5
130	12	-8	34	PASS	SU-5 E,5
131	8	-12	23	PASS	SU-5 E,5
132	5	-15	14	PASS	SU-5 E,5
133	3	-17	8	PASS	SU-5 E,5
134	2	-18	6	PASS	SU-5 E,5
135	1	-19	3	PASS	SU-5 E,5
136	1	-19	3	PASS	SU-5 E,5
137	0	-20	0	PASS	SU-5 E,5
138	0	-20	0	PASS	SU-5 E,5
139	0	-20	0	PASS	SU-5 E,5
140	0	-20	0	PASS	SU-5 E,5
141	12	-8	34	PASS	SU-5 E,5
142	11	-9	31	PASS	SU-5 E,5
143	17	-3	48	PASS	SU-5 E,5
144	11	-9	31	PASS	SU-5 E,5
145	7	-13	20	PASS	SU-5 E,5
146	13	-7	37	PASS	SU-5 E,5
147	17	-3	48	PASS	SU-5 E,5
148	22	2	62	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **151**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
149	26	6	73	PASS	SU-5 E,5
150	17	-3	48	PASS	SU-5 E,5
151	11	-9	31	PASS	SU-5 E,5

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 114
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	5	-15	14	PASS	SU-6 D,6
2	3	-17	8	PASS	SU-6 D,6
3	14	-6	39	PASS	SU-6 D,6
4	9	-11	25	PASS	SU-6 D,6
5	15	-5	42	PASS	SU-6 D,6
6	9	-11	25	PASS	SU-6 D,6
7	6	-14	17	PASS	SU-6 D,6
8	16	-4	45	PASS	SU-6 D,6
9	10	-10	28	PASS	SU-6 D,6
10	7	-13	20	PASS	SU-6 D,6
11	16	-4	45	PASS	SU-6 D,6
12	11	-9	31	PASS	SU-6 D,6
13	7	-13	20	PASS	SU-6 D,6
14	4	-16	11	PASS	SU-6 D,6
15	3	-17	8	PASS	SU-6 D,6
16	2	-18	6	PASS	SU-6 D,6
17	1	-19	3	PASS	SU-6 D,6
18	1	-19	3	PASS	SU-6 D,6
19	0	-20	0	PASS	SU-6 D,6
20	0	-20	0	PASS	SU-6 D,6
21	0	-20	0	PASS	SU-6 D,6
22	19	-1	53	PASS	SU-6 D,6
23	25	5	70	PASS	SU-6 D,6
24	16	-4	45	PASS	SU-6 D,6
25	28	8	79	PASS	SU-6 D,6
26	18	-2	51	PASS	SU-6 D,6
27	12	-8	34	PASS	SU-6 D,6
28	7	-13	20	PASS	SU-6 D,6
29	5	-15	14	PASS	SU-6 D,6
30	3	-17	8	PASS	SU-6 D,6
31	2	-18	6	PASS	SU-6 D,6
32	22	2	62	PASS	SU-6 D,6
33	14	-6	39	PASS	SU-6 D,6
34	9	-11	25	PASS	SU-6 D,6
35	6	-14	17	PASS	SU-6 D,6
36	4	-16	11	PASS	SU-6 D,6
37	2	-18	6	PASS	SU-6 D,6
38	1	-19	3	PASS	SU-6 D,6

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **114**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1	-19	3	PASS	SU-6 D,6
40	0	-20	0	PASS	SU-6 D,6
41	0	-20	0	PASS	SU-6 D,6
42	0	-20	0	PASS	SU-6 D,6
43	0	-20	0	PASS	SU-6 D,6
44	0	-20	0	PASS	SU-6 D,6
45	0	-20	0	PASS	SU-6 D,6
46	12	-8	34	PASS	SU-6 D,6
47	11	-9	31	PASS	SU-6 D,6
48	17	-3	48	PASS	SU-6 D,6
49	11	-9	31	PASS	SU-6 D,6
50	7	-13	20	PASS	SU-6 D,6
51	4	-16	11	PASS	SU-6 D,6
52	3	-17	8	PASS	SU-6 D,6
53	2	-18	6	PASS	SU-6 D,6
54	1	-19	3	PASS	SU-6 D,6
55	0	-20	0	PASS	SU-6 D,6
56	0	-20	0	PASS	SU-6 D,6
57	0	-20	0	PASS	SU-6 D,6
58	0	-20	0	PASS	SU-6 D,6
59	0	-20	0	PASS	SU-6 D,6
60	9	-11	25	PASS	SU-6 D,6
61	27	7	76	PASS	SU-6 D,6
62	18	-2	51	PASS	SU-6 D,6
63	20	0	56	PASS	SU-6 D,6
64	13	-7	37	PASS	SU-6 D,6
65	8	-12	23	PASS	SU-6 D,6
66	5	-15	14	PASS	SU-6 D,6
67	3	-17	8	PASS	SU-6 D,6
68	2	-18	6	PASS	SU-6 D,6
69	1	-19	3	PASS	SU-6 D,6
70	1	-19	3	PASS	SU-6 D,6
71	0	-20	0	PASS	SU-6 D,6
72	0	-20	0	PASS	SU-6 D,6
73	0	-20	0	PASS	SU-6 D,6
74	11	-9	31	PASS	SU-6 D,6
75	7	-13	20	PASS	SU-6 D,6
76	25	5	70	PASS	SU-6 D,6

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **114**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	26	6	73	PASS	SU-6 D,6
78	21	1	59	PASS	SU-6 D,6
79	15	-5	42	PASS	SU-6 D,6
80	22	2	62	PASS	SU-6 D,6
81	14	-6	39	PASS	SU-6 D,6
82	9	-11	25	PASS	SU-6 D,6
83	16	-4	45	PASS	SU-6 D,6
84	10	-10	28	PASS	SU-6 D,6
85	7	-13	20	PASS	SU-6 D,6
86	4	-16	11	PASS	SU-6 D,6
87	3	-17	8	PASS	SU-6 D,6
88	2	-18	6	PASS	SU-6 D,6
89	1	-19	3	PASS	SU-6 D,6
90	0	-20	0	PASS	SU-6 D,6
91	0	-20	0	PASS	SU-6 D,6
92	0	-20	0	PASS	SU-6 D,6
93	0	-20	0	PASS	SU-6 D,6
94	0	-20	0	PASS	SU-6 D,6
95	0	-20	0	PASS	SU-6 D,6
96	9	-11	25	PASS	SU-6 D,6
97	25	5	70	PASS	SU-6 D,6
98	27	7	76	PASS	SU-6 D,6
99	27	7	76	PASS	SU-6 D,6
100	18	-2	51	PASS	SU-6 D,6
101	11	-9	31	PASS	SU-6 D,6
102	7	-13	20	PASS	SU-6 D,6
103	5	-15	14	PASS	SU-6 D,6
104	3	-17	8	PASS	SU-6 D,6
105	2	-18	6	PASS	SU-6 D,6
106	1	-19	3	PASS	SU-6 D,6
107	19	-1	53	PASS	SU-6 D,6
108	22	2	62	PASS	SU-6 D,6
109	27	7	76	PASS	SU-6 D,6
110	22	2	62	PASS	SU-6 D,6
111	14	-6	39	PASS	SU-6 D,6

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **114**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
112	9	-11	25	PASS	SU-6 D,6
113	6	-14	17	PASS	SU-6 D,6
114	9	-11	25	PASS	SU-6 D,6

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	12	-8	34	PASS	SU-7 C,7
2	7	-13	20	PASS	SU-7 C,7
3	5	-15	14	PASS	SU-7 C,7
4	14	-6	39	PASS	SU-7 C,7
5	9	-11	25	PASS	SU-7 C,7
6	24	4	68	PASS	SU-7 C,7
7	16	-4	45	PASS	SU-7 C,7
8	19	-1	53	PASS	SU-7 C,7
9	24	4	68	PASS	SU-7 C,7
10	16	-4	45	PASS	SU-7 C,7
11	10	-10	28	PASS	SU-7 C,7
12	7	-13	20	PASS	SU-7 C,7
13	13	-7	37	PASS	SU-7 C,7
14	19	-1	53	PASS	SU-7 C,7
15	12	-8	34	PASS	SU-7 C,7
16	8	-12	23	PASS	SU-7 C,7
17	5	-15	14	PASS	SU-7 C,7
18	12	-8	34	PASS	SU-7 C,7
19	20	0	56	PASS	SU-7 C,7
20	13	-7	37	PASS	SU-7 C,7
21	20	0	56	PASS	SU-7 C,7
22	13	-7	37	PASS	SU-7 C,7
23	21	1	59	PASS	SU-7 C,7
24	15	-5	42	PASS	SU-7 C,7
25	10	-10	28	PASS	SU-7 C,7
26	7	-13	20	PASS	SU-7 C,7
27	4	-16	11	PASS	SU-7 C,7
28	3	-17	8	PASS	SU-7 C,7
29	2	-18	6	PASS	SU-7 C,7
30	1	-19	3	PASS	SU-7 C,7
31	9	-11	25	PASS	SU-7 C,7
32	6	-14	17	PASS	SU-7 C,7
33	4	-16	11	PASS	SU-7 C,7
34	2	-18	6	PASS	SU-7 C,7
35	1	-19	3	PASS	SU-7 C,7
36	22	2	62	PASS	SU-7 C,7
37	26	6	73	PASS	SU-7 C,7
38	17	-3	48	PASS	SU-7 C,7

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	30	10	84	PASS	SU-7 C,7
40	20	0	56	PASS	SU-7 C,7
41	34	14	96	PASS	SU-7 C,7
42	22	2	62	PASS	SU-7 C,7
43	15	-5	42	PASS	SU-7 C,7
44	10	-10	28	PASS	SU-7 C,7
45	6	-14	17	PASS	SU-7 C,7
46	4	-16	11	PASS	SU-7 C,7
47	3	-17	8	PASS	SU-7 C,7
48	2	-18	6	PASS	SU-7 C,7
49	10	-10	28	PASS	SU-7 C,7
50	6	-14	17	PASS	SU-7 C,7
51	4	-16	11	PASS	SU-7 C,7
52	34	14	96	PASS	SU-7 C,7
53	22	2	62	PASS	SU-7 C,7
54	16	-4	45	PASS	SU-7 C,7
55	13	-7	37	PASS	SU-7 C,7
56	8	-12	23	PASS	SU-7 C,7
57	5	-15	14	PASS	SU-7 C,7
58	3	-17	8	PASS	SU-7 C,7
59	11	-9	31	PASS	SU-7 C,7
60	7	-13	20	PASS	SU-7 C,7
61	26	6	73	PASS	SU-7 C,7
62	17	-3	48	PASS	SU-7 C,7
63	11	-9	31	PASS	SU-7 C,7
64	7	-13	20	PASS	SU-7 C,7
65	4	-16	11	PASS	SU-7 C,7
66	15	-5	42	PASS	SU-7 C,7
67	22	2	62	PASS	SU-7 C,7
68	14	-6	39	PASS	SU-7 C,7
69	21	1	59	PASS	SU-7 C,7
70	26	6	73	PASS	SU-7 C,7
71	17	-3	48	PASS	SU-7 C,7
72	11	-9	31	PASS	SU-7 C,7
73	7	-13	20	PASS	SU-7 C,7
74	4	-16	11	PASS	SU-7 C,7
75	3	-17	8	PASS	SU-7 C,7
76	14	-6	39	PASS	SU-7 C,7

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	32	12	90	PASS	SU-7 C,7
78	21	1	59	PASS	SU-7 C,7
79	13	-7	37	PASS	SU-7 C,7
80	9	-11	25	PASS	SU-7 C,7
81	18	-2	51	PASS	SU-7 C,7
82	21	1	59	PASS	SU-7 C,7
83	14	-6	39	PASS	SU-7 C,7
84	12	-8	34	PASS	SU-7 C,7
85	28	8	79	PASS	SU-7 C,7
86	28	8	79	PASS	SU-7 C,7
87	27	7	76	PASS	SU-7 C,7
88	18	-2	51	PASS	SU-7 C,7
89	11	-9	31	PASS	SU-7 C,7
90	7	-13	20	PASS	SU-7 C,7
91	5	-15	14	PASS	SU-7 C,7
92	3	-17	8	PASS	SU-7 C,7
93	2	-18	6	PASS	SU-7 C,7
94	1	-19	3	PASS	SU-7 C,7
95	20	0	56	PASS	SU-7 C,7
96	13	-7	37	PASS	SU-7 C,7
97	17	-3	48	PASS	SU-7 C,7
98	22	2	62	PASS	SU-7 C,7
99	23	3	65	PASS	SU-7 C,7
100	15	-5	42	PASS	SU-7 C,7
101	10	-10	28	PASS	SU-7 C,7
102	10	-10	28	PASS	SU-7 C,7
103	7	-13	20	PASS	SU-7 C,7
104	4	-16	11	PASS	SU-7 C,7
105	3	-17	8	PASS	SU-7 C,7
106	22	2	62	PASS	SU-7 C,7
107	15	-5	42	PASS	SU-7 C,7
108	9	-11	25	PASS	SU-7 C,7
109	6	-14	17	PASS	SU-7 C,7
110	4	-16	11	PASS	SU-7 C,7
111	2	-18	6	PASS	SU-7 C,7
112	2	-18	6	PASS	SU-7 C,7
113	1	-19	3	PASS	SU-7 C,7
114	1	-19	3	PASS	SU-7 C,7

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	0	-20	0	PASS	SU-7 C,7
116	12	-8	34	PASS	SU-7 C,7
117	8	-12	23	PASS	SU-7 C,7
118	5	-15	14	PASS	SU-7 C,7
119	3	-17	8	PASS	SU-7 C,7
120	2	-18	6	PASS	SU-7 C,7
121	1	-19	3	PASS	SU-7 C,7
122	1	-19	3	PASS	SU-7 C,7
123	0	-20	0	PASS	SU-7 C,7
124	0	-20	0	PASS	SU-7 C,7
125	0	-20	0	PASS	SU-7 C,7
126	0	-20	0	PASS	SU-7 C,7
127	0	-20	0	PASS	SU-7 C,7
128	0	-20	0	PASS	SU-7 C,7
129	0	-20	0	PASS	SU-7 C,7
130	0	-20	0	PASS	SU-7 C,7
131	11	-9	31	PASS	SU-7 C,7
132	7	-13	20	PASS	SU-7 C,7
133	4	-16	11	PASS	SU-7 C,7
134	3	-17	8	PASS	SU-7 C,7
135	2	-18	6	PASS	SU-7 C,7
136	11	-9	31	PASS	SU-7 C,7
137	16	-4	45	PASS	SU-7 C,7
138	10	-10	28	PASS	SU-7 C,7
139	7	-13	20	PASS	SU-7 C,7
140	4	-16	11	PASS	SU-7 C,7
141	15	-5	42	PASS	SU-7 C,7
142	9	-11	25	PASS	SU-7 C,7
143	7	-13	20	PASS	SU-7 C,7
144	1	-19	3	PASS	SU-7 C,7
145	9	-11	25	PASS	SU-7 C,7
146	15	-5	42	PASS	SU-7 C,7
147	20	0	56	PASS	SU-7 C,7
148	13	-7	37	PASS	SU-7 C,7
149	8	-12	23	PASS	SU-7 C,7
150	14	-6	39	PASS	SU-7 C,7
151	9	-11	25	PASS	SU-7 C,7
152	6	-14	17	PASS	SU-7 C,7

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	15	-5	42	PASS	SU-7 C,7
154	9	-11	25	PASS	SU-7 C,7
155	6	-14	17	PASS	SU-7 C,7
156	4	-16	11	PASS	SU-7 C,7
157	12	-8	34	PASS	SU-7 C,7
158	8	-12	23	PASS	SU-7 C,7
159	5	-15	14	PASS	SU-7 C,7
160	3	-17	8	PASS	SU-7 C,7
161	2	-18	6	PASS	SU-7 C,7
162	1	-19	3	PASS	SU-7 C,7
163	1	-19	3	PASS	SU-7 C,7
164	0	-20	0	PASS	SU-7 C,7
165	12	-8	34	PASS	SU-7 C,7

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **65**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	24	4	68	PASS	SU-8 B,8
2	15	-5	42	PASS	SU-8 B,8
3	21	1	59	PASS	SU-8 B,8
4	14	-6	39	PASS	SU-8 B,8
5	9	-11	25	PASS	SU-8 B,8
6	14	-6	39	PASS	SU-8 B,8
7	43	23	121	PASS	SU-8 B,8
8	40	20	113	PASS	SU-8 B,8
9	35	15	99	PASS	SU-8 B,8
10	33	13	93	PASS	SU-8 B,8
11	21	1	59	PASS	SU-8 B,8
12	33	13	93	PASS	SU-8 B,8
13	31	11	87	PASS	SU-8 B,8
14	20	0	56	PASS	SU-8 B,8
15	13	-7	37	PASS	SU-8 B,8
16	30	10	84	PASS	SU-8 B,8
17	20	0	56	PASS	SU-8 B,8
18	34	14	96	PASS	SU-8 B,8
19	33	13	93	PASS	SU-8 B,8
20	22	2	62	PASS	SU-8 B,8
21	19	-1	53	PASS	SU-8 B,8
22	32	12	90	PASS	SU-8 B,8
23	40	20	113	PASS	SU-8 B,8
24	36	16	101	PASS	SU-8 B,8
25	23	3	65	PASS	SU-8 B,8
26	15	-5	42	PASS	SU-8 B,8
27	18	-2	51	PASS	SU-8 B,8
28	24	4	68	PASS	SU-8 B,8
29	16	-4	45	PASS	SU-8 B,8
30	10	-10	28	PASS	SU-8 B,8
31	7	-13	20	PASS	SU-8 B,8
32	15	-5	42	PASS	SU-8 B,8
33	18	-2	51	PASS	SU-8 B,8
34	22	2	62	PASS	SU-8 B,8
35	23	3	65	PASS	SU-8 B,8
36	15	-5	42	PASS	SU-8 B,8
37	10	-10	28	PASS	SU-8 B,8
38	17	-3	48	PASS	SU-8 B,8

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **65**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	23	3	65	PASS	SU-8 B,8
40	19	-1	53	PASS	SU-8 B,8
41	24	4	68	PASS	SU-8 B,8
42	26	6	73	PASS	SU-8 B,8
43	7	-13	20	PASS	SU-8 B,8
44	12	-8	34	PASS	SU-8 B,8
45	20	0	56	PASS	SU-8 B,8
46	13	-7	37	PASS	SU-8 B,8
47	18	-2	51	PASS	SU-8 B,8
48	2	-18	6	PASS	SU-8 B,8
49	1	-19	3	PASS	SU-8 B,8
50	33	13	93	PASS	SU-8 B,8
51	32	12	90	PASS	SU-8 B,8
52	23	3	65	PASS	SU-8 B,8
53	41	21	115	PASS	SU-8 B,8
54	27	7	76	PASS	SU-8 B,8
55	35	15	99	PASS	SU-8 B,8
56	23	3	65	PASS	SU-8 B,8
57	15	-5	42	PASS	SU-8 B,8
58	10	-10	28	PASS	SU-8 B,8
59	6	-14	17	PASS	SU-8 B,8
60	25	5	70	PASS	SU-8 B,8
61	16	-4	45	PASS	SU-8 B,8
62	10	-10	28	PASS	SU-8 B,8
63	19	-1	53	PASS	SU-8 B,8
64	21	1	59	PASS	SU-8 B,8
65	14	-6	39	PASS	SU-8 B,8

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 77
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	12	-8	34	PASS	SU-9 A,9
2	8	-12	23	PASS	SU-9 A,9
3	5	-15	14	PASS	SU-9 A,9
4	3	-17	8	PASS	SU-9 A,9
5	13	-7	37	PASS	SU-9 A,9
6	20	0	56	PASS	SU-9 A,9
7	40	20	113	PASS	SU-9 A,9
8	41	21	115	PASS	SU-9 A,9
9	27	7	76	PASS	SU-9 A,9
10	29	9	82	PASS	SU-9 A,9
11	29	9	82	PASS	SU-9 A,9
12	30	10	84	PASS	SU-9 A,9
13	20	0	56	PASS	SU-9 A,9
14	23	3	65	PASS	SU-9 A,9
15	31	11	87	PASS	SU-9 A,9
16	22	2	62	PASS	SU-9 A,9
17	15	-5	42	PASS	SU-9 A,9
18	9	-11	25	PASS	SU-9 A,9
19	6	-14	17	PASS	SU-9 A,9
20	4	-16	11	PASS	SU-9 A,9
21	2	-18	6	PASS	SU-9 A,9
22	10	-10	28	PASS	SU-9 A,9
23	7	-13	20	PASS	SU-9 A,9
24	13	-7	37	PASS	SU-9 A,9
25	39	19	110	PASS	SU-9 A,9
26	25	5	70	PASS	SU-9 A,9
27	17	-3	48	PASS	SU-9 A,9
28	11	-9	31	PASS	SU-9 A,9
29	7	-13	20	PASS	SU-9 A,9
30	15	-5	42	PASS	SU-9 A,9
31	10	-10	28	PASS	SU-9 A,9
32	6	-14	17	PASS	SU-9 A,9
33	4	-16	11	PASS	SU-9 A,9
34	3	-17	8	PASS	SU-9 A,9
35	2	-18	6	PASS	SU-9 A,9
36	1	-19	3	PASS	SU-9 A,9
37	10	-10	28	PASS	SU-9 A,9
38	7	-13	20	PASS	SU-9 A,9

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **77**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	4	-16	11	PASS	SU-9 A,9
40	3	-17	8	PASS	SU-9 A,9
41	10	-10	28	PASS	SU-9 A,9
42	7	-13	20	PASS	SU-9 A,9
43	14	-6	39	PASS	SU-9 A,9
44	9	-11	25	PASS	SU-9 A,9
45	6	-14	17	PASS	SU-9 A,9
46	4	-16	11	PASS	SU-9 A,9
47	3	-17	8	PASS	SU-9 A,9
48	2	-18	6	PASS	SU-9 A,9
49	1	-19	3	PASS	SU-9 A,9
50	1	-19	3	PASS	SU-9 A,9
51	0	-20	0	PASS	SU-9 A,9
52	0	-20	0	PASS	SU-9 A,9
53	0	-20	0	PASS	SU-9 A,9
54	0	-20	0	PASS	SU-9 A,9
55	0	-20	0	PASS	SU-9 A,9
56	0	-20	0	PASS	SU-9 A,9
57	0	-20	0	PASS	SU-9 A,9
58	0	-20	0	PASS	SU-9 A,9
59	24	4	68	PASS	SU-9 A,9
60	15	-5	42	PASS	SU-9 A,9
61	22	2	62	PASS	SU-9 A,9
62	14	-6	39	PASS	SU-9 A,9
63	9	-11	25	PASS	SU-9 A,9
64	17	-3	48	PASS	SU-9 A,9
65	22	2	62	PASS	SU-9 A,9
66	14	-6	39	PASS	SU-9 A,9
67	20	0	56	PASS	SU-9 A,9
68	13	-7	37	PASS	SU-9 A,9
69	8	-12	23	PASS	SU-9 A,9
70	5	-15	14	PASS	SU-9 A,9
71	3	-17	8	PASS	SU-9 A,9
72	13	-7	37	PASS	SU-9 A,9
73	8	-12	23	PASS	SU-9 A,9
74	5	-15	14	PASS	SU-9 A,9

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **77**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
75	3	-17	8	PASS	SU-9 A,9
76	2	-18	6	PASS	SU-9 A,9
77	20	0	56	PASS	SU-9 A,9

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 105
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1	-19	3	PASS	SU-10 B,10
2	1	-19	3	PASS	SU-10 B,10
3	0	-20	0	PASS	SU-10 B,10
4	11	-9	31	PASS	SU-10 B,10
5	7	-13	20	PASS	SU-10 B,10
6	14	-6	39	PASS	SU-10 B,10
7	9	-11	25	PASS	SU-10 B,10
8	6	-14	17	PASS	SU-10 B,10
9	4	-16	11	PASS	SU-10 B,10
10	21	1	59	PASS	SU-10 B,10
11	14	-6	39	PASS	SU-10 B,10
12	9	-11	25	PASS	SU-10 B,10
13	6	-14	17	PASS	SU-10 B,10
14	16	-4	45	PASS	SU-10 B,10
15	10	-10	28	PASS	SU-10 B,10
16	15	-5	42	PASS	SU-10 B,10
17	10	-10	28	PASS	SU-10 B,10
18	15	-5	42	PASS	SU-10 B,10
19	17	-3	48	PASS	SU-10 B,10
20	11	-9	31	PASS	SU-10 B,10
21	18	-2	51	PASS	SU-10 B,10
22	12	-8	34	PASS	SU-10 B,10
23	7	-13	20	PASS	SU-10 B,10
24	5	-15	14	PASS	SU-10 B,10
25	14	-6	39	PASS	SU-10 B,10
26	9	-11	25	PASS	SU-10 B,10
27	6	-14	17	PASS	SU-10 B,10
28	5	-15	14	PASS	SU-10 B,10
29	3	-17	8	PASS	SU-10 B,10
30	13	-7	37	PASS	SU-10 B,10
31	8	-12	23	PASS	SU-10 B,10
32	14	-6	39	PASS	SU-10 B,10
33	9	-11	25	PASS	SU-10 B,10
34	17	-3	48	PASS	SU-10 B,10
35	11	-9	31	PASS	SU-10 B,10
36	7	-13	20	PASS	SU-10 B,10
37	14	-6	39	PASS	SU-10 B,10
38	19	-1	53	PASS	SU-10 B,10

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 105
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	12	-8	34	PASS	SU-10 B,10
40	8	-12	23	PASS	SU-10 B,10
41	15	-5	42	PASS	SU-10 B,10
42	10	-10	28	PASS	SU-10 B,10
43	6	-14	17	PASS	SU-10 B,10
44	15	-5	42	PASS	SU-10 B,10
45	18	-2	51	PASS	SU-10 B,10
46	12	-8	34	PASS	SU-10 B,10
47	20	0	56	PASS	SU-10 B,10
48	13	-7	37	PASS	SU-10 B,10
49	8	-12	23	PASS	SU-10 B,10
50	17	-3	48	PASS	SU-10 B,10
51	23	3	65	PASS	SU-10 B,10
52	37	17	104	PASS	SU-10 B,10
53	24	4	68	PASS	SU-10 B,10
54	16	-4	45	PASS	SU-10 B,10
55	10	-10	28	PASS	SU-10 B,10
56	7	-13	20	PASS	SU-10 B,10
57	4	-16	11	PASS	SU-10 B,10
58	11	-9	31	PASS	SU-10 B,10
59	8	-12	23	PASS	SU-10 B,10
60	7	-13	20	PASS	SU-10 B,10
61	16	-4	45	PASS	SU-10 B,10
62	11	-9	31	PASS	SU-10 B,10
63	18	-2	51	PASS	SU-10 B,10
64	11	-9	31	PASS	SU-10 B,10
65	16	-4	45	PASS	SU-10 B,10
66	20	0	56	PASS	SU-10 B,10
67	37	17	104	PASS	SU-10 B,10
68	24	4	68	PASS	SU-10 B,10
69	26	6	73	PASS	SU-10 B,10
70	17	-3	48	PASS	SU-10 B,10
71	11	-9	31	PASS	SU-10 B,10
72	7	-13	20	PASS	SU-10 B,10
73	5	-15	14	PASS	SU-10 B,10
74	15	-5	42	PASS	SU-10 B,10
75	19	-1	53	PASS	SU-10 B,10
76	23	3	65	PASS	SU-10 B,10

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	15	-5	42	PASS	SU-10 B,10
78	10	-10	28	PASS	SU-10 B,10
79	16	-4	45	PASS	SU-10 B,10
80	10	-10	28	PASS	SU-10 B,10
81	7	-13	20	PASS	SU-10 B,10
82	4	-16	11	PASS	SU-10 B,10
83	3	-17	8	PASS	SU-10 B,10
84	2	-18	6	PASS	SU-10 B,10
85	1	-19	3	PASS	SU-10 B,10
86	10	-10	28	PASS	SU-10 B,10
87	18	-2	51	PASS	SU-10 B,10
88	12	-8	34	PASS	SU-10 B,10
89	17	-3	48	PASS	SU-10 B,10
90	33	13	93	PASS	SU-10 B,10
91	29	9	82	PASS	SU-10 B,10
92	30	10	84	PASS	SU-10 B,10
93	41	21	115	PASS	SU-10 B,10
94	27	7	76	PASS	SU-10 B,10
95	26	6	73	PASS	SU-10 B,10
96	17	-3	48	PASS	SU-10 B,10
97	11	-9	31	PASS	SU-10 B,10
98	17	-3	48	PASS	SU-10 B,10
99	23	3	65	PASS	SU-10 B,10
100	26	6	73	PASS	SU-10 B,10
101	40	20	113	PASS	SU-10 B,10
102	35	15	99	PASS	SU-10 B,10
103	33	13	93	PASS	SU-10 B,10
104	22	2	62	PASS	SU-10 B,10
105	24	4	68	PASS	SU-10 B,10

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 141
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	5	-15	14	PASS	SU-11 C,11
2	15	-5	42	PASS	SU-11 C,11
3	30	10	84	PASS	SU-11 C,11
4	20	0	56	PASS	SU-11 C,11
5	13	-7	37	PASS	SU-11 C,11
6	17	-3	48	PASS	SU-11 C,11
7	11	-9	31	PASS	SU-11 C,11
8	16	-4	45	PASS	SU-11 C,11
9	10	-10	28	PASS	SU-11 C,11
10	7	-13	20	PASS	SU-11 C,11
11	14	-6	39	PASS	SU-11 C,11
12	9	-11	25	PASS	SU-11 C,11
13	6	-14	17	PASS	SU-11 C,11
14	4	-16	11	PASS	SU-11 C,11
15	2	-18	6	PASS	SU-11 C,11
16	1	-19	3	PASS	SU-11 C,11
17	20	0	56	PASS	SU-11 C,11
18	31	11	87	PASS	SU-11 C,11
19	20	0	56	PASS	SU-11 C,11
20	36	16	101	PASS	SU-11 C,11
21	33	13	93	PASS	SU-11 C,11
22	22	2	62	PASS	SU-11 C,11
23	14	-6	39	PASS	SU-11 C,11
24	9	-11	25	PASS	SU-11 C,11
25	17	-3	48	PASS	SU-11 C,11
26	11	-9	31	PASS	SU-11 C,11
27	7	-13	20	PASS	SU-11 C,11
28	4	-16	11	PASS	SU-11 C,11
29	3	-17	8	PASS	SU-11 C,11
30	2	-18	6	PASS	SU-11 C,11
31	1	-19	3	PASS	SU-11 C,11
32	1	-19	3	PASS	SU-11 C,11
33	20	0	56	PASS	SU-11 C,11
34	13	-7	37	PASS	SU-11 C,11
35	8	-12	23	PASS	SU-11 C,11
36	24	4	68	PASS	SU-11 C,11
37	24	4	68	PASS	SU-11 C,11
38	28	8	79	PASS	SU-11 C,11

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 141
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	28	8	79	PASS	SU-11 C,11
40	18	-2	51	PASS	SU-11 C,11
41	24	4	68	PASS	SU-11 C,11
42	15	-5	42	PASS	SU-11 C,11
43	19	-1	53	PASS	SU-11 C,11
44	12	-8	34	PASS	SU-11 C,11
45	27	7	76	PASS	SU-11 C,11
46	18	-2	51	PASS	SU-11 C,11
47	11	-9	31	PASS	SU-11 C,11
48	7	-13	20	PASS	SU-11 C,11
49	5	-15	14	PASS	SU-11 C,11
50	12	-8	34	PASS	SU-11 C,11
51	18	-2	51	PASS	SU-11 C,11
52	33	13	93	PASS	SU-11 C,11
53	21	1	59	PASS	SU-11 C,11
54	23	3	65	PASS	SU-11 C,11
55	15	-5	42	PASS	SU-11 C,11
56	10	-10	28	PASS	SU-11 C,11
57	6	-14	17	PASS	SU-11 C,11
58	4	-16	11	PASS	SU-11 C,11
59	3	-17	8	PASS	SU-11 C,11
60	2	-18	6	PASS	SU-11 C,11
61	32	12	90	PASS	SU-11 C,11
62	21	1	59	PASS	SU-11 C,11
63	19	-1	53	PASS	SU-11 C,11
64	12	-8	34	PASS	SU-11 C,11
65	8	-12	23	PASS	SU-11 C,11
66	5	-15	14	PASS	SU-11 C,11
67	3	-17	8	PASS	SU-11 C,11
68	2	-18	6	PASS	SU-11 C,11
69	1	-19	3	PASS	SU-11 C,11
70	1	-19	3	PASS	SU-11 C,11
71	0	-20	0	PASS	SU-11 C,11
72	0	-20	0	PASS	SU-11 C,11
73	0	-20	0	PASS	SU-11 C,11
74	12	-8	34	PASS	SU-11 C,11
75	8	-12	23	PASS	SU-11 C,11
76	5	-15	14	PASS	SU-11 C,11

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **141**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	3	-17	8	PASS	SU-11 C,11
78	2	-18	6	PASS	SU-11 C,11
79	10	-10	28	PASS	SU-11 C,11
80	6	-14	17	PASS	SU-11 C,11
81	25	5	70	PASS	SU-11 C,11
82	16	-4	45	PASS	SU-11 C,11
83	11	-9	31	PASS	SU-11 C,11
84	7	-13	20	PASS	SU-11 C,11
85	27	7	76	PASS	SU-11 C,11
86	30	10	84	PASS	SU-11 C,11
87	19	-1	53	PASS	SU-11 C,11
88	12	-8	34	PASS	SU-11 C,11
89	17	-3	48	PASS	SU-11 C,11
90	29	9	82	PASS	SU-11 C,11
91	30	10	84	PASS	SU-11 C,11
92	30	10	84	PASS	SU-11 C,11
93	20	0	56	PASS	SU-11 C,11
94	18	-2	51	PASS	SU-11 C,11
95	43	23	121	PASS	SU-11 C,11
96	38	18	107	PASS	SU-11 C,11
97	25	5	70	PASS	SU-11 C,11
98	16	-4	45	PASS	SU-11 C,11
99	11	-9	31	PASS	SU-11 C,11
100	7	-13	20	PASS	SU-11 C,11
101	14	-6	39	PASS	SU-11 C,11
102	9	-11	25	PASS	SU-11 C,11
103	6	-14	17	PASS	SU-11 C,11
104	12	-8	34	PASS	SU-11 C,11
105	11	-9	31	PASS	SU-11 C,11
106	27	7	76	PASS	SU-11 C,11
107	17	-3	48	PASS	SU-11 C,11
108	3	-17	8	PASS	SU-11 C,11
109	2	-18	6	PASS	SU-11 C,11
110	22	2	62	PASS	SU-11 C,11
111	14	-6	39	PASS	SU-11 C,11
112	9	-11	25	PASS	SU-11 C,11
113	6	-14	17	PASS	SU-11 C,11
114	15	-5	42	PASS	SU-11 C,11

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **141**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	16	-4	45	PASS	SU-11 C,11
116	10	-10	28	PASS	SU-11 C,11
117	16	-4	45	PASS	SU-11 C,11
118	21	1	59	PASS	SU-11 C,11
119	14	-6	39	PASS	SU-11 C,11
120	9	-11	25	PASS	SU-11 C,11
121	15	-5	42	PASS	SU-11 C,11
122	21	1	59	PASS	SU-11 C,11
123	25	5	70	PASS	SU-11 C,11
124	27	7	76	PASS	SU-11 C,11
125	18	-2	51	PASS	SU-11 C,11
126	11	-9	31	PASS	SU-11 C,11
127	7	-13	20	PASS	SU-11 C,11
128	23	3	65	PASS	SU-11 C,11
129	33	13	93	PASS	SU-11 C,11
130	22	2	62	PASS	SU-11 C,11
131	14	-6	39	PASS	SU-11 C,11
132	31	11	87	PASS	SU-11 C,11
133	29	9	82	PASS	SU-11 C,11
134	19	-1	53	PASS	SU-11 C,11
135	12	-8	34	PASS	SU-11 C,11
136	8	-12	23	PASS	SU-11 C,11
137	5	-15	14	PASS	SU-11 C,11
138	3	-17	8	PASS	SU-11 C,11
139	2	-18	6	PASS	SU-11 C,11
140	13	-7	37	PASS	SU-11 C,11
141	8	-12	23	PASS	SU-11 C,11

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **71**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	7	-13	20	PASS	SU-12 D,12
2	5	-15	14	PASS	SU-12 D,12
3	3	-17	8	PASS	SU-12 D,12
4	11	-9	31	PASS	SU-12 D,12
5	7	-13	20	PASS	SU-12 D,12
6	4	-16	11	PASS	SU-12 D,12
7	25	5	70	PASS	SU-12 D,12
8	16	-4	45	PASS	SU-12 D,12
9	10	-10	28	PASS	SU-12 D,12
10	7	-13	20	PASS	SU-12 D,12
11	25	5	70	PASS	SU-12 D,12
12	27	7	76	PASS	SU-12 D,12
13	18	-2	51	PASS	SU-12 D,12
14	11	-9	31	PASS	SU-12 D,12
15	7	-13	20	PASS	SU-12 D,12
16	17	-3	48	PASS	SU-12 D,12
17	11	-9	31	PASS	SU-12 D,12
18	7	-13	20	PASS	SU-12 D,12
19	13	-7	37	PASS	SU-12 D,12
20	9	-11	25	PASS	SU-12 D,12
21	14	-6	39	PASS	SU-12 D,12
22	9	-11	25	PASS	SU-12 D,12
23	16	-4	45	PASS	SU-12 D,12
24	10	-10	28	PASS	SU-12 D,12
25	7	-13	20	PASS	SU-12 D,12
26	16	-4	45	PASS	SU-12 D,12
27	11	-9	31	PASS	SU-12 D,12
28	19	-1	53	PASS	SU-12 D,12
29	17	-3	48	PASS	SU-12 D,12
30	22	2	62	PASS	SU-12 D,12
31	14	-6	39	PASS	SU-12 D,12
32	9	-11	25	PASS	SU-12 D,12
33	18	-2	51	PASS	SU-12 D,12
34	12	-8	34	PASS	SU-12 D,12
35	7	-13	20	PASS	SU-12 D,12
36	5	-15	14	PASS	SU-12 D,12
37	3	-17	8	PASS	SU-12 D,12
38	2	-18	6	PASS	SU-12 D,12

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **71**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1	-19	3	PASS	SU-12 D,12
40	1	-19	3	PASS	SU-12 D,12
41	9	-11	25	PASS	SU-12 D,12
42	18	-2	51	PASS	SU-12 D,12
43	22	2	62	PASS	SU-12 D,12
44	15	-5	42	PASS	SU-12 D,12
45	9	-11	25	PASS	SU-12 D,12
46	6	-14	17	PASS	SU-12 D,12
47	4	-16	11	PASS	SU-12 D,12
48	14	-6	39	PASS	SU-12 D,12
49	9	-11	25	PASS	SU-12 D,12
50	6	-14	17	PASS	SU-12 D,12
51	4	-16	11	PASS	SU-12 D,12
52	2	-18	6	PASS	SU-12 D,12
53	1	-19	3	PASS	SU-12 D,12
54	1	-19	3	PASS	SU-12 D,12
55	21	1	59	PASS	SU-12 D,12
56	4	-16	11	PASS	SU-12 D,12
57	3	-17	8	PASS	SU-12 D,12
58	2	-18	6	PASS	SU-12 D,12
59	1	-19	3	PASS	SU-12 D,12
60	0	-20	0	PASS	SU-12 D,12
61	10	-10	28	PASS	SU-12 D,12
62	15	-5	42	PASS	SU-12 D,12
63	10	-10	28	PASS	SU-12 D,12
64	6	-14	17	PASS	SU-12 D,12
65	4	-16	11	PASS	SU-12 D,12
66	3	-17	8	PASS	SU-12 D,12
67	2	-18	6	PASS	SU-12 D,12
68	12	-8	34	PASS	SU-12 D,12

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **71**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
69	25	5	70	PASS	SU-12 D,12
70	25	5	70	PASS	SU-12 D,12
71	28	8	79	PASS	SU-12 D,12

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 81
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	22	2	62	PASS	SU-13 E,13
2	24	4	68	PASS	SU-13 E,13
3	16	-4	45	PASS	SU-13 E,13
4	21	1	59	PASS	SU-13 E,13
5	14	-6	39	PASS	SU-13 E,13
6	18	-2	51	PASS	SU-13 E,13
7	11	-9	31	PASS	SU-13 E,13
8	7	-13	20	PASS	SU-13 E,13
9	5	-15	14	PASS	SU-13 E,13
10	3	-17	8	PASS	SU-13 E,13
11	2	-18	6	PASS	SU-13 E,13
12	1	-19	3	PASS	SU-13 E,13
13	1	-19	3	PASS	SU-13 E,13
14	0	-20	0	PASS	SU-13 E,13
15	0	-20	0	PASS	SU-13 E,13
16	9	-11	25	PASS	SU-13 E,13
17	14	-6	39	PASS	SU-13 E,13
18	9	-11	25	PASS	SU-13 E,13
19	18	-2	51	PASS	SU-13 E,13
20	12	-8	34	PASS	SU-13 E,13
21	7	-13	20	PASS	SU-13 E,13
22	5	-15	14	PASS	SU-13 E,13
23	3	-17	8	PASS	SU-13 E,13
24	15	-5	42	PASS	SU-13 E,13
25	33	13	93	PASS	SU-13 E,13
26	33	13	93	PASS	SU-13 E,13
27	21	1	59	PASS	SU-13 E,13
28	14	-6	39	PASS	SU-13 E,13
29	9	-11	25	PASS	SU-13 E,13
30	18	-2	51	PASS	SU-13 E,13
31	23	3	65	PASS	SU-13 E,13
32	27	7	76	PASS	SU-13 E,13
33	18	-2	51	PASS	SU-13 E,13
34	11	-9	31	PASS	SU-13 E,13
35	7	-13	20	PASS	SU-13 E,13
36	15	-5	42	PASS	SU-13 E,13
37	9	-11	25	PASS	SU-13 E,13
38	6	-14	17	PASS	SU-13 E,13

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **81**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	4	-16	11	PASS	SU-13 E,13
40	23	3	65	PASS	SU-13 E,13
41	26	6	73	PASS	SU-13 E,13
42	27	7	76	PASS	SU-13 E,13
43	18	-2	51	PASS	SU-13 E,13
44	24	4	68	PASS	SU-13 E,13
45	15	-5	42	PASS	SU-13 E,13
46	19	-1	53	PASS	SU-13 E,13
47	12	-8	34	PASS	SU-13 E,13
48	20	0	56	PASS	SU-13 E,13
49	13	-7	37	PASS	SU-13 E,13
50	8	-12	23	PASS	SU-13 E,13
51	5	-15	14	PASS	SU-13 E,13
52	3	-17	8	PASS	SU-13 E,13
53	2	-18	6	PASS	SU-13 E,13
54	1	-19	3	PASS	SU-13 E,13
55	1	-19	3	PASS	SU-13 E,13
56	10	-10	28	PASS	SU-13 E,13
57	7	-13	20	PASS	SU-13 E,13
58	16	-4	45	PASS	SU-13 E,13
59	11	-9	31	PASS	SU-13 E,13
60	7	-13	20	PASS	SU-13 E,13
61	4	-16	11	PASS	SU-13 E,13
62	3	-17	8	PASS	SU-13 E,13
63	14	-6	39	PASS	SU-13 E,13
64	9	-11	25	PASS	SU-13 E,13
65	24	4	68	PASS	SU-13 E,13
66	16	-4	45	PASS	SU-13 E,13
67	10	-10	28	PASS	SU-13 E,13
68	7	-13	20	PASS	SU-13 E,13
69	4	-16	11	PASS	SU-13 E,13
70	3	-17	8	PASS	SU-13 E,13
71	2	-18	6	PASS	SU-13 E,13
72	1	-19	3	PASS	SU-13 E,13
73	11	-9	31	PASS	SU-13 E,13
74	7	-13	20	PASS	SU-13 E,13
75	5	-15	14	PASS	SU-13 E,13
76	3	-17	8	PASS	SU-13 E,13

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 81
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	2	-18	6	PASS	SU-13 E,13
78	1	-19	3	PASS	SU-13 E,13
79	0	-20	0	PASS	SU-13 E,13
80	0	-20	0	PASS	SU-13 E,13
81	11	-9	31	PASS	SU-13 E,13

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	5	-15	14	PASS	SU-14 D,14
2	3	-17	8	PASS	SU-14 D,14
3	2	-18	6	PASS	SU-14 D,14
4	10	-10	28	PASS	SU-14 D,14
5	17	-3	48	PASS	SU-14 D,14
6	11	-9	31	PASS	SU-14 D,14
7	7	-13	20	PASS	SU-14 D,14
8	13	-7	37	PASS	SU-14 D,14
9	19	-1	53	PASS	SU-14 D,14
10	13	-7	37	PASS	SU-14 D,14
11	8	-12	23	PASS	SU-14 D,14
12	5	-15	14	PASS	SU-14 D,14
13	15	-5	42	PASS	SU-14 D,14
14	20	0	56	PASS	SU-14 D,14
15	18	-2	51	PASS	SU-14 D,14
16	20	0	56	PASS	SU-14 D,14
17	25	5	70	PASS	SU-14 D,14
18	16	-4	45	PASS	SU-14 D,14
19	11	-9	31	PASS	SU-14 D,14
20	7	-13	20	PASS	SU-14 D,14
21	14	-6	39	PASS	SU-14 D,14
22	9	-11	25	PASS	SU-14 D,14
23	15	-5	42	PASS	SU-14 D,14
24	9	-11	25	PASS	SU-14 D,14
25	26	6	73	PASS	SU-14 D,14
26	17	-3	48	PASS	SU-14 D,14
27	21	1	59	PASS	SU-14 D,14
28	13	-7	37	PASS	SU-14 D,14
29	9	-11	25	PASS	SU-14 D,14
30	16	-4	45	PASS	SU-14 D,14
31	11	-9	31	PASS	SU-14 D,14
32	7	-13	20	PASS	SU-14 D,14
33	4	-16	11	PASS	SU-14 D,14
34	14	-6	39	PASS	SU-14 D,14
35	9	-11	25	PASS	SU-14 D,14
36	6	-14	17	PASS	SU-14 D,14
37	14	-6	39	PASS	SU-14 D,14
38	9	-11	25	PASS	SU-14 D,14

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	6	-14	17	PASS	SU-14 D,14
40	14	-6	39	PASS	SU-14 D,14
41	9	-11	25	PASS	SU-14 D,14
42	6	-14	17	PASS	SU-14 D,14
43	12	-8	34	PASS	SU-14 D,14
44	8	-12	23	PASS	SU-14 D,14
45	5	-15	14	PASS	SU-14 D,14
46	4	-16	11	PASS	SU-14 D,14
47	3	-17	8	PASS	SU-14 D,14
48	2	-18	6	PASS	SU-14 D,14
49	1	-19	3	PASS	SU-14 D,14
50	10	-10	28	PASS	SU-14 D,14
51	7	-13	20	PASS	SU-14 D,14
52	4	-16	11	PASS	SU-14 D,14
53	3	-17	8	PASS	SU-14 D,14
54	32	12	90	PASS	SU-14 D,14
55	38	18	107	PASS	SU-14 D,14
56	25	5	70	PASS	SU-14 D,14
57	28	8	79	PASS	SU-14 D,14
58	18	-2	51	PASS	SU-14 D,14
59	12	-8	34	PASS	SU-14 D,14
60	20	0	56	PASS	SU-14 D,14
61	24	4	68	PASS	SU-14 D,14
62	15	-5	42	PASS	SU-14 D,14
63	10	-10	28	PASS	SU-14 D,14
64	6	-14	17	PASS	SU-14 D,14
65	4	-16	11	PASS	SU-14 D,14
66	3	-17	8	PASS	SU-14 D,14
67	2	-18	6	PASS	SU-14 D,14
68	1	-19	3	PASS	SU-14 D,14
69	10	-10	28	PASS	SU-14 D,14
70	17	-3	48	PASS	SU-14 D,14
71	11	-9	31	PASS	SU-14 D,14
72	7	-13	20	PASS	SU-14 D,14
73	17	-3	48	PASS	SU-14 D,14
74	11	-9	31	PASS	SU-14 D,14
75	16	-4	45	PASS	SU-14 D,14
76	22	2	62	PASS	SU-14 D,14

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	16	-4	45	PASS	SU-14 D,14
78	13	-7	37	PASS	SU-14 D,14
79	17	-3	48	PASS	SU-14 D,14
80	20	0	56	PASS	SU-14 D,14
81	13	-7	37	PASS	SU-14 D,14
82	29	9	82	PASS	SU-14 D,14
83	19	-1	53	PASS	SU-14 D,14
84	22	2	62	PASS	SU-14 D,14
85	36	16	101	PASS	SU-14 D,14
86	23	3	65	PASS	SU-14 D,14
87	15	-5	42	PASS	SU-14 D,14
88	22	2	62	PASS	SU-14 D,14
89	23	3	65	PASS	SU-14 D,14
90	15	-5	42	PASS	SU-14 D,14
91	30	10	84	PASS	SU-14 D,14
92	32	12	90	PASS	SU-14 D,14
93	39	19	110	PASS	SU-14 D,14
94	26	6	73	PASS	SU-14 D,14
95	26	6	73	PASS	SU-14 D,14
96	17	-3	48	PASS	SU-14 D,14
97	20	0	56	PASS	SU-14 D,14
98	22	2	62	PASS	SU-14 D,14
99	14	-6	39	PASS	SU-14 D,14
100	9	-11	25	PASS	SU-14 D,14
101	18	-2	51	PASS	SU-14 D,14
102	12	-8	34	PASS	SU-14 D,14
103	7	-13	20	PASS	SU-14 D,14
104	5	-15	14	PASS	SU-14 D,14
105	13	-7	37	PASS	SU-14 D,14
106	8	-12	23	PASS	SU-14 D,14
107	5	-15	14	PASS	SU-14 D,14
108	3	-17	8	PASS	SU-14 D,14
109	3	-17	8	PASS	SU-14 D,14
110	2	-18	6	PASS	SU-14 D,14
111	21	1	59	PASS	SU-14 D,14
112	13	-7	37	PASS	SU-14 D,14
113	9	-11	25	PASS	SU-14 D,14
114	6	-14	17	PASS	SU-14 D,14

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	3	-17	8	PASS	SU-14 D,14
116	2	-18	6	PASS	SU-14 D,14
117	12	-8	34	PASS	SU-14 D,14
118	8	-12	23	PASS	SU-14 D,14
119	5	-15	14	PASS	SU-14 D,14
120	3	-17	8	PASS	SU-14 D,14
121	11	-9	31	PASS	SU-14 D,14
122	7	-13	20	PASS	SU-14 D,14
123	4	-16	11	PASS	SU-14 D,14
124	3	-17	8	PASS	SU-14 D,14
125	2	-18	6	PASS	SU-14 D,14
126	1	-19	3	PASS	SU-14 D,14
127	0	-20	0	PASS	SU-14 D,14
128	0	-20	0	PASS	SU-14 D,14
129	0	-20	0	PASS	SU-14 D,14
130	0	-20	0	PASS	SU-14 D,14
131	10	-10	28	PASS	SU-14 D,14
132	6	-14	17	PASS	SU-14 D,14
133	4	-16	11	PASS	SU-14 D,14
134	3	-17	8	PASS	SU-14 D,14
135	2	-18	6	PASS	SU-14 D,14
136	10	-10	28	PASS	SU-14 D,14
137	15	-5	42	PASS	SU-14 D,14
138	10	-10	28	PASS	SU-14 D,14
139	16	-4	45	PASS	SU-14 D,14
140	14	-6	39	PASS	SU-14 D,14

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 190
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	16	-4	45	PASS	SU-15 C,15
2	11	-9	31	PASS	SU-15 C,15
3	19	-1	53	PASS	SU-15 C,15
4	12	-8	34	PASS	SU-15 C,15
5	8	-12	23	PASS	SU-15 C,15
6	5	-15	14	PASS	SU-15 C,15
7	25	5	70	PASS	SU-15 C,15
8	16	-4	45	PASS	SU-15 C,15
9	11	-9	31	PASS	SU-15 C,15
10	7	-13	20	PASS	SU-15 C,15
11	4	-16	11	PASS	SU-15 C,15
12	15	-5	42	PASS	SU-15 C,15
13	22	2	62	PASS	SU-15 C,15
14	14	-6	39	PASS	SU-15 C,15
15	9	-11	25	PASS	SU-15 C,15
16	6	-14	17	PASS	SU-15 C,15
17	12	-8	34	PASS	SU-15 C,15
18	8	-12	23	PASS	SU-15 C,15
19	5	-15	14	PASS	SU-15 C,15
20	12	-8	34	PASS	SU-15 C,15
21	8	-12	23	PASS	SU-15 C,15
22	14	-6	39	PASS	SU-15 C,15
23	18	-2	51	PASS	SU-15 C,15
24	29	9	82	PASS	SU-15 C,15
25	29	9	82	PASS	SU-15 C,15
26	26	6	73	PASS	SU-15 C,15
27	26	6	73	PASS	SU-15 C,15
28	17	-3	48	PASS	SU-15 C,15
29	23	3	65	PASS	SU-15 C,15
30	24	4	68	PASS	SU-15 C,15
31	15	-5	42	PASS	SU-15 C,15
32	10	-10	28	PASS	SU-15 C,15
33	18	-2	51	PASS	SU-15 C,15
34	12	-8	34	PASS	SU-15 C,15
35	8	-12	23	PASS	SU-15 C,15
36	5	-15	14	PASS	SU-15 C,15
37	13	-7	37	PASS	SU-15 C,15
38	27	7	76	PASS	SU-15 C,15

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	18	-2	51	PASS	SU-15 C,15
40	21	1	59	PASS	SU-15 C,15
41	14	-6	39	PASS	SU-15 C,15
42	9	-11	25	PASS	SU-15 C,15
43	6	-14	17	PASS	SU-15 C,15
44	4	-16	11	PASS	SU-15 C,15
45	14	-6	39	PASS	SU-15 C,15
46	21	1	59	PASS	SU-15 C,15
47	14	-6	39	PASS	SU-15 C,15
48	21	1	59	PASS	SU-15 C,15
49	14	-6	39	PASS	SU-15 C,15
50	9	-11	25	PASS	SU-15 C,15
51	26	6	73	PASS	SU-15 C,15
52	17	-3	48	PASS	SU-15 C,15
53	11	-9	31	PASS	SU-15 C,15
54	7	-13	20	PASS	SU-15 C,15
55	4	-16	11	PASS	SU-15 C,15
56	15	-5	42	PASS	SU-15 C,15
57	13	-7	37	PASS	SU-15 C,15
58	31	11	87	PASS	SU-15 C,15
59	21	1	59	PASS	SU-15 C,15
60	24	4	68	PASS	SU-15 C,15
61	24	4	68	PASS	SU-15 C,15
62	26	6	73	PASS	SU-15 C,15
63	17	-3	48	PASS	SU-15 C,15
64	11	-9	31	PASS	SU-15 C,15
65	7	-13	20	PASS	SU-15 C,15
66	4	-16	11	PASS	SU-15 C,15
67	22	2	62	PASS	SU-15 C,15
68	26	6	73	PASS	SU-15 C,15
69	17	-3	48	PASS	SU-15 C,15
70	11	-9	31	PASS	SU-15 C,15
71	16	-4	45	PASS	SU-15 C,15
72	33	13	93	PASS	SU-15 C,15
73	22	2	62	PASS	SU-15 C,15
74	14	-6	39	PASS	SU-15 C,15
75	9	-11	25	PASS	SU-15 C,15
76	18	-2	51	PASS	SU-15 C,15

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	12	-8	34	PASS	SU-15 C,15
78	7	-13	20	PASS	SU-15 C,15
79	5	-15	14	PASS	SU-15 C,15
80	3	-17	8	PASS	SU-15 C,15
81	2	-18	6	PASS	SU-15 C,15
82	1	-19	3	PASS	SU-15 C,15
83	1	-19	3	PASS	SU-15 C,15
84	0	-20	0	PASS	SU-15 C,15
85	0	-20	0	PASS	SU-15 C,15
86	12	-8	34	PASS	SU-15 C,15
87	8	-12	23	PASS	SU-15 C,15
88	6	-14	17	PASS	SU-15 C,15
89	4	-16	11	PASS	SU-15 C,15
90	23	3	65	PASS	SU-15 C,15
91	15	-5	42	PASS	SU-15 C,15
92	10	-10	28	PASS	SU-15 C,15
93	6	-14	17	PASS	SU-15 C,15
94	4	-16	11	PASS	SU-15 C,15
95	3	-17	8	PASS	SU-15 C,15
96	2	-18	6	PASS	SU-15 C,15
97	1	-19	3	PASS	SU-15 C,15
98	0	-20	0	PASS	SU-15 C,15
99	0	-20	0	PASS	SU-15 C,15
100	0	-20	0	PASS	SU-15 C,15
101	0	-20	0	PASS	SU-15 C,15
102	10	-10	28	PASS	SU-15 C,15
103	6	-14	17	PASS	SU-15 C,15
104	15	-5	42	PASS	SU-15 C,15
105	10	-10	28	PASS	SU-15 C,15
106	6	-14	17	PASS	SU-15 C,15
107	4	-16	11	PASS	SU-15 C,15
108	3	-17	8	PASS	SU-15 C,15
109	2	-18	6	PASS	SU-15 C,15
110	1	-19	3	PASS	SU-15 C,15
111	0	-20	0	PASS	SU-15 C,15
112	0	-20	0	PASS	SU-15 C,15
113	0	-20	0	PASS	SU-15 C,15
114	0	-20	0	PASS	SU-15 C,15

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	11	-9	31	PASS	SU-15 C,15
116	7	-13	20	PASS	SU-15 C,15
117	25	5	70	PASS	SU-15 C,15
118	16	-4	45	PASS	SU-15 C,15
119	12	-8	34	PASS	SU-15 C,15
120	9	-11	25	PASS	SU-15 C,15
121	26	6	73	PASS	SU-15 C,15
122	17	-3	48	PASS	SU-15 C,15
123	11	-9	31	PASS	SU-15 C,15
124	7	-13	20	PASS	SU-15 C,15
125	14	-6	39	PASS	SU-15 C,15
126	9	-11	25	PASS	SU-15 C,15
127	6	-14	17	PASS	SU-15 C,15
128	4	-16	11	PASS	SU-15 C,15
129	41	21	115	PASS	SU-15 C,15
130	27	7	76	PASS	SU-15 C,15
131	18	-2	51	PASS	SU-15 C,15
132	11	-9	31	PASS	SU-15 C,15
133	7	-13	20	PASS	SU-15 C,15
134	5	-15	14	PASS	SU-15 C,15
135	3	-17	8	PASS	SU-15 C,15
136	2	-18	6	PASS	SU-15 C,15
137	13	-7	37	PASS	SU-15 C,15
138	17	-3	48	PASS	SU-15 C,15
139	22	2	62	PASS	SU-15 C,15
140	14	-6	39	PASS	SU-15 C,15
141	9	-11	25	PASS	SU-15 C,15
142	6	-14	17	PASS	SU-15 C,15
143	4	-16	11	PASS	SU-15 C,15
144	2	-18	6	PASS	SU-15 C,15
145	1	-19	3	PASS	SU-15 C,15
146	1	-19	3	PASS	SU-15 C,15
147	0	-20	0	PASS	SU-15 C,15
148	12	-8	34	PASS	SU-15 C,15
149	8	-12	23	PASS	SU-15 C,15
150	5	-15	14	PASS	SU-15 C,15
151	4	-16	11	PASS	SU-15 C,15
152	3	-17	8	PASS	SU-15 C,15

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	14	-6	39	PASS	SU-15 C,15
154	9	-11	25	PASS	SU-15 C,15
155	6	-14	17	PASS	SU-15 C,15
156	15	-5	42	PASS	SU-15 C,15
157	9	-11	25	PASS	SU-15 C,15
158	6	-14	17	PASS	SU-15 C,15
159	4	-16	11	PASS	SU-15 C,15
160	2	-18	6	PASS	SU-15 C,15
161	1	-19	3	PASS	SU-15 C,15
162	1	-19	3	PASS	SU-15 C,15
163	9	-11	25	PASS	SU-15 C,15
164	6	-14	17	PASS	SU-15 C,15
165	4	-16	11	PASS	SU-15 C,15
166	36	16	101	PASS	SU-15 C,15
167	23	3	65	PASS	SU-15 C,15
168	26	6	73	PASS	SU-15 C,15
169	17	-3	48	PASS	SU-15 C,15
170	23	3	65	PASS	SU-15 C,15
171	15	-5	42	PASS	SU-15 C,15
172	10	-10	28	PASS	SU-15 C,15
173	16	-4	45	PASS	SU-15 C,15
174	10	-10	28	PASS	SU-15 C,15
175	7	-13	20	PASS	SU-15 C,15
176	4	-16	11	PASS	SU-15 C,15
177	12	-8	34	PASS	SU-15 C,15
178	8	-12	23	PASS	SU-15 C,15
179	5	-15	14	PASS	SU-15 C,15
180	12	-8	34	PASS	SU-15 C,15
181	8	-12	23	PASS	SU-15 C,15
182	19	-1	53	PASS	SU-15 C,15
183	23	3	65	PASS	SU-15 C,15
184	15	-5	42	PASS	SU-15 C,15
185	10	-10	28	PASS	SU-15 C,15
186	6	-14	17	PASS	SU-15 C,15
187	4	-16	11	PASS	SU-15 C,15

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
188	4	-16	11	PASS	SU-15 C,15
189	3	-17	8	PASS	SU-15 C,15
190	2	-18	6	PASS	SU-15 C,15

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	17	-3	48	PASS	SU-16 B,16
2	20	0	56	PASS	SU-16 B,16
3	13	-7	37	PASS	SU-16 B,16
4	8	-12	23	PASS	SU-16 B,16
5	5	-15	14	PASS	SU-16 B,16
6	3	-17	8	PASS	SU-16 B,16
7	12	-8	34	PASS	SU-16 B,16
8	16	-4	45	PASS	SU-16 B,16
9	22	2	62	PASS	SU-16 B,16
10	26	6	73	PASS	SU-16 B,16
11	17	-3	48	PASS	SU-16 B,16
12	30	10	84	PASS	SU-16 B,16
13	29	9	82	PASS	SU-16 B,16
14	26	6	73	PASS	SU-16 B,16
15	26	6	73	PASS	SU-16 B,16
16	17	-3	48	PASS	SU-16 B,16
17	23	3	65	PASS	SU-16 B,16
18	25	5	70	PASS	SU-16 B,16
19	16	-4	45	PASS	SU-16 B,16
20	20	0	56	PASS	SU-16 B,16
21	35	15	99	PASS	SU-16 B,16
22	31	11	87	PASS	SU-16 B,16
23	31	11	87	PASS	SU-16 B,16
24	29	9	82	PASS	SU-16 B,16
25	43	23	121	PASS	SU-16 B,16
26	40	20	113	PASS	SU-16 B,16
27	43	23	121	PASS	SU-16 B,16
28	42	22	118	PASS	SU-16 B,16
29	37	17	104	PASS	SU-16 B,16
30	34	14	96	PASS	SU-16 B,16
31	34	14	96	PASS	SU-16 B,16
32	31	11	87	PASS	SU-16 B,16
33	30	10	84	PASS	SU-16 B,16
34	42	22	118	PASS	SU-16 B,16
35	43	23	121	PASS	SU-16 B,16
36	42	22	118	PASS	SU-16 B,16
37	32	12	90	PASS	SU-16 B,16
38	21	1	59	PASS	SU-16 B,16

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 133
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	24	4	68	PASS	SU-16 B,16
40	27	7	76	PASS	SU-16 B,16
41	29	9	82	PASS	SU-16 B,16
42	40	20	113	PASS	SU-16 B,16
43	36	16	101	PASS	SU-16 B,16
44	33	13	93	PASS	SU-16 B,16
45	27	7	76	PASS	SU-16 B,16
46	19	-1	53	PASS	SU-16 B,16
47	22	2	62	PASS	SU-16 B,16
48	25	5	70	PASS	SU-16 B,16
49	27	7	76	PASS	SU-16 B,16
50	43	23	121	PASS	SU-16 B,16
51	40	20	113	PASS	SU-16 B,16
52	34	14	96	PASS	SU-16 B,16
53	22	2	62	PASS	SU-16 B,16
54	24	4	68	PASS	SU-16 B,16
55	37	17	104	PASS	SU-16 B,16
56	34	14	96	PASS	SU-16 B,16
57	22	2	62	PASS	SU-16 B,16
58	15	-5	42	PASS	SU-16 B,16
59	31	11	87	PASS	SU-16 B,16
60	20	0	56	PASS	SU-16 B,16
61	25	5	70	PASS	SU-16 B,16
62	27	7	76	PASS	SU-16 B,16
63	18	-2	51	PASS	SU-16 B,16
64	32	12	90	PASS	SU-16 B,16
65	41	21	115	PASS	SU-16 B,16
66	33	13	93	PASS	SU-16 B,16
67	31	11	87	PASS	SU-16 B,16
68	29	9	82	PASS	SU-16 B,16
69	27	7	76	PASS	SU-16 B,16
70	18	-2	51	PASS	SU-16 B,16
71	12	-8	34	PASS	SU-16 B,16
72	17	-3	48	PASS	SU-16 B,16
73	32	12	90	PASS	SU-16 B,16
74	30	10	84	PASS	SU-16 B,16
75	38	18	107	PASS	SU-16 B,16
76	27	7	76	PASS	SU-16 B,16

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	22	2	62	PASS	SU-16 B,16
78	15	-5	42	PASS	SU-16 B,16
79	9	-11	25	PASS	SU-16 B,16
80	28	8	79	PASS	SU-16 B,16
81	27	7	76	PASS	SU-16 B,16
82	28	8	79	PASS	SU-16 B,16
83	18	-2	51	PASS	SU-16 B,16
84	22	2	62	PASS	SU-16 B,16
85	14	-6	39	PASS	SU-16 B,16
86	9	-11	25	PASS	SU-16 B,16
87	15	-5	42	PASS	SU-16 B,16
88	40	20	113	PASS	SU-16 B,16
89	26	6	73	PASS	SU-16 B,16
90	17	-3	48	PASS	SU-16 B,16
91	30	10	84	PASS	SU-16 B,16
92	41	21	115	PASS	SU-16 B,16
93	26	6	73	PASS	SU-16 B,16
94	17	-3	48	PASS	SU-16 B,16
95	23	3	65	PASS	SU-16 B,16
96	15	-5	42	PASS	SU-16 B,16
97	10	-10	28	PASS	SU-16 B,16
98	15	-5	42	PASS	SU-16 B,16
99	10	-10	28	PASS	SU-16 B,16
100	6	-14	17	PASS	SU-16 B,16
101	4	-16	11	PASS	SU-16 B,16
102	23	3	65	PASS	SU-16 B,16
103	24	4	68	PASS	SU-16 B,16
104	15	-5	42	PASS	SU-16 B,16
105	32	12	90	PASS	SU-16 B,16
106	41	21	115	PASS	SU-16 B,16
107	39	19	110	PASS	SU-16 B,16
108	35	15	99	PASS	SU-16 B,16
109	43	23	121	PASS	SU-16 B,16
110	36	16	101	PASS	SU-16 B,16
111	43	23	121	PASS	SU-16 B,16
112	38	18	107	PASS	SU-16 B,16
113	35	15	99	PASS	SU-16 B,16
114	23	3	65	PASS	SU-16 B,16

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	25	5	70	PASS	SU-16 B,16
116	27	7	76	PASS	SU-16 B,16
117	26	6	73	PASS	SU-16 B,16
118	17	-3	48	PASS	SU-16 B,16
119	11	-9	31	PASS	SU-16 B,16
120	7	-13	20	PASS	SU-16 B,16
121	13	-7	37	PASS	SU-16 B,16
122	19	-1	53	PASS	SU-16 B,16
123	22	2	62	PASS	SU-16 B,16
124	43	23	121	PASS	SU-16 B,16
125	38	18	107	PASS	SU-16 B,16
126	34	14	96	PASS	SU-16 B,16
127	31	11	87	PASS	SU-16 B,16
128	29	9	82	PASS	SU-16 B,16
129	42	22	118	PASS	SU-16 B,16
130	37	17	104	PASS	SU-16 B,16
131	34	14	96	PASS	SU-16 B,16
132	22	2	62	PASS	SU-16 B,16
133	25	5	70	PASS	SU-16 B,16

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 110
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	25	5	70	PASS	SU-17 A,17
2	35	15	99	PASS	SU-17 A,17
3	23	3	65	PASS	SU-17 A,17
4	15	-5	42	PASS	SU-17 A,17
5	30	10	84	PASS	SU-17 A,17
6	20	0	56	PASS	SU-17 A,17
7	22	2	62	PASS	SU-17 A,17
8	15	-5	42	PASS	SU-17 A,17
9	9	-11	25	PASS	SU-17 A,17
10	15	-5	42	PASS	SU-17 A,17
11	20	0	56	PASS	SU-17 A,17
12	13	-7	37	PASS	SU-17 A,17
13	43	23	121	PASS	SU-17 A,17
14	42	22	118	PASS	SU-17 A,17
15	40	20	113	PASS	SU-17 A,17
16	43	23	121	PASS	SU-17 A,17
17	29	9	82	PASS	SU-17 A,17
18	19	-1	53	PASS	SU-17 A,17
19	42	22	118	PASS	SU-17 A,17
20	22	2	62	PASS	SU-17 A,17
21	33	13	93	PASS	SU-17 A,17
22	42	22	118	PASS	SU-17 A,17
23	40	20	113	PASS	SU-17 A,17
24	43	23	121	PASS	SU-17 A,17
25	38	18	107	PASS	SU-17 A,17
26	37	17	104	PASS	SU-17 A,17
27	36	16	101	PASS	SU-17 A,17
28	23	3	65	PASS	SU-17 A,17
29	15	-5	42	PASS	SU-17 A,17
30	38	18	107	PASS	SU-17 A,17
31	33	13	93	PASS	SU-17 A,17
32	22	2	62	PASS	SU-17 A,17
33	14	-6	39	PASS	SU-17 A,17
34	19	-1	53	PASS	SU-17 A,17
35	21	1	59	PASS	SU-17 A,17
36	26	6	73	PASS	SU-17 A,17
37	17	-3	48	PASS	SU-17 A,17
38	11	-9	31	PASS	SU-17 A,17

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **110**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	19	-1	53	PASS	SU-17 A,17
40	12	-8	34	PASS	SU-17 A,17
41	8	-12	23	PASS	SU-17 A,17
42	14	-6	39	PASS	SU-17 A,17
43	18	-2	51	PASS	SU-17 A,17
44	11	-9	31	PASS	SU-17 A,17
45	16	-4	45	PASS	SU-17 A,17
46	32	12	90	PASS	SU-17 A,17
47	31	11	87	PASS	SU-17 A,17
48	20	0	56	PASS	SU-17 A,17
49	22	2	62	PASS	SU-17 A,17
50	14	-6	39	PASS	SU-17 A,17
51	21	1	59	PASS	SU-17 A,17
52	14	-6	39	PASS	SU-17 A,17
53	26	6	73	PASS	SU-17 A,17
54	17	-3	48	PASS	SU-17 A,17
55	11	-9	31	PASS	SU-17 A,17
56	7	-13	20	PASS	SU-17 A,17
57	17	-3	48	PASS	SU-17 A,17
58	32	12	90	PASS	SU-17 A,17
59	43	23	121	PASS	SU-17 A,17
60	28	8	79	PASS	SU-17 A,17
61	23	3	65	PASS	SU-17 A,17
62	41	21	115	PASS	SU-17 A,17
63	41	21	115	PASS	SU-17 A,17
64	43	23	121	PASS	SU-17 A,17
65	41	21	115	PASS	SU-17 A,17
66	27	7	76	PASS	SU-17 A,17
67	35	15	99	PASS	SU-17 A,17
68	23	3	65	PASS	SU-17 A,17
69	15	-5	42	PASS	SU-17 A,17
70	40	20	113	PASS	SU-17 A,17
71	43	23	121	PASS	SU-17 A,17
72	39	19	110	PASS	SU-17 A,17
73	43	23	121	PASS	SU-17 A,17
74	30	10	84	PASS	SU-17 A,17
75	20	0	56	PASS	SU-17 A,17
76	22	2	62	PASS	SU-17 A,17

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 110
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	43	23	121	PASS	SU-17 A,17
78	39	19	110	PASS	SU-17 A,17
79	41	21	115	PASS	SU-17 A,17
80	43	23	121	PASS	SU-17 A,17
81	43	23	121	PASS	SU-17 A,17
82	40	20	113	PASS	SU-17 A,17
83	42	22	118	PASS	SU-17 A,17
84	27	7	76	PASS	SU-17 A,17
85	36	16	101	PASS	SU-17 A,17
86	24	4	68	PASS	SU-17 A,17
87	39	19	110	PASS	SU-17 A,17
88	26	6	73	PASS	SU-17 A,17
89	29	9	82	PASS	SU-17 A,17
90	29	9	82	PASS	SU-17 A,17
91	30	10	84	PASS	SU-17 A,17
92	22	2	62	PASS	SU-17 A,17
93	18	-2	51	PASS	SU-17 A,17
94	21	1	59	PASS	SU-17 A,17
95	14	-6	39	PASS	SU-17 A,17
96	9	-11	25	PASS	SU-17 A,17
97	6	-14	17	PASS	SU-17 A,17
98	15	-5	42	PASS	SU-17 A,17
99	9	-11	25	PASS	SU-17 A,17
100	6	-14	17	PASS	SU-17 A,17
101	12	-8	34	PASS	SU-17 A,17
102	8	-12	23	PASS	SU-17 A,17
103	5	-15	14	PASS	SU-17 A,17
104	15	-5	42	PASS	SU-17 A,17
105	20	0	56	PASS	SU-17 A,17
106	13	-7	37	PASS	SU-17 A,17
107	18	-2	51	PASS	SU-17 A,17

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **110**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
108	32	12	90	PASS	SU-17 A,17
109	30	10	84	PASS	SU-17 A,17
110	31	11	87	PASS	SU-17 A,17

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 92
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	14	-6	39	PASS	SU-18 B,18
2	9	-11	25	PASS	SU-18 B,18
3	6	-14	17	PASS	SU-18 B,18
4	3	-17	8	PASS	SU-18 B,18
5	2	-18	6	PASS	SU-18 B,18
6	10	-10	28	PASS	SU-18 B,18
7	7	-13	20	PASS	SU-18 B,18
8	16	-4	45	PASS	SU-18 B,18
9	11	-9	31	PASS	SU-18 B,18
10	19	-1	53	PASS	SU-18 B,18
11	12	-8	34	PASS	SU-18 B,18
12	8	-12	23	PASS	SU-18 B,18
13	5	-15	14	PASS	SU-18 B,18
14	3	-17	8	PASS	SU-18 B,18
15	2	-18	6	PASS	SU-18 B,18
16	1	-19	3	PASS	SU-18 B,18
17	1	-19	3	PASS	SU-18 B,18
18	7	-13	20	PASS	SU-18 B,18
19	4	-16	11	PASS	SU-18 B,18
20	15	-5	42	PASS	SU-18 B,18
21	27	7	76	PASS	SU-18 B,18
22	27	7	76	PASS	SU-18 B,18
23	20	0	56	PASS	SU-18 B,18
24	16	-4	45	PASS	SU-18 B,18
25	10	-10	28	PASS	SU-18 B,18
26	7	-13	20	PASS	SU-18 B,18
27	4	-16	11	PASS	SU-18 B,18
28	3	-17	8	PASS	SU-18 B,18
29	2	-18	6	PASS	SU-18 B,18
30	1	-19	3	PASS	SU-18 B,18
31	0	-20	0	PASS	SU-18 B,18
32	0	-20	0	PASS	SU-18 B,18
33	9	-11	25	PASS	SU-18 B,18
34	14	-6	39	PASS	SU-18 B,18
35	9	-11	25	PASS	SU-18 B,18
36	6	-14	17	PASS	SU-18 B,18
37	4	-16	11	PASS	SU-18 B,18
38	2	-18	6	PASS	SU-18 B,18

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **92**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1	-19	3	PASS	SU-18 B,18
40	10	-10	28	PASS	SU-18 B,18
41	17	-3	48	PASS	SU-18 B,18
42	11	-9	31	PASS	SU-18 B,18
43	16	-4	45	PASS	SU-18 B,18
44	10	-10	28	PASS	SU-18 B,18
45	7	-13	20	PASS	SU-18 B,18
46	14	-6	39	PASS	SU-18 B,18
47	18	-2	51	PASS	SU-18 B,18
48	11	-9	31	PASS	SU-18 B,18
49	7	-13	20	PASS	SU-18 B,18
50	5	-15	14	PASS	SU-18 B,18
51	3	-17	8	PASS	SU-18 B,18
52	13	-7	37	PASS	SU-18 B,18
53	8	-12	23	PASS	SU-18 B,18
54	5	-15	14	PASS	SU-18 B,18
55	5	-15	14	PASS	SU-18 B,18
56	3	-17	8	PASS	SU-18 B,18
57	2	-18	6	PASS	SU-18 B,18
58	1	-19	3	PASS	SU-18 B,18
59	11	-9	31	PASS	SU-18 B,18
60	7	-13	20	PASS	SU-18 B,18
61	14	-6	39	PASS	SU-18 B,18
62	9	-11	25	PASS	SU-18 B,18
63	18	-2	51	PASS	SU-18 B,18
64	11	-9	31	PASS	SU-18 B,18
65	19	-1	53	PASS	SU-18 B,18
66	13	-7	37	PASS	SU-18 B,18
67	31	11	87	PASS	SU-18 B,18
68	20	0	56	PASS	SU-18 B,18
69	13	-7	37	PASS	SU-18 B,18
70	8	-12	23	PASS	SU-18 B,18
71	5	-15	14	PASS	SU-18 B,18
72	15	-5	42	PASS	SU-18 B,18
73	10	-10	28	PASS	SU-18 B,18
74	7	-13	20	PASS	SU-18 B,18
75	15	-5	42	PASS	SU-18 B,18
76	10	-10	28	PASS	SU-18 B,18

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 92
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	15	-5	42	PASS	SU-18 B,18
78	10	-10	28	PASS	SU-18 B,18
79	28	8	79	PASS	SU-18 B,18
80	18	-2	51	PASS	SU-18 B,18
81	12	-8	34	PASS	SU-18 B,18
82	17	-3	48	PASS	SU-18 B,18
83	42	22	118	PASS	SU-18 B,18
84	39	19	110	PASS	SU-18 B,18
85	35	15	99	PASS	SU-18 B,18
86	43	23	121	PASS	SU-18 B,18
87	37	17	104	PASS	SU-18 B,18
88	43	23	121	PASS	SU-18 B,18
89	38	18	107	PASS	SU-18 B,18
90	25	5	70	PASS	SU-18 B,18
91	16	-4	45	PASS	SU-18 B,18
92	30	10	84	PASS	SU-18 B,18

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 181
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	26	6	73	PASS	SU-19 C,19
2	43	23	121	PASS	SU-19 C,19
3	42	22	118	PASS	SU-19 C,19
4	38	18	107	PASS	SU-19 C,19
5	25	5	70	PASS	SU-19 C,19
6	28	8	79	PASS	SU-19 C,19
7	18	-2	51	PASS	SU-19 C,19
8	24	4	68	PASS	SU-19 C,19
9	16	-4	45	PASS	SU-19 C,19
10	10	-10	28	PASS	SU-19 C,19
11	15	-5	42	PASS	SU-19 C,19
12	10	-10	28	PASS	SU-19 C,19
13	6	-14	17	PASS	SU-19 C,19
14	4	-16	11	PASS	SU-19 C,19
15	3	-17	8	PASS	SU-19 C,19
16	10	-10	28	PASS	SU-19 C,19
17	16	-4	45	PASS	SU-19 C,19
18	19	-1	53	PASS	SU-19 C,19
19	23	3	65	PASS	SU-19 C,19
20	19	-1	53	PASS	SU-19 C,19
21	24	4	68	PASS	SU-19 C,19
22	16	-4	45	PASS	SU-19 C,19
23	10	-10	28	PASS	SU-19 C,19
24	27	7	76	PASS	SU-19 C,19
25	36	16	101	PASS	SU-19 C,19
26	25	5	70	PASS	SU-19 C,19
27	35	15	99	PASS	SU-19 C,19
28	33	13	93	PASS	SU-19 C,19
29	35	15	99	PASS	SU-19 C,19
30	43	23	121	PASS	SU-19 C,19
31	37	17	104	PASS	SU-19 C,19
32	24	4	68	PASS	SU-19 C,19
33	36	16	101	PASS	SU-19 C,19
34	24	4	68	PASS	SU-19 C,19
35	33	13	93	PASS	SU-19 C,19
36	22	2	62	PASS	SU-19 C,19
37	25	5	70	PASS	SU-19 C,19
38	28	8	79	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	30	10	84	PASS	SU-19 C,19
40	20	0	56	PASS	SU-19 C,19
41	13	-7	37	PASS	SU-19 C,19
42	17	-3	48	PASS	SU-19 C,19
43	39	19	110	PASS	SU-19 C,19
44	37	17	104	PASS	SU-19 C,19
45	40	20	113	PASS	SU-19 C,19
46	30	10	84	PASS	SU-19 C,19
47	28	8	79	PASS	SU-19 C,19
48	27	7	76	PASS	SU-19 C,19
49	37	17	104	PASS	SU-19 C,19
50	35	15	99	PASS	SU-19 C,19
51	26	6	73	PASS	SU-19 C,19
52	21	1	59	PASS	SU-19 C,19
53	25	5	70	PASS	SU-19 C,19
54	28	8	79	PASS	SU-19 C,19
55	43	23	121	PASS	SU-19 C,19
56	34	14	96	PASS	SU-19 C,19
57	30	10	84	PASS	SU-19 C,19
58	39	19	110	PASS	SU-19 C,19
59	43	23	121	PASS	SU-19 C,19
60	31	11	87	PASS	SU-19 C,19
61	41	21	115	PASS	SU-19 C,19
62	27	7	76	PASS	SU-19 C,19
63	37	17	104	PASS	SU-19 C,19
64	39	19	110	PASS	SU-19 C,19
65	38	18	107	PASS	SU-19 C,19
66	43	23	121	PASS	SU-19 C,19
67	26	6	73	PASS	SU-19 C,19
68	36	16	101	PASS	SU-19 C,19
69	41	21	115	PASS	SU-19 C,19
70	43	23	121	PASS	SU-19 C,19
71	43	23	121	PASS	SU-19 C,19
72	29	9	82	PASS	SU-19 C,19
73	36	16	101	PASS	SU-19 C,19
74	41	21	115	PASS	SU-19 C,19
75	27	7	76	PASS	SU-19 C,19
76	26	6	73	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	41	21	115	PASS	SU-19 C,19
78	36	16	101	PASS	SU-19 C,19
79	35	15	99	PASS	SU-19 C,19
80	26	6	73	PASS	SU-19 C,19
81	25	5	70	PASS	SU-19 C,19
82	42	22	118	PASS	SU-19 C,19
83	38	18	107	PASS	SU-19 C,19
84	43	23	121	PASS	SU-19 C,19
85	37	17	104	PASS	SU-19 C,19
86	24	4	68	PASS	SU-19 C,19
87	38	18	107	PASS	SU-19 C,19
88	36	16	101	PASS	SU-19 C,19
89	43	23	121	PASS	SU-19 C,19
90	25	5	70	PASS	SU-19 C,19
91	43	23	121	PASS	SU-19 C,19
92	38	18	107	PASS	SU-19 C,19
93	40	20	113	PASS	SU-19 C,19
94	25	5	70	PASS	SU-19 C,19
95	43	23	121	PASS	SU-19 C,19
96	15	-5	42	PASS	SU-19 C,19
97	43	23	121	PASS	SU-19 C,19
98	34	14	96	PASS	SU-19 C,19
99	26	6	73	PASS	SU-19 C,19
100	43	23	121	PASS	SU-19 C,19
101	26	6	73	PASS	SU-19 C,19
102	15	-5	42	PASS	SU-19 C,19
103	33	13	93	PASS	SU-19 C,19
104	31	11	87	PASS	SU-19 C,19
105	29	9	82	PASS	SU-19 C,19
106	39	19	110	PASS	SU-19 C,19
107	43	23	121	PASS	SU-19 C,19
108	40	20	113	PASS	SU-19 C,19
109	26	6	73	PASS	SU-19 C,19
110	29	9	82	PASS	SU-19 C,19
111	29	9	82	PASS	SU-19 C,19
112	39	19	110	PASS	SU-19 C,19
113	35	15	99	PASS	SU-19 C,19
114	32	12	90	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 181
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	41	21	115	PASS	SU-19 C,19
116	36	16	101	PASS	SU-19 C,19
117	43	23	121	PASS	SU-19 C,19
118	42	22	118	PASS	SU-19 C,19
119	28	8	79	PASS	SU-19 C,19
120	30	10	84	PASS	SU-19 C,19
121	36	16	101	PASS	SU-19 C,19
122	43	23	121	PASS	SU-19 C,19
123	40	20	113	PASS	SU-19 C,19
124	26	6	73	PASS	SU-19 C,19
125	38	18	107	PASS	SU-19 C,19
126	35	15	99	PASS	SU-19 C,19
127	35	15	99	PASS	SU-19 C,19
128	40	20	113	PASS	SU-19 C,19
129	31	11	87	PASS	SU-19 C,19
130	39	19	110	PASS	SU-19 C,19
131	39	19	110	PASS	SU-19 C,19
132	42	22	118	PASS	SU-19 C,19
133	27	7	76	PASS	SU-19 C,19
134	33	13	93	PASS	SU-19 C,19
135	43	23	121	PASS	SU-19 C,19
136	5	-15	14	PASS	SU-19 C,19
137	34	14	96	PASS	SU-19 C,19
138	38	18	107	PASS	SU-19 C,19
139	25	5	70	PASS	SU-19 C,19
140	26	6	73	PASS	SU-19 C,19
141	17	-3	48	PASS	SU-19 C,19
142	11	-9	31	PASS	SU-19 C,19
143	7	-13	20	PASS	SU-19 C,19
144	39	19	110	PASS	SU-19 C,19
145	35	15	99	PASS	SU-19 C,19
146	30	10	84	PASS	SU-19 C,19
147	33	13	93	PASS	SU-19 C,19
148	32	12	90	PASS	SU-19 C,19
149	40	20	113	PASS	SU-19 C,19
150	26	6	73	PASS	SU-19 C,19
151	40	20	113	PASS	SU-19 C,19
152	35	15	99	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	33	13	93	PASS	SU-19 C,19
154	22	2	62	PASS	SU-19 C,19
155	26	6	73	PASS	SU-19 C,19
156	26	6	73	PASS	SU-19 C,19
157	37	17	104	PASS	SU-19 C,19
158	41	21	115	PASS	SU-19 C,19
159	22	2	62	PASS	SU-19 C,19
160	41	21	115	PASS	SU-19 C,19
161	26	6	73	PASS	SU-19 C,19
162	16	-4	45	PASS	SU-19 C,19
163	25	5	70	PASS	SU-19 C,19
164	43	23	121	PASS	SU-19 C,19
165	37	17	104	PASS	SU-19 C,19
166	41	21	115	PASS	SU-19 C,19
167	40	20	113	PASS	SU-19 C,19
168	32	12	90	PASS	SU-19 C,19
169	43	23	121	PASS	SU-19 C,19
170	37	17	104	PASS	SU-19 C,19
171	35	15	99	PASS	SU-19 C,19
172	34	14	96	PASS	SU-19 C,19
173	22	2	62	PASS	SU-19 C,19
174	14	-6	39	PASS	SU-19 C,19
175	9	-11	25	PASS	SU-19 C,19
176	18	-2	51	PASS	SU-19 C,19
177	25	5	70	PASS	SU-19 C,19
178	26	6	73	PASS	SU-19 C,19
179	15	-5	42	PASS	SU-19 C,19
180	33	13	93	PASS	SU-19 C,19
181	30	10	84	PASS	SU-19 C,19

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **99**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	26	6	73	PASS	SU-20 D,20
2	26	6	73	PASS	SU-20 D,20
3	17	-3	48	PASS	SU-20 D,20
4	11	-9	31	PASS	SU-20 D,20
5	7	-13	20	PASS	SU-20 D,20
6	4	-16	11	PASS	SU-20 D,20
7	11	-9	31	PASS	SU-20 D,20
8	19	-1	53	PASS	SU-20 D,20
9	12	-8	34	PASS	SU-20 D,20
10	41	21	115	PASS	SU-20 D,20
11	30	10	84	PASS	SU-20 D,20
12	24	4	68	PASS	SU-20 D,20
13	43	23	121	PASS	SU-20 D,20
14	39	19	110	PASS	SU-20 D,20
15	26	6	73	PASS	SU-20 D,20
16	26	6	73	PASS	SU-20 D,20
17	43	23	121	PASS	SU-20 D,20
18	32	12	90	PASS	SU-20 D,20
19	21	1	59	PASS	SU-20 D,20
20	24	4	68	PASS	SU-20 D,20
21	16	-4	45	PASS	SU-20 D,20
22	32	12	90	PASS	SU-20 D,20
23	21	1	59	PASS	SU-20 D,20
24	14	-6	39	PASS	SU-20 D,20
25	18	-2	51	PASS	SU-20 D,20
26	11	-9	31	PASS	SU-20 D,20
27	7	-13	20	PASS	SU-20 D,20
28	5	-15	14	PASS	SU-20 D,20
29	3	-17	8	PASS	SU-20 D,20
30	13	-7	37	PASS	SU-20 D,20
31	43	23	121	PASS	SU-20 D,20
32	32	12	90	PASS	SU-20 D,20
33	32	12	90	PASS	SU-20 D,20
34	21	1	59	PASS	SU-20 D,20
35	14	-6	39	PASS	SU-20 D,20
36	19	-1	53	PASS	SU-20 D,20
37	23	3	65	PASS	SU-20 D,20
38	27	7	76	PASS	SU-20 D,20

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 99
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	37	17	104	PASS	SU-20 D,20
40	31	11	87	PASS	SU-20 D,20
41	20	0	56	PASS	SU-20 D,20
42	22	2	62	PASS	SU-20 D,20
43	20	0	56	PASS	SU-20 D,20
44	22	2	62	PASS	SU-20 D,20
45	15	-5	42	PASS	SU-20 D,20
46	22	2	62	PASS	SU-20 D,20
47	14	-6	39	PASS	SU-20 D,20
48	20	0	56	PASS	SU-20 D,20
49	13	-7	37	PASS	SU-20 D,20
50	28	8	79	PASS	SU-20 D,20
51	18	-2	51	PASS	SU-20 D,20
52	12	-8	34	PASS	SU-20 D,20
53	7	-13	20	PASS	SU-20 D,20
54	14	-6	39	PASS	SU-20 D,20
55	20	0	56	PASS	SU-20 D,20
56	13	-7	37	PASS	SU-20 D,20
57	40	20	113	PASS	SU-20 D,20
58	30	10	84	PASS	SU-20 D,20
59	29	9	82	PASS	SU-20 D,20
60	19	-1	53	PASS	SU-20 D,20
61	12	-8	34	PASS	SU-20 D,20
62	17	-3	48	PASS	SU-20 D,20
63	11	-9	31	PASS	SU-20 D,20
64	18	-2	51	PASS	SU-20 D,20
65	11	-9	31	PASS	SU-20 D,20
66	7	-13	20	PASS	SU-20 D,20
67	24	4	68	PASS	SU-20 D,20
68	26	6	73	PASS	SU-20 D,20
69	26	6	73	PASS	SU-20 D,20
70	26	6	73	PASS	SU-20 D,20
71	17	-3	48	PASS	SU-20 D,20
72	20	0	56	PASS	SU-20 D,20
73	25	5	70	PASS	SU-20 D,20
74	22	2	62	PASS	SU-20 D,20
75	15	-5	42	PASS	SU-20 D,20
76	9	-11	25	PASS	SU-20 D,20

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 99
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	16	-4	45	PASS	SU-20 D,20
78	22	2	62	PASS	SU-20 D,20
79	24	4	68	PASS	SU-20 D,20
80	28	8	79	PASS	SU-20 D,20
81	18	-2	51	PASS	SU-20 D,20
82	37	17	104	PASS	SU-20 D,20
83	30	10	84	PASS	SU-20 D,20
84	32	12	90	PASS	SU-20 D,20
85	21	1	59	PASS	SU-20 D,20
86	14	-6	39	PASS	SU-20 D,20
87	9	-11	25	PASS	SU-20 D,20
88	6	-14	17	PASS	SU-20 D,20
89	26	6	73	PASS	SU-20 D,20
90	17	-3	48	PASS	SU-20 D,20
91	20	0	56	PASS	SU-20 D,20
92	24	4	68	PASS	SU-20 D,20
93	15	-5	42	PASS	SU-20 D,20
94	10	-10	28	PASS	SU-20 D,20
95	18	-2	51	PASS	SU-20 D,20
96	12	-8	34	PASS	SU-20 D,20
97	18	-2	51	PASS	SU-20 D,20
98	32	12	90	PASS	SU-20 D,20
99	36	16	101	PASS	SU-20 D,20

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 131
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	17	-3	48	PASS	SU-21 E,21
2	15	-5	42	PASS	SU-21 E,21
3	31	11	87	PASS	SU-21 E,21
4	20	0	56	PASS	SU-21 E,21
5	13	-7	37	PASS	SU-21 E,21
6	28	8	79	PASS	SU-21 E,21
7	42	22	118	PASS	SU-21 E,21
8	28	8	79	PASS	SU-21 E,21
9	38	18	107	PASS	SU-21 E,21
10	35	15	99	PASS	SU-21 E,21
11	23	3	65	PASS	SU-21 E,21
12	23	3	65	PASS	SU-21 E,21
13	15	-5	42	PASS	SU-21 E,21
14	10	-10	28	PASS	SU-21 E,21
15	30	10	84	PASS	SU-21 E,21
16	20	0	56	PASS	SU-21 E,21
17	24	4	68	PASS	SU-21 E,21
18	38	18	107	PASS	SU-21 E,21
19	35	15	99	PASS	SU-21 E,21
20	23	3	65	PASS	SU-21 E,21
21	42	22	118	PASS	SU-21 E,21
22	43	23	121	PASS	SU-21 E,21
23	21	1	59	PASS	SU-21 E,21
24	29	9	82	PASS	SU-21 E,21
25	32	12	90	PASS	SU-21 E,21
26	21	1	59	PASS	SU-21 E,21
27	24	4	68	PASS	SU-21 E,21
28	16	-4	45	PASS	SU-21 E,21
29	10	-10	28	PASS	SU-21 E,21
30	7	-13	20	PASS	SU-21 E,21
31	4	-16	11	PASS	SU-21 E,21
32	3	-17	8	PASS	SU-21 E,21
33	2	-18	6	PASS	SU-21 E,21
34	1	-19	3	PASS	SU-21 E,21
35	1	-19	3	PASS	SU-21 E,21
36	11	-9	31	PASS	SU-21 E,21
37	7	-13	20	PASS	SU-21 E,21
38	5	-15	14	PASS	SU-21 E,21

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **131**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	3	-17	8	PASS	SU-21 E,21
40	2	-18	6	PASS	SU-21 E,21
41	10	-10	28	PASS	SU-21 E,21
42	29	9	82	PASS	SU-21 E,21
43	19	-1	53	PASS	SU-21 E,21
44	12	-8	34	PASS	SU-21 E,21
45	8	-12	23	PASS	SU-21 E,21
46	14	-6	39	PASS	SU-21 E,21
47	9	-11	25	PASS	SU-21 E,21
48	38	18	107	PASS	SU-21 E,21
49	36	16	101	PASS	SU-21 E,21
50	23	3	65	PASS	SU-21 E,21
51	15	-5	42	PASS	SU-21 E,21
52	10	-10	28	PASS	SU-21 E,21
53	6	-14	17	PASS	SU-21 E,21
54	4	-16	11	PASS	SU-21 E,21
55	3	-17	8	PASS	SU-21 E,21
56	2	-18	6	PASS	SU-21 E,21
57	1	-19	3	PASS	SU-21 E,21
58	0	-20	0	PASS	SU-21 E,21
59	9	-11	25	PASS	SU-21 E,21
60	25	5	70	PASS	SU-21 E,21
61	16	-4	45	PASS	SU-21 E,21
62	23	3	65	PASS	SU-21 E,21
63	27	7	76	PASS	SU-21 E,21
64	22	2	62	PASS	SU-21 E,21
65	16	-4	45	PASS	SU-21 E,21
66	30	10	84	PASS	SU-21 E,21
67	19	-1	53	PASS	SU-21 E,21
68	12	-8	34	PASS	SU-21 E,21
69	17	-3	48	PASS	SU-21 E,21
70	11	-9	31	PASS	SU-21 E,21
71	19	-1	53	PASS	SU-21 E,21
72	24	4	68	PASS	SU-21 E,21
73	27	7	76	PASS	SU-21 E,21
74	37	17	104	PASS	SU-21 E,21
75	24	4	68	PASS	SU-21 E,21
76	16	-4	45	PASS	SU-21 E,21

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **131**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	31	11	87	PASS	SU-21 E,21
78	29	9	82	PASS	SU-21 E,21
79	37	17	104	PASS	SU-21 E,21
80	34	14	96	PASS	SU-21 E,21
81	33	13	93	PASS	SU-21 E,21
82	22	2	62	PASS	SU-21 E,21
83	24	4	68	PASS	SU-21 E,21
84	25	5	70	PASS	SU-21 E,21
85	25	5	70	PASS	SU-21 E,21
86	38	18	107	PASS	SU-21 E,21
87	37	17	104	PASS	SU-21 E,21
88	43	23	121	PASS	SU-21 E,21
89	28	8	79	PASS	SU-21 E,21
90	18	-2	51	PASS	SU-21 E,21
91	12	-8	34	PASS	SU-21 E,21
92	17	-3	48	PASS	SU-21 E,21
93	31	11	87	PASS	SU-21 E,21
94	40	20	113	PASS	SU-21 E,21
95	15	-5	42	PASS	SU-21 E,21
96	41	21	115	PASS	SU-21 E,21
97	39	19	110	PASS	SU-21 E,21
98	25	5	70	PASS	SU-21 E,21
99	27	7	76	PASS	SU-21 E,21
100	18	-2	51	PASS	SU-21 E,21
101	31	11	87	PASS	SU-21 E,21
102	43	23	121	PASS	SU-21 E,21
103	30	10	84	PASS	SU-21 E,21
104	41	21	115	PASS	SU-21 E,21
105	38	18	107	PASS	SU-21 E,21
106	25	5	70	PASS	SU-21 E,21
107	16	-4	45	PASS	SU-21 E,21
108	31	11	87	PASS	SU-21 E,21
109	20	0	56	PASS	SU-21 E,21
110	23	3	65	PASS	SU-21 E,21
111	25	5	70	PASS	SU-21 E,21
112	26	6	73	PASS	SU-21 E,21
113	17	-3	48	PASS	SU-21 E,21
114	11	-9	31	PASS	SU-21 E,21

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 131
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	7	-13	20	PASS	SU-21 E,21
116	13	-7	37	PASS	SU-21 E,21
117	9	-11	25	PASS	SU-21 E,21
118	26	6	73	PASS	SU-21 E,21
119	27	7	76	PASS	SU-21 E,21
120	18	-2	51	PASS	SU-21 E,21
121	21	1	59	PASS	SU-21 E,21
122	22	2	62	PASS	SU-21 E,21
123	15	-5	42	PASS	SU-21 E,21
124	28	8	79	PASS	SU-21 E,21
125	36	16	101	PASS	SU-21 E,21
126	35	15	99	PASS	SU-21 E,21
127	32	12	90	PASS	SU-21 E,21
128	33	13	93	PASS	SU-21 E,21
129	21	1	59	PASS	SU-21 E,21
130	14	-6	39	PASS	SU-21 E,21
131	9	-11	25	PASS	SU-21 E,21

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	16	-4	45	PASS	SU-22 D,22
2	29	9	82	PASS	SU-22 D,22
3	27	7	76	PASS	SU-22 D,22
4	18	-2	51	PASS	SU-22 D,22
5	32	12	90	PASS	SU-22 D,22
6	21	1	59	PASS	SU-22 D,22
7	14	-6	39	PASS	SU-22 D,22
8	32	12	90	PASS	SU-22 D,22
9	43	23	121	PASS	SU-22 D,22
10	41	21	115	PASS	SU-22 D,22
11	38	18	107	PASS	SU-22 D,22
12	33	13	93	PASS	SU-22 D,22
13	41	21	115	PASS	SU-22 D,22
14	35	15	99	PASS	SU-22 D,22
15	33	13	93	PASS	SU-22 D,22
16	21	1	59	PASS	SU-22 D,22
17	14	-6	39	PASS	SU-22 D,22
18	9	-11	25	PASS	SU-22 D,22
19	6	-14	17	PASS	SU-22 D,22
20	13	-7	37	PASS	SU-22 D,22
21	9	-11	25	PASS	SU-22 D,22
22	6	-14	17	PASS	SU-22 D,22
23	3	-17	8	PASS	SU-22 D,22
24	11	-9	31	PASS	SU-22 D,22
25	16	-4	45	PASS	SU-22 D,22
26	10	-10	28	PASS	SU-22 D,22
27	7	-13	20	PASS	SU-22 D,22
28	4	-16	11	PASS	SU-22 D,22
29	12	-8	34	PASS	SU-22 D,22
30	28	8	79	PASS	SU-22 D,22
31	32	12	90	PASS	SU-22 D,22
32	38	18	107	PASS	SU-22 D,22
33	37	17	104	PASS	SU-22 D,22
34	24	4	68	PASS	SU-22 D,22
35	16	-4	45	PASS	SU-22 D,22
36	31	11	87	PASS	SU-22 D,22
37	29	9	82	PASS	SU-22 D,22
38	42	22	118	PASS	SU-22 D,22

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	39	19	110	PASS	SU-22 D,22
40	26	6	73	PASS	SU-22 D,22
41	17	-3	48	PASS	SU-22 D,22
42	20	0	56	PASS	SU-22 D,22
43	22	2	62	PASS	SU-22 D,22
44	27	7	76	PASS	SU-22 D,22
45	26	6	73	PASS	SU-22 D,22
46	40	20	113	PASS	SU-22 D,22
47	26	6	73	PASS	SU-22 D,22
48	17	-3	48	PASS	SU-22 D,22
49	23	3	65	PASS	SU-22 D,22
50	35	15	99	PASS	SU-22 D,22
51	32	12	90	PASS	SU-22 D,22
52	33	13	93	PASS	SU-22 D,22
53	37	17	104	PASS	SU-22 D,22
54	24	4	68	PASS	SU-22 D,22
55	25	5	70	PASS	SU-22 D,22
56	27	7	76	PASS	SU-22 D,22
57	26	6	73	PASS	SU-22 D,22
58	17	-3	48	PASS	SU-22 D,22
59	20	0	56	PASS	SU-22 D,22
60	25	5	70	PASS	SU-22 D,22
61	40	20	113	PASS	SU-22 D,22
62	43	23	121	PASS	SU-22 D,22
63	43	23	121	PASS	SU-22 D,22
64	42	22	118	PASS	SU-22 D,22
65	39	19	110	PASS	SU-22 D,22
66	38	18	107	PASS	SU-22 D,22
67	33	13	93	PASS	SU-22 D,22
68	41	21	115	PASS	SU-22 D,22
69	27	7	76	PASS	SU-22 D,22
70	39	19	110	PASS	SU-22 D,22
71	36	16	101	PASS	SU-22 D,22
72	38	18	107	PASS	SU-22 D,22
73	31	11	87	PASS	SU-22 D,22
74	30	10	84	PASS	SU-22 D,22
75	41	21	115	PASS	SU-22 D,22
76	38	18	107	PASS	SU-22 D,22

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 112
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	33	13	93	PASS	SU-22 D,22
78	33	13	93	PASS	SU-22 D,22
79	31	11	87	PASS	SU-22 D,22
80	29	9	82	PASS	SU-22 D,22
81	28	8	79	PASS	SU-22 D,22
82	39	19	110	PASS	SU-22 D,22
83	39	19	110	PASS	SU-22 D,22
84	42	22	118	PASS	SU-22 D,22
85	38	18	107	PASS	SU-22 D,22
86	25	5	70	PASS	SU-22 D,22
87	38	18	107	PASS	SU-22 D,22
88	25	5	70	PASS	SU-22 D,22
89	16	-4	45	PASS	SU-22 D,22
90	21	1	59	PASS	SU-22 D,22
91	14	-6	39	PASS	SU-22 D,22
92	9	-11	25	PASS	SU-22 D,22
93	6	-14	17	PASS	SU-22 D,22
94	17	-3	48	PASS	SU-22 D,22
95	21	1	59	PASS	SU-22 D,22
96	14	-6	39	PASS	SU-22 D,22
97	30	10	84	PASS	SU-22 D,22
98	30	10	84	PASS	SU-22 D,22
99	19	-1	53	PASS	SU-22 D,22
100	12	-8	34	PASS	SU-22 D,22
101	8	-12	23	PASS	SU-22 D,22
102	17	-3	48	PASS	SU-22 D,22
103	40	20	113	PASS	SU-22 D,22
104	26	6	73	PASS	SU-22 D,22
105	26	6	73	PASS	SU-22 D,22
106	27	7	76	PASS	SU-22 D,22
107	17	-3	48	PASS	SU-22 D,22
108	42	22	118	PASS	SU-22 D,22
109	38	18	107	PASS	SU-22 D,22

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
110	43	23	121	PASS	SU-22 D,22
111	38	18	107	PASS	SU-22 D,22
112	37	17	104	PASS	SU-22 D,22

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	22	2	62	PASS	SU-23 C,23
2	26	6	73	PASS	SU-23 C,23
3	17	-3	48	PASS	SU-23 C,23
4	11	-9	31	PASS	SU-23 C,23
5	7	-13	20	PASS	SU-23 C,23
6	15	-5	42	PASS	SU-23 C,23
7	20	0	56	PASS	SU-23 C,23
8	13	-7	37	PASS	SU-23 C,23
9	19	-1	53	PASS	SU-23 C,23
10	42	22	118	PASS	SU-23 C,23
11	27	7	76	PASS	SU-23 C,23
12	18	-2	51	PASS	SU-23 C,23
13	22	2	62	PASS	SU-23 C,23
14	26	6	73	PASS	SU-23 C,23
15	24	4	68	PASS	SU-23 C,23
16	15	-5	42	PASS	SU-23 C,23
17	20	0	56	PASS	SU-23 C,23
18	13	-7	37	PASS	SU-23 C,23
19	20	0	56	PASS	SU-23 C,23
20	13	-7	37	PASS	SU-23 C,23
21	8	-12	23	PASS	SU-23 C,23
22	14	-6	39	PASS	SU-23 C,23
23	18	-2	51	PASS	SU-23 C,23
24	22	2	62	PASS	SU-23 C,23
25	15	-5	42	PASS	SU-23 C,23
26	9	-11	25	PASS	SU-23 C,23
27	6	-14	17	PASS	SU-23 C,23
28	4	-16	11	PASS	SU-23 C,23
29	15	-5	42	PASS	SU-23 C,23
30	9	-11	25	PASS	SU-23 C,23
31	18	-2	51	PASS	SU-23 C,23
32	12	-8	34	PASS	SU-23 C,23
33	7	-13	20	PASS	SU-23 C,23
34	17	-3	48	PASS	SU-23 C,23
35	23	3	65	PASS	SU-23 C,23
36	26	6	73	PASS	SU-23 C,23
37	17	-3	48	PASS	SU-23 C,23
38	11	-9	31	PASS	SU-23 C,23

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	7	-13	20	PASS	SU-23 C,23
40	4	-16	11	PASS	SU-23 C,23
41	3	-17	8	PASS	SU-23 C,23
42	14	-6	39	PASS	SU-23 C,23
43	9	-11	25	PASS	SU-23 C,23
44	24	4	68	PASS	SU-23 C,23
45	28	8	79	PASS	SU-23 C,23
46	22	2	62	PASS	SU-23 C,23
47	27	7	76	PASS	SU-23 C,23
48	30	10	84	PASS	SU-23 C,23
49	40	20	113	PASS	SU-23 C,23
50	26	6	73	PASS	SU-23 C,23
51	29	9	82	PASS	SU-23 C,23
52	28	8	79	PASS	SU-23 C,23
53	18	-2	51	PASS	SU-23 C,23
54	12	-8	34	PASS	SU-23 C,23
55	7	-13	20	PASS	SU-23 C,23
56	17	-3	48	PASS	SU-23 C,23
57	22	2	62	PASS	SU-23 C,23
58	25	5	70	PASS	SU-23 C,23
59	16	-4	45	PASS	SU-23 C,23
60	11	-9	31	PASS	SU-23 C,23
61	16	-4	45	PASS	SU-23 C,23
62	20	0	56	PASS	SU-23 C,23
63	23	3	65	PASS	SU-23 C,23
64	26	6	73	PASS	SU-23 C,23
65	17	-3	48	PASS	SU-23 C,23
66	5	-15	14	PASS	SU-23 C,23
67	3	-17	8	PASS	SU-23 C,23
68	2	-18	6	PASS	SU-23 C,23
69	11	-9	31	PASS	SU-23 C,23
70	7	-13	20	PASS	SU-23 C,23
71	15	-5	42	PASS	SU-23 C,23
72	12	-8	34	PASS	SU-23 C,23
73	17	-3	48	PASS	SU-23 C,23
74	11	-9	31	PASS	SU-23 C,23
75	7	-13	20	PASS	SU-23 C,23
76	5	-15	14	PASS	SU-23 C,23

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	3	-17	8	PASS	SU-23 C,23
78	21	1	59	PASS	SU-23 C,23
79	25	5	70	PASS	SU-23 C,23
80	27	7	76	PASS	SU-23 C,23
81	18	-2	51	PASS	SU-23 C,23
82	23	3	65	PASS	SU-23 C,23
83	15	-5	42	PASS	SU-23 C,23
84	30	10	84	PASS	SU-23 C,23
85	20	0	56	PASS	SU-23 C,23
86	25	5	70	PASS	SU-23 C,23
87	16	-4	45	PASS	SU-23 C,23
88	20	0	56	PASS	SU-23 C,23
89	13	-7	37	PASS	SU-23 C,23
90	28	8	79	PASS	SU-23 C,23
91	38	18	107	PASS	SU-23 C,23
92	25	5	70	PASS	SU-23 C,23
93	16	-4	45	PASS	SU-23 C,23
94	12	-8	34	PASS	SU-23 C,23
95	20	0	56	PASS	SU-23 C,23
96	13	-7	37	PASS	SU-23 C,23
97	17	-3	48	PASS	SU-23 C,23
98	22	2	62	PASS	SU-23 C,23
99	14	-6	39	PASS	SU-23 C,23
100	25	5	70	PASS	SU-23 C,23
101	16	-4	45	PASS	SU-23 C,23
102	11	-9	31	PASS	SU-23 C,23
103	7	-13	20	PASS	SU-23 C,23
104	4	-16	11	PASS	SU-23 C,23
105	3	-17	8	PASS	SU-23 C,23
106	2	-18	6	PASS	SU-23 C,23
107	1	-19	3	PASS	SU-23 C,23
108	0	-20	0	PASS	SU-23 C,23
109	11	-9	31	PASS	SU-23 C,23
110	33	13	93	PASS	SU-23 C,23
111	22	2	62	PASS	SU-23 C,23
112	23	3	65	PASS	SU-23 C,23
113	27	7	76	PASS	SU-23 C,23
114	18	-2	51	PASS	SU-23 C,23

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	22	2	62	PASS	SU-23 C,23
116	15	-5	42	PASS	SU-23 C,23
117	9	-11	25	PASS	SU-23 C,23
118	6	-14	17	PASS	SU-23 C,23
119	4	-16	11	PASS	SU-23 C,23
120	14	-6	39	PASS	SU-23 C,23
121	9	-11	25	PASS	SU-23 C,23
122	6	-14	17	PASS	SU-23 C,23
123	14	-6	39	PASS	SU-23 C,23
124	19	-1	53	PASS	SU-23 C,23
125	25	5	70	PASS	SU-23 C,23
126	16	-4	45	PASS	SU-23 C,23
127	11	-9	31	PASS	SU-23 C,23
128	7	-13	20	PASS	SU-23 C,23
129	14	-6	39	PASS	SU-23 C,23
130	9	-11	25	PASS	SU-23 C,23
131	8	-12	23	PASS	SU-23 C,23
117	5	-15	14	PASS	SU-23 C,23
118	3	-17	8	PASS	SU-23 C,23
119	2	-18	6	PASS	SU-23 C,23
120	1	-19	3	PASS	SU-23 C,23
121	1	-19	3	PASS	SU-23 C,23
122	9	-11	25	PASS	SU-23 C,23
123	6	-14	17	PASS	SU-23 C,23
124	4	-16	11	PASS	SU-23 C,23
125	2	-18	6	PASS	SU-23 C,23

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	23	3	65	PASS	SU-24 B,24
2	18	-2	51	PASS	SU-24 B,24
3	43	23	121	PASS	SU-24 B,24
4	39	19	110	PASS	SU-24 B,24
5	26	6	73	PASS	SU-24 B,24
6	17	-3	48	PASS	SU-24 B,24
7	20	0	56	PASS	SU-24 B,24
8	13	-7	37	PASS	SU-24 B,24
9	30	10	84	PASS	SU-24 B,24
10	20	0	56	PASS	SU-24 B,24
11	13	-7	37	PASS	SU-24 B,24
12	29	9	82	PASS	SU-24 B,24
13	19	-1	53	PASS	SU-24 B,24
14	32	12	90	PASS	SU-24 B,24
15	42	22	118	PASS	SU-24 B,24
16	37	17	104	PASS	SU-24 B,24
17	41	21	115	PASS	SU-24 B,24
18	43	23	121	PASS	SU-24 B,24
19	40	20	113	PASS	SU-24 B,24
20	26	6	73	PASS	SU-24 B,24
21	28	8	79	PASS	SU-24 B,24
22	29	9	82	PASS	SU-24 B,24
23	31	11	87	PASS	SU-24 B,24
24	32	12	90	PASS	SU-24 B,24
25	39	19	110	PASS	SU-24 B,24
26	26	6	73	PASS	SU-24 B,24
27	17	-3	48	PASS	SU-24 B,24
28	21	1	59	PASS	SU-24 B,24
29	35	15	99	PASS	SU-24 B,24
30	33	13	93	PASS	SU-24 B,24
31	33	13	93	PASS	SU-24 B,24
32	33	13	93	PASS	SU-24 B,24
33	30	10	84	PASS	SU-24 B,24
34	20	0	56	PASS	SU-24 B,24
35	22	2	62	PASS	SU-24 B,24
36	25	5	70	PASS	SU-24 B,24
37	36	16	101	PASS	SU-24 B,24
38	23	3	65	PASS	SU-24 B,24

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	24	4	68	PASS	SU-24 B,24
40	38	18	107	PASS	SU-24 B,24
41	37	17	104	PASS	SU-24 B,24
42	24	4	68	PASS	SU-24 B,24
43	26	6	73	PASS	SU-24 B,24
44	17	-3	48	PASS	SU-24 B,24
45	22	2	62	PASS	SU-24 B,24
46	24	4	68	PASS	SU-24 B,24
47	38	18	107	PASS	SU-24 B,24
48	36	16	101	PASS	SU-24 B,24
49	35	15	99	PASS	SU-24 B,24
50	23	3	65	PASS	SU-24 B,24
51	15	-5	42	PASS	SU-24 B,24
52	29	9	82	PASS	SU-24 B,24
53	41	21	115	PASS	SU-24 B,24
54	27	7	76	PASS	SU-24 B,24
55	39	19	110	PASS	SU-24 B,24
56	34	14	96	PASS	SU-24 B,24
57	41	21	115	PASS	SU-24 B,24
58	30	10	84	PASS	SU-24 B,24
59	19	-1	53	PASS	SU-24 B,24
60	12	-8	34	PASS	SU-24 B,24
61	8	-12	23	PASS	SU-24 B,24
62	28	8	79	PASS	SU-24 B,24
63	18	-2	51	PASS	SU-24 B,24
64	16	-4	45	PASS	SU-24 B,24
65	11	-9	31	PASS	SU-24 B,24
66	16	-4	45	PASS	SU-24 B,24
67	10	-10	28	PASS	SU-24 B,24
68	7	-13	20	PASS	SU-24 B,24
69	4	-16	11	PASS	SU-24 B,24
70	3	-17	8	PASS	SU-24 B,24
71	2	-18	6	PASS	SU-24 B,24
72	21	1	59	PASS	SU-24 B,24
73	14	-6	39	PASS	SU-24 B,24
74	20	0	56	PASS	SU-24 B,24
75	22	2	62	PASS	SU-24 B,24
76	23	3	65	PASS	SU-24 B,24

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	15	-5	42	PASS	SU-24 B,24
78	30	10	84	PASS	SU-24 B,24
79	41	21	115	PASS	SU-24 B,24
80	38	18	107	PASS	SU-24 B,24
81	42	22	118	PASS	SU-24 B,24
82	27	7	76	PASS	SU-24 B,24
83	37	17	104	PASS	SU-24 B,24
84	34	14	96	PASS	SU-24 B,24
85	31	11	87	PASS	SU-24 B,24
86	20	0	56	PASS	SU-24 B,24
87	22	2	62	PASS	SU-24 B,24
88	23	3	65	PASS	SU-24 B,24
89	15	-5	42	PASS	SU-24 B,24
90	30	10	84	PASS	SU-24 B,24
91	20	0	56	PASS	SU-24 B,24
92	13	-7	37	PASS	SU-24 B,24
93	8	-12	23	PASS	SU-24 B,24
94	24	4	68	PASS	SU-24 B,24
95	19	-1	53	PASS	SU-24 B,24
96	26	6	73	PASS	SU-24 B,24
97	17	-3	48	PASS	SU-24 B,24
98	38	18	107	PASS	SU-24 B,24
99	36	16	101	PASS	SU-24 B,24
100	23	3	65	PASS	SU-24 B,24
101	36	16	101	PASS	SU-24 B,24
102	23	3	65	PASS	SU-24 B,24
103	15	-5	42	PASS	SU-24 B,24
104	22	2	62	PASS	SU-24 B,24
105	23	3	65	PASS	SU-24 B,24

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	11	-9	31	PASS	SU-25 A,25
2	7	-13	20	PASS	SU-25 A,25
3	15	-5	42	PASS	SU-25 A,25
4	10	-10	28	PASS	SU-25 A,25
5	16	-4	45	PASS	SU-25 A,25
6	11	-9	31	PASS	SU-25 A,25
7	7	-13	20	PASS	SU-25 A,25
8	14	-6	39	PASS	SU-25 A,25
9	21	1	59	PASS	SU-25 A,25
10	26	6	73	PASS	SU-25 A,25
11	17	-3	48	PASS	SU-25 A,25
12	11	-9	31	PASS	SU-25 A,25
13	17	-3	48	PASS	SU-25 A,25
14	11	-9	31	PASS	SU-25 A,25
15	17	-3	48	PASS	SU-25 A,25
16	22	2	62	PASS	SU-25 A,25
17	14	-6	39	PASS	SU-25 A,25
18	9	-11	25	PASS	SU-25 A,25
19	18	-2	51	PASS	SU-25 A,25
20	22	2	62	PASS	SU-25 A,25
21	15	-5	42	PASS	SU-25 A,25
22	20	0	56	PASS	SU-25 A,25
23	13	-7	37	PASS	SU-25 A,25
24	17	-3	48	PASS	SU-25 A,25
25	11	-9	31	PASS	SU-25 A,25
26	31	11	87	PASS	SU-25 A,25
27	20	0	56	PASS	SU-25 A,25
28	18	-2	51	PASS	SU-25 A,25
29	12	-8	34	PASS	SU-25 A,25
30	8	-12	23	PASS	SU-25 A,25
31	5	-15	14	PASS	SU-25 A,25
32	3	-17	8	PASS	SU-25 A,25
33	2	-18	6	PASS	SU-25 A,25
34	1	-19	3	PASS	SU-25 A,25
35	1	-19	3	PASS	SU-25 A,25
36	0	-20	0	PASS	SU-25 A,25
37	0	-20	0	PASS	SU-25 A,25
38	12	-8	34	PASS	SU-25 A,25

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	8	-12	23	PASS	SU-25 A,25
40	5	-15	14	PASS	SU-25 A,25
41	12	-8	34	PASS	SU-25 A,25
42	8	-12	23	PASS	SU-25 A,25
43	5	-15	14	PASS	SU-25 A,25
44	25	5	70	PASS	SU-25 A,25
45	16	-4	45	PASS	SU-25 A,25
46	11	-9	31	PASS	SU-25 A,25
47	7	-13	20	PASS	SU-25 A,25
48	4	-16	11	PASS	SU-25 A,25
49	24	4	68	PASS	SU-25 A,25
50	16	-4	45	PASS	SU-25 A,25
51	10	-10	28	PASS	SU-25 A,25
52	7	-13	20	PASS	SU-25 A,25
53	14	-6	39	PASS	SU-25 A,25
54	9	-11	25	PASS	SU-25 A,25
55	6	-14	17	PASS	SU-25 A,25
56	4	-16	11	PASS	SU-25 A,25
57	2	-18	6	PASS	SU-25 A,25
58	1	-19	3	PASS	SU-25 A,25
59	1	-19	3	PASS	SU-25 A,25
60	1	-19	3	PASS	SU-25 A,25
61	0	-20	0	PASS	SU-25 A,25
62	0	-20	0	PASS	SU-25 A,25
63	0	-20	0	PASS	SU-25 A,25
64	0	-20	0	PASS	SU-25 A,25
65	11	-9	31	PASS	SU-25 A,25
66	7	-13	20	PASS	SU-25 A,25
67	4	-16	11	PASS	SU-25 A,25
68	3	-17	8	PASS	SU-25 A,25
69	2	-18	6	PASS	SU-25 A,25
70	1	-19	3	PASS	SU-25 A,25
71	0	-20	0	PASS	SU-25 A,25
72	0	-20	0	PASS	SU-25 A,25
73	0	-20	0	PASS	SU-25 A,25
74	11	-9	31	PASS	SU-25 A,25
75	7	-13	20	PASS	SU-25 A,25
76	4	-16	11	PASS	SU-25 A,25

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	3	-17	8	PASS	SU-25 A,25
78	14	-6	39	PASS	SU-25 A,25
79	9	-11	25	PASS	SU-25 A,25
80	6	-14	17	PASS	SU-25 A,25
81	16	-4	45	PASS	SU-25 A,25
82	22	2	62	PASS	SU-25 A,25

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	24	4	68	PASS	SU-26 B,26
2	34	14	96	PASS	SU-26 B,26
3	31	11	87	PASS	SU-26 B,26
4	42	22	118	PASS	SU-26 B,26
5	27	7	76	PASS	SU-26 B,26
6	35	15	99	PASS	SU-26 B,26
7	32	12	90	PASS	SU-26 B,26
8	21	1	59	PASS	SU-26 B,26
9	14	-6	39	PASS	SU-26 B,26
10	18	-2	51	PASS	SU-26 B,26
11	20	0	56	PASS	SU-26 B,26
12	25	5	70	PASS	SU-26 B,26
13	26	6	73	PASS	SU-26 B,26
14	17	-3	48	PASS	SU-26 B,26
15	32	12	90	PASS	SU-26 B,26
16	21	1	59	PASS	SU-26 B,26
17	30	10	84	PASS	SU-26 B,26
18	20	0	56	PASS	SU-26 B,26
19	40	20	113	PASS	SU-26 B,26
20	26	6	73	PASS	SU-26 B,26
21	40	20	113	PASS	SU-26 B,26
22	37	17	104	PASS	SU-26 B,26
23	43	23	121	PASS	SU-26 B,26
24	29	9	82	PASS	SU-26 B,26
25	19	-1	53	PASS	SU-26 B,26
26	32	12	90	PASS	SU-26 B,26
27	38	18	107	PASS	SU-26 B,26
28	35	15	99	PASS	SU-26 B,26
29	25	5	70	PASS	SU-26 B,26
30	26	6	73	PASS	SU-26 B,26
31	37	17	104	PASS	SU-26 B,26
32	43	23	121	PASS	SU-26 B,26
33	29	9	82	PASS	SU-26 B,26
34	41	21	115	PASS	SU-26 B,26
35	41	21	115	PASS	SU-26 B,26
36	39	19	110	PASS	SU-26 B,26
37	42	22	118	PASS	SU-26 B,26
38	27	7	76	PASS	SU-26 B,26

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	30	10	84	PASS	SU-26 B,26
40	19	-1	53	PASS	SU-26 B,26
41	22	2	62	PASS	SU-26 B,26
42	24	4	68	PASS	SU-26 B,26
43	27	7	76	PASS	SU-26 B,26
44	27	7	76	PASS	SU-26 B,26
45	37	17	104	PASS	SU-26 B,26
46	24	4	68	PASS	SU-26 B,26
47	33	13	93	PASS	SU-26 B,26
48	30	10	84	PASS	SU-26 B,26
49	19	-1	53	PASS	SU-26 B,26
50	22	2	62	PASS	SU-26 B,26
51	36	16	101	PASS	SU-26 B,26
52	23	3	65	PASS	SU-26 B,26
53	37	17	104	PASS	SU-26 B,26
54	43	23	121	PASS	SU-26 B,26
55	39	19	110	PASS	SU-26 B,26
56	37	17	104	PASS	SU-26 B,26
57	36	16	101	PASS	SU-26 B,26
58	23	3	65	PASS	SU-26 B,26
59	24	4	68	PASS	SU-26 B,26
60	35	15	99	PASS	SU-26 B,26
61	25	5	70	PASS	SU-26 B,26
62	43	23	121	PASS	SU-26 B,26
63	30	10	84	PASS	SU-26 B,26
64	20	0	56	PASS	SU-26 B,26
65	13	-7	37	PASS	SU-26 B,26
66	17	-3	48	PASS	SU-26 B,26
67	11	-9	31	PASS	SU-26 B,26
68	19	-1	53	PASS	SU-26 B,26
69	12	-8	34	PASS	SU-26 B,26
70	8	-12	23	PASS	SU-26 B,26
71	35	15	99	PASS	SU-26 B,26
72	40	20	113	PASS	SU-26 B,26
73	29	9	82	PASS	SU-26 B,26
74	25	5	70	PASS	SU-26 B,26
75	34	14	96	PASS	SU-26 B,26
76	43	23	121	PASS	SU-26 B,26

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	29	9	82	PASS	SU-26 B,26
78	29	9	82	PASS	SU-26 B,26
79	29	9	82	PASS	SU-26 B,26
80	18	-2	51	PASS	SU-26 B,26
81	35	15	99	PASS	SU-26 B,26
82	34	14	96	PASS	SU-26 B,26

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	35	15	99	PASS	SU-27 C,27
2	35	15	99	PASS	SU-27 C,27
3	35	15	99	PASS	SU-27 C,27
4	23	3	65	PASS	SU-27 C,27
5	27	7	76	PASS	SU-27 C,27
6	17	-3	48	PASS	SU-27 C,27
7	11	-9	31	PASS	SU-27 C,27
8	7	-13	20	PASS	SU-27 C,27
9	14	-6	39	PASS	SU-27 C,27
10	40	20	113	PASS	SU-27 C,27
11	40	20	113	PASS	SU-27 C,27
12	43	23	121	PASS	SU-27 C,27
13	39	19	110	PASS	SU-27 C,27
14	38	18	107	PASS	SU-27 C,27
15	41	21	115	PASS	SU-27 C,27
16	43	23	121	PASS	SU-27 C,27
17	33	13	93	PASS	SU-27 C,27
18	31	11	87	PASS	SU-27 C,27
19	36	16	101	PASS	SU-27 C,27
20	41	21	115	PASS	SU-27 C,27
21	33	13	93	PASS	SU-27 C,27
22	39	19	110	PASS	SU-27 C,27
23	38	18	107	PASS	SU-27 C,27
24	35	15	99	PASS	SU-27 C,27
25	32	12	90	PASS	SU-27 C,27
26	41	21	115	PASS	SU-27 C,27
27	26	6	73	PASS	SU-27 C,27
28	27	7	76	PASS	SU-27 C,27
29	28	8	79	PASS	SU-27 C,27
30	30	10	84	PASS	SU-27 C,27
31	31	11	87	PASS	SU-27 C,27
32	20	0	56	PASS	SU-27 C,27
33	25	5	70	PASS	SU-27 C,27
34	16	-4	45	PASS	SU-27 C,27
35	31	11	87	PASS	SU-27 C,27
36	30	10	84	PASS	SU-27 C,27
37	7	-13	20	PASS	SU-27 C,27
38	40	20	113	PASS	SU-27 C,27

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	35	15	99	PASS	SU-27 C,27
40	43	23	121	PASS	SU-27 C,27
41	29	9	82	PASS	SU-27 C,27
42	31	11	87	PASS	SU-27 C,27
43	20	0	56	PASS	SU-27 C,27
44	25	5	70	PASS	SU-27 C,27
45	36	16	101	PASS	SU-27 C,27
46	23	3	65	PASS	SU-27 C,27
47	15	-5	42	PASS	SU-27 C,27
48	21	1	59	PASS	SU-27 C,27
49	22	2	62	PASS	SU-27 C,27
50	35	15	99	PASS	SU-27 C,27
51	15	-5	42	PASS	SU-27 C,27
52	33	13	93	PASS	SU-27 C,27
53	42	22	118	PASS	SU-27 C,27
54	27	7	76	PASS	SU-27 C,27
55	38	18	107	PASS	SU-27 C,27
56	36	16	101	PASS	SU-27 C,27
57	23	3	65	PASS	SU-27 C,27
58	15	-5	42	PASS	SU-27 C,27
59	43	23	121	PASS	SU-27 C,27
60	42	22	118	PASS	SU-27 C,27
61	5	-15	14	PASS	SU-27 C,27
62	8	-12	23	PASS	SU-27 C,27
63	6	-14	17	PASS	SU-27 C,27
64	37	17	104	PASS	SU-27 C,27
65	24	4	68	PASS	SU-27 C,27
66	16	-4	45	PASS	SU-27 C,27
67	32	12	90	PASS	SU-27 C,27
68	21	1	59	PASS	SU-27 C,27
69	14	-6	39	PASS	SU-27 C,27
70	31	11	87	PASS	SU-27 C,27
71	30	10	84	PASS	SU-27 C,27
72	30	10	84	PASS	SU-27 C,27
73	29	9	82	PASS	SU-27 C,27
74	30	10	84	PASS	SU-27 C,27
75	31	11	87	PASS	SU-27 C,27
76	39	19	110	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	28	8	79	PASS	SU-27 C,27
78	38	18	107	PASS	SU-27 C,27
79	34	14	96	PASS	SU-27 C,27
80	34	14	96	PASS	SU-27 C,27
81	22	2	62	PASS	SU-27 C,27
82	15	-5	42	PASS	SU-27 C,27
83	41	21	115	PASS	SU-27 C,27
84	26	6	73	PASS	SU-27 C,27
85	37	17	104	PASS	SU-27 C,27
86	37	17	104	PASS	SU-27 C,27
87	36	16	101	PASS	SU-27 C,27
88	24	4	68	PASS	SU-27 C,27
89	26	6	73	PASS	SU-27 C,27
90	29	9	82	PASS	SU-27 C,27
91	38	18	107	PASS	SU-27 C,27
92	32	12	90	PASS	SU-27 C,27
93	34	14	96	PASS	SU-27 C,27
94	40	20	113	PASS	SU-27 C,27
95	26	6	73	PASS	SU-27 C,27
96	17	-3	48	PASS	SU-27 C,27
97	33	13	93	PASS	SU-27 C,27
98	40	20	113	PASS	SU-27 C,27
99	37	17	104	PASS	SU-27 C,27
100	22	2	62	PASS	SU-27 C,27
101	24	4	68	PASS	SU-27 C,27
102	39	19	110	PASS	SU-27 C,27
103	34	14	96	PASS	SU-27 C,27
104	37	17	104	PASS	SU-27 C,27
105	37	17	104	PASS	SU-27 C,27
106	33	13	93	PASS	SU-27 C,27
107	22	2	62	PASS	SU-27 C,27
108	14	-6	39	PASS	SU-27 C,27
109	29	9	82	PASS	SU-27 C,27
110	27	7	76	PASS	SU-27 C,27
111	27	7	76	PASS	SU-27 C,27
112	25	5	70	PASS	SU-27 C,27
113	27	7	76	PASS	SU-27 C,27
114	37	17	104	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	27	7	76	PASS	SU-27 C,27
116	40	20	113	PASS	SU-27 C,27
117	40	20	113	PASS	SU-27 C,27
118	37	17	104	PASS	SU-27 C,27
119	33	13	93	PASS	SU-27 C,27
120	33	13	93	PASS	SU-27 C,27
121	22	2	62	PASS	SU-27 C,27
122	14	-6	39	PASS	SU-27 C,27
123	9	-11	25	PASS	SU-27 C,27
124	29	9	82	PASS	SU-27 C,27
125	19	-1	53	PASS	SU-27 C,27
126	35	15	99	PASS	SU-27 C,27
127	33	13	93	PASS	SU-27 C,27
128	25	5	70	PASS	SU-27 C,27
129	33	13	93	PASS	SU-27 C,27
130	35	15	99	PASS	SU-27 C,27
131	42	22	118	PASS	SU-27 C,27
132	29	9	82	PASS	SU-27 C,27
133	30	10	84	PASS	SU-27 C,27
134	39	19	110	PASS	SU-27 C,27
135	34	14	96	PASS	SU-27 C,27
136	42	22	118	PASS	SU-27 C,27
137	41	21	115	PASS	SU-27 C,27
138	41	21	115	PASS	SU-27 C,27
139	25	5	70	PASS	SU-27 C,27
140	25	5	70	PASS	SU-27 C,27
141	40	20	113	PASS	SU-27 C,27
142	38	18	107	PASS	SU-27 C,27
143	43	23	121	PASS	SU-27 C,27
144	38	18	107	PASS	SU-27 C,27
145	33	13	93	PASS	SU-27 C,27
146	33	13	93	PASS	SU-27 C,27
147	40	20	113	PASS	SU-27 C,27
148	26	6	73	PASS	SU-27 C,27
149	17	-3	48	PASS	SU-27 C,27
150	22	2	62	PASS	SU-27 C,27
151	25	5	70	PASS	SU-27 C,27
152	34	14	96	PASS	SU-27 C,27

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	22	2	62	PASS	SU-27 C,27
154	26	6	73	PASS	SU-27 C,27
155	36	16	101	PASS	SU-27 C,27
156	38	18	107	PASS	SU-27 C,27
157	41	21	115	PASS	SU-27 C,27
158	43	23	121	PASS	SU-27 C,27
159	34	14	96	PASS	SU-27 C,27
160	22	2	62	PASS	SU-27 C,27
161	22	2	62	PASS	SU-27 C,27
162	29	9	82	PASS	SU-27 C,27
163	18	-2	51	PASS	SU-27 C,27
164	41	21	115	PASS	SU-27 C,27
165	27	7	76	PASS	SU-27 C,27
166	18	-2	51	PASS	SU-27 C,27
167	21	1	59	PASS	SU-27 C,27
168	14	-6	39	PASS	SU-27 C,27
169	27	7	76	PASS	SU-27 C,27
170	35	15	99	PASS	SU-27 C,27
171	34	14	96	PASS	SU-27 C,27
172	38	18	107	PASS	SU-27 C,27
173	34	14	96	PASS	SU-27 C,27
174	32	12	90	PASS	SU-27 C,27
175	21	1	59	PASS	SU-27 C,27
176	14	-6	39	PASS	SU-27 C,27
177	18	-2	51	PASS	SU-27 C,27
178	29	9	82	PASS	SU-27 C,27
179	19	-1	53	PASS	SU-27 C,27
180	23	3	65	PASS	SU-27 C,27
181	15	-5	42	PASS	SU-27 C,27
182	19	-1	53	PASS	SU-27 C,27
183	41	21	115	PASS	SU-27 C,27
184	35	15	99	PASS	SU-27 C,27
185	23	3	65	PASS	SU-27 C,27
186	24	4	68	PASS	SU-27 C,27
187	15	-5	42	PASS	SU-27 C,27
188	21	1	59	PASS	SU-27 C,27

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
189	14	-6	39	PASS	SU-27 C,27
190	27	7	76	PASS	SU-27 C,27
191	26	6	73	PASS	SU-27 C,27

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	12	-8	34	PASS	SU-28 D,28
2	20	0	56	PASS	SU-28 D,28
3	23	3	65	PASS	SU-28 D,28
4	15	-5	42	PASS	SU-28 D,28
5	20	0	56	PASS	SU-28 D,28
6	23	3	65	PASS	SU-28 D,28
7	39	19	110	PASS	SU-28 D,28
8	38	18	107	PASS	SU-28 D,28
9	37	17	104	PASS	SU-28 D,28
10	30	10	84	PASS	SU-28 D,28
11	43	23	121	PASS	SU-28 D,28
12	37	17	104	PASS	SU-28 D,28
13	34	14	96	PASS	SU-28 D,28
14	22	2	62	PASS	SU-28 D,28
15	23	3	65	PASS	SU-28 D,28
16	24	4	68	PASS	SU-28 D,28
17	15	-5	42	PASS	SU-28 D,28
18	10	-10	28	PASS	SU-28 D,28
19	29	9	82	PASS	SU-28 D,28
20	28	8	79	PASS	SU-28 D,28
21	28	8	79	PASS	SU-28 D,28
22	18	-2	51	PASS	SU-28 D,28
23	33	13	93	PASS	SU-28 D,28
24	30	10	84	PASS	SU-28 D,28
25	38	18	107	PASS	SU-28 D,28
26	25	5	70	PASS	SU-28 D,28
27	43	23	121	PASS	SU-28 D,28
28	28	8	79	PASS	SU-28 D,28
29	28	8	79	PASS	SU-28 D,28
30	18	-2	51	PASS	SU-28 D,28
31	12	-8	34	PASS	SU-28 D,28
32	30	10	84	PASS	SU-28 D,28
33	20	0	56	PASS	SU-28 D,28
34	23	3	65	PASS	SU-28 D,28
35	15	-5	42	PASS	SU-28 D,28
36	30	10	84	PASS	SU-28 D,28
37	20	0	56	PASS	SU-28 D,28
38	13	-7	37	PASS	SU-28 D,28

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	17	-3	48	PASS	SU-28 D,28
40	23	3	65	PASS	SU-28 D,28
41	17	-3	48	PASS	SU-28 D,28
42	26	6	73	PASS	SU-28 D,28
43	27	7	76	PASS	SU-28 D,28
44	26	6	73	PASS	SU-28 D,28
45	39	19	110	PASS	SU-28 D,28
46	29	9	82	PASS	SU-28 D,28
47	30	10	84	PASS	SU-28 D,28
48	39	19	110	PASS	SU-28 D,28
49	34	14	96	PASS	SU-28 D,28
50	42	22	118	PASS	SU-28 D,28
51	37	17	104	PASS	SU-28 D,28
52	24	4	68	PASS	SU-28 D,28
53	26	6	73	PASS	SU-28 D,28
54	26	6	73	PASS	SU-28 D,28
55	17	-3	48	PASS	SU-28 D,28
56	11	-9	31	PASS	SU-28 D,28
57	7	-13	20	PASS	SU-28 D,28
58	5	-15	14	PASS	SU-28 D,28
59	3	-17	8	PASS	SU-28 D,28
60	11	-9	31	PASS	SU-28 D,28
61	16	-4	45	PASS	SU-28 D,28
62	22	2	62	PASS	SU-28 D,28
63	26	6	73	PASS	SU-28 D,28
64	17	-3	48	PASS	SU-28 D,28
65	11	-9	31	PASS	SU-28 D,28
66	7	-13	20	PASS	SU-28 D,28
67	36	16	101	PASS	SU-28 D,28
68	23	3	65	PASS	SU-28 D,28
69	25	5	70	PASS	SU-28 D,28
70	16	-4	45	PASS	SU-28 D,28
71	11	-9	31	PASS	SU-28 D,28
72	18	-2	51	PASS	SU-28 D,28
73	16	-4	45	PASS	SU-28 D,28
74	22	2	62	PASS	SU-28 D,28
75	43	23	121	PASS	SU-28 D,28
76	39	19	110	PASS	SU-28 D,28

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	26	6	73	PASS	SU-28 D,28
78	17	-3	48	PASS	SU-28 D,28
79	42	22	118	PASS	SU-28 D,28
80	32	12	90	PASS	SU-28 D,28
81	25	5	70	PASS	SU-28 D,28
82	43	23	121	PASS	SU-28 D,28
83	29	9	82	PASS	SU-28 D,28
84	28	8	79	PASS	SU-28 D,28
85	18	-2	51	PASS	SU-28 D,28
86	23	3	65	PASS	SU-28 D,28
87	15	-5	42	PASS	SU-28 D,28
88	20	0	56	PASS	SU-28 D,28
89	24	4	68	PASS	SU-28 D,28
90	16	-4	45	PASS	SU-28 D,28
91	22	2	62	PASS	SU-28 D,28
92	38	18	107	PASS	SU-28 D,28
93	35	15	99	PASS	SU-28 D,28
94	43	23	121	PASS	SU-28 D,28
95	30	10	84	PASS	SU-28 D,28
96	19	-1	53	PASS	SU-28 D,28
97	23	3	65	PASS	SU-28 D,28
98	27	7	76	PASS	SU-28 D,28
99	22	2	62	PASS	SU-28 D,28
100	33	13	93	PASS	SU-28 D,28
101	40	20	113	PASS	SU-28 D,28
102	29	9	82	PASS	SU-28 D,28
103	28	8	79	PASS	SU-28 D,28
104	25	5	70	PASS	SU-28 D,28
105	28	8	79	PASS	SU-28 D,28
106	18	-2	51	PASS	SU-28 D,28
107	12	-8	34	PASS	SU-28 D,28
108	17	-3	48	PASS	SU-28 D,28
109	20	0	56	PASS	SU-28 D,28
110	13	-7	37	PASS	SU-28 D,28

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
111	41	21	115	PASS	SU-28 D,28
112	27	7	76	PASS	SU-28 D,28
113	28	8	79	PASS	SU-28 D,28

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	12	-8	34	PASS	SU-29 E-29
2	20	0	56	PASS	SU-29 E-29
3	23	3	65	PASS	SU-29 E-29
4	15	-5	42	PASS	SU-29 E-29
5	20	0	56	PASS	SU-29 E-29
6	23	3	65	PASS	SU-29 E-29
7	39	19	110	PASS	SU-29 E-29
8	38	18	107	PASS	SU-29 E-29
9	37	17	104	PASS	SU-29 E-29
10	30	10	84	PASS	SU-29 E-29
11	43	23	121	PASS	SU-29 E-29
12	37	17	104	PASS	SU-29 E-29
13	34	14	96	PASS	SU-29 E-29
14	22	2	62	PASS	SU-29 E-29
15	23	3	65	PASS	SU-29 E-29
16	24	4	68	PASS	SU-29 E-29
17	15	-5	42	PASS	SU-29 E-29
18	10	-10	28	PASS	SU-29 E-29
19	29	9	82	PASS	SU-29 E-29
20	28	8	79	PASS	SU-29 E-29
21	28	8	79	PASS	SU-29 E-29
22	18	-2	51	PASS	SU-29 E-29
23	33	13	93	PASS	SU-29 E-29
24	30	10	84	PASS	SU-29 E-29
25	38	18	107	PASS	SU-29 E-29
26	25	5	70	PASS	SU-29 E-29
27	43	23	121	PASS	SU-29 E-29
28	28	8	79	PASS	SU-29 E-29
29	28	8	79	PASS	SU-29 E-29
30	18	-2	51	PASS	SU-29 E-29
31	12	-8	34	PASS	SU-29 E-29
32	30	10	84	PASS	SU-29 E-29
33	20	0	56	PASS	SU-29 E-29
34	23	3	65	PASS	SU-29 E-29
35	15	-5	42	PASS	SU-29 E-29
36	30	10	84	PASS	SU-29 E-29
37	20	0	56	PASS	SU-29 E-29
38	13	-7	37	PASS	SU-29 E-29

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	17	-3	48	PASS	SU-29 E-29
40	23	3	65	PASS	SU-29 E-29
41	17	-3	48	PASS	SU-29 E-29
42	26	6	73	PASS	SU-29 E-29
43	27	7	76	PASS	SU-29 E-29
44	26	6	73	PASS	SU-29 E-29
45	39	19	110	PASS	SU-29 E-29
46	29	9	82	PASS	SU-29 E-29
47	30	10	84	PASS	SU-29 E-29
48	39	19	110	PASS	SU-29 E-29
49	34	14	96	PASS	SU-29 E-29
50	42	22	118	PASS	SU-29 E-29
51	37	17	104	PASS	SU-29 E-29
52	24	4	68	PASS	SU-29 E-29
53	26	6	73	PASS	SU-29 E-29
54	26	6	73	PASS	SU-29 E-29
55	17	-3	48	PASS	SU-29 E-29
56	11	-9	31	PASS	SU-29 E-29
57	7	-13	20	PASS	SU-29 E-29
58	5	-15	14	PASS	SU-29 E-29
59	3	-17	8	PASS	SU-29 E-29
60	11	-9	31	PASS	SU-29 E-29
61	16	-4	45	PASS	SU-29 E-29
62	22	2	62	PASS	SU-29 E-29
63	26	6	73	PASS	SU-29 E-29
64	17	-3	48	PASS	SU-29 E-29
65	11	-9	31	PASS	SU-29 E-29
66	7	-13	20	PASS	SU-29 E-29
67	36	16	101	PASS	SU-29 E-29
68	23	3	65	PASS	SU-29 E-29
69	25	5	70	PASS	SU-29 E-29
70	16	-4	45	PASS	SU-29 E-29
71	11	-9	31	PASS	SU-29 E-29
72	18	-2	51	PASS	SU-29 E-29
73	16	-4	45	PASS	SU-29 E-29
74	22	2	62	PASS	SU-29 E-29
75	43	23	121	PASS	SU-29 E-29
76	39	19	110	PASS	SU-29 E-29

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	26	6	73	PASS	SU-29 E-29
78	17	-3	48	PASS	SU-29 E-29
79	39	19	110	PASS	SU-29 E-29
80	32	12	90	PASS	SU-29 E-29
81	25	5	70	PASS	SU-29 E-29
82	43	23	121	PASS	SU-29 E-29
83	29	9	82	PASS	SU-29 E-29
84	28	8	79	PASS	SU-29 E-29
85	18	-2	51	PASS	SU-29 E-29
86	23	3	65	PASS	SU-29 E-29
87	15	-5	42	PASS	SU-29 E-29
88	20	0	56	PASS	SU-29 E-29
89	24	4	68	PASS	SU-29 E-29
90	16	-4	45	PASS	SU-29 E-29
91	22	2	62	PASS	SU-29 E-29
92	38	18	107	PASS	SU-29 E-29
93	35	15	99	PASS	SU-29 E-29
94	43	23	121	PASS	SU-29 E-29
95	30	10	84	PASS	SU-29 E-29
96	19	-1	53	PASS	SU-29 E-29
97	23	3	65	PASS	SU-29 E-29
98	27	7	76	PASS	SU-29 E-29
99	15	-5	42	PASS	SU-29 E-29
100	33	13	93	PASS	SU-29 E-29
101	43	23	121	PASS	SU-29 E-29
102	29	9	82	PASS	SU-29 E-29
103	28	8	79	PASS	SU-29 E-29
104	25	5	70	PASS	SU-29 E-29
105	28	8	79	PASS	SU-29 E-29
106	18	-2	51	PASS	SU-29 E-29
107	12	-8	34	PASS	SU-29 E-29
108	17	-3	48	PASS	SU-29 E-29
109	20	0	56	PASS	SU-29 E-29
110	13	-7	37	PASS	SU-29 E-29

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Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
111	41	21	115	PASS	SU-29 E-29
112	27	7	76	PASS	SU-29 E-29
113	28	8	79	PASS	SU-29 E-29

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = 94
Fail = 0
0.0%

Isotope Th-230 **Fail = 123 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	40	20	113	PASS	SU-30 D,30
2	37	17	104	PASS	SU-30 D,30
3	34	14	96	PASS	SU-30 D,30
4	40	20	113	PASS	SU-30 D,30
5	38	18	107	PASS	SU-30 D,30
6	43	23	121	PASS	SU-30 D,30
7	38	18	107	PASS	SU-30 D,30
8	37	17	104	PASS	SU-30 D,30
9	33	13	93	PASS	SU-30 D,30
10	22	2	62	PASS	SU-30 D,30
11	32	12	90	PASS	SU-30 D,30
12	43	23	121	PASS	SU-30 D,30
13	37	17	104	PASS	SU-30 D,30
14	33	13	93	PASS	SU-30 D,30
15	22	2	62	PASS	SU-30 D,30
16	24	4	68	PASS	SU-30 D,30
17	35	15	99	PASS	SU-30 D,30
18	35	15	99	PASS	SU-30 D,30
19	23	3	65	PASS	SU-30 D,30
20	15	-5	42	PASS	SU-30 D,30
21	18	-2	51	PASS	SU-30 D,30
22	34	14	96	PASS	SU-30 D,30
23	22	2	62	PASS	SU-30 D,30
24	14	-6	39	PASS	SU-30 D,30
25	9	-11	25	PASS	SU-30 D,30
26	6	-14	17	PASS	SU-30 D,30
27	4	-16	11	PASS	SU-30 D,30
28	11	-9	31	PASS	SU-30 D,30
29	17	-3	48	PASS	SU-30 D,30
30	11	-9	31	PASS	SU-30 D,30
31	7	-13	20	PASS	SU-30 D,30
32	4	-16	11	PASS	SU-30 D,30
33	3	-17	8	PASS	SU-30 D,30
34	22	2	62	PASS	SU-30 D,30
35	15	-5	42	PASS	SU-30 D,30
36	40	20	113	PASS	SU-30 D,30
37	40	20	113	PASS	SU-30 D,30
38	30	10	84	PASS	SU-30 D,30

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Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **94**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	30	10	84	PASS	SU-30 D,30
40	29	9	82	PASS	SU-30 D,30
41	19	-1	53	PASS	SU-30 D,30
42	33	13	93	PASS	SU-30 D,30
43	30	10	84	PASS	SU-30 D,30
44	39	19	110	PASS	SU-30 D,30
45	32	12	90	PASS	SU-30 D,30
46	23	3	65	PASS	SU-30 D,30
47	25	5	70	PASS	SU-30 D,30
48	43	23	121	PASS	SU-30 D,30
49	30	10	84	PASS	SU-30 D,30
50	39	19	110	PASS	SU-30 D,30
51	37	17	104	PASS	SU-30 D,30
52	27	7	76	PASS	SU-30 D,30
53	36	16	101	PASS	SU-30 D,30
54	27	7	76	PASS	SU-30 D,30
55	39	19	110	PASS	SU-30 D,30
56	32	12	90	PASS	SU-30 D,30
57	41	21	115	PASS	SU-30 D,30
58	27	7	76	PASS	SU-30 D,30
59	18	-2	51	PASS	SU-30 D,30
60	30	10	84	PASS	SU-30 D,30
61	19	-1	53	PASS	SU-30 D,30
62	13	-7	37	PASS	SU-30 D,30
63	17	-3	48	PASS	SU-30 D,30
64	22	2	62	PASS	SU-30 D,30
65	14	-6	39	PASS	SU-30 D,30
66	9	-11	25	PASS	SU-30 D,30
67	6	-14	17	PASS	SU-30 D,30
68	23	3	65	PASS	SU-30 D,30
69	15	-5	42	PASS	SU-30 D,30
70	18	-2	51	PASS	SU-30 D,30
71	12	-8	34	PASS	SU-30 D,30
72	8	-12	23	PASS	SU-30 D,30
73	23	3	65	PASS	SU-30 D,30
74	15	-5	42	PASS	SU-30 D,30
75	21	1	59	PASS	SU-30 D,30
76	15	-5	42	PASS	SU-30 D,30

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 356 \text{ dpm/100cm}^2$$

Pass = **94**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	23	3	65	PASS	SU-30 D,30
78	35	15	99	PASS	SU-30 D,30
79	23	3	65	PASS	SU-30 D,30
80	43	23	121	PASS	SU-30 D,30
81	30	10	84	PASS	SU-30 D,30
82	28	8	79	PASS	SU-30 D,30
83	18	-2	51	PASS	SU-30 D,30
84	42	22	118	PASS	SU-30 D,30
85	27	7	76	PASS	SU-30 D,30
86	36	16	101	PASS	SU-30 D,30
87	15	-5	42	PASS	SU-30 D,30
88	43	23	121	PASS	SU-30 D,30
89	21	1	59	PASS	SU-30 D,30
90	43	23	121	PASS	SU-30 D,30
91	37	17	104	PASS	SU-30 D,30
92	35	15	99	PASS	SU-30 D,30
93	32	12	90	PASS	SU-30 D,30
94	21	1	59	PASS	SU-30 D,30

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

Appendix C. Beta Scan Data

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	741	-361	2,283	PASS	SU-1 A,1
2	690	-412	2,126	PASS	SU-1 A,1
3	665	-437	2,049	PASS	SU-1 A,1
4	692	-410	2,132	PASS	SU-1 A,1
5	769	-333	2,369	PASS	SU-1 A,1
6	921	-181	2,838	PASS	SU-1 A,1
7	843	-259	2,597	PASS	SU-1 A,1
8	837	-265	2,579	PASS	SU-1 A,1
9	800	-302	2,465	PASS	SU-1 A,1
10	781	-321	2,406	PASS	SU-1 A,1
11	774	-328	2,385	PASS	SU-1 A,1
12	762	-340	2,348	PASS	SU-1 A,1
13	912	-190	2,810	PASS	SU-1 A,1
14	948	-154	2,921	PASS	SU-1 A,1
15	977	-125	3,010	PASS	SU-1 A,1
16	962	-140	2,964	PASS	SU-1 A,1
17	929	-173	2,862	PASS	SU-1 A,1
18	874	-228	2,693	PASS	SU-1 A,1
19	1,006	-96	3,099	PASS	SU-1 A,1
20	842	-260	2,594	PASS	SU-1 A,1
21	840	-262	2,588	PASS	SU-1 A,1
22	937	-165	2,887	PASS	SU-1 A,1
23	903	-199	2,782	PASS	SU-1 A,1
24	860	-242	2,650	PASS	SU-1 A,1
25	903	-199	2,782	PASS	SU-1 A,1
26	828	-274	2,551	PASS	SU-1 A,1
27	885	-217	2,727	PASS	SU-1 A,1
28	920	-182	2,834	PASS	SU-1 A,1
29	971	-131	2,992	PASS	SU-1 A,1
30	993	-109	3,059	PASS	SU-1 A,1
31	929	-173	2,862	PASS	SU-1 A,1
32	881	-221	2,714	PASS	SU-1 A,1
33	894	-208	2,754	PASS	SU-1 A,1
34	891	-211	2,745	PASS	SU-1 A,1
35	873	-229	2,690	PASS	SU-1 A,1
36	907	-195	2,794	PASS	SU-1 A,1
37	956	-146	2,945	PASS	SU-1 A,1
38	998	-104	3,075	PASS	SU-1 A,1

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1,016	-86	3,130	PASS	SU-1 A,1
40	977	-125	3,010	PASS	SU-1 A,1
41	847	-255	2,610	PASS	SU-1 A,1
42	874	-228	2,693	PASS	SU-1 A,1
43	891	-211	2,745	PASS	SU-1 A,1
44	822	-280	2,533	PASS	SU-1 A,1
45	958	-144	2,952	PASS	SU-1 A,1
46	1,008	-94	3,106	PASS	SU-1 A,1
47	1,007	-95	3,103	PASS	SU-1 A,1
48	936	-166	2,884	PASS	SU-1 A,1
49	839	-263	2,585	PASS	SU-1 A,1
50	822	-280	2,533	PASS	SU-1 A,1
51	883	-219	2,720	PASS	SU-1 A,1
52	890	-212	2,742	PASS	SU-1 A,1
53	882	-220	2,717	PASS	SU-1 A,1
54	937	-165	2,887	PASS	SU-1 A,1
55	829	-273	2,554	PASS	SU-1 A,1
56	848	-254	2,613	PASS	SU-1 A,1
57	826	-276	2,545	PASS	SU-1 A,1
58	902	-200	2,779	PASS	SU-1 A,1
59	843	-259	2,597	PASS	SU-1 A,1
60	842	-260	2,594	PASS	SU-1 A,1
61	878	-224	2,705	PASS	SU-1 A,1
62	756	-346	2,329	PASS	SU-1 A,1
63	814	-288	2,508	PASS	SU-1 A,1
64	876	-226	2,699	PASS	SU-1 A,1
65	866	-236	2,668	PASS	SU-1 A,1
66	900	-202	2,773	PASS	SU-1 A,1
67	835	-267	2,573	PASS	SU-1 A,1
68	882	-220	2,717	PASS	SU-1 A,1
69	809	-293	2,492	PASS	SU-1 A,1
70	827	-275	2,548	PASS	SU-1 A,1
71	890	-212	2,742	PASS	SU-1 A,1
72	881	-221	2,714	PASS	SU-1 A,1
73	806	-296	2,483	PASS	SU-1 A,1
74	777	-325	2,394	PASS	SU-1 A,1
75	797	-305	2,456	PASS	SU-1 A,1
76	745	-357	2,295	PASS	SU-1 A,1

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	843	-259	2,597	PASS	SU-1 A,1
78	842	-260	2,594	PASS	SU-1 A,1
79	900	-202	2,773	PASS	SU-1 A,1
80	843	-259	2,597	PASS	SU-1 A,1
81	876	-226	2,699	PASS	SU-1 A,1
82	876	-226	2,699	PASS	SU-1 A,1
83	830	-272	2,557	PASS	SU-1 A,1
84	991	-111	3,053	PASS	SU-1 A,1
85	889	-213	2,739	PASS	SU-1 A,1
86	887	-215	2,733	PASS	SU-1 A,1
87	927	-175	2,856	PASS	SU-1 A,1
88	953	-149	2,936	PASS	SU-1 A,1
89	922	-180	2,841	PASS	SU-1 A,1
90	1,027	-75	3,164	PASS	SU-1 A,1
91	1,000	-102	3,081	PASS	SU-1 A,1
92	992	-110	3,056	PASS	SU-1 A,1
93	878	-224	2,705	PASS	SU-1 A,1
94	926	-176	2,853	PASS	SU-1 A,1
95	983	-119	3,029	PASS	SU-1 A,1
96	978	-124	3,013	PASS	SU-1 A,1
97	987	-115	3,041	PASS	SU-1 A,1
98	1,068	-34	3,290	PASS	SU-1 A,1
99	964	-138	2,970	PASS	SU-1 A,1
100	993	-109	3,059	PASS	SU-1 A,1
101	1,000	-102	3,081	PASS	SU-1 A,1
102	901	-201	2,776	PASS	SU-1 A,1
103	849	-253	2,616	PASS	SU-1 A,1
104	869	-233	2,677	PASS	SU-1 A,1
105	865	-237	2,665	PASS	SU-1 A,1
106	944	-158	2,908	PASS	SU-1 A,1
107	899	-203	2,770	PASS	SU-1 A,1
108	880	-222	2,711	PASS	SU-1 A,1
109	900	-202	2,773	PASS	SU-1 A,1
110	865	-237	2,665	PASS	SU-1 A,1
111	761	-341	2,345	PASS	SU-1 A,1
112	889	-213	2,739	PASS	SU-1 A,1
113	803	-299	2,474	PASS	SU-1 A,1
114	776	-326	2,391	PASS	SU-1 A,1

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	832	-270	2,563	PASS	SU-1 A,1
116	774	-328	2,385	PASS	SU-1 A,1
117	740	-362	2,280	PASS	SU-1 A,1
118	812	-290	2,502	PASS	SU-1 A,1
119	747	-355	2,301	PASS	SU-1 A,1
120	836	-266	2,576	PASS	SU-1 A,1
121	800	-302	2,465	PASS	SU-1 A,1
122	815	-287	2,511	PASS	SU-1 A,1
123	871	-231	2,684	PASS	SU-1 A,1
124	883	-219	2,720	PASS	SU-1 A,1
125	1,003	-99	3,090	PASS	SU-1 A,1
126	925	-177	2,850	PASS	SU-1 A,1
127	790	-312	2,434	PASS	SU-1 A,1
128	782	-320	2,409	PASS	SU-1 A,1
129	789	-313	2,431	PASS	SU-1 A,1
130	852	-250	2,625	PASS	SU-1 A,1
131	808	-294	2,489	PASS	SU-1 A,1
132	754	-348	2,323	PASS	SU-1 A,1
133	843	-259	2,597	PASS	SU-1 A,1
134	895	-207	2,757	PASS	SU-1 A,1
135	950	-152	2,927	PASS	SU-1 A,1
136	979	-123	3,016	PASS	SU-1 A,1
137	1,065	-37	3,281	PASS	SU-1 A,1
138	909	-193	2,801	PASS	SU-1 A,1
139	891	-211	2,745	PASS	SU-1 A,1
140	784	-318	2,415	PASS	SU-1 A,1
141	787	-315	2,425	PASS	SU-1 A,1
142	873	-229	2,690	PASS	SU-1 A,1
143	798	-304	2,459	PASS	SU-1 A,1
144	765	-337	2,357	PASS	SU-1 A,1
145	925	-177	2,850	PASS	SU-1 A,1
146	903	-199	2,782	PASS	SU-1 A,1
147	869	-233	2,677	PASS	SU-1 A,1
148	791	-311	2,437	PASS	SU-1 A,1
149	851	-251	2,622	PASS	SU-1 A,1
150	840	-262	2,588	PASS	SU-1 A,1
151	958	-144	2,952	PASS	SU-1 A,1
152	893	-209	2,751	PASS	SU-1 A,1

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **189**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	971	-131	2,992	PASS	SU-1 A,1
154	903	-199	2,782	PASS	SU-1 A,1
155	970	-132	2,989	PASS	SU-1 A,1
156	1,011	-91	3,115	PASS	SU-1 A,1
157	915	-187	2,819	PASS	SU-1 A,1
158	821	-281	2,529	PASS	SU-1 A,1
159	1,005	-97	3,096	PASS	SU-1 A,1
160	1,013	-89	3,121	PASS	SU-1 A,1
161	944	-158	2,908	PASS	SU-1 A,1
162	992	-110	3,056	PASS	SU-1 A,1
163	956	-146	2,945	PASS	SU-1 A,1
164	926	-176	2,853	PASS	SU-1 A,1
165	812	-290	2,502	PASS	SU-1 A,1
166	816	-286	2,514	PASS	SU-1 A,1
167	853	-249	2,628	PASS	SU-1 A,1
168	764	-338	2,354	PASS	SU-1 A,1
169	797	-305	2,456	PASS	SU-1 A,1
170	847	-255	2,610	PASS	SU-1 A,1
171	841	-261	2,591	PASS	SU-1 A,1
172	849	-253	2,616	PASS	SU-1 A,1
173	850	-252	2,619	PASS	SU-1 A,1
174	799	-303	2,462	PASS	SU-1 A,1
175	822	-280	2,533	PASS	SU-1 A,1
176	840	-262	2,588	PASS	SU-1 A,1
177	812	-290	2,502	PASS	SU-1 A,1
178	729	-373	2,246	PASS	SU-1 A,1
179	757	-345	2,332	PASS	SU-1 A,1
180	792	-310	2,440	PASS	SU-1 A,1
181	829	-273	2,554	PASS	SU-1 A,1
182	824	-278	2,539	PASS	SU-1 A,1
183	848	-254	2,613	PASS	SU-1 A,1
184	932	-170	2,871	PASS	SU-1 A,1
185	760	-342	2,342	PASS	SU-1 A,1
186	738	-364	2,274	PASS	SU-1 A,1

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 189
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
187	847	-255	2,610	PASS	SU-1 A,1
188	849	-253	2,616	PASS	SU-1 A,1
189	856	-246	2,637	PASS	SU-1 A,1

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **149**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	875	-227	2,696	PASS	SU-2 B,2
2	840	-262	2,588	PASS	SU-2 B,2
3	895	-207	2,757	PASS	SU-2 B,2
4	897	-205	2,764	PASS	SU-2 B,2
5	733	-369	2,258	PASS	SU-2 B,2
6	733	-369	2,258	PASS	SU-2 B,2
7	723	-379	2,228	PASS	SU-2 B,2
8	742	-360	2,286	PASS	SU-2 B,2
9	740	-362	2,280	PASS	SU-2 B,2
10	720	-382	2,218	PASS	SU-2 B,2
11	700	-402	2,157	PASS	SU-2 B,2
12	765	-337	2,357	PASS	SU-2 B,2
13	810	-292	2,496	PASS	SU-2 B,2
14	943	-159	2,905	PASS	SU-2 B,2
15	813	-289	2,505	PASS	SU-2 B,2
16	851	-251	2,622	PASS	SU-2 B,2
17	902	-200	2,779	PASS	SU-2 B,2
18	814	-288	2,508	PASS	SU-2 B,2
19	790	-312	2,434	PASS	SU-2 B,2
20	878	-224	2,705	PASS	SU-2 B,2
21	945	-157	2,912	PASS	SU-2 B,2
22	869	-233	2,677	PASS	SU-2 B,2
23	873	-229	2,690	PASS	SU-2 B,2
24	792	-310	2,440	PASS	SU-2 B,2
25	812	-290	2,502	PASS	SU-2 B,2
26	887	-215	2,733	PASS	SU-2 B,2
27	815	-287	2,511	PASS	SU-2 B,2
28	804	-298	2,477	PASS	SU-2 B,2
29	861	-241	2,653	PASS	SU-2 B,2
30	900	-202	2,773	PASS	SU-2 B,2
31	945	-157	2,912	PASS	SU-2 B,2
32	976	-126	3,007	PASS	SU-2 B,2
33	943	-159	2,905	PASS	SU-2 B,2
34	893	-209	2,751	PASS	SU-2 B,2
35	894	-208	2,754	PASS	SU-2 B,2
36	1,050	-52	3,235	PASS	SU-2 B,2
37	1,133	31	3,491	PASS	SU-2 B,2
38	1,143	41	3,522	PASS	SU-2 B,2

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **149**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1,125	23	3,466	PASS	SU-2 B,2
40	1,000	-102	3,081	PASS	SU-2 B,2
41	1,121	19	3,454	PASS	SU-2 B,2
42	1,073	-29	3,306	PASS	SU-2 B,2
43	1,036	-66	3,192	PASS	SU-2 B,2
44	981	-121	3,022	PASS	SU-2 B,2
45	915	-187	2,819	PASS	SU-2 B,2
46	1,010	-92	3,112	PASS	SU-2 B,2
47	934	-168	2,878	PASS	SU-2 B,2
48	812	-290	2,502	PASS	SU-2 B,2
49	848	-254	2,613	PASS	SU-2 B,2
50	920	-182	2,834	PASS	SU-2 B,2
51	880	-222	2,711	PASS	SU-2 B,2
52	858	-244	2,643	PASS	SU-2 B,2
53	858	-244	2,643	PASS	SU-2 B,2
54	855	-247	2,634	PASS	SU-2 B,2
55	855	-247	2,634	PASS	SU-2 B,2
56	826	-276	2,545	PASS	SU-2 B,2
57	849	-253	2,616	PASS	SU-2 B,2
58	728	-374	2,243	PASS	SU-2 B,2
59	733	-369	2,258	PASS	SU-2 B,2
60	796	-306	2,452	PASS	SU-2 B,2
61	877	-225	2,702	PASS	SU-2 B,2
62	887	-215	2,733	PASS	SU-2 B,2
63	912	-190	2,810	PASS	SU-2 B,2
64	880	-222	2,711	PASS	SU-2 B,2
65	830	-272	2,557	PASS	SU-2 B,2
66	843	-259	2,597	PASS	SU-2 B,2
67	889	-213	2,739	PASS	SU-2 B,2
68	892	-210	2,748	PASS	SU-2 B,2
69	962	-140	2,964	PASS	SU-2 B,2
70	889	-213	2,739	PASS	SU-2 B,2
71	873	-229	2,690	PASS	SU-2 B,2
72	862	-240	2,656	PASS	SU-2 B,2
73	772	-330	2,379	PASS	SU-2 B,2
74	865	-237	2,665	PASS	SU-2 B,2
75	893	-209	2,751	PASS	SU-2 B,2
76	901	-201	2,776	PASS	SU-2 B,2

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **149**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	842	-260	2,594	PASS	SU-2 B,2
78	912	-190	2,810	PASS	SU-2 B,2
79	834	-268	2,570	PASS	SU-2 B,2
80	832	-270	2,563	PASS	SU-2 B,2
81	806	-296	2,483	PASS	SU-2 B,2
82	788	-314	2,428	PASS	SU-2 B,2
83	791	-311	2,437	PASS	SU-2 B,2
84	838	-264	2,582	PASS	SU-2 B,2
85	809	-293	2,492	PASS	SU-2 B,2
86	926	-176	2,853	PASS	SU-2 B,2
87	972	-130	2,995	PASS	SU-2 B,2
88	895	-207	2,757	PASS	SU-2 B,2
89	861	-241	2,653	PASS	SU-2 B,2
90	864	-238	2,662	PASS	SU-2 B,2
91	960	-142	2,958	PASS	SU-2 B,2
92	1,057	-45	3,257	PASS	SU-2 B,2
93	954	-148	2,939	PASS	SU-2 B,2
94	978	-124	3,013	PASS	SU-2 B,2
95	943	-159	2,905	PASS	SU-2 B,2
96	871	-231	2,684	PASS	SU-2 B,2
97	844	-258	2,600	PASS	SU-2 B,2
98	840	-262	2,588	PASS	SU-2 B,2
99	847	-255	2,610	PASS	SU-2 B,2
100	922	-180	2,841	PASS	SU-2 B,2
101	1,028	-74	3,167	PASS	SU-2 B,2
102	898	-204	2,767	PASS	SU-2 B,2
103	897	-205	2,764	PASS	SU-2 B,2
104	985	-117	3,035	PASS	SU-2 B,2
105	987	-115	3,041	PASS	SU-2 B,2
106	874	-228	2,693	PASS	SU-2 B,2
107	757	-345	2,332	PASS	SU-2 B,2
108	759	-343	2,338	PASS	SU-2 B,2
109	678	-424	2,089	PASS	SU-2 B,2
110	712	-390	2,194	PASS	SU-2 B,2
111	735	-367	2,265	PASS	SU-2 B,2
112	789	-313	2,431	PASS	SU-2 B,2
113	754	-348	2,323	PASS	SU-2 B,2
114	702	-400	2,163	PASS	SU-2 B,2

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
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Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **149**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	809	-293	2,492	PASS	SU-2 B,2
116	883	-219	2,720	PASS	SU-2 B,2
117	790	-312	2,434	PASS	SU-2 B,2
118	859	-243	2,647	PASS	SU-2 B,2
119	890	-212	2,742	PASS	SU-2 B,2
120	838	-264	2,582	PASS	SU-2 B,2
121	818	-284	2,520	PASS	SU-2 B,2
122	833	-269	2,566	PASS	SU-2 B,2
123	835	-267	2,573	PASS	SU-2 B,2
124	920	-182	2,834	PASS	SU-2 B,2
125	968	-134	2,982	PASS	SU-2 B,2
126	840	-262	2,588	PASS	SU-2 B,2
127	857	-245	2,640	PASS	SU-2 B,2
128	913	-189	2,813	PASS	SU-2 B,2
129	951	-151	2,930	PASS	SU-2 B,2
130	970	-132	2,989	PASS	SU-2 B,2
131	930	-172	2,865	PASS	SU-2 B,2
132	859	-243	2,647	PASS	SU-2 B,2
133	877	-225	2,702	PASS	SU-2 B,2
134	859	-243	2,647	PASS	SU-2 B,2
135	868	-234	2,674	PASS	SU-2 B,2
136	939	-163	2,893	PASS	SU-2 B,2
137	943	-159	2,905	PASS	SU-2 B,2
138	871	-231	2,684	PASS	SU-2 B,2
139	874	-228	2,693	PASS	SU-2 B,2
140	768	-334	2,366	PASS	SU-2 B,2
141	780	-322	2,403	PASS	SU-2 B,2
142	827	-275	2,548	PASS	SU-2 B,2
143	877	-225	2,702	PASS	SU-2 B,2
144	873	-229	2,690	PASS	SU-2 B,2
145	789	-313	2,431	PASS	SU-2 B,2
146	715	-387	2,203	PASS	SU-2 B,2

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 149
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
147	759	-343	2,338	PASS	
148	826	-276	2,545	PASS	
149	874	-228	2,693	PASS	

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
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$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	818	-284	2,520	PASS	SU-3 C,3
2	760	-342	2,342	PASS	SU-3 C,3
3	868	-234	2,674	PASS	SU-3 C,3
4	961	-141	2,961	PASS	SU-3 C,3
5	935	-167	2,881	PASS	SU-3 C,3
6	883	-219	2,720	PASS	SU-3 C,3
7	792	-310	2,440	PASS	SU-3 C,3
8	798	-304	2,459	PASS	SU-3 C,3
9	752	-350	2,317	PASS	SU-3 C,3
10	812	-290	2,502	PASS	SU-3 C,3
11	776	-326	2,391	PASS	SU-3 C,3
12	740	-362	2,280	PASS	SU-3 C,3
13	704	-398	2,169	PASS	SU-3 C,3
14	681	-421	2,098	PASS	SU-3 C,3
15	670	-432	2,064	PASS	SU-3 C,3
16	724	-378	2,231	PASS	SU-3 C,3
17	801	-301	2,468	PASS	SU-3 C,3
18	722	-380	2,224	PASS	SU-3 C,3
19	746	-356	2,298	PASS	SU-3 C,3
20	760	-342	2,342	PASS	SU-3 C,3
21	805	-297	2,480	PASS	SU-3 C,3
22	828	-274	2,551	PASS	SU-3 C,3
23	866	-236	2,668	PASS	SU-3 C,3
24	752	-350	2,317	PASS	SU-3 C,3
25	827	-275	2,548	PASS	SU-3 C,3
26	771	-331	2,375	PASS	SU-3 C,3
27	777	-325	2,394	PASS	SU-3 C,3
28	796	-306	2,452	PASS	SU-3 C,3
29	860	-242	2,650	PASS	SU-3 C,3
30	812	-290	2,502	PASS	SU-3 C,3
31	943	-159	2,905	PASS	SU-3 C,3
32	912	-190	2,810	PASS	SU-3 C,3
33	888	-214	2,736	PASS	SU-3 C,3
34	872	-230	2,687	PASS	SU-3 C,3
35	933	-169	2,875	PASS	SU-3 C,3
36	892	-210	2,748	PASS	SU-3 C,3
37	884	-218	2,724	PASS	SU-3 C,3
38	836	-266	2,576	PASS	SU-3 C,3

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Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
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Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	930	-172	2,865	PASS	SU-3 C,3
40	906	-196	2,791	PASS	SU-3 C,3
41	857	-245	2,640	PASS	SU-3 C,3
42	858	-244	2,643	PASS	SU-3 C,3
43	936	-166	2,884	PASS	SU-3 C,3
44	855	-247	2,634	PASS	SU-3 C,3
45	728	-374	2,243	PASS	SU-3 C,3
46	688	-414	2,120	PASS	SU-3 C,3
47	718	-384	2,212	PASS	SU-3 C,3
48	748	-354	2,305	PASS	SU-3 C,3
49	795	-307	2,449	PASS	SU-3 C,3
50	836	-266	2,576	PASS	SU-3 C,3
51	792	-310	2,440	PASS	SU-3 C,3
52	827	-275	2,548	PASS	SU-3 C,3
53	804	-298	2,477	PASS	SU-3 C,3
54	814	-288	2,508	PASS	SU-3 C,3
55	918	-184	2,828	PASS	SU-3 C,3
56	846	-256	2,606	PASS	SU-3 C,3
57	916	-186	2,822	PASS	SU-3 C,3
58	892	-210	2,748	PASS	SU-3 C,3
59	861	-241	2,653	PASS	SU-3 C,3
60	823	-279	2,536	PASS	SU-3 C,3
61	752	-350	2,317	PASS	SU-3 C,3
62	712	-390	2,194	PASS	SU-3 C,3
63	732	-370	2,255	PASS	SU-3 C,3
64	705	-397	2,172	PASS	SU-3 C,3
65	699	-403	2,154	PASS	SU-3 C,3
66	793	-309	2,443	PASS	SU-3 C,3
67	830	-272	2,557	PASS	SU-3 C,3
68	799	-303	2,462	PASS	SU-3 C,3
69	812	-290	2,502	PASS	SU-3 C,3
70	827	-275	2,548	PASS	SU-3 C,3
71	912	-190	2,810	PASS	SU-3 C,3
72	890	-212	2,742	PASS	SU-3 C,3
73	882	-220	2,717	PASS	SU-3 C,3
74	918	-184	2,828	PASS	SU-3 C,3
75	825	-277	2,542	PASS	SU-3 C,3
76	874	-228	2,693	PASS	SU-3 C,3

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 261
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	775	-327	2,388	PASS	SU-3 C,3
78	864	-238	2,662	PASS	SU-3 C,3
79	815	-287	2,511	PASS	SU-3 C,3
80	850	-252	2,619	PASS	SU-3 C,3
81	791	-311	2,437	PASS	SU-3 C,3
82	823	-279	2,536	PASS	SU-3 C,3
83	741	-361	2,283	PASS	SU-3 C,3
84	765	-337	2,357	PASS	SU-3 C,3
85	757	-345	2,332	PASS	SU-3 C,3
86	879	-223	2,708	PASS	SU-3 C,3
87	862	-240	2,656	PASS	SU-3 C,3
88	835	-267	2,573	PASS	SU-3 C,3
89	743	-359	2,289	PASS	SU-3 C,3
90	736	-366	2,268	PASS	SU-3 C,3
91	719	-383	2,215	PASS	SU-3 C,3
92	674	-428	2,077	PASS	SU-3 C,3
93	640	-462	1,972	PASS	SU-3 C,3
94	674	-428	2,077	PASS	SU-3 C,3
95	707	-395	2,178	PASS	SU-3 C,3
96	732	-370	2,255	PASS	SU-3 C,3
97	638	-464	1,966	PASS	SU-3 C,3
98	693	-409	2,135	PASS	SU-3 C,3
99	686	-416	2,114	PASS	SU-3 C,3
100	675	-427	2,080	PASS	SU-3 C,3
101	741	-361	2,283	PASS	SU-3 C,3
102	970	-132	2,989	PASS	SU-3 C,3
103	963	-139	2,967	PASS	SU-3 C,3
104	1,005	-97	3,096	PASS	SU-3 C,3
105	832	-270	2,563	PASS	SU-3 C,3
106	806	-296	2,483	PASS	SU-3 C,3
107	842	-260	2,594	PASS	SU-3 C,3
108	897	-205	2,764	PASS	SU-3 C,3
109	783	-319	2,412	PASS	SU-3 C,3
110	801	-301	2,468	PASS	SU-3 C,3
111	756	-346	2,329	PASS	SU-3 C,3
112	712	-390	2,194	PASS	SU-3 C,3
113	724	-378	2,231	PASS	SU-3 C,3
114	782	-320	2,409	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 261
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	681	-421	2,098	PASS	SU-3 C,3
116	780	-322	2,403	PASS	SU-3 C,3
117	809	-293	2,492	PASS	SU-3 C,3
118	770	-332	2,372	PASS	SU-3 C,3
119	899	-203	2,770	PASS	SU-3 C,3
120	866	-236	2,668	PASS	SU-3 C,3
121	889	-213	2,739	PASS	SU-3 C,3
122	876	-226	2,699	PASS	SU-3 C,3
123	917	-185	2,825	PASS	SU-3 C,3
124	858	-244	2,643	PASS	SU-3 C,3
125	836	-266	2,576	PASS	SU-3 C,3
126	789	-313	2,431	PASS	SU-3 C,3
127	818	-284	2,520	PASS	SU-3 C,3
128	863	-239	2,659	PASS	SU-3 C,3
129	823	-279	2,536	PASS	SU-3 C,3
130	784	-318	2,415	PASS	SU-3 C,3
131	897	-205	2,764	PASS	SU-3 C,3
132	930	-172	2,865	PASS	SU-3 C,3
133	916	-186	2,822	PASS	SU-3 C,3
134	900	-202	2,773	PASS	SU-3 C,3
135	913	-189	2,813	PASS	SU-3 C,3
136	919	-183	2,831	PASS	SU-3 C,3
137	825	-277	2,542	PASS	SU-3 C,3
138	886	-216	2,730	PASS	SU-3 C,3
139	845	-257	2,603	PASS	SU-3 C,3
140	976	-126	3,007	PASS	SU-3 C,3
141	870	-232	2,680	PASS	SU-3 C,3
142	866	-236	2,668	PASS	SU-3 C,3
143	803	-299	2,474	PASS	SU-3 C,3
144	800	-302	2,465	PASS	SU-3 C,3
145	886	-216	2,730	PASS	SU-3 C,3
146	988	-114	3,044	PASS	SU-3 C,3
147	836	-266	2,576	PASS	SU-3 C,3
148	828	-274	2,551	PASS	SU-3 C,3
149	832	-270	2,563	PASS	SU-3 C,3
150	757	-345	2,332	PASS	SU-3 C,3
151	840	-262	2,588	PASS	SU-3 C,3
152	846	-256	2,606	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 261
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	928	-174	2,859	PASS	SU-3 C,3
154	965	-137	2,973	PASS	SU-3 C,3
155	971	-131	2,992	PASS	SU-3 C,3
156	929	-173	2,862	PASS	SU-3 C,3
157	865	-237	2,665	PASS	SU-3 C,3
158	801	-301	2,468	PASS	SU-3 C,3
159	714	-388	2,200	PASS	SU-3 C,3
160	775	-327	2,388	PASS	SU-3 C,3
161	810	-292	2,496	PASS	SU-3 C,3
162	807	-295	2,486	PASS	SU-3 C,3
163	794	-308	2,446	PASS	SU-3 C,3
164	873	-229	2,690	PASS	SU-3 C,3
165	830	-272	2,557	PASS	SU-3 C,3
166	883	-219	2,720	PASS	SU-3 C,3
167	989	-113	3,047	PASS	SU-3 C,3
168	956	-146	2,945	PASS	SU-3 C,3
169	932	-170	2,871	PASS	SU-3 C,3
170	866	-236	2,668	PASS	SU-3 C,3
171	835	-267	2,573	PASS	SU-3 C,3
172	811	-291	2,499	PASS	SU-3 C,3
173	797	-305	2,456	PASS	SU-3 C,3
174	819	-283	2,523	PASS	SU-3 C,3
175	768	-334	2,366	PASS	SU-3 C,3
176	791	-311	2,437	PASS	SU-3 C,3
177	808	-294	2,489	PASS	SU-3 C,3
178	978	-124	3,013	PASS	SU-3 C,3
179	923	-179	2,844	PASS	SU-3 C,3
180	1,057	-45	3,257	PASS	SU-3 C,3
181	943	-159	2,905	PASS	SU-3 C,3
182	912	-190	2,810	PASS	SU-3 C,3
183	890	-212	2,742	PASS	SU-3 C,3
184	838	-264	2,582	PASS	SU-3 C,3
185	830	-272	2,557	PASS	SU-3 C,3
186	834	-268	2,570	PASS	SU-3 C,3
187	860	-242	2,650	PASS	SU-3 C,3
188	948	-154	2,921	PASS	SU-3 C,3
189	950	-152	2,927	PASS	SU-3 C,3
190	977	-125	3,010	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
191	900	-202	2,773	PASS	SU-3 C,3
192	880	-222	2,711	PASS	SU-3 C,3
193	745	-357	2,295	PASS	SU-3 C,3
194	799	-303	2,462	PASS	SU-3 C,3
195	848	-254	2,613	PASS	SU-3 C,3
196	858	-244	2,643	PASS	SU-3 C,3
197	767	-335	2,363	PASS	SU-3 C,3
198	763	-339	2,351	PASS	SU-3 C,3
199	729	-373	2,246	PASS	SU-3 C,3
200	792	-310	2,440	PASS	SU-3 C,3
201	789	-313	2,431	PASS	SU-3 C,3
202	834	-268	2,570	PASS	SU-3 C,3
203	872	-230	2,687	PASS	SU-3 C,3
204	881	-221	2,714	PASS	SU-3 C,3
205	854	-248	2,631	PASS	SU-3 C,3
206	752	-350	2,317	PASS	SU-3 C,3
207	825	-277	2,542	PASS	SU-3 C,3
208	866	-236	2,668	PASS	SU-3 C,3
209	971	-131	2,992	PASS	SU-3 C,3
210	996	-106	3,069	PASS	SU-3 C,3
211	1,038	-64	3,198	PASS	SU-3 C,3
212	975	-127	3,004	PASS	SU-3 C,3
213	890	-212	2,742	PASS	SU-3 C,3
214	919	-183	2,831	PASS	SU-3 C,3
215	926	-176	2,853	PASS	SU-3 C,3
216	949	-153	2,924	PASS	SU-3 C,3
217	862	-240	2,656	PASS	SU-3 C,3
218	808	-294	2,489	PASS	SU-3 C,3
219	756	-346	2,329	PASS	SU-3 C,3
220	787	-315	2,425	PASS	SU-3 C,3
221	733	-369	2,258	PASS	SU-3 C,3
222	669	-433	2,061	PASS	SU-3 C,3
223	723	-379	2,228	PASS	SU-3 C,3
224	824	-278	2,539	PASS	SU-3 C,3
225	814	-288	2,508	PASS	SU-3 C,3
226	694	-408	2,138	PASS	SU-3 C,3
227	729	-373	2,246	PASS	SU-3 C,3
228	795	-307	2,449	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **261**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
229	840	-262	2,588	PASS	SU-3 C,3
230	853	-249	2,628	PASS	SU-3 C,3
231	818	-284	2,520	PASS	SU-3 C,3
232	805	-297	2,480	PASS	SU-3 C,3
233	839	-263	2,585	PASS	SU-3 C,3
234	819	-283	2,523	PASS	SU-3 C,3
235	768	-334	2,366	PASS	SU-3 C,3
236	750	-352	2,311	PASS	SU-3 C,3
237	811	-291	2,499	PASS	SU-3 C,3
238	833	-269	2,566	PASS	SU-3 C,3
239	715	-387	2,203	PASS	SU-3 C,3
240	670	-432	2,064	PASS	SU-3 C,3
241	650	-452	2,003	PASS	SU-3 C,3
242	600	-502	1,849	PASS	SU-3 C,3
243	720	-382	2,218	PASS	SU-3 C,3
244	747	-355	2,301	PASS	SU-3 C,3
245	726	-376	2,237	PASS	SU-3 C,3
246	731	-371	2,252	PASS	SU-3 C,3
247	777	-325	2,394	PASS	SU-3 C,3
248	801	-301	2,468	PASS	SU-3 C,3
249	826	-276	2,545	PASS	SU-3 C,3
250	785	-317	2,419	PASS	SU-3 C,3
251	817	-285	2,517	PASS	SU-3 C,3
252	879	-223	2,708	PASS	SU-3 C,3
253	918	-184	2,828	PASS	SU-3 C,3
254	832	-270	2,563	PASS	SU-3 C,3
255	818	-284	2,520	PASS	SU-3 C,3
256	829	-273	2,554	PASS	SU-3 C,3
257	803	-299	2,474	PASS	SU-3 C,3
258	709	-393	2,184	PASS	SU-3 C,3

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 261
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
259	672	-430	2,070	PASS	SU-3 C,3
260	717	-385	2,209	PASS	SU-3 C,3
261	665	-437	2,049	PASS	SU-3 C,3

Prepared By: _____

Print Name: Don Wadsworth Date: 6/27/2014

Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **154**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	893	-209	2,751	PASS	SU-4 D,4
2	919	-183	2,831	PASS	SU-4 D,4
3	892	-210	2,748	PASS	SU-4 D,4
4	835	-267	2,573	PASS	SU-4 D,4
5	856	-246	2,637	PASS	SU-4 D,4
6	842	-260	2,594	PASS	SU-4 D,4
7	784	-318	2,415	PASS	SU-4 D,4
8	833	-269	2,566	PASS	SU-4 D,4
9	854	-248	2,631	PASS	SU-4 D,4
10	802	-300	2,471	PASS	SU-4 D,4
11	776	-326	2,391	PASS	SU-4 D,4
12	751	-351	2,314	PASS	SU-4 D,4
13	798	-304	2,459	PASS	SU-4 D,4
14	780	-322	2,403	PASS	SU-4 D,4
15	727	-375	2,240	PASS	SU-4 D,4
16	663	-439	2,043	PASS	SU-4 D,4
17	690	-412	2,126	PASS	SU-4 D,4
18	802	-300	2,471	PASS	SU-4 D,4
19	830	-272	2,557	PASS	SU-4 D,4
20	743	-359	2,289	PASS	SU-4 D,4
21	765	-337	2,357	PASS	SU-4 D,4
22	844	-258	2,600	PASS	SU-4 D,4
23	842	-260	2,594	PASS	SU-4 D,4
24	837	-265	2,579	PASS	SU-4 D,4
25	838	-264	2,582	PASS	SU-4 D,4
26	856	-246	2,637	PASS	SU-4 D,4
27	864	-238	2,662	PASS	SU-4 D,4
28	894	-208	2,754	PASS	SU-4 D,4
29	864	-238	2,662	PASS	SU-4 D,4
30	872	-230	2,687	PASS	SU-4 D,4
31	805	-297	2,480	PASS	SU-4 D,4
32	811	-291	2,499	PASS	SU-4 D,4
33	802	-300	2,471	PASS	SU-4 D,4
34	828	-274	2,551	PASS	SU-4 D,4
35	945	-157	2,912	PASS	SU-4 D,4
36	906	-196	2,791	PASS	SU-4 D,4
37	929	-173	2,862	PASS	SU-4 D,4
38	879	-223	2,708	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **154**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	857	-245	2,640	PASS	SU-4 D,4
40	816	-286	2,514	PASS	SU-4 D,4
41	829	-273	2,554	PASS	SU-4 D,4
42	872	-230	2,687	PASS	SU-4 D,4
43	820	-282	2,526	PASS	SU-4 D,4
44	822	-280	2,533	PASS	SU-4 D,4
45	845	-257	2,603	PASS	SU-4 D,4
46	947	-155	2,918	PASS	SU-4 D,4
47	961	-141	2,961	PASS	SU-4 D,4
48	1,036	-66	3,192	PASS	SU-4 D,4
49	967	-135	2,979	PASS	SU-4 D,4
50	1,013	-89	3,121	PASS	SU-4 D,4
51	927	-175	2,856	PASS	SU-4 D,4
52	848	-254	2,613	PASS	SU-4 D,4
53	834	-268	2,570	PASS	SU-4 D,4
54	906	-196	2,791	PASS	SU-4 D,4
55	790	-312	2,434	PASS	SU-4 D,4
56	911	-191	2,807	PASS	SU-4 D,4
57	905	-197	2,788	PASS	SU-4 D,4
58	854	-248	2,631	PASS	SU-4 D,4
59	789	-313	2,431	PASS	SU-4 D,4
60	841	-261	2,591	PASS	SU-4 D,4
61	740	-362	2,280	PASS	SU-4 D,4
62	670	-432	2,064	PASS	SU-4 D,4
63	632	-470	1,947	PASS	SU-4 D,4
64	653	-449	2,012	PASS	SU-4 D,4
65	778	-324	2,397	PASS	SU-4 D,4
66	758	-344	2,335	PASS	SU-4 D,4
67	770	-332	2,372	PASS	SU-4 D,4
68	782	-320	2,409	PASS	SU-4 D,4
69	764	-338	2,354	PASS	SU-4 D,4
70	752	-350	2,317	PASS	SU-4 D,4
71	787	-315	2,425	PASS	SU-4 D,4
72	749	-353	2,308	PASS	SU-4 D,4
73	752	-350	2,317	PASS	SU-4 D,4
74	787	-315	2,425	PASS	SU-4 D,4
75	778	-324	2,397	PASS	SU-4 D,4
76	815	-287	2,511	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **154**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	833	-269	2,566	PASS	SU-4 D,4
78	818	-284	2,520	PASS	SU-4 D,4
79	775	-327	2,388	PASS	SU-4 D,4
80	978	-124	3,013	PASS	SU-4 D,4
81	952	-150	2,933	PASS	SU-4 D,4
82	987	-115	3,041	PASS	SU-4 D,4
83	1,010	-92	3,112	PASS	SU-4 D,4
84	906	-196	2,791	PASS	SU-4 D,4
85	905	-197	2,788	PASS	SU-4 D,4
86	855	-247	2,634	PASS	SU-4 D,4
87	924	-178	2,847	PASS	SU-4 D,4
88	1,018	-84	3,136	PASS	SU-4 D,4
89	919	-183	2,831	PASS	SU-4 D,4
90	871	-231	2,684	PASS	SU-4 D,4
91	802	-300	2,471	PASS	SU-4 D,4
92	875	-227	2,696	PASS	SU-4 D,4
93	783	-319	2,412	PASS	SU-4 D,4
94	660	-442	2,033	PASS	SU-4 D,4
95	662	-440	2,040	PASS	SU-4 D,4
96	711	-391	2,191	PASS	SU-4 D,4
97	747	-355	2,301	PASS	SU-4 D,4
98	814	-288	2,508	PASS	SU-4 D,4
99	810	-292	2,496	PASS	SU-4 D,4
100	904	-198	2,785	PASS	SU-4 D,4
101	791	-311	2,437	PASS	SU-4 D,4
102	812	-290	2,502	PASS	SU-4 D,4
103	745	-357	2,295	PASS	SU-4 D,4
104	767	-335	2,363	PASS	SU-4 D,4
105	771	-331	2,375	PASS	SU-4 D,4
106	766	-336	2,360	PASS	SU-4 D,4
107	854	-248	2,631	PASS	SU-4 D,4
108	785	-317	2,419	PASS	SU-4 D,4
109	718	-384	2,212	PASS	SU-4 D,4
110	805	-297	2,480	PASS	SU-4 D,4
111	829	-273	2,554	PASS	SU-4 D,4
112	870	-232	2,680	PASS	SU-4 D,4
113	734	-368	2,261	PASS	SU-4 D,4
114	737	-365	2,271	PASS	SU-4 D,4

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 154
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	763	-339	2,351	PASS	SU-4 D,4
116	897	-205	2,764	PASS	SU-4 D,4
117	886	-216	2,730	PASS	SU-4 D,4
118	849	-253	2,616	PASS	SU-4 D,4
119	825	-277	2,542	PASS	SU-4 D,4
120	859	-243	2,647	PASS	SU-4 D,4
121	851	-251	2,622	PASS	SU-4 D,4
122	856	-246	2,637	PASS	SU-4 D,4
123	892	-210	2,748	PASS	SU-4 D,4
124	780	-322	2,403	PASS	SU-4 D,4
125	874	-228	2,693	PASS	SU-4 D,4
126	863	-239	2,659	PASS	SU-4 D,4
127	825	-277	2,542	PASS	SU-4 D,4
128	901	-201	2,776	PASS	SU-4 D,4
129	823	-279	2,536	PASS	SU-4 D,4
130	861	-241	2,653	PASS	SU-4 D,4
131	938	-164	2,890	PASS	SU-4 D,4
132	971	-131	2,992	PASS	SU-4 D,4
133	911	-191	2,807	PASS	SU-4 D,4
134	955	-147	2,942	PASS	SU-4 D,4
135	1,095	-7	3,374	PASS	SU-4 D,4
136	1,001	-101	3,084	PASS	SU-4 D,4
137	950	-152	2,927	PASS	SU-4 D,4
138	865	-237	2,665	PASS	SU-4 D,4
139	864	-238	2,662	PASS	SU-4 D,4
140	874	-228	2,693	PASS	SU-4 D,4
141	838	-264	2,582	PASS	SU-4 D,4
142	841	-261	2,591	PASS	SU-4 D,4
143	815	-287	2,511	PASS	SU-4 D,4
144	876	-226	2,699	PASS	SU-4 D,4
145	943	-159	2,905	PASS	SU-4 D,4
146	1,023	-79	3,152	PASS	SU-4 D,4
147	946	-156	2,915	PASS	SU-4 D,4
148	854	-248	2,631	PASS	SU-4 D,4
149	851	-251	2,622	PASS	SU-4 D,4
150	833	-269	2,566	PASS	SU-4 D,4
151	759	-343	2,338	PASS	SU-4 D,4

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 154
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
152	777	-325	2,394	PASS	SU-4 D,4
153	783	-319	2,412	PASS	SU-4 D,4
154	882	-220	2,717	PASS	SU-4 D,4

Prepared By: _____
Print Name: Don Wadsworth Date: 6/27/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **151**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	713	-389	2,197	PASS	SU-5 E,5
2	722	-380	2,224	PASS	SU-5 E,5
3	768	-334	2,366	PASS	SU-5 E,5
4	848	-254	2,613	PASS	SU-5 E,5
5	787	-315	2,425	PASS	SU-5 E,5
6	721	-381	2,221	PASS	SU-5 E,5
7	833	-269	2,566	PASS	SU-5 E,5
8	785	-317	2,419	PASS	SU-5 E,5
9	776	-326	2,391	PASS	SU-5 E,5
10	839	-263	2,585	PASS	SU-5 E,5
11	838	-264	2,582	PASS	SU-5 E,5
12	825	-277	2,542	PASS	SU-5 E,5
13	792	-310	2,440	PASS	SU-5 E,5
14	789	-313	2,431	PASS	SU-5 E,5
15	734	-368	2,261	PASS	SU-5 E,5
16	810	-292	2,496	PASS	SU-5 E,5
17	765	-337	2,357	PASS	SU-5 E,5
18	772	-330	2,379	PASS	SU-5 E,5
19	798	-304	2,459	PASS	SU-5 E,5
20	795	-307	2,449	PASS	SU-5 E,5
21	799	-303	2,462	PASS	SU-5 E,5
22	836	-266	2,576	PASS	SU-5 E,5
23	858	-244	2,643	PASS	SU-5 E,5
24	817	-285	2,517	PASS	SU-5 E,5
25	812	-290	2,502	PASS	SU-5 E,5
26	765	-337	2,357	PASS	SU-5 E,5
27	805	-297	2,480	PASS	SU-5 E,5
28	894	-208	2,754	PASS	SU-5 E,5
29	831	-271	2,560	PASS	SU-5 E,5
30	779	-323	2,400	PASS	SU-5 E,5
31	779	-323	2,400	PASS	SU-5 E,5
32	813	-289	2,505	PASS	SU-5 E,5
33	806	-296	2,483	PASS	SU-5 E,5
34	766	-336	2,360	PASS	SU-5 E,5
35	763	-339	2,351	PASS	SU-5 E,5
36	838	-264	2,582	PASS	SU-5 E,5
37	842	-260	2,594	PASS	SU-5 E,5
38	909	-193	2,801	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **151**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	851	-251	2,622	PASS	SU-5 E,5
40	753	-349	2,320	PASS	SU-5 E,5
41	727	-375	2,240	PASS	SU-5 E,5
42	743	-359	2,289	PASS	SU-5 E,5
43	741	-361	2,283	PASS	SU-5 E,5
44	812	-290	2,502	PASS	SU-5 E,5
45	774	-328	2,385	PASS	SU-5 E,5
46	756	-346	2,329	PASS	SU-5 E,5
47	826	-276	2,545	PASS	SU-5 E,5
48	850	-252	2,619	PASS	SU-5 E,5
49	726	-376	2,237	PASS	SU-5 E,5
50	762	-340	2,348	PASS	SU-5 E,5
51	760	-342	2,342	PASS	SU-5 E,5
52	791	-311	2,437	PASS	SU-5 E,5
53	846	-256	2,606	PASS	SU-5 E,5
54	770	-332	2,372	PASS	SU-5 E,5
55	794	-308	2,446	PASS	SU-5 E,5
56	892	-210	2,748	PASS	SU-5 E,5
57	747	-355	2,301	PASS	SU-5 E,5
58	761	-341	2,345	PASS	SU-5 E,5
59	672	-430	2,070	PASS	SU-5 E,5
60	669	-433	2,061	PASS	SU-5 E,5
61	771	-331	2,375	PASS	SU-5 E,5
62	865	-237	2,665	PASS	SU-5 E,5
63	806	-296	2,483	PASS	SU-5 E,5
64	832	-270	2,563	PASS	SU-5 E,5
65	894	-208	2,754	PASS	SU-5 E,5
66	821	-281	2,529	PASS	SU-5 E,5
67	762	-340	2,348	PASS	SU-5 E,5
68	759	-343	2,338	PASS	SU-5 E,5
69	792	-310	2,440	PASS	SU-5 E,5
70	795	-307	2,449	PASS	SU-5 E,5
71	797	-305	2,456	PASS	SU-5 E,5
72	791	-311	2,437	PASS	SU-5 E,5
73	783	-319	2,412	PASS	SU-5 E,5
74	819	-283	2,523	PASS	SU-5 E,5
75	807	-295	2,486	PASS	SU-5 E,5
76	844	-258	2,600	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 151
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	868	-234	2,674	PASS	SU-5 E,5
78	836	-266	2,576	PASS	SU-5 E,5
79	948	-154	2,921	PASS	SU-5 E,5
80	1,042	-60	3,210	PASS	SU-5 E,5
81	955	-147	2,942	PASS	SU-5 E,5
82	884	-218	2,724	PASS	SU-5 E,5
83	906	-196	2,791	PASS	SU-5 E,5
84	857	-245	2,640	PASS	SU-5 E,5
85	910	-192	2,804	PASS	SU-5 E,5
86	968	-134	2,982	PASS	SU-5 E,5
87	951	-151	2,930	PASS	SU-5 E,5
88	938	-164	2,890	PASS	SU-5 E,5
89	911	-191	2,807	PASS	SU-5 E,5
90	930	-172	2,865	PASS	SU-5 E,5
91	899	-203	2,770	PASS	SU-5 E,5
92	882	-220	2,717	PASS	SU-5 E,5
93	814	-288	2,508	PASS	SU-5 E,5
94	768	-334	2,366	PASS	SU-5 E,5
95	740	-362	2,280	PASS	SU-5 E,5
96	855	-247	2,634	PASS	SU-5 E,5
97	857	-245	2,640	PASS	SU-5 E,5
98	910	-192	2,804	PASS	SU-5 E,5
99	886	-216	2,730	PASS	SU-5 E,5
100	851	-251	2,622	PASS	SU-5 E,5
101	854	-248	2,631	PASS	SU-5 E,5
102	890	-212	2,742	PASS	SU-5 E,5
103	901	-201	2,776	PASS	SU-5 E,5
104	916	-186	2,822	PASS	SU-5 E,5
105	924	-178	2,847	PASS	SU-5 E,5
106	918	-184	2,828	PASS	SU-5 E,5
107	914	-188	2,816	PASS	SU-5 E,5
108	941	-161	2,899	PASS	SU-5 E,5
109	920	-182	2,834	PASS	SU-5 E,5
110	859	-243	2,647	PASS	SU-5 E,5
111	953	-149	2,936	PASS	SU-5 E,5
112	828	-274	2,551	PASS	SU-5 E,5
113	807	-295	2,486	PASS	SU-5 E,5
114	846	-256	2,606	PASS	SU-5 E,5

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **151**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	781	-321	2,406	PASS	SU-5 E,5
116	847	-255	2,610	PASS	SU-5 E,5
117	852	-250	2,625	PASS	SU-5 E,5
118	918	-184	2,828	PASS	SU-5 E,5
119	886	-216	2,730	PASS	SU-5 E,5
120	883	-219	2,720	PASS	SU-5 E,5
121	941	-161	2,899	PASS	SU-5 E,5
122	961	-141	2,961	PASS	SU-5 E,5
123	915	-187	2,819	PASS	SU-5 E,5
124	840	-262	2,588	PASS	SU-5 E,5
125	835	-267	2,573	PASS	SU-5 E,5
126	832	-270	2,563	PASS	SU-5 E,5
127	813	-289	2,505	PASS	SU-5 E,5
128	821	-281	2,529	PASS	SU-5 E,5
129	850	-252	2,619	PASS	SU-5 E,5
130	755	-347	2,326	PASS	SU-5 E,5
131	867	-235	2,671	PASS	SU-5 E,5
132	868	-234	2,674	PASS	SU-5 E,5
133	835	-267	2,573	PASS	SU-5 E,5
134	846	-256	2,606	PASS	SU-5 E,5
135	860	-242	2,650	PASS	SU-5 E,5
136	886	-216	2,730	PASS	SU-5 E,5
137	960	-142	2,958	PASS	SU-5 E,5
138	1,021	-81	3,146	PASS	SU-5 E,5
139	1,064	-38	3,278	PASS	SU-5 E,5
140	903	-199	2,782	PASS	SU-5 E,5
141	921	-181	2,838	PASS	SU-5 E,5
142	913	-189	2,813	PASS	SU-5 E,5
143	917	-185	2,825	PASS	SU-5 E,5
144	874	-228	2,693	PASS	SU-5 E,5
145	784	-318	2,415	PASS	SU-5 E,5
146	764	-338	2,354	PASS	SU-5 E,5
147	814	-288	2,508	PASS	SU-5 E,5
148	873	-229	2,690	PASS	SU-5 E,5

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 151
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
149	836	-266	2,576	PASS	SU-5 E,5
150	901	-201	2,776	PASS	SU-5 E,5
151	863	-239	2,659	PASS	SU-5 E,5

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **114**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	987	-115	3,041	PASS	SU-6 D,6
2	869	-233	2,677	PASS	SU-6 D,6
3	837	-265	2,579	PASS	SU-6 D,6
4	884	-218	2,724	PASS	SU-6 D,6
5	936	-166	2,884	PASS	SU-6 D,6
6	833	-269	2,566	PASS	SU-6 D,6
7	728	-374	2,243	PASS	SU-6 D,6
8	792	-310	2,440	PASS	SU-6 D,6
9	714	-388	2,200	PASS	SU-6 D,6
10	705	-397	2,172	PASS	SU-6 D,6
11	699	-403	2,154	PASS	SU-6 D,6
12	867	-235	2,671	PASS	SU-6 D,6
13	842	-260	2,594	PASS	SU-6 D,6
14	822	-280	2,533	PASS	SU-6 D,6
15	788	-314	2,428	PASS	SU-6 D,6
16	793	-309	2,443	PASS	SU-6 D,6
17	713	-389	2,197	PASS	SU-6 D,6
18	699	-403	2,154	PASS	SU-6 D,6
19	706	-396	2,175	PASS	SU-6 D,6
20	747	-355	2,301	PASS	SU-6 D,6
21	783	-319	2,412	PASS	SU-6 D,6
22	832	-270	2,563	PASS	SU-6 D,6
23	894	-208	2,754	PASS	SU-6 D,6
24	811	-291	2,499	PASS	SU-6 D,6
25	890	-212	2,742	PASS	SU-6 D,6
26	797	-305	2,456	PASS	SU-6 D,6
27	802	-300	2,471	PASS	SU-6 D,6
28	831	-271	2,560	PASS	SU-6 D,6
29	938	-164	2,890	PASS	SU-6 D,6
30	832	-270	2,563	PASS	SU-6 D,6
31	754	-348	2,323	PASS	SU-6 D,6
32	785	-317	2,419	PASS	SU-6 D,6
33	738	-364	2,274	PASS	SU-6 D,6
34	714	-388	2,200	PASS	SU-6 D,6
35	838	-264	2,582	PASS	SU-6 D,6
36	755	-347	2,326	PASS	SU-6 D,6
37	887	-215	2,733	PASS	SU-6 D,6
38	972	-130	2,995	PASS	SU-6 D,6

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **114**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	834	-268	2,570	PASS	SU-6 D,6
40	834	-268	2,570	PASS	SU-6 D,6
41	919	-183	2,831	PASS	SU-6 D,6
42	879	-223	2,708	PASS	SU-6 D,6
43	778	-324	2,397	PASS	SU-6 D,6
44	812	-290	2,502	PASS	SU-6 D,6
45	832	-270	2,563	PASS	SU-6 D,6
46	808	-294	2,489	PASS	SU-6 D,6
47	835	-267	2,573	PASS	SU-6 D,6
48	796	-306	2,452	PASS	SU-6 D,6
49	688	-414	2,120	PASS	SU-6 D,6
50	682	-420	2,101	PASS	SU-6 D,6
51	684	-418	2,107	PASS	SU-6 D,6
52	841	-261	2,591	PASS	SU-6 D,6
53	808	-294	2,489	PASS	SU-6 D,6
54	800	-302	2,465	PASS	SU-6 D,6
55	740	-362	2,280	PASS	SU-6 D,6
56	766	-336	2,360	PASS	SU-6 D,6
57	797	-305	2,456	PASS	SU-6 D,6
58	858	-244	2,643	PASS	SU-6 D,6
59	838	-264	2,582	PASS	SU-6 D,6
60	800	-302	2,465	PASS	SU-6 D,6
61	812	-290	2,502	PASS	SU-6 D,6
62	810	-292	2,496	PASS	SU-6 D,6
63	823	-279	2,536	PASS	SU-6 D,6
64	822	-280	2,533	PASS	SU-6 D,6
65	868	-234	2,674	PASS	SU-6 D,6
66	955	-147	2,942	PASS	SU-6 D,6
67	899	-203	2,770	PASS	SU-6 D,6
68	953	-149	2,936	PASS	SU-6 D,6
69	877	-225	2,702	PASS	SU-6 D,6
70	842	-260	2,594	PASS	SU-6 D,6
71	898	-204	2,767	PASS	SU-6 D,6
72	919	-183	2,831	PASS	SU-6 D,6
73	899	-203	2,770	PASS	SU-6 D,6
74	771	-331	2,375	PASS	SU-6 D,6
75	723	-379	2,228	PASS	SU-6 D,6
76	675	-427	2,080	PASS	SU-6 D,6

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **114**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	678	-424	2,089	PASS	SU-6 D,6
78	743	-359	2,289	PASS	SU-6 D,6
79	778	-324	2,397	PASS	SU-6 D,6
80	759	-343	2,338	PASS	SU-6 D,6
81	836	-266	2,576	PASS	SU-6 D,6
82	811	-291	2,499	PASS	SU-6 D,6
83	866	-236	2,668	PASS	SU-6 D,6
84	779	-323	2,400	PASS	SU-6 D,6
85	751	-351	2,314	PASS	SU-6 D,6
86	709	-393	2,184	PASS	SU-6 D,6
87	727	-375	2,240	PASS	SU-6 D,6
88	840	-262	2,588	PASS	SU-6 D,6
89	776	-326	2,391	PASS	SU-6 D,6
90	884	-218	2,724	PASS	SU-6 D,6
91	891	-211	2,745	PASS	SU-6 D,6
92	984	-118	3,032	PASS	SU-6 D,6
93	921	-181	2,838	PASS	SU-6 D,6
94	845	-257	2,603	PASS	SU-6 D,6
95	803	-299	2,474	PASS	SU-6 D,6
96	798	-304	2,459	PASS	SU-6 D,6
97	770	-332	2,372	PASS	SU-6 D,6
98	793	-309	2,443	PASS	SU-6 D,6
99	745	-357	2,295	PASS	SU-6 D,6
100	766	-336	2,360	PASS	SU-6 D,6
101	740	-362	2,280	PASS	SU-6 D,6
102	789	-313	2,431	PASS	SU-6 D,6
103	761	-341	2,345	PASS	SU-6 D,6
104	752	-350	2,317	PASS	SU-6 D,6
105	738	-364	2,274	PASS	SU-6 D,6
106	749	-353	2,308	PASS	SU-6 D,6
107	770	-332	2,372	PASS	SU-6 D,6
108	661	-441	2,037	PASS	SU-6 D,6
109	668	-434	2,058	PASS	SU-6 D,6
110	665	-437	2,049	PASS	SU-6 D,6
111	731	-371	2,252	PASS	SU-6 D,6

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 114
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
112	750	-352	2,311	PASS	SU-6 D,6
113	703	-399	2,166	PASS	SU-6 D,6
114	898	-204	2,767	PASS	SU-6 D,6

Prepared By: _____
Print Name: Don Wadsworth Date: 6/27/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	806	-296	2,483	PASS	SU-7 C,7
2	936	-166	2,884	PASS	SU-7 C,7
3	937	-165	2,887	PASS	SU-7 C,7
4	973	-129	2,998	PASS	SU-7 C,7
5	934	-168	2,878	PASS	SU-7 C,7
6	907	-195	2,794	PASS	SU-7 C,7
7	904	-198	2,785	PASS	SU-7 C,7
8	904	-198	2,785	PASS	SU-7 C,7
9	944	-158	2,908	PASS	SU-7 C,7
10	1,033	-69	3,183	PASS	SU-7 C,7
11	899	-203	2,770	PASS	SU-7 C,7
12	898	-204	2,767	PASS	SU-7 C,7
13	883	-219	2,720	PASS	SU-7 C,7
14	923	-179	2,844	PASS	SU-7 C,7
15	741	-361	2,283	PASS	SU-7 C,7
16	754	-348	2,323	PASS	SU-7 C,7
17	735	-367	2,265	PASS	SU-7 C,7
18	718	-384	2,212	PASS	SU-7 C,7
19	644	-458	1,984	PASS	SU-7 C,7
20	703	-399	2,166	PASS	SU-7 C,7
21	767	-335	2,363	PASS	SU-7 C,7
22	777	-325	2,394	PASS	SU-7 C,7
23	773	-329	2,382	PASS	SU-7 C,7
24	747	-355	2,301	PASS	SU-7 C,7
25	775	-327	2,388	PASS	SU-7 C,7
26	770	-332	2,372	PASS	SU-7 C,7
27	874	-228	2,693	PASS	SU-7 C,7
28	833	-269	2,566	PASS	SU-7 C,7
29	932	-170	2,871	PASS	SU-7 C,7
30	831	-271	2,560	PASS	SU-7 C,7
31	844	-258	2,600	PASS	SU-7 C,7
32	812	-290	2,502	PASS	SU-7 C,7
33	774	-328	2,385	PASS	SU-7 C,7
34	736	-366	2,268	PASS	SU-7 C,7
35	707	-395	2,178	PASS	SU-7 C,7
36	770	-332	2,372	PASS	SU-7 C,7
37	786	-316	2,422	PASS	SU-7 C,7
38	885	-217	2,727	PASS	SU-7 C,7

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 165
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	825	-277	2,542	PASS	SU-7 C,7
40	900	-202	2,773	PASS	SU-7 C,7
41	887	-215	2,733	PASS	SU-7 C,7
42	838	-264	2,582	PASS	SU-7 C,7
43	805	-297	2,480	PASS	SU-7 C,7
44	800	-302	2,465	PASS	SU-7 C,7
45	684	-418	2,107	PASS	SU-7 C,7
46	780	-322	2,403	PASS	SU-7 C,7
47	895	-207	2,757	PASS	SU-7 C,7
48	860	-242	2,650	PASS	SU-7 C,7
49	863	-239	2,659	PASS	SU-7 C,7
50	913	-189	2,813	PASS	SU-7 C,7
51	797	-305	2,456	PASS	SU-7 C,7
52	828	-274	2,551	PASS	SU-7 C,7
53	767	-335	2,363	PASS	SU-7 C,7
54	720	-382	2,218	PASS	SU-7 C,7
55	745	-357	2,295	PASS	SU-7 C,7
56	736	-366	2,268	PASS	SU-7 C,7
57	699	-403	2,154	PASS	SU-7 C,7
58	723	-379	2,228	PASS	SU-7 C,7
59	746	-356	2,298	PASS	SU-7 C,7
60	785	-317	2,419	PASS	SU-7 C,7
61	1,166	64	3,592	PASS	SU-7 C,7
62	1,095	-7	3,374	PASS	SU-7 C,7
63	1,030	-72	3,173	PASS	SU-7 C,7
64	946	-156	2,915	PASS	SU-7 C,7
65	924	-178	2,847	PASS	SU-7 C,7
66	876	-226	2,699	PASS	SU-7 C,7
67	908	-194	2,798	PASS	SU-7 C,7
68	877	-225	2,702	PASS	SU-7 C,7
69	870	-232	2,680	PASS	SU-7 C,7
70	744	-358	2,292	PASS	SU-7 C,7
71	714	-388	2,200	PASS	SU-7 C,7
72	749	-353	2,308	PASS	SU-7 C,7
73	692	-410	2,132	PASS	SU-7 C,7
74	726	-376	2,237	PASS	SU-7 C,7
75	765	-337	2,357	PASS	SU-7 C,7
76	679	-423	2,092	PASS	SU-7 C,7

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	710	-392	2,187	PASS	SU-7 C,7
78	721	-381	2,221	PASS	SU-7 C,7
79	690	-412	2,126	PASS	SU-7 C,7
80	757	-345	2,332	PASS	SU-7 C,7
81	828	-274	2,551	PASS	SU-7 C,7
82	869	-233	2,677	PASS	SU-7 C,7
83	838	-264	2,582	PASS	SU-7 C,7
84	826	-276	2,545	PASS	SU-7 C,7
85	785	-317	2,419	PASS	SU-7 C,7
86	743	-359	2,289	PASS	SU-7 C,7
87	759	-343	2,338	PASS	SU-7 C,7
88	675	-427	2,080	PASS	SU-7 C,7
89	649	-453	2,000	PASS	SU-7 C,7
90	632	-470	1,947	PASS	SU-7 C,7
91	736	-366	2,268	PASS	SU-7 C,7
92	749	-353	2,308	PASS	SU-7 C,7
93	735	-367	2,265	PASS	SU-7 C,7
94	694	-408	2,138	PASS	SU-7 C,7
95	655	-447	2,018	PASS	SU-7 C,7
96	642	-460	1,978	PASS	SU-7 C,7
97	717	-385	2,209	PASS	SU-7 C,7
98	788	-314	2,428	PASS	SU-7 C,7
99	771	-331	2,375	PASS	SU-7 C,7
100	728	-374	2,243	PASS	SU-7 C,7
101	758	-344	2,335	PASS	SU-7 C,7
102	1,072	-30	3,303	PASS	SU-7 C,7
103	964	-138	2,970	PASS	SU-7 C,7
104	860	-242	2,650	PASS	SU-7 C,7
105	862	-240	2,656	PASS	SU-7 C,7
106	891	-211	2,745	PASS	SU-7 C,7
107	880	-222	2,711	PASS	SU-7 C,7
108	852	-250	2,625	PASS	SU-7 C,7
109	870	-232	2,680	PASS	SU-7 C,7
110	901	-201	2,776	PASS	SU-7 C,7
111	872	-230	2,687	PASS	SU-7 C,7
112	917	-185	2,825	PASS	SU-7 C,7
113	912	-190	2,810	PASS	SU-7 C,7
114	864	-238	2,662	PASS	SU-7 C,7

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	986	-116	3,038	PASS	SU-7 C,7
116	894	-208	2,754	PASS	SU-7 C,7
117	849	-253	2,616	PASS	SU-7 C,7
118	806	-296	2,483	PASS	SU-7 C,7
119	783	-319	2,412	PASS	SU-7 C,7
120	706	-396	2,175	PASS	SU-7 C,7
121	703	-399	2,166	PASS	SU-7 C,7
122	767	-335	2,363	PASS	SU-7 C,7
123	755	-347	2,326	PASS	SU-7 C,7
124	770	-332	2,372	PASS	SU-7 C,7
125	680	-422	2,095	PASS	SU-7 C,7
126	653	-449	2,012	PASS	SU-7 C,7
127	678	-424	2,089	PASS	SU-7 C,7
128	631	-471	1,944	PASS	SU-7 C,7
129	642	-460	1,978	PASS	SU-7 C,7
130	732	-370	2,255	PASS	SU-7 C,7
131	811	-291	2,499	PASS	SU-7 C,7
132	774	-328	2,385	PASS	SU-7 C,7
133	704	-398	2,169	PASS	SU-7 C,7
134	762	-340	2,348	PASS	SU-7 C,7
135	716	-386	2,206	PASS	SU-7 C,7
136	668	-434	2,058	PASS	SU-7 C,7
137	663	-439	2,043	PASS	SU-7 C,7
138	827	-275	2,548	PASS	SU-7 C,7
139	858	-244	2,643	PASS	SU-7 C,7
140	904	-198	2,785	PASS	SU-7 C,7
141	862	-240	2,656	PASS	SU-7 C,7
142	738	-364	2,274	PASS	SU-7 C,7
143	760	-342	2,342	PASS	SU-7 C,7
144	1,196	94	3,685	PASS	SU-7 C,7
145	1,041	-61	3,207	PASS	SU-7 C,7
146	1,019	-83	3,140	PASS	SU-7 C,7
147	956	-146	2,945	PASS	SU-7 C,7
148	838	-264	2,582	PASS	SU-7 C,7
149	809	-293	2,492	PASS	SU-7 C,7
150	863	-239	2,659	PASS	SU-7 C,7
151	825	-277	2,542	PASS	SU-7 C,7
152	731	-371	2,252	PASS	SU-7 C,7

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **165**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	736	-366	2,268	PASS	SU-7 C,7
154	729	-373	2,246	PASS	SU-7 C,7
155	695	-407	2,141	PASS	SU-7 C,7
156	641	-461	1,975	PASS	SU-7 C,7
157	690	-412	2,126	PASS	SU-7 C,7
158	643	-459	1,981	PASS	SU-7 C,7
159	575	-527	1,772	PASS	SU-7 C,7
160	631	-471	1,944	PASS	SU-7 C,7
161	633	-469	1,950	PASS	SU-7 C,7
162	674	-428	2,077	PASS	SU-7 C,7
163	731	-371	2,252	PASS	SU-7 C,7
164	742	-360	2,286	PASS	SU-7 C,7
165	734	-368	2,261	PASS	SU-7 C,7

Prepared By: _____
Print Name: Don Wadsworth Date: 6/27/2014
Title: Health Physicist

New World Environmental Inc.

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **65**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	899	-203	2,770	PASS	SU-8 B,8
2	903	-199	2,782	PASS	SU-8 B,8
3	916	-186	2,822	PASS	SU-8 B,8
4	889	-213	2,739	PASS	SU-8 B,8
5	845	-257	2,603	PASS	SU-8 B,8
6	860	-242	2,650	PASS	SU-8 B,8
7	826	-276	2,545	PASS	SU-8 B,8
8	731	-371	2,252	PASS	SU-8 B,8
9	774	-328	2,385	PASS	SU-8 B,8
10	784	-318	2,415	PASS	SU-8 B,8
11	828	-274	2,551	PASS	SU-8 B,8
12	806	-296	2,483	PASS	SU-8 B,8
13	887	-215	2,733	PASS	SU-8 B,8
14	801	-301	2,468	PASS	SU-8 B,8
15	704	-398	2,169	PASS	SU-8 B,8
16	761	-341	2,345	PASS	SU-8 B,8
17	894	-208	2,754	PASS	SU-8 B,8
18	899	-203	2,770	PASS	SU-8 B,8
19	823	-279	2,536	PASS	SU-8 B,8
20	1,107	5	3,411	PASS	SU-8 B,8
21	1,020	-82	3,143	PASS	SU-8 B,8
22	1,016	-86	3,130	PASS	SU-8 B,8
23	1,043	-59	3,213	PASS	SU-8 B,8
24	954	-148	2,939	PASS	SU-8 B,8
25	961	-141	2,961	PASS	SU-8 B,8
26	922	-180	2,841	PASS	SU-8 B,8
27	878	-224	2,705	PASS	SU-8 B,8
28	833	-269	2,566	PASS	SU-8 B,8
29	816	-286	2,514	PASS	SU-8 B,8
30	771	-331	2,375	PASS	SU-8 B,8
31	1,084	-18	3,340	PASS	SU-8 B,8
32	960	-142	2,958	PASS	SU-8 B,8
33	847	-255	2,610	PASS	SU-8 B,8
34	878	-224	2,705	PASS	SU-8 B,8
35	850	-252	2,619	PASS	SU-8 B,8
36	818	-284	2,520	PASS	SU-8 B,8
37	868	-234	2,674	PASS	SU-8 B,8
38	865	-237	2,665	PASS	SU-8 B,8

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **65**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	862	-240	2,656	PASS	SU-8 B,8
40	788	-314	2,428	PASS	SU-8 B,8
41	658	-444	2,027	PASS	SU-8 B,8
42	652	-450	2,009	PASS	SU-8 B,8
43	1,031	-71	3,176	PASS	SU-8 B,8
44	1,181	79	3,639	PASS	SU-8 B,8
45	1,094	-8	3,371	PASS	SU-8 B,8
46	988	-114	3,044	PASS	SU-8 B,8
47	896	-206	2,761	PASS	SU-8 B,8
48	1,207	105	3,719	PASS	SU-8 B,8
49	1,044	-58	3,217	PASS	SU-8 B,8
50	1,107	5	3,411	PASS	SU-8 B,8
51	956	-146	2,945	PASS	SU-8 B,8
52	926	-176	2,853	PASS	SU-8 B,8
53	921	-181	2,838	PASS	SU-8 B,8
54	866	-236	2,668	PASS	SU-8 B,8
55	860	-242	2,650	PASS	SU-8 B,8
56	773	-329	2,382	PASS	SU-8 B,8
57	872	-230	2,687	PASS	SU-8 B,8
58	885	-217	2,727	PASS	SU-8 B,8
59	837	-265	2,579	PASS	SU-8 B,8
60	810	-292	2,496	PASS	SU-8 B,8
61	735	-367	2,265	PASS	SU-8 B,8
62	810	-292	2,496	PASS	SU-8 B,8
63	776	-326	2,391	PASS	SU-8 B,8
64	798	-304	2,459	PASS	SU-8 B,8
65	876	-226	2,699	PASS	SU-8 B,8

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **81**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	804	-298	2,477	PASS	SU-9 A,9
2	879	-223	2,708	PASS	SU-9 A,9
3	900	-202	2,773	PASS	SU-9 A,9
4	1,026	-76	3,161	PASS	SU-9 A,9
5	997	-105	3,072	PASS	SU-9 A,9
6	997	-105	3,072	PASS	SU-9 A,9
7	834	-268	2,570	PASS	SU-9 A,9
8	859	-243	2,647	PASS	SU-9 A,9
9	993	-109	3,059	PASS	SU-9 A,9
10	1,015	-87	3,127	PASS	SU-9 A,9
11	935	-167	2,881	PASS	SU-9 A,9
12	947	-155	2,918	PASS	SU-9 A,9
13	921	-181	2,838	PASS	SU-9 A,9
14	831	-271	2,560	PASS	SU-9 A,9
15	821	-281	2,529	PASS	SU-9 A,9
16	766	-336	2,360	PASS	SU-9 A,9
17	776	-326	2,391	PASS	SU-9 A,9
18	847	-255	2,610	PASS	SU-9 A,9
19	854	-248	2,631	PASS	SU-9 A,9
20	876	-226	2,699	PASS	SU-9 A,9
21	873	-229	2,690	PASS	SU-9 A,9
22	918	-184	2,828	PASS	SU-9 A,9
23	918	-184	2,828	PASS	SU-9 A,9
24	978	-124	3,013	PASS	SU-9 A,9
25	922	-180	2,841	PASS	SU-9 A,9
26	926	-176	2,853	PASS	SU-9 A,9
27	899	-203	2,770	PASS	SU-9 A,9
28	924	-178	2,847	PASS	SU-9 A,9
29	909	-193	2,801	PASS	SU-9 A,9
30	832	-270	2,563	PASS	SU-9 A,9
31	798	-304	2,459	PASS	SU-9 A,9
32	854	-248	2,631	PASS	SU-9 A,9
33	921	-181	2,838	PASS	SU-9 A,9
34	918	-184	2,828	PASS	SU-9 A,9
35	813	-289	2,505	PASS	SU-9 A,9
36	825	-277	2,542	PASS	SU-9 A,9
37	901	-201	2,776	PASS	SU-9 A,9
38	951	-151	2,930	PASS	SU-9 A,9

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 81
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	946	-156	2,915	PASS	SU-9 A,9
40	895	-207	2,757	PASS	SU-9 A,9
41	891	-211	2,745	PASS	SU-9 A,9
42	841	-261	2,591	PASS	SU-9 A,9
43	819	-283	2,523	PASS	SU-9 A,9
44	813	-289	2,505	PASS	SU-9 A,9
45	820	-282	2,526	PASS	SU-9 A,9
46	877	-225	2,702	PASS	SU-9 A,9
47	865	-237	2,665	PASS	SU-9 A,9
48	1,040	-62	3,204	PASS	SU-9 A,9
49	958	-144	2,952	PASS	SU-9 A,9
50	930	-172	2,865	PASS	SU-9 A,9
51	974	-128	3,001	PASS	SU-9 A,9
52	879	-223	2,708	PASS	SU-9 A,9
53	911	-191	2,807	PASS	SU-9 A,9
54	848	-254	2,613	PASS	SU-9 A,9
55	762	-340	2,348	PASS	SU-9 A,9
56	827	-275	2,548	PASS	SU-9 A,9
57	862	-240	2,656	PASS	SU-9 A,9
58	815	-287	2,511	PASS	SU-9 A,9
59	885	-217	2,727	PASS	SU-9 A,9
60	828	-274	2,551	PASS	SU-9 A,9
61	841	-261	2,591	PASS	SU-9 A,9
62	799	-303	2,462	PASS	SU-9 A,9
63	836	-266	2,576	PASS	SU-9 A,9
64	782	-320	2,409	PASS	SU-9 A,9
65	877	-225	2,702	PASS	SU-9 A,9
66	781	-321	2,406	PASS	SU-9 A,9
67	716	-386	2,206	PASS	SU-9 A,9
68	719	-383	2,215	PASS	SU-9 A,9
69	751	-351	2,314	PASS	SU-9 A,9
70	750	-352	2,311	PASS	SU-9 A,9
71	836	-266	2,576	PASS	SU-9 A,9
72	849	-253	2,616	PASS	SU-9 A,9
73	810	-292	2,496	PASS	SU-9 A,9
74	799	-303	2,462	PASS	SU-9 A,9
75	816	-286	2,514	PASS	SU-9 A,9
76	858	-244	2,643	PASS	SU-9 A,9

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **81**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	812	-290	2,502	PASS	SU-9 A,9
78	771	-331	2,375	PASS	
79	713	-389	2,197	PASS	
80	824	-278	2,539	PASS	
81	780	-322	2,403	PASS	

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	830	-272	2,557	PASS	SU-10 B,10
2	746	-356	2,298	PASS	SU-10 B,10
3	840	-262	2,588	PASS	SU-10 B,10
4	863	-239	2,659	PASS	SU-10 B,10
5	772	-330	2,379	PASS	SU-10 B,10
6	760	-342	2,342	PASS	SU-10 B,10
7	712	-390	2,194	PASS	SU-10 B,10
8	761	-341	2,345	PASS	SU-10 B,10
9	805	-297	2,480	PASS	SU-10 B,10
10	851	-251	2,622	PASS	SU-10 B,10
11	810	-292	2,496	PASS	SU-10 B,10
12	670	-432	2,064	PASS	SU-10 B,10
13	721	-381	2,221	PASS	SU-10 B,10
14	766	-336	2,360	PASS	SU-10 B,10
15	721	-381	2,221	PASS	SU-10 B,10
16	728	-374	2,243	PASS	SU-10 B,10
17	870	-232	2,680	PASS	SU-10 B,10
18	867	-235	2,671	PASS	SU-10 B,10
19	1,161	59	3,577	PASS	SU-10 B,10
20	1,023	-79	3,152	PASS	SU-10 B,10
21	944	-158	2,908	PASS	SU-10 B,10
22	943	-159	2,905	PASS	SU-10 B,10
23	776	-326	2,391	PASS	SU-10 B,10
24	787	-315	2,425	PASS	SU-10 B,10
25	836	-266	2,576	PASS	SU-10 B,10
26	782	-320	2,409	PASS	SU-10 B,10
27	853	-249	2,628	PASS	SU-10 B,10
28	816	-286	2,514	PASS	SU-10 B,10
29	822	-280	2,533	PASS	SU-10 B,10
30	801	-301	2,468	PASS	SU-10 B,10
31	809	-293	2,492	PASS	SU-10 B,10
32	776	-326	2,391	PASS	SU-10 B,10
33	801	-301	2,468	PASS	SU-10 B,10
34	835	-267	2,573	PASS	SU-10 B,10
35	864	-238	2,662	PASS	SU-10 B,10
36	822	-280	2,533	PASS	SU-10 B,10
37	804	-298	2,477	PASS	SU-10 B,10
38	825	-277	2,542	PASS	SU-10 B,10

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	840	-262	2,588	PASS	SU-10 B,10
40	880	-222	2,711	PASS	SU-10 B,10
41	935	-167	2,881	PASS	SU-10 B,10
42	910	-192	2,804	PASS	SU-10 B,10
43	958	-144	2,952	PASS	SU-10 B,10
44	865	-237	2,665	PASS	SU-10 B,10
45	840	-262	2,588	PASS	SU-10 B,10
46	885	-217	2,727	PASS	SU-10 B,10
47	828	-274	2,551	PASS	SU-10 B,10
48	829	-273	2,554	PASS	SU-10 B,10
49	765	-337	2,357	PASS	SU-10 B,10
50	784	-318	2,415	PASS	SU-10 B,10
51	797	-305	2,456	PASS	SU-10 B,10
52	752	-350	2,317	PASS	SU-10 B,10
53	793	-309	2,443	PASS	SU-10 B,10
54	740	-362	2,280	PASS	SU-10 B,10
55	800	-302	2,465	PASS	SU-10 B,10
56	907	-195	2,794	PASS	SU-10 B,10
57	772	-330	2,379	PASS	SU-10 B,10
58	768	-334	2,366	PASS	SU-10 B,10
59	722	-380	2,224	PASS	SU-10 B,10
60	683	-419	2,104	PASS	SU-10 B,10
61	715	-387	2,203	PASS	SU-10 B,10
62	754	-348	2,323	PASS	SU-10 B,10
63	771	-331	2,375	PASS	SU-10 B,10
64	793	-309	2,443	PASS	SU-10 B,10
65	775	-327	2,388	PASS	SU-10 B,10
66	868	-234	2,674	PASS	SU-10 B,10
67	824	-278	2,539	PASS	SU-10 B,10
68	801	-301	2,468	PASS	SU-10 B,10
69	878	-224	2,705	PASS	SU-10 B,10
70	822	-280	2,533	PASS	SU-10 B,10
71	738	-364	2,274	PASS	SU-10 B,10
72	812	-290	2,502	PASS	SU-10 B,10
73	833	-269	2,566	PASS	SU-10 B,10
74	777	-325	2,394	PASS	SU-10 B,10
75	731	-371	2,252	PASS	SU-10 B,10
76	791	-311	2,437	PASS	SU-10 B,10

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	681	-421	2,098	PASS	SU-10 B,10
78	735	-367	2,265	PASS	SU-10 B,10
79	720	-382	2,218	PASS	SU-10 B,10
80	799	-303	2,462	PASS	SU-10 B,10
81	844	-258	2,600	PASS	SU-10 B,10
82	848	-254	2,613	PASS	SU-10 B,10
83	824	-278	2,539	PASS	SU-10 B,10
84	771	-331	2,375	PASS	SU-10 B,10
85	841	-261	2,591	PASS	SU-10 B,10
86	765	-337	2,357	PASS	SU-10 B,10
87	782	-320	2,409	PASS	SU-10 B,10
88	859	-243	2,647	PASS	SU-10 B,10
89	764	-338	2,354	PASS	SU-10 B,10
90	825	-277	2,542	PASS	SU-10 B,10
91	778	-324	2,397	PASS	SU-10 B,10
92	782	-320	2,409	PASS	SU-10 B,10
93	755	-347	2,326	PASS	SU-10 B,10
94	755	-347	2,326	PASS	SU-10 B,10
95	735	-367	2,265	PASS	SU-10 B,10
96	705	-397	2,172	PASS	SU-10 B,10
97	746	-356	2,298	PASS	SU-10 B,10
98	858	-244	2,643	PASS	SU-10 B,10
99	847	-255	2,610	PASS	SU-10 B,10
100	917	-185	2,825	PASS	SU-10 B,10
101	882	-220	2,717	PASS	SU-10 B,10
102	803	-299	2,474	PASS	SU-10 B,10
103	791	-311	2,437	PASS	SU-10 B,10
104	885	-217	2,727	PASS	SU-10 B,10
105	792	-310	2,440	PASS	SU-10 B,10

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 141
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,134	32	3,494	PASS	SU-11 C,11
2	1,060	-42	3,266	PASS	SU-11 C,11
3	897	-205	2,764	PASS	SU-11 C,11
4	861	-241	2,653	PASS	SU-11 C,11
5	798	-304	2,459	PASS	SU-11 C,11
6	819	-283	2,523	PASS	SU-11 C,11
7	832	-270	2,563	PASS	SU-11 C,11
8	824	-278	2,539	PASS	SU-11 C,11
9	819	-283	2,523	PASS	SU-11 C,11
10	830	-272	2,557	PASS	SU-11 C,11
11	881	-221	2,714	PASS	SU-11 C,11
12	916	-186	2,822	PASS	SU-11 C,11
13	923	-179	2,844	PASS	SU-11 C,11
14	872	-230	2,687	PASS	SU-11 C,11
15	824	-278	2,539	PASS	SU-11 C,11
16	864	-238	2,662	PASS	SU-11 C,11
17	852	-250	2,625	PASS	SU-11 C,11
18	855	-247	2,634	PASS	SU-11 C,11
19	823	-279	2,536	PASS	SU-11 C,11
20	743	-359	2,289	PASS	SU-11 C,11
21	732	-370	2,255	PASS	SU-11 C,11
22	795	-307	2,449	PASS	SU-11 C,11
23	862	-240	2,656	PASS	SU-11 C,11
24	914	-188	2,816	PASS	SU-11 C,11
25	928	-174	2,859	PASS	SU-11 C,11
26	936	-166	2,884	PASS	SU-11 C,11
27	876	-226	2,699	PASS	SU-11 C,11
28	910	-192	2,804	PASS	SU-11 C,11
29	850	-252	2,619	PASS	SU-11 C,11
30	921	-181	2,838	PASS	SU-11 C,11
31	970	-132	2,989	PASS	SU-11 C,11
32	900	-202	2,773	PASS	SU-11 C,11
33	823	-279	2,536	PASS	SU-11 C,11
34	734	-368	2,261	PASS	SU-11 C,11
35	778	-324	2,397	PASS	SU-11 C,11
36	744	-358	2,292	PASS	SU-11 C,11
37	761	-341	2,345	PASS	SU-11 C,11
38	811	-291	2,499	PASS	SU-11 C,11

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **141**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	859	-243	2,647	PASS	SU-11 C,11
40	851	-251	2,622	PASS	SU-11 C,11
41	865	-237	2,665	PASS	SU-11 C,11
42	967	-135	2,979	PASS	SU-11 C,11
43	971	-131	2,992	PASS	SU-11 C,11
44	896	-206	2,761	PASS	SU-11 C,11
45	868	-234	2,674	PASS	SU-11 C,11
46	855	-247	2,634	PASS	SU-11 C,11
47	791	-311	2,437	PASS	SU-11 C,11
48	863	-239	2,659	PASS	SU-11 C,11
49	821	-281	2,529	PASS	SU-11 C,11
50	964	-138	2,970	PASS	SU-11 C,11
51	968	-134	2,982	PASS	SU-11 C,11
52	897	-205	2,764	PASS	SU-11 C,11
53	802	-300	2,471	PASS	SU-11 C,11
54	776	-326	2,391	PASS	SU-11 C,11
55	747	-355	2,301	PASS	SU-11 C,11
56	802	-300	2,471	PASS	SU-11 C,11
57	786	-316	2,422	PASS	SU-11 C,11
58	809	-293	2,492	PASS	SU-11 C,11
59	891	-211	2,745	PASS	SU-11 C,11
60	790	-312	2,434	PASS	SU-11 C,11
61	812	-290	2,502	PASS	SU-11 C,11
62	781	-321	2,406	PASS	SU-11 C,11
63	787	-315	2,425	PASS	SU-11 C,11
64	811	-291	2,499	PASS	SU-11 C,11
65	879	-223	2,708	PASS	SU-11 C,11
66	952	-150	2,933	PASS	SU-11 C,11
67	863	-239	2,659	PASS	SU-11 C,11
68	847	-255	2,610	PASS	SU-11 C,11
69	785	-317	2,419	PASS	SU-11 C,11
70	761	-341	2,345	PASS	SU-11 C,11
71	788	-314	2,428	PASS	SU-11 C,11
72	884	-218	2,724	PASS	SU-11 C,11
73	966	-136	2,976	PASS	SU-11 C,11
74	944	-158	2,908	PASS	SU-11 C,11
75	898	-204	2,767	PASS	SU-11 C,11
76	838	-264	2,582	PASS	SU-11 C,11

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **141**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	776	-326	2,391	PASS	SU-11 C,11
78	843	-259	2,597	PASS	SU-11 C,11
79	872	-230	2,687	PASS	SU-11 C,11
80	922	-180	2,841	PASS	SU-11 C,11
81	942	-160	2,902	PASS	SU-11 C,11
82	894	-208	2,754	PASS	SU-11 C,11
83	870	-232	2,680	PASS	SU-11 C,11
84	786	-316	2,422	PASS	SU-11 C,11
85	740	-362	2,280	PASS	SU-11 C,11
86	711	-391	2,191	PASS	SU-11 C,11
87	712	-390	2,194	PASS	SU-11 C,11
88	886	-216	2,730	PASS	SU-11 C,11
89	831	-271	2,560	PASS	SU-11 C,11
90	739	-363	2,277	PASS	SU-11 C,11
91	860	-242	2,650	PASS	SU-11 C,11
92	793	-309	2,443	PASS	SU-11 C,11
93	786	-316	2,422	PASS	SU-11 C,11
94	815	-287	2,511	PASS	SU-11 C,11
95	825	-277	2,542	PASS	SU-11 C,11
96	773	-329	2,382	PASS	SU-11 C,11
97	816	-286	2,514	PASS	SU-11 C,11
98	821	-281	2,529	PASS	SU-11 C,11
99	705	-397	2,172	PASS	SU-11 C,11
100	771	-331	2,375	PASS	SU-11 C,11
101	847	-255	2,610	PASS	SU-11 C,11
102	952	-150	2,933	PASS	SU-11 C,11
103	816	-286	2,514	PASS	SU-11 C,11
104	864	-238	2,662	PASS	SU-11 C,11
105	1,184	82	3,648	PASS	SU-11 C,11
106	1,068	-34	3,290	PASS	SU-11 C,11
107	1,004	-98	3,093	PASS	SU-11 C,11
108	1,183	81	3,645	PASS	SU-11 C,11
109	1,003	-99	3,090	PASS	SU-11 C,11
110	837	-265	2,579	PASS	SU-11 C,11
111	1,132	30	3,488	PASS	SU-11 C,11
112	1,040	-62	3,204	PASS	SU-11 C,11
113	962	-140	2,964	PASS	SU-11 C,11
114	866	-236	2,668	PASS	SU-11 C,11

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **141**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	1,149	47	3,540	PASS	SU-11 C,11
116	1,001	-101	3,084	PASS	SU-11 C,11
117	940	-162	2,896	PASS	SU-11 C,11
118	934	-168	2,878	PASS	SU-11 C,11
119	852	-250	2,625	PASS	SU-11 C,11
120	842	-260	2,594	PASS	SU-11 C,11
121	902	-200	2,779	PASS	SU-11 C,11
122	890	-212	2,742	PASS	SU-11 C,11
123	918	-184	2,828	PASS	SU-11 C,11
124	896	-206	2,761	PASS	SU-11 C,11
125	946	-156	2,915	PASS	SU-11 C,11
126	873	-229	2,690	PASS	SU-11 C,11
127	832	-270	2,563	PASS	SU-11 C,11
128	839	-263	2,585	PASS	SU-11 C,11
129	734	-368	2,261	PASS	SU-11 C,11
130	670	-432	2,064	PASS	SU-11 C,11
131	733	-369	2,258	PASS	SU-11 C,11
132	824	-278	2,539	PASS	SU-11 C,11
133	866	-236	2,668	PASS	SU-11 C,11
134	836	-266	2,576	PASS	SU-11 C,11
135	792	-310	2,440	PASS	SU-11 C,11
136	805	-297	2,480	PASS	SU-11 C,11
137	849	-253	2,616	PASS	SU-11 C,11
138	782	-320	2,409	PASS	SU-11 C,11
139	716	-386	2,206	PASS	SU-11 C,11
140	707	-395	2,178	PASS	SU-11 C,11
141	787	-315	2,425	PASS	SU-11 C,11

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **71**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	788	-314	2,428	PASS	SU-12 D,12
2	818	-284	2,520	PASS	SU-12 D,12
3	792	-310	2,440	PASS	SU-12 D,12
4	818	-284	2,520	PASS	SU-12 D,12
5	742	-360	2,286	PASS	SU-12 D,12
6	719	-383	2,215	PASS	SU-12 D,12
7	692	-410	2,132	PASS	SU-12 D,12
8	759	-343	2,338	PASS	SU-12 D,12
9	799	-303	2,462	PASS	SU-12 D,12
10	848	-254	2,613	PASS	SU-12 D,12
11	773	-329	2,382	PASS	SU-12 D,12
12	707	-395	2,178	PASS	SU-12 D,12
13	680	-422	2,095	PASS	SU-12 D,12
14	720	-382	2,218	PASS	SU-12 D,12
15	708	-394	2,181	PASS	SU-12 D,12
16	761	-341	2,345	PASS	SU-12 D,12
17	782	-320	2,409	PASS	SU-12 D,12
18	810	-292	2,496	PASS	SU-12 D,12
19	716	-386	2,206	PASS	SU-12 D,12
20	768	-334	2,366	PASS	SU-12 D,12
21	804	-298	2,477	PASS	SU-12 D,12
22	804	-298	2,477	PASS	SU-12 D,12
23	854	-248	2,631	PASS	SU-12 D,12
24	862	-240	2,656	PASS	SU-12 D,12
25	835	-267	2,573	PASS	SU-12 D,12
26	900	-202	2,773	PASS	SU-12 D,12
27	872	-230	2,687	PASS	SU-12 D,12
28	854	-248	2,631	PASS	SU-12 D,12
29	852	-250	2,625	PASS	SU-12 D,12
30	787	-315	2,425	PASS	SU-12 D,12
31	772	-330	2,379	PASS	SU-12 D,12
32	753	-349	2,320	PASS	SU-12 D,12
33	735	-367	2,265	PASS	SU-12 D,12
34	762	-340	2,348	PASS	SU-12 D,12
35	751	-351	2,314	PASS	SU-12 D,12
36	813	-289	2,505	PASS	SU-12 D,12
37	807	-295	2,486	PASS	SU-12 D,12
38	892	-210	2,748	PASS	SU-12 D,12

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **71**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	797	-305	2,456	PASS	SU-12 D,12
40	839	-263	2,585	PASS	SU-12 D,12
41	761	-341	2,345	PASS	SU-12 D,12
42	780	-322	2,403	PASS	SU-12 D,12
43	813	-289	2,505	PASS	SU-12 D,12
44	900	-202	2,773	PASS	SU-12 D,12
45	906	-196	2,791	PASS	SU-12 D,12
46	882	-220	2,717	PASS	SU-12 D,12
47	753	-349	2,320	PASS	SU-12 D,12
48	797	-305	2,456	PASS	SU-12 D,12
49	792	-310	2,440	PASS	SU-12 D,12
50	769	-333	2,369	PASS	SU-12 D,12
51	866	-236	2,668	PASS	SU-12 D,12
52	885	-217	2,727	PASS	SU-12 D,12
53	783	-319	2,412	PASS	SU-12 D,12
54	704	-398	2,169	PASS	SU-12 D,12
55	681	-421	2,098	PASS	SU-12 D,12
56	1,161	59	3,577	PASS	SU-12 D,12
57	1,061	-41	3,269	PASS	SU-12 D,12
58	940	-162	2,896	PASS	SU-12 D,12
59	911	-191	2,807	PASS	SU-12 D,12
60	929	-173	2,862	PASS	SU-12 D,12
61	873	-229	2,690	PASS	SU-12 D,12
62	814	-288	2,508	PASS	SU-12 D,12
63	745	-357	2,295	PASS	SU-12 D,12
64	855	-247	2,634	PASS	SU-12 D,12
65	814	-288	2,508	PASS	SU-12 D,12
66	891	-211	2,745	PASS	SU-12 D,12
67	829	-273	2,554	PASS	SU-12 D,12
68	921	-181	2,838	PASS	SU-12 D,12

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 71
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
69	869	-233	2,677	PASS	SU-12 D,12
70	894	-208	2,754	PASS	SU-12 D,12
71	875	-227	2,696	PASS	SU-12 D,12

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 81
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	926	-176	2,853	PASS	SU-13 E,13
2	920	-182	2,834	PASS	SU-13 E,13
3	834	-268	2,570	PASS	SU-13 E,13
4	930	-172	2,865	PASS	SU-13 E,13
5	877	-225	2,702	PASS	SU-13 E,13
6	832	-270	2,563	PASS	SU-13 E,13
7	880	-222	2,711	PASS	SU-13 E,13
8	877	-225	2,702	PASS	SU-13 E,13
9	902	-200	2,779	PASS	SU-13 E,13
10	918	-184	2,828	PASS	SU-13 E,13
11	842	-260	2,594	PASS	SU-13 E,13
12	814	-288	2,508	PASS	SU-13 E,13
13	834	-268	2,570	PASS	SU-13 E,13
14	822	-280	2,533	PASS	SU-13 E,13
15	872	-230	2,687	PASS	SU-13 E,13
16	806	-296	2,483	PASS	SU-13 E,13
17	888	-214	2,736	PASS	SU-13 E,13
18	953	-149	2,936	PASS	SU-13 E,13
19	965	-137	2,973	PASS	SU-13 E,13
20	851	-251	2,622	PASS	SU-13 E,13
21	845	-257	2,603	PASS	SU-13 E,13
22	955	-147	2,942	PASS	SU-13 E,13
23	900	-202	2,773	PASS	SU-13 E,13
24	845	-257	2,603	PASS	SU-13 E,13
25	864	-238	2,662	PASS	SU-13 E,13
26	826	-276	2,545	PASS	SU-13 E,13
27	709	-393	2,184	PASS	SU-13 E,13
28	756	-346	2,329	PASS	SU-13 E,13
29	773	-329	2,382	PASS	SU-13 E,13
30	771	-331	2,375	PASS	SU-13 E,13
31	764	-338	2,354	PASS	SU-13 E,13
32	779	-323	2,400	PASS	SU-13 E,13
33	761	-341	2,345	PASS	SU-13 E,13
34	818	-284	2,520	PASS	SU-13 E,13
35	804	-298	2,477	PASS	SU-13 E,13
36	946	-156	2,915	PASS	SU-13 E,13
37	926	-176	2,853	PASS	SU-13 E,13
38	900	-202	2,773	PASS	SU-13 E,13

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **81**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	840	-262	2,588	PASS	SU-13 E,13
40	804	-298	2,477	PASS	SU-13 E,13
41	719	-383	2,215	PASS	SU-13 E,13
42	728	-374	2,243	PASS	SU-13 E,13
43	765	-337	2,357	PASS	SU-13 E,13
44	811	-291	2,499	PASS	SU-13 E,13
45	788	-314	2,428	PASS	SU-13 E,13
46	912	-190	2,810	PASS	SU-13 E,13
47	892	-210	2,748	PASS	SU-13 E,13
48	926	-176	2,853	PASS	SU-13 E,13
49	874	-228	2,693	PASS	SU-13 E,13
50	834	-268	2,570	PASS	SU-13 E,13
51	838	-264	2,582	PASS	SU-13 E,13
52	858	-244	2,643	PASS	SU-13 E,13
53	873	-229	2,690	PASS	SU-13 E,13
54	815	-287	2,511	PASS	SU-13 E,13
55	794	-308	2,446	PASS	SU-13 E,13
56	764	-338	2,354	PASS	SU-13 E,13
57	807	-295	2,486	PASS	SU-13 E,13
58	806	-296	2,483	PASS	SU-13 E,13
59	743	-359	2,289	PASS	SU-13 E,13
60	774	-328	2,385	PASS	SU-13 E,13
61	772	-330	2,379	PASS	SU-13 E,13
62	758	-344	2,335	PASS	SU-13 E,13
63	752	-350	2,317	PASS	SU-13 E,13
64	824	-278	2,539	PASS	SU-13 E,13
65	849	-253	2,616	PASS	SU-13 E,13
66	965	-137	2,973	PASS	SU-13 E,13
67	937	-165	2,887	PASS	SU-13 E,13
68	889	-213	2,739	PASS	SU-13 E,13
69	816	-286	2,514	PASS	SU-13 E,13
70	836	-266	2,576	PASS	SU-13 E,13
71	836	-266	2,576	PASS	SU-13 E,13
72	934	-168	2,878	PASS	SU-13 E,13
73	915	-187	2,819	PASS	SU-13 E,13
74	872	-230	2,687	PASS	SU-13 E,13
75	889	-213	2,739	PASS	SU-13 E,13
76	915	-187	2,819	PASS	SU-13 E,13

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **81**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	944	-158	2,908	PASS	SU-13 E,13
78	872	-230	2,687	PASS	SU-13 E,13
79	872	-230	2,687	PASS	SU-13 E,13
80	870	-232	2,680	PASS	SU-13 E,13
81	874	-228	2,693	PASS	SU-13 E,13

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 140
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	870	-232	2,680	PASS	SU-14 D,14
2	870	-232	2,680	PASS	SU-14 D,14
3	900	-202	2,773	PASS	SU-14 D,14
4	906	-196	2,791	PASS	SU-14 D,14
5	907	-195	2,794	PASS	SU-14 D,14
6	878	-224	2,705	PASS	SU-14 D,14
7	841	-261	2,591	PASS	SU-14 D,14
8	737	-365	2,271	PASS	SU-14 D,14
9	822	-280	2,533	PASS	SU-14 D,14
10	804	-298	2,477	PASS	SU-14 D,14
11	851	-251	2,622	PASS	SU-14 D,14
12	882	-220	2,717	PASS	SU-14 D,14
13	853	-249	2,628	PASS	SU-14 D,14
14	832	-270	2,563	PASS	SU-14 D,14
15	929	-173	2,862	PASS	SU-14 D,14
16	853	-249	2,628	PASS	SU-14 D,14
17	788	-314	2,428	PASS	SU-14 D,14
18	816	-286	2,514	PASS	SU-14 D,14
19	867	-235	2,671	PASS	SU-14 D,14
20	918	-184	2,828	PASS	SU-14 D,14
21	849	-253	2,616	PASS	SU-14 D,14
22	874	-228	2,693	PASS	SU-14 D,14
23	916	-186	2,822	PASS	SU-14 D,14
24	952	-150	2,933	PASS	SU-14 D,14
25	975	-127	3,004	PASS	SU-14 D,14
26	1,014	-88	3,124	PASS	SU-14 D,14
27	988	-114	3,044	PASS	SU-14 D,14
28	1,022	-80	3,149	PASS	SU-14 D,14
29	997	-105	3,072	PASS	SU-14 D,14
30	986	-116	3,038	PASS	SU-14 D,14
31	1,006	-96	3,099	PASS	SU-14 D,14
32	967	-135	2,979	PASS	SU-14 D,14
33	915	-187	2,819	PASS	SU-14 D,14
34	879	-223	2,708	PASS	SU-14 D,14
35	780	-322	2,403	PASS	SU-14 D,14
36	694	-408	2,138	PASS	SU-14 D,14
37	696	-406	2,144	PASS	SU-14 D,14
38	775	-327	2,388	PASS	SU-14 D,14

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	876	-226	2,699	PASS	SU-14 D,14
40	820	-282	2,526	PASS	SU-14 D,14
41	873	-229	2,690	PASS	SU-14 D,14
42	808	-294	2,489	PASS	SU-14 D,14
43	892	-210	2,748	PASS	SU-14 D,14
44	809	-293	2,492	PASS	SU-14 D,14
45	781	-321	2,406	PASS	SU-14 D,14
46	863	-239	2,659	PASS	SU-14 D,14
47	833	-269	2,566	PASS	SU-14 D,14
48	770	-332	2,372	PASS	SU-14 D,14
49	943	-159	2,905	PASS	SU-14 D,14
50	1,055	-47	3,250	PASS	SU-14 D,14
51	969	-133	2,985	PASS	SU-14 D,14
52	980	-122	3,019	PASS	SU-14 D,14
53	952	-150	2,933	PASS	SU-14 D,14
54	946	-156	2,915	PASS	SU-14 D,14
55	954	-148	2,939	PASS	SU-14 D,14
56	952	-150	2,933	PASS	SU-14 D,14
57	932	-170	2,871	PASS	SU-14 D,14
58	833	-269	2,566	PASS	SU-14 D,14
59	799	-303	2,462	PASS	SU-14 D,14
60	888	-214	2,736	PASS	SU-14 D,14
61	882	-220	2,717	PASS	SU-14 D,14
62	873	-229	2,690	PASS	SU-14 D,14
63	878	-224	2,705	PASS	SU-14 D,14
64	816	-286	2,514	PASS	SU-14 D,14
65	782	-320	2,409	PASS	SU-14 D,14
66	799	-303	2,462	PASS	SU-14 D,14
67	771	-331	2,375	PASS	SU-14 D,14
68	788	-314	2,428	PASS	SU-14 D,14
69	729	-373	2,246	PASS	SU-14 D,14
70	736	-366	2,268	PASS	SU-14 D,14
71	814	-288	2,508	PASS	SU-14 D,14
72	747	-355	2,301	PASS	SU-14 D,14
73	887	-215	2,733	PASS	SU-14 D,14
74	843	-259	2,597	PASS	SU-14 D,14
75	887	-215	2,733	PASS	SU-14 D,14
76	866	-236	2,668	PASS	SU-14 D,14

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	969	-133	2,985	PASS	SU-14 D,14
78	896	-206	2,761	PASS	SU-14 D,14
79	904	-198	2,785	PASS	SU-14 D,14
80	895	-207	2,757	PASS	SU-14 D,14
81	830	-272	2,557	PASS	SU-14 D,14
82	772	-330	2,379	PASS	SU-14 D,14
83	830	-272	2,557	PASS	SU-14 D,14
84	802	-300	2,471	PASS	SU-14 D,14
85	763	-339	2,351	PASS	SU-14 D,14
86	814	-288	2,508	PASS	SU-14 D,14
87	900	-202	2,773	PASS	SU-14 D,14
88	858	-244	2,643	PASS	SU-14 D,14
89	846	-256	2,606	PASS	SU-14 D,14
90	912	-190	2,810	PASS	SU-14 D,14
91	928	-174	2,859	PASS	SU-14 D,14
92	852	-250	2,625	PASS	SU-14 D,14
93	877	-225	2,702	PASS	SU-14 D,14
94	898	-204	2,767	PASS	SU-14 D,14
95	840	-262	2,588	PASS	SU-14 D,14
96	898	-204	2,767	PASS	SU-14 D,14
97	853	-249	2,628	PASS	SU-14 D,14
98	947	-155	2,918	PASS	SU-14 D,14
99	855	-247	2,634	PASS	SU-14 D,14
100	976	-126	3,007	PASS	SU-14 D,14
101	1,041	-61	3,207	PASS	SU-14 D,14
102	1,039	-63	3,201	PASS	SU-14 D,14
103	1,075	-27	3,312	PASS	SU-14 D,14
104	1,048	-54	3,229	PASS	SU-14 D,14
105	1,020	-82	3,143	PASS	SU-14 D,14
106	1,020	-82	3,143	PASS	SU-14 D,14
107	1,022	-80	3,149	PASS	SU-14 D,14
108	992	-110	3,056	PASS	SU-14 D,14
109	989	-113	3,047	PASS	SU-14 D,14
110	995	-107	3,066	PASS	SU-14 D,14
111	949	-153	2,924	PASS	SU-14 D,14
112	955	-147	2,942	PASS	SU-14 D,14
113	932	-170	2,871	PASS	SU-14 D,14
114	857	-245	2,640	PASS	SU-14 D,14

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	937	-165	2,887	PASS	SU-14 D,14
116	892	-210	2,748	PASS	SU-14 D,14
117	939	-163	2,893	PASS	SU-14 D,14
118	875	-227	2,696	PASS	SU-14 D,14
119	851	-251	2,622	PASS	SU-14 D,14
120	851	-251	2,622	PASS	SU-14 D,14
121	913	-189	2,813	PASS	SU-14 D,14
122	888	-214	2,736	PASS	SU-14 D,14
123	892	-210	2,748	PASS	SU-14 D,14
124	883	-219	2,720	PASS	SU-14 D,14
125	965	-137	2,973	PASS	SU-14 D,14
126	993	-109	3,059	PASS	SU-14 D,14
127	877	-225	2,702	PASS	SU-14 D,14
128	893	-209	2,751	PASS	SU-14 D,14
129	948	-154	2,921	PASS	SU-14 D,14
130	992	-110	3,056	PASS	SU-14 D,14
131	1,019	-83	3,140	PASS	SU-14 D,14
132	957	-145	2,948	PASS	SU-14 D,14
133	835	-267	2,573	PASS	SU-14 D,14
134	865	-237	2,665	PASS	SU-14 D,14
135	849	-253	2,616	PASS	SU-14 D,14
136	815	-287	2,511	PASS	SU-14 D,14
137	784	-318	2,415	PASS	SU-14 D,14
138	660	-442	2,033	PASS	SU-14 D,14
139	700	-402	2,157	PASS	SU-14 D,14
140	678	-424	2,089	PASS	SU-14 D,14

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 190
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	870	-232	2,680	PASS	SU-15 C,15
2	900	-202	2,773	PASS	SU-15 C,15
3	849	-253	2,616	PASS	SU-15 C,15
4	879	-223	2,708	PASS	SU-15 C,15
5	915	-187	2,819	PASS	SU-15 C,15
6	831	-271	2,560	PASS	SU-15 C,15
7	741	-361	2,283	PASS	SU-15 C,15
8	853	-249	2,628	PASS	SU-15 C,15
9	831	-271	2,560	PASS	SU-15 C,15
10	879	-223	2,708	PASS	SU-15 C,15
11	840	-262	2,588	PASS	SU-15 C,15
12	807	-295	2,486	PASS	SU-15 C,15
13	740	-362	2,280	PASS	SU-15 C,15
14	838	-264	2,582	PASS	SU-15 C,15
15	845	-257	2,603	PASS	SU-15 C,15
16	932	-170	2,871	PASS	SU-15 C,15
17	918	-184	2,828	PASS	SU-15 C,15
18	902	-200	2,779	PASS	SU-15 C,15
19	790	-312	2,434	PASS	SU-15 C,15
20	873	-229	2,690	PASS	SU-15 C,15
21	920	-182	2,834	PASS	SU-15 C,15
22	981	-121	3,022	PASS	SU-15 C,15
23	888	-214	2,736	PASS	SU-15 C,15
24	839	-263	2,585	PASS	SU-15 C,15
25	885	-217	2,727	PASS	SU-15 C,15
26	881	-221	2,714	PASS	SU-15 C,15
27	917	-185	2,825	PASS	SU-15 C,15
28	926	-176	2,853	PASS	SU-15 C,15
29	773	-329	2,382	PASS	SU-15 C,15
30	820	-282	2,526	PASS	SU-15 C,15
31	825	-277	2,542	PASS	SU-15 C,15
32	813	-289	2,505	PASS	SU-15 C,15
33	801	-301	2,468	PASS	SU-15 C,15
34	790	-312	2,434	PASS	SU-15 C,15
35	844	-258	2,600	PASS	SU-15 C,15
36	858	-244	2,643	PASS	SU-15 C,15
37	867	-235	2,671	PASS	SU-15 C,15
38	908	-194	2,798	PASS	SU-15 C,15

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	944	-158	2,908	PASS	SU-15 C,15
40	1,143	41	3,522	PASS	SU-15 C,15
41	1,016	-86	3,130	PASS	SU-15 C,15
42	910	-192	2,804	PASS	SU-15 C,15
43	959	-143	2,955	PASS	SU-15 C,15
44	967	-135	2,979	PASS	SU-15 C,15
45	877	-225	2,702	PASS	SU-15 C,15
46	1,004	-98	3,093	PASS	SU-15 C,15
47	960	-142	2,958	PASS	SU-15 C,15
48	1,011	-91	3,115	PASS	SU-15 C,15
49	999	-103	3,078	PASS	SU-15 C,15
50	931	-171	2,868	PASS	SU-15 C,15
51	850	-252	2,619	PASS	SU-15 C,15
52	810	-292	2,496	PASS	SU-15 C,15
53	807	-295	2,486	PASS	SU-15 C,15
54	764	-338	2,354	PASS	SU-15 C,15
55	815	-287	2,511	PASS	SU-15 C,15
56	869	-233	2,677	PASS	SU-15 C,15
57	914	-188	2,816	PASS	SU-15 C,15
58	935	-167	2,881	PASS	SU-15 C,15
59	936	-166	2,884	PASS	SU-15 C,15
60	887	-215	2,733	PASS	SU-15 C,15
61	1,024	-78	3,155	PASS	SU-15 C,15
62	1,064	-38	3,278	PASS	SU-15 C,15
63	1,078	-24	3,321	PASS	SU-15 C,15
64	1,151	49	3,546	PASS	SU-15 C,15
65	991	-111	3,053	PASS	SU-15 C,15
66	948	-154	2,921	PASS	SU-15 C,15
67	910	-192	2,804	PASS	SU-15 C,15
68	841	-261	2,591	PASS	SU-15 C,15
69	812	-290	2,502	PASS	SU-15 C,15
70	858	-244	2,643	PASS	SU-15 C,15
71	880	-222	2,711	PASS	SU-15 C,15
72	887	-215	2,733	PASS	SU-15 C,15
73	910	-192	2,804	PASS	SU-15 C,15
74	851	-251	2,622	PASS	SU-15 C,15
75	795	-307	2,449	PASS	SU-15 C,15
76	892	-210	2,748	PASS	SU-15 C,15

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	973	-129	2,998	PASS	SU-15 C,15
78	932	-170	2,871	PASS	SU-15 C,15
79	894	-208	2,754	PASS	SU-15 C,15
80	806	-296	2,483	PASS	SU-15 C,15
81	911	-191	2,807	PASS	SU-15 C,15
82	859	-243	2,647	PASS	SU-15 C,15
83	814	-288	2,508	PASS	SU-15 C,15
84	798	-304	2,459	PASS	SU-15 C,15
85	736	-366	2,268	PASS	SU-15 C,15
86	826	-276	2,545	PASS	SU-15 C,15
87	828	-274	2,551	PASS	SU-15 C,15
88	818	-284	2,520	PASS	SU-15 C,15
89	761	-341	2,345	PASS	SU-15 C,15
90	780	-322	2,403	PASS	SU-15 C,15
91	729	-373	2,246	PASS	SU-15 C,15
92	753	-349	2,320	PASS	SU-15 C,15
93	831	-271	2,560	PASS	SU-15 C,15
94	843	-259	2,597	PASS	SU-15 C,15
95	749	-353	2,308	PASS	SU-15 C,15
96	816	-286	2,514	PASS	SU-15 C,15
97	840	-262	2,588	PASS	SU-15 C,15
98	995	-107	3,066	PASS	SU-15 C,15
99	1,147	45	3,534	PASS	SU-15 C,15
100	1,035	-67	3,189	PASS	SU-15 C,15
101	993	-109	3,059	PASS	SU-15 C,15
102	974	-128	3,001	PASS	SU-15 C,15
103	1,001	-101	3,084	PASS	SU-15 C,15
104	918	-184	2,828	PASS	SU-15 C,15
105	960	-142	2,958	PASS	SU-15 C,15
106	890	-212	2,742	PASS	SU-15 C,15
107	870	-232	2,680	PASS	SU-15 C,15
108	936	-166	2,884	PASS	SU-15 C,15
109	948	-154	2,921	PASS	SU-15 C,15
110	874	-228	2,693	PASS	SU-15 C,15
111	919	-183	2,831	PASS	SU-15 C,15
112	930	-172	2,865	PASS	SU-15 C,15
113	916	-186	2,822	PASS	SU-15 C,15
114	1,026	-76	3,161	PASS	SU-15 C,15

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	925	-177	2,850	PASS	SU-15 C,15
116	928	-174	2,859	PASS	SU-15 C,15
117	947	-155	2,918	PASS	SU-15 C,15
118	921	-181	2,838	PASS	SU-15 C,15
119	946	-156	2,915	PASS	SU-15 C,15
120	943	-159	2,905	PASS	SU-15 C,15
121	834	-268	2,570	PASS	SU-15 C,15
122	821	-281	2,529	PASS	SU-15 C,15
123	815	-287	2,511	PASS	SU-15 C,15
124	920	-182	2,834	PASS	SU-15 C,15
125	794	-308	2,446	PASS	SU-15 C,15
126	806	-296	2,483	PASS	SU-15 C,15
127	890	-212	2,742	PASS	SU-15 C,15
128	879	-223	2,708	PASS	SU-15 C,15
129	907	-195	2,794	PASS	SU-15 C,15
130	903	-199	2,782	PASS	SU-15 C,15
131	846	-256	2,606	PASS	SU-15 C,15
132	811	-291	2,499	PASS	SU-15 C,15
133	820	-282	2,526	PASS	SU-15 C,15
134	791	-311	2,437	PASS	SU-15 C,15
135	660	-442	2,033	PASS	SU-15 C,15
136	780	-322	2,403	PASS	SU-15 C,15
137	763	-339	2,351	PASS	SU-15 C,15
138	809	-293	2,492	PASS	SU-15 C,15
139	825	-277	2,542	PASS	SU-15 C,15
140	791	-311	2,437	PASS	SU-15 C,15
141	781	-321	2,406	PASS	SU-15 C,15
142	769	-333	2,369	PASS	SU-15 C,15
143	780	-322	2,403	PASS	SU-15 C,15
144	784	-318	2,415	PASS	SU-15 C,15
145	771	-331	2,375	PASS	SU-15 C,15
146	853	-249	2,628	PASS	SU-15 C,15
147	871	-231	2,684	PASS	SU-15 C,15
148	864	-238	2,662	PASS	SU-15 C,15
149	788	-314	2,428	PASS	SU-15 C,15
150	774	-328	2,385	PASS	SU-15 C,15
151	757	-345	2,332	PASS	SU-15 C,15
152	856	-246	2,637	PASS	SU-15 C,15

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **190**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	832	-270	2,563	PASS	SU-15 C,15
154	805	-297	2,480	PASS	SU-15 C,15
155	806	-296	2,483	PASS	SU-15 C,15
156	817	-285	2,517	PASS	SU-15 C,15
157	829	-273	2,554	PASS	SU-15 C,15
158	886	-216	2,730	PASS	SU-15 C,15
159	746	-356	2,298	PASS	SU-15 C,15
160	808	-294	2,489	PASS	SU-15 C,15
161	871	-231	2,684	PASS	SU-15 C,15
162	861	-241	2,653	PASS	SU-15 C,15
163	909	-193	2,801	PASS	SU-15 C,15
164	885	-217	2,727	PASS	SU-15 C,15
165	837	-265	2,579	PASS	SU-15 C,15
166	877	-225	2,702	PASS	SU-15 C,15
167	969	-133	2,985	PASS	SU-15 C,15
168	905	-197	2,788	PASS	SU-15 C,15
169	957	-145	2,948	PASS	SU-15 C,15
170	968	-134	2,982	PASS	SU-15 C,15
171	869	-233	2,677	PASS	SU-15 C,15
172	1,015	-87	3,127	PASS	SU-15 C,15
173	949	-153	2,924	PASS	SU-15 C,15
174	920	-182	2,834	PASS	SU-15 C,15
175	915	-187	2,819	PASS	SU-15 C,15
176	804	-298	2,477	PASS	SU-15 C,15
177	794	-308	2,446	PASS	SU-15 C,15
178	779	-323	2,400	PASS	SU-15 C,15
179	833	-269	2,566	PASS	SU-15 C,15
180	874	-228	2,693	PASS	SU-15 C,15
181	884	-218	2,724	PASS	SU-15 C,15
182	903	-199	2,782	PASS	SU-15 C,15
183	878	-224	2,705	PASS	SU-15 C,15
184	859	-243	2,647	PASS	SU-15 C,15
185	893	-209	2,751	PASS	SU-15 C,15
186	961	-141	2,961	PASS	SU-15 C,15
187	922	-180	2,841	PASS	SU-15 C,15

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 190
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
188	916	-186	2,822	PASS	SU-15 C,15
189	1,013	-89	3,121	PASS	SU-15 C,15
190	891	-211	2,745	PASS	SU-15 C,15

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	986	-116	3,038	PASS	SU-16 B,16
2	1,025	-77	3,158	PASS	SU-16 B,16
3	908	-194	2,798	PASS	SU-16 B,16
4	929	-173	2,862	PASS	SU-16 B,16
5	960	-142	2,958	PASS	SU-16 B,16
6	871	-231	2,684	PASS	SU-16 B,16
7	939	-163	2,893	PASS	SU-16 B,16
8	964	-138	2,970	PASS	SU-16 B,16
9	1,007	-95	3,103	PASS	SU-16 B,16
10	1,013	-89	3,121	PASS	SU-16 B,16
11	1,016	-86	3,130	PASS	SU-16 B,16
12	967	-135	2,979	PASS	SU-16 B,16
13	957	-145	2,948	PASS	SU-16 B,16
14	933	-169	2,875	PASS	SU-16 B,16
15	964	-138	2,970	PASS	SU-16 B,16
16	873	-229	2,690	PASS	SU-16 B,16
17	880	-222	2,711	PASS	SU-16 B,16
18	990	-112	3,050	PASS	SU-16 B,16
19	1,002	-100	3,087	PASS	SU-16 B,16
20	955	-147	2,942	PASS	SU-16 B,16
21	902	-200	2,779	PASS	SU-16 B,16
22	1,022	-80	3,149	PASS	SU-16 B,16
23	1,178	76	3,629	PASS	SU-16 B,16
24	1,112	10	3,426	PASS	SU-16 B,16
25	1,058	-44	3,260	PASS	SU-16 B,16
26	1,016	-86	3,130	PASS	SU-16 B,16
27	970	-132	2,989	PASS	SU-16 B,16
28	1,016	-86	3,130	PASS	SU-16 B,16
29	1,116	14	3,438	PASS	SU-16 B,16
30	1,004	-98	3,093	PASS	SU-16 B,16
31	980	-122	3,019	PASS	SU-16 B,16
32	1,018	-84	3,136	PASS	SU-16 B,16
33	982	-120	3,026	PASS	SU-16 B,16
34	971	-131	2,992	PASS	SU-16 B,16
35	986	-116	3,038	PASS	SU-16 B,16
36	1,019	-83	3,140	PASS	SU-16 B,16
37	950	-152	2,927	PASS	SU-16 B,16
38	899	-203	2,770	PASS	SU-16 B,16

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	897	-205	2,764	PASS	SU-16 B,16
40	897	-205	2,764	PASS	SU-16 B,16
41	969	-133	2,985	PASS	SU-16 B,16
42	992	-110	3,056	PASS	SU-16 B,16
43	994	-108	3,062	PASS	SU-16 B,16
44	989	-113	3,047	PASS	SU-16 B,16
45	986	-116	3,038	PASS	SU-16 B,16
46	956	-146	2,945	PASS	SU-16 B,16
47	1,054	-48	3,247	PASS	SU-16 B,16
48	948	-154	2,921	PASS	SU-16 B,16
49	978	-124	3,013	PASS	SU-16 B,16
50	908	-194	2,798	PASS	SU-16 B,16
51	955	-147	2,942	PASS	SU-16 B,16
52	966	-136	2,976	PASS	SU-16 B,16
53	1,000	-102	3,081	PASS	SU-16 B,16
54	1,011	-91	3,115	PASS	SU-16 B,16
55	981	-121	3,022	PASS	SU-16 B,16
56	879	-223	2,708	PASS	SU-16 B,16
57	883	-219	2,720	PASS	SU-16 B,16
58	841	-261	2,591	PASS	SU-16 B,16
59	865	-237	2,665	PASS	SU-16 B,16
60	883	-219	2,720	PASS	SU-16 B,16
61	921	-181	2,838	PASS	SU-16 B,16
62	930	-172	2,865	PASS	SU-16 B,16
63	863	-239	2,659	PASS	SU-16 B,16
64	989	-113	3,047	PASS	SU-16 B,16
65	871	-231	2,684	PASS	SU-16 B,16
66	908	-194	2,798	PASS	SU-16 B,16
67	921	-181	2,838	PASS	SU-16 B,16
68	899	-203	2,770	PASS	SU-16 B,16
69	783	-319	2,412	PASS	SU-16 B,16
70	971	-131	2,992	PASS	SU-16 B,16
71	958	-144	2,952	PASS	SU-16 B,16
72	983	-119	3,029	PASS	SU-16 B,16
73	971	-131	2,992	PASS	SU-16 B,16
74	1,036	-66	3,192	PASS	SU-16 B,16
75	992	-110	3,056	PASS	SU-16 B,16
76	902	-200	2,779	PASS	SU-16 B,16

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	996	-106	3,069	PASS	SU-16 B,16
78	934	-168	2,878	PASS	SU-16 B,16
79	866	-236	2,668	PASS	SU-16 B,16
80	880	-222	2,711	PASS	SU-16 B,16
81	960	-142	2,958	PASS	SU-16 B,16
82	1,029	-73	3,170	PASS	SU-16 B,16
83	1,052	-50	3,241	PASS	SU-16 B,16
84	1,126	24	3,469	PASS	SU-16 B,16
85	1,022	-80	3,149	PASS	SU-16 B,16
86	1,012	-90	3,118	PASS	SU-16 B,16
87	920	-182	2,834	PASS	SU-16 B,16
88	960	-142	2,958	PASS	SU-16 B,16
89	916	-186	2,822	PASS	SU-16 B,16
90	858	-244	2,643	PASS	SU-16 B,16
91	886	-216	2,730	PASS	SU-16 B,16
92	933	-169	2,875	PASS	SU-16 B,16
93	908	-194	2,798	PASS	SU-16 B,16
94	878	-224	2,705	PASS	SU-16 B,16
95	888	-214	2,736	PASS	SU-16 B,16
96	889	-213	2,739	PASS	SU-16 B,16
97	973	-129	2,998	PASS	SU-16 B,16
98	993	-109	3,059	PASS	SU-16 B,16
99	989	-113	3,047	PASS	SU-16 B,16
100	850	-252	2,619	PASS	SU-16 B,16
101	837	-265	2,579	PASS	SU-16 B,16
102	945	-157	2,912	PASS	SU-16 B,16
103	1,031	-71	3,176	PASS	SU-16 B,16
104	1,059	-43	3,263	PASS	SU-16 B,16
105	1,141	39	3,515	PASS	SU-16 B,16
106	1,015	-87	3,127	PASS	SU-16 B,16
107	1,077	-25	3,318	PASS	SU-16 B,16
108	1,101	-1	3,392	PASS	SU-16 B,16
109	1,038	-64	3,198	PASS	SU-16 B,16
110	1,034	-68	3,186	PASS	SU-16 B,16
111	1,020	-82	3,143	PASS	SU-16 B,16
112	911	-191	2,807	PASS	SU-16 B,16
113	925	-177	2,850	PASS	SU-16 B,16
114	1,002	-100	3,087	PASS	SU-16 B,16

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **133**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	1,101	-1	3,392	PASS	SU-16 B,16
116	1,007	-95	3,103	PASS	SU-16 B,16
117	1,017	-85	3,133	PASS	SU-16 B,16
118	1,069	-33	3,294	PASS	SU-16 B,16
119	1,073	-29	3,306	PASS	SU-16 B,16
120	1,024	-78	3,155	PASS	SU-16 B,16
121	1,110	8	3,420	PASS	SU-16 B,16
122	1,125	23	3,466	PASS	SU-16 B,16
123	986	-116	3,038	PASS	SU-16 B,16
124	1,030	-72	3,173	PASS	SU-16 B,16
125	1,019	-83	3,140	PASS	SU-16 B,16
126	1,071	-31	3,300	PASS	SU-16 B,16
127	1,009	-93	3,109	PASS	SU-16 B,16
128	1,054	-48	3,247	PASS	SU-16 B,16
129	926	-176	2,853	PASS	SU-16 B,16
130	1,018	-84	3,136	PASS	SU-16 B,16
131	947	-155	2,918	PASS	SU-16 B,16
132	960	-142	2,958	PASS	SU-16 B,16
133	889	-213	2,739	PASS	SU-16 B,16

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **110**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,185	83	3,651	PASS	SU-17 A,17
2	1,099	-3	3,386	PASS	SU-17 A,17
3	1,041	-61	3,207	PASS	SU-17 A,17
4	1,024	-78	3,155	PASS	SU-17 A,17
5	960	-142	2,958	PASS	SU-17 A,17
6	1,018	-84	3,136	PASS	SU-17 A,17
7	1,038	-64	3,198	PASS	SU-17 A,17
8	1,001	-101	3,084	PASS	SU-17 A,17
9	1,001	-101	3,084	PASS	SU-17 A,17
10	999	-103	3,078	PASS	SU-17 A,17
11	1,029	-73	3,170	PASS	SU-17 A,17
12	1,070	-32	3,297	PASS	SU-17 A,17
13	1,194	92	3,679	PASS	SU-17 A,17
14	1,120	18	3,451	PASS	SU-17 A,17
15	1,080	-22	3,327	PASS	SU-17 A,17
16	997	-105	3,072	PASS	SU-17 A,17
17	892	-210	2,748	PASS	SU-17 A,17
18	885	-217	2,727	PASS	SU-17 A,17
19	937	-165	2,887	PASS	SU-17 A,17
20	868	-234	2,674	PASS	SU-17 A,17
21	880	-222	2,711	PASS	SU-17 A,17
22	859	-243	2,647	PASS	SU-17 A,17
23	900	-202	2,773	PASS	SU-17 A,17
24	906	-196	2,791	PASS	SU-17 A,17
25	963	-139	2,967	PASS	SU-17 A,17
26	939	-163	2,893	PASS	SU-17 A,17
27	879	-223	2,708	PASS	SU-17 A,17
28	971	-131	2,992	PASS	SU-17 A,17
29	1,104	2	3,401	PASS	SU-17 A,17
30	1,089	-13	3,355	PASS	SU-17 A,17
31	1,085	-17	3,343	PASS	SU-17 A,17
32	1,005	-97	3,096	PASS	SU-17 A,17
33	1,053	-49	3,244	PASS	SU-17 A,17
34	971	-131	2,992	PASS	SU-17 A,17
35	789	-313	2,431	PASS	SU-17 A,17
36	834	-268	2,570	PASS	SU-17 A,17
37	978	-124	3,013	PASS	SU-17 A,17
38	1,070	-32	3,297	PASS	SU-17 A,17

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 110
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	994	-108	3,062	PASS	SU-17 A,17
40	974	-128	3,001	PASS	SU-17 A,17
41	889	-213	2,739	PASS	SU-17 A,17
42	886	-216	2,730	PASS	SU-17 A,17
43	947	-155	2,918	PASS	SU-17 A,17
44	930	-172	2,865	PASS	SU-17 A,17
45	910	-192	2,804	PASS	SU-17 A,17
46	855	-247	2,634	PASS	SU-17 A,17
47	886	-216	2,730	PASS	SU-17 A,17
48	860	-242	2,650	PASS	SU-17 A,17
49	820	-282	2,526	PASS	SU-17 A,17
50	761	-341	2,345	PASS	SU-17 A,17
51	910	-192	2,804	PASS	SU-17 A,17
52	842	-260	2,594	PASS	SU-17 A,17
53	879	-223	2,708	PASS	SU-17 A,17
54	947	-155	2,918	PASS	SU-17 A,17
55	943	-159	2,905	PASS	SU-17 A,17
56	975	-127	3,004	PASS	SU-17 A,17
57	879	-223	2,708	PASS	SU-17 A,17
58	930	-172	2,865	PASS	SU-17 A,17
59	896	-206	2,761	PASS	SU-17 A,17
60	875	-227	2,696	PASS	SU-17 A,17
61	919	-183	2,831	PASS	SU-17 A,17
62	973	-129	2,998	PASS	SU-17 A,17
63	932	-170	2,871	PASS	SU-17 A,17
64	924	-178	2,847	PASS	SU-17 A,17
65	929	-173	2,862	PASS	SU-17 A,17
66	929	-173	2,862	PASS	SU-17 A,17
67	876	-226	2,699	PASS	SU-17 A,17
68	944	-158	2,908	PASS	SU-17 A,17
69	937	-165	2,887	PASS	SU-17 A,17
70	1,008	-94	3,106	PASS	SU-17 A,17
71	1,030	-72	3,173	PASS	SU-17 A,17
72	890	-212	2,742	PASS	SU-17 A,17
73	817	-285	2,517	PASS	SU-17 A,17
74	880	-222	2,711	PASS	SU-17 A,17
75	907	-195	2,794	PASS	SU-17 A,17
76	1,008	-94	3,106	PASS	SU-17 A,17

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **110**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	931	-171	2,868	PASS	SU-17 A,17
78	948	-154	2,921	PASS	SU-17 A,17
79	997	-105	3,072	PASS	SU-17 A,17
80	974	-128	3,001	PASS	SU-17 A,17
81	1,032	-70	3,180	PASS	SU-17 A,17
82	1,084	-18	3,340	PASS	SU-17 A,17
83	1,035	-67	3,189	PASS	SU-17 A,17
84	954	-148	2,939	PASS	SU-17 A,17
85	927	-175	2,856	PASS	SU-17 A,17
86	844	-258	2,600	PASS	SU-17 A,17
87	898	-204	2,767	PASS	SU-17 A,17
88	892	-210	2,748	PASS	SU-17 A,17
89	1,002	-100	3,087	PASS	SU-17 A,17
90	1,127	25	3,472	PASS	SU-17 A,17
91	1,093	-9	3,367	PASS	SU-17 A,17
92	1,024	-78	3,155	PASS	SU-17 A,17
93	990	-112	3,050	PASS	SU-17 A,17
94	933	-169	2,875	PASS	SU-17 A,17
95	841	-261	2,591	PASS	SU-17 A,17
96	932	-170	2,871	PASS	SU-17 A,17
97	989	-113	3,047	PASS	SU-17 A,17
98	1,018	-84	3,136	PASS	SU-17 A,17
99	1,045	-57	3,220	PASS	SU-17 A,17
100	1,083	-19	3,337	PASS	SU-17 A,17
101	948	-154	2,921	PASS	SU-17 A,17
102	914	-188	2,816	PASS	SU-17 A,17
103	832	-270	2,563	PASS	SU-17 A,17
104	856	-246	2,637	PASS	SU-17 A,17
105	806	-296	2,483	PASS	SU-17 A,17
106	940	-162	2,896	PASS	SU-17 A,17
107	1,082	-20	3,334	PASS	SU-17 A,17

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 110
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
108	975	-127	3,004	PASS	SU-17 A,17
109	968	-134	2,982	PASS	SU-17 A,17
110	926	-176	2,853	PASS	SU-17 A,17

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **92**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,012	-90	3,118	PASS	SU-18 B,18
2	885	-217	2,727	PASS	SU-18 B,18
3	862	-240	2,656	PASS	SU-18 B,18
4	850	-252	2,619	PASS	SU-18 B,18
5	842	-260	2,594	PASS	SU-18 B,18
6	850	-252	2,619	PASS	SU-18 B,18
7	879	-223	2,708	PASS	SU-18 B,18
8	918	-184	2,828	PASS	SU-18 B,18
9	831	-271	2,560	PASS	SU-18 B,18
10	813	-289	2,505	PASS	SU-18 B,18
11	925	-177	2,850	PASS	SU-18 B,18
12	991	-111	3,053	PASS	SU-18 B,18
13	895	-207	2,757	PASS	SU-18 B,18
14	840	-262	2,588	PASS	SU-18 B,18
15	812	-290	2,502	PASS	SU-18 B,18
16	790	-312	2,434	PASS	SU-18 B,18
17	892	-210	2,748	PASS	SU-18 B,18
18	748	-354	2,305	PASS	SU-18 B,18
19	694	-408	2,138	PASS	SU-18 B,18
20	763	-339	2,351	PASS	SU-18 B,18
21	863	-239	2,659	PASS	SU-18 B,18
22	930	-172	2,865	PASS	SU-18 B,18
23	966	-136	2,976	PASS	SU-18 B,18
24	998	-104	3,075	PASS	SU-18 B,18
25	853	-249	2,628	PASS	SU-18 B,18
26	789	-313	2,431	PASS	SU-18 B,18
27	867	-235	2,671	PASS	SU-18 B,18
28	838	-264	2,582	PASS	SU-18 B,18
29	872	-230	2,687	PASS	SU-18 B,18
30	856	-246	2,637	PASS	SU-18 B,18
31	911	-191	2,807	PASS	SU-18 B,18
32	907	-195	2,794	PASS	SU-18 B,18
33	883	-219	2,720	PASS	SU-18 B,18
34	906	-196	2,791	PASS	SU-18 B,18
35	936	-166	2,884	PASS	SU-18 B,18
36	1,012	-90	3,118	PASS	SU-18 B,18
37	970	-132	2,989	PASS	SU-18 B,18
38	946	-156	2,915	PASS	SU-18 B,18

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **92**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	826	-276	2,545	PASS	SU-18 B,18
40	940	-162	2,896	PASS	SU-18 B,18
41	940	-162	2,896	PASS	SU-18 B,18
42	941	-161	2,899	PASS	SU-18 B,18
43	867	-235	2,671	PASS	SU-18 B,18
44	818	-284	2,520	PASS	SU-18 B,18
45	771	-331	2,375	PASS	SU-18 B,18
46	709	-393	2,184	PASS	SU-18 B,18
47	750	-352	2,311	PASS	SU-18 B,18
48	829	-273	2,554	PASS	SU-18 B,18
49	768	-334	2,366	PASS	SU-18 B,18
50	724	-378	2,231	PASS	SU-18 B,18
51	772	-330	2,379	PASS	SU-18 B,18
52	751	-351	2,314	PASS	SU-18 B,18
53	942	-160	2,902	PASS	SU-18 B,18
54	898	-204	2,767	PASS	SU-18 B,18
55	856	-246	2,637	PASS	SU-18 B,18
56	1,010	-92	3,112	PASS	SU-18 B,18
57	988	-114	3,044	PASS	SU-18 B,18
58	1,029	-73	3,170	PASS	SU-18 B,18
59	950	-152	2,927	PASS	SU-18 B,18
60	890	-212	2,742	PASS	SU-18 B,18
61	842	-260	2,594	PASS	SU-18 B,18
62	778	-324	2,397	PASS	SU-18 B,18
63	876	-226	2,699	PASS	SU-18 B,18
64	1,043	-59	3,213	PASS	SU-18 B,18
65	977	-125	3,010	PASS	SU-18 B,18
66	930	-172	2,865	PASS	SU-18 B,18
67	881	-221	2,714	PASS	SU-18 B,18
68	946	-156	2,915	PASS	SU-18 B,18
69	994	-108	3,062	PASS	SU-18 B,18
70	912	-190	2,810	PASS	SU-18 B,18
71	921	-181	2,838	PASS	SU-18 B,18
72	868	-234	2,674	PASS	SU-18 B,18
73	879	-223	2,708	PASS	SU-18 B,18
74	840	-262	2,588	PASS	SU-18 B,18
75	792	-310	2,440	PASS	SU-18 B,18
76	881	-221	2,714	PASS	SU-18 B,18

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **92**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	923	-179	2,844	PASS	SU-18 B,18
78	915	-187	2,819	PASS	SU-18 B,18
79	901	-201	2,776	PASS	SU-18 B,18
80	1,004	-98	3,093	PASS	SU-18 B,18
81	973	-129	2,998	PASS	SU-18 B,18
82	906	-196	2,791	PASS	SU-18 B,18
83	838	-264	2,582	PASS	SU-18 B,18
84	869	-233	2,677	PASS	SU-18 B,18
85	913	-189	2,813	PASS	SU-18 B,18
86	894	-208	2,754	PASS	SU-18 B,18
87	901	-201	2,776	PASS	SU-18 B,18
88	817	-285	2,517	PASS	SU-18 B,18
89	843	-259	2,597	PASS	SU-18 B,18
90	858	-244	2,643	PASS	SU-18 B,18
91	905	-197	2,788	PASS	SU-18 B,18
92	876	-226	2,699	PASS	SU-18 B,18

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 181
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	980	-122	3,019	PASS	SU-19 C,19
2	974	-128	3,001	PASS	SU-19 C,19
3	968	-134	2,982	PASS	SU-19 C,19
4	1,036	-66	3,192	PASS	SU-19 C,19
5	980	-122	3,019	PASS	SU-19 C,19
6	963	-139	2,967	PASS	SU-19 C,19
7	841	-261	2,591	PASS	SU-19 C,19
8	835	-267	2,573	PASS	SU-19 C,19
9	901	-201	2,776	PASS	SU-19 C,19
10	913	-189	2,813	PASS	SU-19 C,19
11	969	-133	2,985	PASS	SU-19 C,19
12	932	-170	2,871	PASS	SU-19 C,19
13	907	-195	2,794	PASS	SU-19 C,19
14	989	-113	3,047	PASS	SU-19 C,19
15	891	-211	2,745	PASS	SU-19 C,19
16	876	-226	2,699	PASS	SU-19 C,19
17	938	-164	2,890	PASS	SU-19 C,19
18	894	-208	2,754	PASS	SU-19 C,19
19	936	-166	2,884	PASS	SU-19 C,19
20	940	-162	2,896	PASS	SU-19 C,19
21	991	-111	3,053	PASS	SU-19 C,19
22	937	-165	2,887	PASS	SU-19 C,19
23	992	-110	3,056	PASS	SU-19 C,19
24	912	-190	2,810	PASS	SU-19 C,19
25	907	-195	2,794	PASS	SU-19 C,19
26	892	-210	2,748	PASS	SU-19 C,19
27	933	-169	2,875	PASS	SU-19 C,19
28	907	-195	2,794	PASS	SU-19 C,19
29	968	-134	2,982	PASS	SU-19 C,19
30	920	-182	2,834	PASS	SU-19 C,19
31	1,025	-77	3,158	PASS	SU-19 C,19
32	1,097	-5	3,380	PASS	SU-19 C,19
33	1,019	-83	3,140	PASS	SU-19 C,19
34	1,127	25	3,472	PASS	SU-19 C,19
35	1,148	46	3,537	PASS	SU-19 C,19
36	1,010	-92	3,112	PASS	SU-19 C,19
37	914	-188	2,816	PASS	SU-19 C,19
38	850	-252	2,619	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	870	-232	2,680	PASS	SU-19 C,19
40	937	-165	2,887	PASS	SU-19 C,19
41	890	-212	2,742	PASS	SU-19 C,19
42	827	-275	2,548	PASS	SU-19 C,19
43	790	-312	2,434	PASS	SU-19 C,19
44	808	-294	2,489	PASS	SU-19 C,19
45	764	-338	2,354	PASS	SU-19 C,19
46	732	-370	2,255	PASS	SU-19 C,19
47	772	-330	2,379	PASS	SU-19 C,19
48	836	-266	2,576	PASS	SU-19 C,19
49	1,016	-86	3,130	PASS	SU-19 C,19
50	960	-142	2,958	PASS	SU-19 C,19
51	883	-219	2,720	PASS	SU-19 C,19
52	929	-173	2,862	PASS	SU-19 C,19
53	909	-193	2,801	PASS	SU-19 C,19
54	1,002	-100	3,087	PASS	SU-19 C,19
55	990	-112	3,050	PASS	SU-19 C,19
56	891	-211	2,745	PASS	SU-19 C,19
57	891	-211	2,745	PASS	SU-19 C,19
58	927	-175	2,856	PASS	SU-19 C,19
59	905	-197	2,788	PASS	SU-19 C,19
60	918	-184	2,828	PASS	SU-19 C,19
61	835	-267	2,573	PASS	SU-19 C,19
62	947	-155	2,918	PASS	SU-19 C,19
63	993	-109	3,059	PASS	SU-19 C,19
64	949	-153	2,924	PASS	SU-19 C,19
65	884	-218	2,724	PASS	SU-19 C,19
66	957	-145	2,948	PASS	SU-19 C,19
67	879	-223	2,708	PASS	SU-19 C,19
68	939	-163	2,893	PASS	SU-19 C,19
69	897	-205	2,764	PASS	SU-19 C,19
70	994	-108	3,062	PASS	SU-19 C,19
71	994	-108	3,062	PASS	SU-19 C,19
72	901	-201	2,776	PASS	SU-19 C,19
73	840	-262	2,588	PASS	SU-19 C,19
74	826	-276	2,545	PASS	SU-19 C,19
75	840	-262	2,588	PASS	SU-19 C,19
76	953	-149	2,936	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	996	-106	3,069	PASS	SU-19 C,19
78	954	-148	2,939	PASS	SU-19 C,19
79	932	-170	2,871	PASS	SU-19 C,19
80	942	-160	2,902	PASS	SU-19 C,19
81	958	-144	2,952	PASS	SU-19 C,19
82	896	-206	2,761	PASS	SU-19 C,19
83	950	-152	2,927	PASS	SU-19 C,19
84	948	-154	2,921	PASS	SU-19 C,19
85	952	-150	2,933	PASS	SU-19 C,19
86	1,009	-93	3,109	PASS	SU-19 C,19
87	974	-128	3,001	PASS	SU-19 C,19
88	1,051	-51	3,238	PASS	SU-19 C,19
89	986	-116	3,038	PASS	SU-19 C,19
90	981	-121	3,022	PASS	SU-19 C,19
91	948	-154	2,921	PASS	SU-19 C,19
92	866	-236	2,668	PASS	SU-19 C,19
93	832	-270	2,563	PASS	SU-19 C,19
94	870	-232	2,680	PASS	SU-19 C,19
95	926	-176	2,853	PASS	SU-19 C,19
96	915	-187	2,819	PASS	SU-19 C,19
97	1,014	-88	3,124	PASS	SU-19 C,19
98	1,037	-65	3,195	PASS	SU-19 C,19
99	1,001	-101	3,084	PASS	SU-19 C,19
100	923	-179	2,844	PASS	SU-19 C,19
101	888	-214	2,736	PASS	SU-19 C,19
102	902	-200	2,779	PASS	SU-19 C,19
103	966	-136	2,976	PASS	SU-19 C,19
104	1,009	-93	3,109	PASS	SU-19 C,19
105	972	-130	2,995	PASS	SU-19 C,19
106	921	-181	2,838	PASS	SU-19 C,19
107	1,001	-101	3,084	PASS	SU-19 C,19
108	1,058	-44	3,260	PASS	SU-19 C,19
109	996	-106	3,069	PASS	SU-19 C,19
110	1,013	-89	3,121	PASS	SU-19 C,19
111	956	-146	2,945	PASS	SU-19 C,19
112	985	-117	3,035	PASS	SU-19 C,19
113	881	-221	2,714	PASS	SU-19 C,19
114	829	-273	2,554	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	787	-315	2,425	PASS	SU-19 C,19
116	793	-309	2,443	PASS	SU-19 C,19
117	727	-375	2,240	PASS	SU-19 C,19
118	782	-320	2,409	PASS	SU-19 C,19
119	834	-268	2,570	PASS	SU-19 C,19
120	776	-326	2,391	PASS	SU-19 C,19
121	842	-260	2,594	PASS	SU-19 C,19
122	878	-224	2,705	PASS	SU-19 C,19
123	904	-198	2,785	PASS	SU-19 C,19
124	869	-233	2,677	PASS	SU-19 C,19
125	828	-274	2,551	PASS	SU-19 C,19
126	872	-230	2,687	PASS	SU-19 C,19
127	901	-201	2,776	PASS	SU-19 C,19
128	905	-197	2,788	PASS	SU-19 C,19
129	970	-132	2,989	PASS	SU-19 C,19
130	960	-142	2,958	PASS	SU-19 C,19
131	977	-125	3,010	PASS	SU-19 C,19
132	921	-181	2,838	PASS	SU-19 C,19
133	917	-185	2,825	PASS	SU-19 C,19
134	880	-222	2,711	PASS	SU-19 C,19
135	956	-146	2,945	PASS	SU-19 C,19
136	1,062	-40	3,272	PASS	SU-19 C,19
137	1,026	-76	3,161	PASS	SU-19 C,19
138	1,003	-99	3,090	PASS	SU-19 C,19
139	1,050	-52	3,235	PASS	SU-19 C,19
140	961	-141	2,961	PASS	SU-19 C,19
141	984	-118	3,032	PASS	SU-19 C,19
142	887	-215	2,733	PASS	SU-19 C,19
143	902	-200	2,779	PASS	SU-19 C,19
144	948	-154	2,921	PASS	SU-19 C,19
145	939	-163	2,893	PASS	SU-19 C,19
146	937	-165	2,887	PASS	SU-19 C,19
147	810	-292	2,496	PASS	SU-19 C,19
148	823	-279	2,536	PASS	SU-19 C,19
149	820	-282	2,526	PASS	SU-19 C,19
150	873	-229	2,690	PASS	SU-19 C,19
151	843	-259	2,597	PASS	SU-19 C,19
152	897	-205	2,764	PASS	SU-19 C,19

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **181**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	925	-177	2,850	PASS	SU-19 C,19
154	916	-186	2,822	PASS	SU-19 C,19
155	960	-142	2,958	PASS	SU-19 C,19
156	922	-180	2,841	PASS	SU-19 C,19
157	857	-245	2,640	PASS	SU-19 C,19
158	865	-237	2,665	PASS	SU-19 C,19
159	914	-188	2,816	PASS	SU-19 C,19
160	919	-183	2,831	PASS	SU-19 C,19
161	912	-190	2,810	PASS	SU-19 C,19
162	847	-255	2,610	PASS	SU-19 C,19
163	900	-202	2,773	PASS	SU-19 C,19
164	903	-199	2,782	PASS	SU-19 C,19
165	951	-151	2,930	PASS	SU-19 C,19
166	870	-232	2,680	PASS	SU-19 C,19
167	785	-317	2,419	PASS	SU-19 C,19
168	826	-276	2,545	PASS	SU-19 C,19
169	820	-282	2,526	PASS	SU-19 C,19
170	893	-209	2,751	PASS	SU-19 C,19
171	965	-137	2,973	PASS	SU-19 C,19
172	949	-153	2,924	PASS	SU-19 C,19
173	957	-145	2,948	PASS	SU-19 C,19
174	943	-159	2,905	PASS	SU-19 C,19
175	911	-191	2,807	PASS	SU-19 C,19
176	935	-167	2,881	PASS	SU-19 C,19
177	948	-154	2,921	PASS	SU-19 C,19
178	830	-272	2,557	PASS	SU-19 C,19
179	845	-257	2,603	PASS	SU-19 C,19
180	790	-312	2,434	PASS	SU-19 C,19
181	841	-261	2,591	PASS	SU-19 C,19

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **99**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	875	-227	2,696	PASS	SU-20 D,20
2	885	-217	2,727	PASS	SU-20 D,20
3	899	-203	2,770	PASS	SU-20 D,20
4	840	-262	2,588	PASS	SU-20 D,20
5	877	-225	2,702	PASS	SU-20 D,20
6	800	-302	2,465	PASS	SU-20 D,20
7	1,050	-52	3,235	PASS	SU-20 D,20
8	879	-223	2,708	PASS	SU-20 D,20
9	837	-265	2,579	PASS	SU-20 D,20
10	885	-217	2,727	PASS	SU-20 D,20
11	845	-257	2,603	PASS	SU-20 D,20
12	851	-251	2,622	PASS	SU-20 D,20
13	889	-213	2,739	PASS	SU-20 D,20
14	862	-240	2,656	PASS	SU-20 D,20
15	898	-204	2,767	PASS	SU-20 D,20
16	1,037	-65	3,195	PASS	SU-20 D,20
17	981	-121	3,022	PASS	SU-20 D,20
18	999	-103	3,078	PASS	SU-20 D,20
19	921	-181	2,838	PASS	SU-20 D,20
20	922	-180	2,841	PASS	SU-20 D,20
21	982	-120	3,026	PASS	SU-20 D,20
22	938	-164	2,890	PASS	SU-20 D,20
23	932	-170	2,871	PASS	SU-20 D,20
24	858	-244	2,643	PASS	SU-20 D,20
25	787	-315	2,425	PASS	SU-20 D,20
26	846	-256	2,606	PASS	SU-20 D,20
27	872	-230	2,687	PASS	SU-20 D,20
28	984	-118	3,032	PASS	SU-20 D,20
29	972	-130	2,995	PASS	SU-20 D,20
30	956	-146	2,945	PASS	SU-20 D,20
31	973	-129	2,998	PASS	SU-20 D,20
32	837	-265	2,579	PASS	SU-20 D,20
33	901	-201	2,776	PASS	SU-20 D,20
34	832	-270	2,563	PASS	SU-20 D,20
35	954	-148	2,939	PASS	SU-20 D,20
36	926	-176	2,853	PASS	SU-20 D,20
37	868	-234	2,674	PASS	SU-20 D,20
38	963	-139	2,967	PASS	SU-20 D,20

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **99**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	926	-176	2,853	PASS	SU-20 D,20
40	875	-227	2,696	PASS	SU-20 D,20
41	903	-199	2,782	PASS	SU-20 D,20
42	909	-193	2,801	PASS	SU-20 D,20
43	878	-224	2,705	PASS	SU-20 D,20
44	770	-332	2,372	PASS	SU-20 D,20
45	787	-315	2,425	PASS	SU-20 D,20
46	802	-300	2,471	PASS	SU-20 D,20
47	841	-261	2,591	PASS	SU-20 D,20
48	817	-285	2,517	PASS	SU-20 D,20
49	743	-359	2,289	PASS	SU-20 D,20
50	832	-270	2,563	PASS	SU-20 D,20
51	812	-290	2,502	PASS	SU-20 D,20
52	840	-262	2,588	PASS	SU-20 D,20
53	903	-199	2,782	PASS	SU-20 D,20
54	785	-317	2,419	PASS	SU-20 D,20
55	870	-232	2,680	PASS	SU-20 D,20
56	892	-210	2,748	PASS	SU-20 D,20
57	826	-276	2,545	PASS	SU-20 D,20
58	832	-270	2,563	PASS	SU-20 D,20
59	799	-303	2,462	PASS	SU-20 D,20
60	717	-385	2,209	PASS	SU-20 D,20
61	777	-325	2,394	PASS	SU-20 D,20
62	721	-381	2,221	PASS	SU-20 D,20
63	801	-301	2,468	PASS	SU-20 D,20
64	788	-314	2,428	PASS	SU-20 D,20
65	766	-336	2,360	PASS	SU-20 D,20
66	855	-247	2,634	PASS	SU-20 D,20
67	887	-215	2,733	PASS	SU-20 D,20
68	945	-157	2,912	PASS	SU-20 D,20
69	893	-209	2,751	PASS	SU-20 D,20
70	878	-224	2,705	PASS	SU-20 D,20
71	853	-249	2,628	PASS	SU-20 D,20
72	782	-320	2,409	PASS	SU-20 D,20
73	785	-317	2,419	PASS	SU-20 D,20
74	742	-360	2,286	PASS	SU-20 D,20
75	718	-384	2,212	PASS	SU-20 D,20
76	814	-288	2,508	PASS	SU-20 D,20

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 99
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	825	-277	2,542	PASS	SU-20 D,20
78	843	-259	2,597	PASS	SU-20 D,20
79	843	-259	2,597	PASS	SU-20 D,20
80	983	-119	3,029	PASS	SU-20 D,20
81	932	-170	2,871	PASS	SU-20 D,20
82	792	-310	2,440	PASS	SU-20 D,20
83	897	-205	2,764	PASS	SU-20 D,20
84	947	-155	2,918	PASS	SU-20 D,20
85	975	-127	3,004	PASS	SU-20 D,20
86	871	-231	2,684	PASS	SU-20 D,20
87	838	-264	2,582	PASS	SU-20 D,20
88	830	-272	2,557	PASS	SU-20 D,20
89	857	-245	2,640	PASS	SU-20 D,20
90	889	-213	2,739	PASS	SU-20 D,20
91	834	-268	2,570	PASS	SU-20 D,20
92	904	-198	2,785	PASS	SU-20 D,20
93	1,081	-21	3,331	PASS	SU-20 D,20
94	1,053	-49	3,244	PASS	SU-20 D,20
95	920	-182	2,834	PASS	SU-20 D,20
96	947	-155	2,918	PASS	SU-20 D,20
97	956	-146	2,945	PASS	SU-20 D,20
98	1,039	-63	3,201	PASS	SU-20 D,20
99	1,055	-47	3,250	PASS	SU-20 D,20

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **131**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	891	-211	2,745	PASS	SU-21 E,21
2	922	-180	2,841	PASS	SU-21 E,21
3	933	-169	2,875	PASS	SU-21 E,21
4	965	-137	2,973	PASS	SU-21 E,21
5	1,008	-94	3,106	PASS	SU-21 E,21
6	953	-149	2,936	PASS	SU-21 E,21
7	945	-157	2,912	PASS	SU-21 E,21
8	963	-139	2,967	PASS	SU-21 E,21
9	941	-161	2,899	PASS	SU-21 E,21
10	998	-104	3,075	PASS	SU-21 E,21
11	1,004	-98	3,093	PASS	SU-21 E,21
12	968	-134	2,982	PASS	SU-21 E,21
13	946	-156	2,915	PASS	SU-21 E,21
14	906	-196	2,791	PASS	SU-21 E,21
15	901	-201	2,776	PASS	SU-21 E,21
16	870	-232	2,680	PASS	SU-21 E,21
17	898	-204	2,767	PASS	SU-21 E,21
18	869	-233	2,677	PASS	SU-21 E,21
19	831	-271	2,560	PASS	SU-21 E,21
20	948	-154	2,921	PASS	SU-21 E,21
21	997	-105	3,072	PASS	SU-21 E,21
22	1,002	-100	3,087	PASS	SU-21 E,21
23	898	-204	2,767	PASS	SU-21 E,21
24	960	-142	2,958	PASS	SU-21 E,21
25	1,018	-84	3,136	PASS	SU-21 E,21
26	1,040	-62	3,204	PASS	SU-21 E,21
27	1,061	-41	3,269	PASS	SU-21 E,21
28	1,009	-93	3,109	PASS	SU-21 E,21
29	1,051	-51	3,238	PASS	SU-21 E,21
30	1,061	-41	3,269	PASS	SU-21 E,21
31	1,091	-11	3,361	PASS	SU-21 E,21
32	1,040	-62	3,204	PASS	SU-21 E,21
33	1,068	-34	3,290	PASS	SU-21 E,21
34	980	-122	3,019	PASS	SU-21 E,21
35	927	-175	2,856	PASS	SU-21 E,21
36	1,026	-76	3,161	PASS	SU-21 E,21
37	1,013	-89	3,121	PASS	SU-21 E,21
38	1,040	-62	3,204	PASS	SU-21 E,21

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **131**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1,039	-63	3,201	PASS	SU-21 E,21
40	1,010	-92	3,112	PASS	SU-21 E,21
41	861	-241	2,653	PASS	SU-21 E,21
42	1,002	-100	3,087	PASS	SU-21 E,21
43	1,052	-50	3,241	PASS	SU-21 E,21
44	1,090	-12	3,358	PASS	SU-21 E,21
45	970	-132	2,989	PASS	SU-21 E,21
46	936	-166	2,884	PASS	SU-21 E,21
47	906	-196	2,791	PASS	SU-21 E,21
48	1,048	-54	3,229	PASS	SU-21 E,21
49	1,110	8	3,420	PASS	SU-21 E,21
50	940	-162	2,896	PASS	SU-21 E,21
51	889	-213	2,739	PASS	SU-21 E,21
52	989	-113	3,047	PASS	SU-21 E,21
53	944	-158	2,908	PASS	SU-21 E,21
54	955	-147	2,942	PASS	SU-21 E,21
55	1,023	-79	3,152	PASS	SU-21 E,21
56	980	-122	3,019	PASS	SU-21 E,21
57	879	-223	2,708	PASS	SU-21 E,21
58	987	-115	3,041	PASS	SU-21 E,21
59	966	-136	2,976	PASS	SU-21 E,21
60	1,101	-1	3,392	PASS	SU-21 E,21
61	986	-116	3,038	PASS	SU-21 E,21
62	994	-108	3,062	PASS	SU-21 E,21
63	940	-162	2,896	PASS	SU-21 E,21
64	1,018	-84	3,136	PASS	SU-21 E,21
65	1,067	-35	3,287	PASS	SU-21 E,21
66	949	-153	2,924	PASS	SU-21 E,21
67	895	-207	2,757	PASS	SU-21 E,21
68	1,017	-85	3,133	PASS	SU-21 E,21
69	1,014	-88	3,124	PASS	SU-21 E,21
70	1,153	51	3,552	PASS	SU-21 E,21
71	1,044	-58	3,217	PASS	SU-21 E,21
72	1,079	-23	3,324	PASS	SU-21 E,21
73	940	-162	2,896	PASS	SU-21 E,21
74	978	-124	3,013	PASS	SU-21 E,21
75	1,043	-59	3,213	PASS	SU-21 E,21
76	936	-166	2,884	PASS	SU-21 E,21

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **131**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	1,031	-71	3,176	PASS	SU-21 E,21
78	1,019	-83	3,140	PASS	SU-21 E,21
79	1,082	-20	3,334	PASS	SU-21 E,21
80	997	-105	3,072	PASS	SU-21 E,21
81	1,013	-89	3,121	PASS	SU-21 E,21
82	1,068	-34	3,290	PASS	SU-21 E,21
83	969	-133	2,985	PASS	SU-21 E,21
84	967	-135	2,979	PASS	SU-21 E,21
85	943	-159	2,905	PASS	SU-21 E,21
86	900	-202	2,773	PASS	SU-21 E,21
87	913	-189	2,813	PASS	SU-21 E,21
88	1,014	-88	3,124	PASS	SU-21 E,21
89	1,002	-100	3,087	PASS	SU-21 E,21
90	995	-107	3,066	PASS	SU-21 E,21
91	1,027	-75	3,164	PASS	SU-21 E,21
92	1,042	-60	3,210	PASS	SU-21 E,21
93	943	-159	2,905	PASS	SU-21 E,21
94	987	-115	3,041	PASS	SU-21 E,21
95	919	-183	2,831	PASS	SU-21 E,21
96	893	-209	2,751	PASS	SU-21 E,21
97	977	-125	3,010	PASS	SU-21 E,21
98	995	-107	3,066	PASS	SU-21 E,21
99	950	-152	2,927	PASS	SU-21 E,21
100	1,080	-22	3,327	PASS	SU-21 E,21
101	1,015	-87	3,127	PASS	SU-21 E,21
102	1,035	-67	3,189	PASS	SU-21 E,21
103	1,033	-69	3,183	PASS	SU-21 E,21
104	946	-156	2,915	PASS	SU-21 E,21
105	985	-117	3,035	PASS	SU-21 E,21
106	1,054	-48	3,247	PASS	SU-21 E,21
107	1,031	-71	3,176	PASS	SU-21 E,21
108	1,082	-20	3,334	PASS	SU-21 E,21
109	1,122	20	3,457	PASS	SU-21 E,21
110	1,126	24	3,469	PASS	SU-21 E,21
111	1,084	-18	3,340	PASS	SU-21 E,21
112	1,091	-11	3,361	PASS	SU-21 E,21
113	911	-191	2,807	PASS	SU-21 E,21
114	988	-114	3,044	PASS	SU-21 E,21

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 131
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	836	-266	2,576	PASS	SU-21 E,21
116	941	-161	2,899	PASS	SU-21 E,21
117	1,066	-36	3,284	PASS	SU-21 E,21
118	1,025	-77	3,158	PASS	SU-21 E,21
119	926	-176	2,853	PASS	SU-21 E,21
120	978	-124	3,013	PASS	SU-21 E,21
121	1,044	-58	3,217	PASS	SU-21 E,21
122	987	-115	3,041	PASS	SU-21 E,21
123	986	-116	3,038	PASS	SU-21 E,21
124	1,072	-30	3,303	PASS	SU-21 E,21
125	1,152	50	3,549	PASS	SU-21 E,21
126	1,102	0	3,395	PASS	SU-21 E,21
127	1,087	-15	3,349	PASS	SU-21 E,21
128	974	-128	3,001	PASS	SU-21 E,21
129	1,015	-87	3,127	PASS	SU-21 E,21
130	974	-128	3,001	PASS	SU-21 E,21
131	1,055	-47	3,250	PASS	SU-21 E,21

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	883	-219	2,720	PASS	SU-22 D,22
2	970	-132	2,989	PASS	SU-22 D,22
3	961	-141	2,961	PASS	SU-22 D,22
4	867	-235	2,671	PASS	SU-22 D,22
5	836	-266	2,576	PASS	SU-22 D,22
6	822	-280	2,533	PASS	SU-22 D,22
7	783	-319	2,412	PASS	SU-22 D,22
8	807	-295	2,486	PASS	SU-22 D,22
9	791	-311	2,437	PASS	SU-22 D,22
10	862	-240	2,656	PASS	SU-22 D,22
11	877	-225	2,702	PASS	SU-22 D,22
12	904	-198	2,785	PASS	SU-22 D,22
13	907	-195	2,794	PASS	SU-22 D,22
14	918	-184	2,828	PASS	SU-22 D,22
15	930	-172	2,865	PASS	SU-22 D,22
16	892	-210	2,748	PASS	SU-22 D,22
17	885	-217	2,727	PASS	SU-22 D,22
18	938	-164	2,890	PASS	SU-22 D,22
19	990	-112	3,050	PASS	SU-22 D,22
20	912	-190	2,810	PASS	SU-22 D,22
21	876	-226	2,699	PASS	SU-22 D,22
22	784	-318	2,415	PASS	SU-22 D,22
23	743	-359	2,289	PASS	SU-22 D,22
24	775	-327	2,388	PASS	SU-22 D,22
25	814	-288	2,508	PASS	SU-22 D,22
26	723	-379	2,228	PASS	SU-22 D,22
27	879	-223	2,708	PASS	SU-22 D,22
28	863	-239	2,659	PASS	SU-22 D,22
29	858	-244	2,643	PASS	SU-22 D,22
30	877	-225	2,702	PASS	SU-22 D,22
31	971	-131	2,992	PASS	SU-22 D,22
32	945	-157	2,912	PASS	SU-22 D,22
33	916	-186	2,822	PASS	SU-22 D,22
34	907	-195	2,794	PASS	SU-22 D,22
35	904	-198	2,785	PASS	SU-22 D,22
36	865	-237	2,665	PASS	SU-22 D,22
37	873	-229	2,690	PASS	SU-22 D,22
38	904	-198	2,785	PASS	SU-22 D,22

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	969	-133	2,985	PASS	SU-22 D,22
40	914	-188	2,816	PASS	SU-22 D,22
41	908	-194	2,798	PASS	SU-22 D,22
42	954	-148	2,939	PASS	SU-22 D,22
43	842	-260	2,594	PASS	SU-22 D,22
44	918	-184	2,828	PASS	SU-22 D,22
45	863	-239	2,659	PASS	SU-22 D,22
46	1,052	-50	3,241	PASS	SU-22 D,22
47	1,030	-72	3,173	PASS	SU-22 D,22
48	920	-182	2,834	PASS	SU-22 D,22
49	855	-247	2,634	PASS	SU-22 D,22
50	792	-310	2,440	PASS	SU-22 D,22
51	796	-306	2,452	PASS	SU-22 D,22
52	896	-206	2,761	PASS	SU-22 D,22
53	866	-236	2,668	PASS	SU-22 D,22
54	912	-190	2,810	PASS	SU-22 D,22
55	1,022	-80	3,149	PASS	SU-22 D,22
56	995	-107	3,066	PASS	SU-22 D,22
57	957	-145	2,948	PASS	SU-22 D,22
58	937	-165	2,887	PASS	SU-22 D,22
59	1,012	-90	3,118	PASS	SU-22 D,22
60	941	-161	2,899	PASS	SU-22 D,22
61	989	-113	3,047	PASS	SU-22 D,22
62	1,032	-70	3,180	PASS	SU-22 D,22
63	976	-126	3,007	PASS	SU-22 D,22
64	1,028	-74	3,167	PASS	SU-22 D,22
65	1,019	-83	3,140	PASS	SU-22 D,22
66	982	-120	3,026	PASS	SU-22 D,22
67	970	-132	2,989	PASS	SU-22 D,22
68	964	-138	2,970	PASS	SU-22 D,22
69	972	-130	2,995	PASS	SU-22 D,22
70	989	-113	3,047	PASS	SU-22 D,22
71	987	-115	3,041	PASS	SU-22 D,22
72	925	-177	2,850	PASS	SU-22 D,22
73	1,036	-66	3,192	PASS	SU-22 D,22
74	1,085	-17	3,343	PASS	SU-22 D,22
75	978	-124	3,013	PASS	SU-22 D,22
76	945	-157	2,912	PASS	SU-22 D,22

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	925	-177	2,850	PASS	SU-22 D,22
78	974	-128	3,001	PASS	SU-22 D,22
79	971	-131	2,992	PASS	SU-22 D,22
80	984	-118	3,032	PASS	SU-22 D,22
81	988	-114	3,044	PASS	SU-22 D,22
82	930	-172	2,865	PASS	SU-22 D,22
83	1,005	-97	3,096	PASS	SU-22 D,22
84	979	-123	3,016	PASS	SU-22 D,22
85	1,032	-70	3,180	PASS	SU-22 D,22
86	1,032	-70	3,180	PASS	SU-22 D,22
87	1,016	-86	3,130	PASS	SU-22 D,22
88	1,035	-67	3,189	PASS	SU-22 D,22
89	918	-184	2,828	PASS	SU-22 D,22
90	994	-108	3,062	PASS	SU-22 D,22
91	1,017	-85	3,133	PASS	SU-22 D,22
92	965	-137	2,973	PASS	SU-22 D,22
93	975	-127	3,004	PASS	SU-22 D,22
94	949	-153	2,924	PASS	SU-22 D,22
95	862	-240	2,656	PASS	SU-22 D,22
96	852	-250	2,625	PASS	SU-22 D,22
97	862	-240	2,656	PASS	SU-22 D,22
98	790	-312	2,434	PASS	SU-22 D,22
99	748	-354	2,305	PASS	SU-22 D,22
100	844	-258	2,600	PASS	SU-22 D,22
101	891	-211	2,745	PASS	SU-22 D,22
102	739	-363	2,277	PASS	SU-22 D,22
103	835	-267	2,573	PASS	SU-22 D,22
104	830	-272	2,557	PASS	SU-22 D,22
105	774	-328	2,385	PASS	SU-22 D,22
106	820	-282	2,526	PASS	SU-22 D,22
107	865	-237	2,665	PASS	SU-22 D,22
108	799	-303	2,462	PASS	SU-22 D,22
109	856	-246	2,637	PASS	SU-22 D,22

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **112**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
110	765	-337	2,357	PASS	SU-22 D,22
111	804	-298	2,477	PASS	SU-22 D,22
112	880	-222	2,711	PASS	SU-22 D,22

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	971	-131	2,992	PASS	SU-23 C,23
2	972	-130	2,995	PASS	SU-23 C,23
3	938	-164	2,890	PASS	SU-23 C,23
4	864	-238	2,662	PASS	SU-23 C,23
5	801	-301	2,468	PASS	SU-23 C,23
6	924	-178	2,847	PASS	SU-23 C,23
7	852	-250	2,625	PASS	SU-23 C,23
8	812	-290	2,502	PASS	SU-23 C,23
9	877	-225	2,702	PASS	SU-23 C,23
10	900	-202	2,773	PASS	SU-23 C,23
11	964	-138	2,970	PASS	SU-23 C,23
12	971	-131	2,992	PASS	SU-23 C,23
13	961	-141	2,961	PASS	SU-23 C,23
14	912	-190	2,810	PASS	SU-23 C,23
15	892	-210	2,748	PASS	SU-23 C,23
16	960	-142	2,958	PASS	SU-23 C,23
17	880	-222	2,711	PASS	SU-23 C,23
18	821	-281	2,529	PASS	SU-23 C,23
19	870	-232	2,680	PASS	SU-23 C,23
20	964	-138	2,970	PASS	SU-23 C,23
21	960	-142	2,958	PASS	SU-23 C,23
22	930	-172	2,865	PASS	SU-23 C,23
23	939	-163	2,893	PASS	SU-23 C,23
24	952	-150	2,933	PASS	SU-23 C,23
25	877	-225	2,702	PASS	SU-23 C,23
26	1,008	-94	3,106	PASS	SU-23 C,23
27	997	-105	3,072	PASS	SU-23 C,23
28	915	-187	2,819	PASS	SU-23 C,23
29	889	-213	2,739	PASS	SU-23 C,23
30	903	-199	2,782	PASS	SU-23 C,23
31	897	-205	2,764	PASS	SU-23 C,23
32	878	-224	2,705	PASS	SU-23 C,23
33	836	-266	2,576	PASS	SU-23 C,23
34	870	-232	2,680	PASS	SU-23 C,23
35	824	-278	2,539	PASS	SU-23 C,23
36	826	-276	2,545	PASS	SU-23 C,23
37	852	-250	2,625	PASS	SU-23 C,23
38	900	-202	2,773	PASS	SU-23 C,23

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	910	-192	2,804	PASS	SU-23 C,23
40	1,035	-67	3,189	PASS	SU-23 C,23
41	1,003	-99	3,090	PASS	SU-23 C,23
42	881	-221	2,714	PASS	SU-23 C,23
43	818	-284	2,520	PASS	SU-23 C,23
44	935	-167	2,881	PASS	SU-23 C,23
45	937	-165	2,887	PASS	SU-23 C,23
46	897	-205	2,764	PASS	SU-23 C,23
47	881	-221	2,714	PASS	SU-23 C,23
48	867	-235	2,671	PASS	SU-23 C,23
49	871	-231	2,684	PASS	SU-23 C,23
50	915	-187	2,819	PASS	SU-23 C,23
51	827	-275	2,548	PASS	SU-23 C,23
52	814	-288	2,508	PASS	SU-23 C,23
53	745	-357	2,295	PASS	SU-23 C,23
54	861	-241	2,653	PASS	SU-23 C,23
55	856	-246	2,637	PASS	SU-23 C,23
56	832	-270	2,563	PASS	SU-23 C,23
57	801	-301	2,468	PASS	SU-23 C,23
58	786	-316	2,422	PASS	SU-23 C,23
59	822	-280	2,533	PASS	SU-23 C,23
60	777	-325	2,394	PASS	SU-23 C,23
61	749	-353	2,308	PASS	SU-23 C,23
62	767	-335	2,363	PASS	SU-23 C,23
63	822	-280	2,533	PASS	SU-23 C,23
64	827	-275	2,548	PASS	SU-23 C,23
65	994	-108	3,062	PASS	SU-23 C,23
66	1,134	32	3,494	PASS	SU-23 C,23
67	1,161	59	3,577	PASS	SU-23 C,23
68	1,114	12	3,432	PASS	SU-23 C,23
69	1,030	-72	3,173	PASS	SU-23 C,23
70	953	-149	2,936	PASS	SU-23 C,23
71	1,007	-95	3,103	PASS	SU-23 C,23
72	920	-182	2,834	PASS	SU-23 C,23
73	913	-189	2,813	PASS	SU-23 C,23
74	849	-253	2,616	PASS	SU-23 C,23
75	825	-277	2,542	PASS	SU-23 C,23
76	780	-322	2,403	PASS	SU-23 C,23

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Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	794	-308	2,446	PASS	SU-23 C,23
78	866	-236	2,668	PASS	SU-23 C,23
79	925	-177	2,850	PASS	SU-23 C,23
80	846	-256	2,606	PASS	SU-23 C,23
81	846	-256	2,606	PASS	SU-23 C,23
82	822	-280	2,533	PASS	SU-23 C,23
83	858	-244	2,643	PASS	SU-23 C,23
84	858	-244	2,643	PASS	SU-23 C,23
85	915	-187	2,819	PASS	SU-23 C,23
86	939	-163	2,893	PASS	SU-23 C,23
87	831	-271	2,560	PASS	SU-23 C,23
88	788	-314	2,428	PASS	SU-23 C,23
89	779	-323	2,400	PASS	SU-23 C,23
90	852	-250	2,625	PASS	SU-23 C,23
91	913	-189	2,813	PASS	SU-23 C,23
92	919	-183	2,831	PASS	SU-23 C,23
93	914	-188	2,816	PASS	SU-23 C,23
94	1,101	-1	3,392	PASS	SU-23 C,23
95	1,007	-95	3,103	PASS	SU-23 C,23
96	942	-160	2,902	PASS	SU-23 C,23
97	1,008	-94	3,106	PASS	SU-23 C,23
98	953	-149	2,936	PASS	SU-23 C,23
99	893	-209	2,751	PASS	SU-23 C,23
100	864	-238	2,662	PASS	SU-23 C,23
101	889	-213	2,739	PASS	SU-23 C,23
102	924	-178	2,847	PASS	SU-23 C,23
103	863	-239	2,659	PASS	SU-23 C,23
104	780	-322	2,403	PASS	SU-23 C,23
105	806	-296	2,483	PASS	SU-23 C,23
106	812	-290	2,502	PASS	SU-23 C,23
107	759	-343	2,338	PASS	SU-23 C,23
108	733	-369	2,258	PASS	SU-23 C,23
109	758	-344	2,335	PASS	SU-23 C,23
110	740	-362	2,280	PASS	SU-23 C,23
111	784	-318	2,415	PASS	SU-23 C,23
112	780	-322	2,403	PASS	SU-23 C,23
113	843	-259	2,597	PASS	SU-23 C,23
114	783	-319	2,412	PASS	SU-23 C,23

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Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

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Sample&Bkg Count time = 0.03 min
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$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **140**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	693	-409	2,135	PASS	SU-23 C,23
116	749	-353	2,308	PASS	SU-23 C,23
117	780	-322	2,403	PASS	SU-23 C,23
118	846	-256	2,606	PASS	SU-23 C,23
119	735	-367	2,265	PASS	SU-23 C,23
121	731	-371	2,252	PASS	SU-23 C,23
122	792	-310	2,440	PASS	SU-23 C,23
123	954	-148	2,939	PASS	SU-23 C,23
124	885	-217	2,727	PASS	SU-23 C,23
125	939	-163	2,893	PASS	SU-23 C,23
126	1,056	-46	3,253	PASS	SU-23 C,23
127	1,027	-75	3,164	PASS	SU-23 C,23
128	997	-105	3,072	PASS	SU-23 C,23
129	981	-121	3,022	PASS	SU-23 C,23
130	996	-106	3,069	PASS	SU-23 C,23
120	1,021	-81	3,146	PASS	SU-23 C,23
121	1,051	-51	3,238	PASS	SU-23 C,23
122	996	-106	3,069	PASS	SU-23 C,23
123	971	-131	2,992	PASS	SU-23 C,23
124	948	-154	2,921	PASS	SU-23 C,23
125	913	-189	2,813	PASS	SU-23 C,23
126	964	-138	2,970	PASS	SU-23 C,23
127	906	-196	2,791	PASS	SU-23 C,23
128	883	-219	2,720	PASS	SU-23 C,23
129	921	-181	2,838	PASS	SU-23 C,23
130	1,002	-100	3,087	PASS	SU-23 C,23

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	981	-121	3,022	PASS	SU-24 B,24
2	922	-180	2,841	PASS	SU-24 B,24
3	943	-159	2,905	PASS	SU-24 B,24
4	888	-214	2,736	PASS	SU-24 B,24
5	780	-322	2,403	PASS	SU-24 B,24
6	824	-278	2,539	PASS	SU-24 B,24
7	831	-271	2,560	PASS	SU-24 B,24
8	952	-150	2,933	PASS	SU-24 B,24
9	983	-119	3,029	PASS	SU-24 B,24
10	947	-155	2,918	PASS	SU-24 B,24
11	980	-122	3,019	PASS	SU-24 B,24
12	1,060	-42	3,266	PASS	SU-24 B,24
13	1,053	-49	3,244	PASS	SU-24 B,24
14	1,136	34	3,500	PASS	SU-24 B,24
15	1,159	57	3,571	PASS	SU-24 B,24
16	1,062	-40	3,272	PASS	SU-24 B,24
17	1,077	-25	3,318	PASS	SU-24 B,24
18	1,012	-90	3,118	PASS	SU-24 B,24
19	1,045	-57	3,220	PASS	SU-24 B,24
20	950	-152	2,927	PASS	SU-24 B,24
21	956	-146	2,945	PASS	SU-24 B,24
22	988	-114	3,044	PASS	SU-24 B,24
23	935	-167	2,881	PASS	SU-24 B,24
24	913	-189	2,813	PASS	SU-24 B,24
25	940	-162	2,896	PASS	SU-24 B,24
26	904	-198	2,785	PASS	SU-24 B,24
27	874	-228	2,693	PASS	SU-24 B,24
28	964	-138	2,970	PASS	SU-24 B,24
29	918	-184	2,828	PASS	SU-24 B,24
30	1,032	-70	3,180	PASS	SU-24 B,24
31	944	-158	2,908	PASS	SU-24 B,24
32	1,031	-71	3,176	PASS	SU-24 B,24
33	1,048	-54	3,229	PASS	SU-24 B,24
34	969	-133	2,985	PASS	SU-24 B,24
35	912	-190	2,810	PASS	SU-24 B,24
36	905	-197	2,788	PASS	SU-24 B,24
37	890	-212	2,742	PASS	SU-24 B,24
38	892	-210	2,748	PASS	SU-24 B,24

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	919	-183	2,831	PASS	SU-24 B,24
40	842	-260	2,594	PASS	SU-24 B,24
41	974	-128	3,001	PASS	SU-24 B,24
42	876	-226	2,699	PASS	SU-24 B,24
43	929	-173	2,862	PASS	SU-24 B,24
44	914	-188	2,816	PASS	SU-24 B,24
45	765	-337	2,357	PASS	SU-24 B,24
46	696	-406	2,144	PASS	SU-24 B,24
47	690	-412	2,126	PASS	SU-24 B,24
48	770	-332	2,372	PASS	SU-24 B,24
49	843	-259	2,597	PASS	SU-24 B,24
50	765	-337	2,357	PASS	SU-24 B,24
51	775	-327	2,388	PASS	SU-24 B,24
52	716	-386	2,206	PASS	SU-24 B,24
53	799	-303	2,462	PASS	SU-24 B,24
54	805	-297	2,480	PASS	SU-24 B,24
55	811	-291	2,499	PASS	SU-24 B,24
56	837	-265	2,579	PASS	SU-24 B,24
57	860	-242	2,650	PASS	SU-24 B,24
58	974	-128	3,001	PASS	SU-24 B,24
59	971	-131	2,992	PASS	SU-24 B,24
60	868	-234	2,674	PASS	SU-24 B,24
61	824	-278	2,539	PASS	SU-24 B,24
62	896	-206	2,761	PASS	SU-24 B,24
63	886	-216	2,730	PASS	SU-24 B,24
64	857	-245	2,640	PASS	SU-24 B,24
65	908	-194	2,798	PASS	SU-24 B,24
66	950	-152	2,927	PASS	SU-24 B,24
67	882	-220	2,717	PASS	SU-24 B,24
68	934	-168	2,878	PASS	SU-24 B,24
69	897	-205	2,764	PASS	SU-24 B,24
70	929	-173	2,862	PASS	SU-24 B,24
71	909	-193	2,801	PASS	SU-24 B,24
72	1,032	-70	3,180	PASS	SU-24 B,24
73	1,006	-96	3,099	PASS	SU-24 B,24
74	942	-160	2,902	PASS	SU-24 B,24
75	936	-166	2,884	PASS	SU-24 B,24
76	988	-114	3,044	PASS	SU-24 B,24

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **105**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	957	-145	2,948	PASS	SU-24 B,24
78	1,002	-100	3,087	PASS	SU-24 B,24
79	894	-208	2,754	PASS	SU-24 B,24
80	873	-229	2,690	PASS	SU-24 B,24
81	900	-202	2,773	PASS	SU-24 B,24
82	970	-132	2,989	PASS	SU-24 B,24
83	896	-206	2,761	PASS	SU-24 B,24
84	903	-199	2,782	PASS	SU-24 B,24
85	980	-122	3,019	PASS	SU-24 B,24
86	886	-216	2,730	PASS	SU-24 B,24
87	913	-189	2,813	PASS	SU-24 B,24
88	921	-181	2,838	PASS	SU-24 B,24
89	909	-193	2,801	PASS	SU-24 B,24
90	865	-237	2,665	PASS	SU-24 B,24
91	868	-234	2,674	PASS	SU-24 B,24
92	862	-240	2,656	PASS	SU-24 B,24
93	774	-328	2,385	PASS	SU-24 B,24
94	811	-291	2,499	PASS	SU-24 B,24
95	815	-287	2,511	PASS	SU-24 B,24
96	882	-220	2,717	PASS	SU-24 B,24
97	905	-197	2,788	PASS	SU-24 B,24
98	884	-218	2,724	PASS	SU-24 B,24
99	814	-288	2,508	PASS	SU-24 B,24
100	964	-138	2,970	PASS	SU-24 B,24
101	986	-116	3,038	PASS	SU-24 B,24
102	975	-127	3,004	PASS	SU-24 B,24
103	842	-260	2,594	PASS	SU-24 B,24
104	900	-202	2,773	PASS	SU-24 B,24
105	922	-180	2,841	PASS	SU-24 B,24

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	965	-137	2,973	PASS	SU-25 A,25
2	1,029	-73	3,170	PASS	SU-25 A,25
3	989	-113	3,047	PASS	SU-25 A,25
4	978	-124	3,013	PASS	SU-25 A,25
5	876	-226	2,699	PASS	SU-25 A,25
6	890	-212	2,742	PASS	SU-25 A,25
7	900	-202	2,773	PASS	SU-25 A,25
8	855	-247	2,634	PASS	SU-25 A,25
9	869	-233	2,677	PASS	SU-25 A,25
10	882	-220	2,717	PASS	SU-25 A,25
11	889	-213	2,739	PASS	SU-25 A,25
12	988	-114	3,044	PASS	SU-25 A,25
13	905	-197	2,788	PASS	SU-25 A,25
14	864	-238	2,662	PASS	SU-25 A,25
15	915	-187	2,819	PASS	SU-25 A,25
16	980	-122	3,019	PASS	SU-25 A,25
17	938	-164	2,890	PASS	SU-25 A,25
18	915	-187	2,819	PASS	SU-25 A,25
19	912	-190	2,810	PASS	SU-25 A,25
20	883	-219	2,720	PASS	SU-25 A,25
21	836	-266	2,576	PASS	SU-25 A,25
22	889	-213	2,739	PASS	SU-25 A,25
23	838	-264	2,582	PASS	SU-25 A,25
24	887	-215	2,733	PASS	SU-25 A,25
25	939	-163	2,893	PASS	SU-25 A,25
26	931	-171	2,868	PASS	SU-25 A,25
27	908	-194	2,798	PASS	SU-25 A,25
28	901	-201	2,776	PASS	SU-25 A,25
29	906	-196	2,791	PASS	SU-25 A,25
30	926	-176	2,853	PASS	SU-25 A,25
31	938	-164	2,890	PASS	SU-25 A,25
32	974	-128	3,001	PASS	SU-25 A,25
33	871	-231	2,684	PASS	SU-25 A,25
34	907	-195	2,794	PASS	SU-25 A,25
35	937	-165	2,887	PASS	SU-25 A,25
36	1,011	-91	3,115	PASS	SU-25 A,25
37	925	-177	2,850	PASS	SU-25 A,25
38	904	-198	2,785	PASS	SU-25 A,25

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	868	-234	2,674	PASS	SU-25 A,25
40	874	-228	2,693	PASS	SU-25 A,25
41	855	-247	2,634	PASS	SU-25 A,25
42	816	-286	2,514	PASS	SU-25 A,25
43	879	-223	2,708	PASS	SU-25 A,25
44	881	-221	2,714	PASS	SU-25 A,25
45	853	-249	2,628	PASS	SU-25 A,25
46	856	-246	2,637	PASS	SU-25 A,25
47	909	-193	2,801	PASS	SU-25 A,25
48	930	-172	2,865	PASS	SU-25 A,25
49	960	-142	2,958	PASS	SU-25 A,25
50	910	-192	2,804	PASS	SU-25 A,25
51	942	-160	2,902	PASS	SU-25 A,25
52	945	-157	2,912	PASS	SU-25 A,25
53	850	-252	2,619	PASS	SU-25 A,25
54	770	-332	2,372	PASS	SU-25 A,25
55	813	-289	2,505	PASS	SU-25 A,25
56	862	-240	2,656	PASS	SU-25 A,25
57	931	-171	2,868	PASS	SU-25 A,25
58	893	-209	2,751	PASS	SU-25 A,25
59	898	-204	2,767	PASS	SU-25 A,25
60	879	-223	2,708	PASS	SU-25 A,25
61	878	-224	2,705	PASS	SU-25 A,25
62	890	-212	2,742	PASS	SU-25 A,25
63	798	-304	2,459	PASS	SU-25 A,25
64	929	-173	2,862	PASS	SU-25 A,25
65	934	-168	2,878	PASS	SU-25 A,25
66	886	-216	2,730	PASS	SU-25 A,25
67	871	-231	2,684	PASS	SU-25 A,25
68	858	-244	2,643	PASS	SU-25 A,25
69	922	-180	2,841	PASS	SU-25 A,25
70	820	-282	2,526	PASS	SU-25 A,25
71	916	-186	2,822	PASS	SU-25 A,25
72	911	-191	2,807	PASS	SU-25 A,25
73	925	-177	2,850	PASS	SU-25 A,25
74	910	-192	2,804	PASS	SU-25 A,25
75	890	-212	2,742	PASS	SU-25 A,25
76	919	-183	2,831	PASS	SU-25 A,25

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	962	-140	2,964	PASS	SU-25 A,25
78	894	-208	2,754	PASS	SU-25 A,25
79	870	-232	2,680	PASS	SU-25 A,25
80	833	-269	2,566	PASS	SU-25 A,25
81	967	-135	2,979	PASS	SU-25 A,25
82	880	-222	2,711	PASS	SU-25 A,25

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,038	-64	3,198	PASS	SU-26 B,26
2	1,064	-38	3,278	PASS	SU-26 B,26
3	935	-167	2,881	PASS	SU-26 B,26
4	913	-189	2,813	PASS	SU-26 B,26
5	1,021	-81	3,146	PASS	SU-26 B,26
6	1,084	-18	3,340	PASS	SU-26 B,26
7	1,136	34	3,500	PASS	SU-26 B,26
8	1,138	36	3,506	PASS	SU-26 B,26
9	1,028	-74	3,167	PASS	SU-26 B,26
10	1,082	-20	3,334	PASS	SU-26 B,26
11	1,041	-61	3,207	PASS	SU-26 B,26
12	1,005	-97	3,096	PASS	SU-26 B,26
13	968	-134	2,982	PASS	SU-26 B,26
14	890	-212	2,742	PASS	SU-26 B,26
15	949	-153	2,924	PASS	SU-26 B,26
16	985	-117	3,035	PASS	SU-26 B,26
17	994	-108	3,062	PASS	SU-26 B,26
18	889	-213	2,739	PASS	SU-26 B,26
19	939	-163	2,893	PASS	SU-26 B,26
20	802	-300	2,471	PASS	SU-26 B,26
21	815	-287	2,511	PASS	SU-26 B,26
22	938	-164	2,890	PASS	SU-26 B,26
23	1,023	-79	3,152	PASS	SU-26 B,26
24	1,066	-36	3,284	PASS	SU-26 B,26
25	1,066	-36	3,284	PASS	SU-26 B,26
26	1,029	-73	3,170	PASS	SU-26 B,26
27	1,083	-19	3,337	PASS	SU-26 B,26
28	1,037	-65	3,195	PASS	SU-26 B,26
29	973	-129	2,998	PASS	SU-26 B,26
30	1,030	-72	3,173	PASS	SU-26 B,26
31	1,028	-74	3,167	PASS	SU-26 B,26
32	988	-114	3,044	PASS	SU-26 B,26
33	1,020	-82	3,143	PASS	SU-26 B,26
34	1,013	-89	3,121	PASS	SU-26 B,26
35	1,067	-35	3,287	PASS	SU-26 B,26
36	1,035	-67	3,189	PASS	SU-26 B,26
37	1,081	-21	3,331	PASS	SU-26 B,26
38	975	-127	3,004	PASS	SU-26 B,26

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	956	-146	2,945	PASS	SU-26 B,26
40	1,002	-100	3,087	PASS	SU-26 B,26
41	1,002	-100	3,087	PASS	SU-26 B,26
42	991	-111	3,053	PASS	SU-26 B,26
43	1,102	0	3,395	PASS	SU-26 B,26
44	1,086	-16	3,346	PASS	SU-26 B,26
45	1,054	-48	3,247	PASS	SU-26 B,26
46	1,012	-90	3,118	PASS	SU-26 B,26
47	1,147	45	3,534	PASS	SU-26 B,26
48	1,093	-9	3,367	PASS	SU-26 B,26
49	1,075	-27	3,312	PASS	SU-26 B,26
50	1,141	39	3,515	PASS	SU-26 B,26
51	1,121	19	3,454	PASS	SU-26 B,26
52	1,116	14	3,438	PASS	SU-26 B,26
53	1,164	62	3,586	PASS	SU-26 B,26
54	1,225	123	3,774	PASS	SU-26 B,26
55	1,043	-59	3,213	PASS	SU-26 B,26
56	1,016	-86	3,130	PASS	SU-26 B,26
57	986	-116	3,038	PASS	SU-26 B,26
58	1,008	-94	3,106	PASS	SU-26 B,26
59	1,021	-81	3,146	PASS	SU-26 B,26
60	1,065	-37	3,281	PASS	SU-26 B,26
61	1,144	42	3,525	PASS	SU-26 B,26
62	959	-143	2,955	PASS	SU-26 B,26
63	894	-208	2,754	PASS	SU-26 B,26
64	936	-166	2,884	PASS	SU-26 B,26
65	819	-283	2,523	PASS	SU-26 B,26
66	899	-203	2,770	PASS	SU-26 B,26
67	956	-146	2,945	PASS	SU-26 B,26
68	898	-204	2,767	PASS	SU-26 B,26
69	928	-174	2,859	PASS	SU-26 B,26
70	1,028	-74	3,167	PASS	SU-26 B,26
71	1,011	-91	3,115	PASS	SU-26 B,26
72	976	-126	3,007	PASS	SU-26 B,26
73	1,005	-97	3,096	PASS	SU-26 B,26
74	878	-224	2,705	PASS	SU-26 B,26
75	913	-189	2,813	PASS	SU-26 B,26
76	900	-202	2,773	PASS	SU-26 B,26

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **82**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	1,008	-94	3,106	PASS	SU-26 B,26
78	944	-158	2,908	PASS	SU-26 B,26
79	908	-194	2,798	PASS	SU-26 B,26
80	844	-258	2,600	PASS	SU-26 B,26
81	896	-206	2,761	PASS	SU-26 B,26
82	941	-161	2,899	PASS	SU-26 B,26

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,021	-81	3,146	PASS	SU-27 C,27
2	966	-136	2,976	PASS	SU-27 C,27
3	911	-191	2,807	PASS	SU-27 C,27
4	846	-256	2,606	PASS	SU-27 C,27
5	844	-258	2,600	PASS	SU-27 C,27
6	843	-259	2,597	PASS	SU-27 C,27
7	911	-191	2,807	PASS	SU-27 C,27
8	944	-158	2,908	PASS	SU-27 C,27
9	977	-125	3,010	PASS	SU-27 C,27
10	1,079	-23	3,324	PASS	SU-27 C,27
11	1,150	48	3,543	PASS	SU-27 C,27
12	1,019	-83	3,140	PASS	SU-27 C,27
13	1,072	-30	3,303	PASS	SU-27 C,27
14	1,040	-62	3,204	PASS	SU-27 C,27
15	1,002	-100	3,087	PASS	SU-27 C,27
16	885	-217	2,727	PASS	SU-27 C,27
17	921	-181	2,838	PASS	SU-27 C,27
18	983	-119	3,029	PASS	SU-27 C,27
19	1,023	-79	3,152	PASS	SU-27 C,27
20	933	-169	2,875	PASS	SU-27 C,27
21	991	-111	3,053	PASS	SU-27 C,27
22	1,012	-90	3,118	PASS	SU-27 C,27
23	989	-113	3,047	PASS	SU-27 C,27
24	1,058	-44	3,260	PASS	SU-27 C,27
25	1,017	-85	3,133	PASS	SU-27 C,27
26	1,017	-85	3,133	PASS	SU-27 C,27
27	1,093	-9	3,367	PASS	SU-27 C,27
28	1,095	-7	3,374	PASS	SU-27 C,27
29	1,006	-96	3,099	PASS	SU-27 C,27
30	1,024	-78	3,155	PASS	SU-27 C,27
31	1,032	-70	3,180	PASS	SU-27 C,27
32	1,059	-43	3,263	PASS	SU-27 C,27
33	1,055	-47	3,250	PASS	SU-27 C,27
34	1,004	-98	3,093	PASS	SU-27 C,27
35	1,014	-88	3,124	PASS	SU-27 C,27
36	1,040	-62	3,204	PASS	SU-27 C,27
37	1,045	-57	3,220	PASS	SU-27 C,27
38	901	-201	2,776	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	821	-281	2,529	PASS	SU-27 C,27
40	876	-226	2,699	PASS	SU-27 C,27
41	857	-245	2,640	PASS	SU-27 C,27
42	904	-198	2,785	PASS	SU-27 C,27
43	961	-141	2,961	PASS	SU-27 C,27
44	941	-161	2,899	PASS	SU-27 C,27
45	1,040	-62	3,204	PASS	SU-27 C,27
46	1,074	-28	3,309	PASS	SU-27 C,27
47	1,035	-67	3,189	PASS	SU-27 C,27
48	1,004	-98	3,093	PASS	SU-27 C,27
49	1,000	-102	3,081	PASS	SU-27 C,27
50	1,066	-36	3,284	PASS	SU-27 C,27
51	994	-108	3,062	PASS	SU-27 C,27
52	856	-246	2,637	PASS	SU-27 C,27
53	914	-188	2,816	PASS	SU-27 C,27
54	867	-235	2,671	PASS	SU-27 C,27
55	926	-176	2,853	PASS	SU-27 C,27
56	906	-196	2,791	PASS	SU-27 C,27
57	976	-126	3,007	PASS	SU-27 C,27
58	903	-199	2,782	PASS	SU-27 C,27
59	995	-107	3,066	PASS	SU-27 C,27
60	925	-177	2,850	PASS	SU-27 C,27
61	889	-213	2,739	PASS	SU-27 C,27
62	857	-245	2,640	PASS	SU-27 C,27
63	885	-217	2,727	PASS	SU-27 C,27
64	988	-114	3,044	PASS	SU-27 C,27
65	920	-182	2,834	PASS	SU-27 C,27
66	1,078	-24	3,321	PASS	SU-27 C,27
67	992	-110	3,056	PASS	SU-27 C,27
68	955	-147	2,942	PASS	SU-27 C,27
69	966	-136	2,976	PASS	SU-27 C,27
70	952	-150	2,933	PASS	SU-27 C,27
71	1,012	-90	3,118	PASS	SU-27 C,27
72	1,010	-92	3,112	PASS	SU-27 C,27
73	961	-141	2,961	PASS	SU-27 C,27
74	1,023	-79	3,152	PASS	SU-27 C,27
75	933	-169	2,875	PASS	SU-27 C,27
76	960	-142	2,958	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	1,006	-96	3,099	PASS	SU-27 C,27
78	953	-149	2,936	PASS	SU-27 C,27
79	930	-172	2,865	PASS	SU-27 C,27
80	987	-115	3,041	PASS	SU-27 C,27
81	910	-192	2,804	PASS	SU-27 C,27
82	934	-168	2,878	PASS	SU-27 C,27
83	830	-272	2,557	PASS	SU-27 C,27
84	828	-274	2,551	PASS	SU-27 C,27
85	853	-249	2,628	PASS	SU-27 C,27
86	831	-271	2,560	PASS	SU-27 C,27
87	817	-285	2,517	PASS	SU-27 C,27
88	829	-273	2,554	PASS	SU-27 C,27
89	756	-346	2,329	PASS	SU-27 C,27
90	746	-356	2,298	PASS	SU-27 C,27
91	796	-306	2,452	PASS	SU-27 C,27
92	836	-266	2,576	PASS	SU-27 C,27
93	811	-291	2,499	PASS	SU-27 C,27
94	888	-214	2,736	PASS	SU-27 C,27
95	910	-192	2,804	PASS	SU-27 C,27
96	895	-207	2,757	PASS	SU-27 C,27
97	1,006	-96	3,099	PASS	SU-27 C,27
98	967	-135	2,979	PASS	SU-27 C,27
99	988	-114	3,044	PASS	SU-27 C,27
100	846	-256	2,606	PASS	SU-27 C,27
101	721	-381	2,221	PASS	SU-27 C,27
102	782	-320	2,409	PASS	SU-27 C,27
103	780	-322	2,403	PASS	SU-27 C,27
104	933	-169	2,875	PASS	SU-27 C,27
105	871	-231	2,684	PASS	SU-27 C,27
106	832	-270	2,563	PASS	SU-27 C,27
107	896	-206	2,761	PASS	SU-27 C,27
108	927	-175	2,856	PASS	SU-27 C,27
109	883	-219	2,720	PASS	SU-27 C,27
110	967	-135	2,979	PASS	SU-27 C,27
111	1,072	-30	3,303	PASS	SU-27 C,27
112	1,025	-77	3,158	PASS	SU-27 C,27
113	1,016	-86	3,130	PASS	SU-27 C,27
114	1,061	-41	3,269	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
115	1,072	-30	3,303	PASS	SU-27 C,27
116	1,027	-75	3,164	PASS	SU-27 C,27
117	1,035	-67	3,189	PASS	SU-27 C,27
118	938	-164	2,890	PASS	SU-27 C,27
119	972	-130	2,995	PASS	SU-27 C,27
120	982	-120	3,026	PASS	SU-27 C,27
121	996	-106	3,069	PASS	SU-27 C,27
122	968	-134	2,982	PASS	SU-27 C,27
123	1,000	-102	3,081	PASS	SU-27 C,27
124	1,000	-102	3,081	PASS	SU-27 C,27
125	1,063	-39	3,275	PASS	SU-27 C,27
126	1,007	-95	3,103	PASS	SU-27 C,27
127	966	-136	2,976	PASS	SU-27 C,27
128	933	-169	2,875	PASS	SU-27 C,27
129	922	-180	2,841	PASS	SU-27 C,27
130	925	-177	2,850	PASS	SU-27 C,27
131	961	-141	2,961	PASS	SU-27 C,27
132	987	-115	3,041	PASS	SU-27 C,27
133	953	-149	2,936	PASS	SU-27 C,27
134	972	-130	2,995	PASS	SU-27 C,27
135	958	-144	2,952	PASS	SU-27 C,27
136	1,015	-87	3,127	PASS	SU-27 C,27
137	953	-149	2,936	PASS	SU-27 C,27
138	942	-160	2,902	PASS	SU-27 C,27
139	978	-124	3,013	PASS	SU-27 C,27
140	993	-109	3,059	PASS	SU-27 C,27
141	924	-178	2,847	PASS	SU-27 C,27
142	963	-139	2,967	PASS	SU-27 C,27
143	948	-154	2,921	PASS	SU-27 C,27
144	977	-125	3,010	PASS	SU-27 C,27
145	1,041	-61	3,207	PASS	SU-27 C,27
146	1,113	11	3,429	PASS	SU-27 C,27
147	1,170	68	3,605	PASS	SU-27 C,27
148	1,090	-12	3,358	PASS	SU-27 C,27
149	931	-171	2,868	PASS	SU-27 C,27
150	1,054	-48	3,247	PASS	SU-27 C,27
151	1,008	-94	3,106	PASS	SU-27 C,27
152	893	-209	2,751	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **191**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
153	838	-264	2,582	PASS	SU-27 C,27
154	951	-151	2,930	PASS	SU-27 C,27
155	963	-139	2,967	PASS	SU-27 C,27
156	858	-244	2,643	PASS	SU-27 C,27
157	830	-272	2,557	PASS	SU-27 C,27
158	878	-224	2,705	PASS	SU-27 C,27
159	909	-193	2,801	PASS	SU-27 C,27
160	889	-213	2,739	PASS	SU-27 C,27
161	818	-284	2,520	PASS	SU-27 C,27
162	942	-160	2,902	PASS	SU-27 C,27
163	998	-104	3,075	PASS	SU-27 C,27
164	994	-108	3,062	PASS	SU-27 C,27
165	977	-125	3,010	PASS	SU-27 C,27
166	955	-147	2,942	PASS	SU-27 C,27
167	919	-183	2,831	PASS	SU-27 C,27
168	900	-202	2,773	PASS	SU-27 C,27
169	876	-226	2,699	PASS	SU-27 C,27
170	933	-169	2,875	PASS	SU-27 C,27
171	891	-211	2,745	PASS	SU-27 C,27
172	980	-122	3,019	PASS	SU-27 C,27
173	915	-187	2,819	PASS	SU-27 C,27
174	870	-232	2,680	PASS	SU-27 C,27
175	910	-192	2,804	PASS	SU-27 C,27
176	1,018	-84	3,136	PASS	SU-27 C,27
177	1,069	-33	3,294	PASS	SU-27 C,27
178	1,046	-56	3,223	PASS	SU-27 C,27
179	948	-154	2,921	PASS	SU-27 C,27
180	842	-260	2,594	PASS	SU-27 C,27
181	870	-232	2,680	PASS	SU-27 C,27
182	952	-150	2,933	PASS	SU-27 C,27
183	941	-161	2,899	PASS	SU-27 C,27
184	893	-209	2,751	PASS	SU-27 C,27
185	970	-132	2,989	PASS	SU-27 C,27
186	896	-206	2,761	PASS	SU-27 C,27
187	999	-103	3,078	PASS	SU-27 C,27
188	1,043	-59	3,213	PASS	SU-27 C,27

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 191
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
189	935	-167	2,881	PASS	SU-27 C,27
190	902	-200	2,779	PASS	SU-27 C,27
191	864	-238	2,662	PASS	SU-27 C,27

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	805	-297	2,480	PASS	SU-28 D,28
2	893	-209	2,751	PASS	SU-28 D,28
3	958	-144	2,952	PASS	SU-28 D,28
4	1,004	-98	3,093	PASS	SU-28 D,28
5	1,019	-83	3,140	PASS	SU-28 D,28
6	903	-199	2,782	PASS	SU-28 D,28
7	1,010	-92	3,112	PASS	SU-28 D,28
8	1,074	-28	3,309	PASS	SU-28 D,28
9	1,105	3	3,404	PASS	SU-28 D,28
10	1,150	48	3,543	PASS	SU-28 D,28
11	1,080	-22	3,327	PASS	SU-28 D,28
12	1,044	-58	3,217	PASS	SU-28 D,28
13	897	-205	2,764	PASS	SU-28 D,28
14	871	-231	2,684	PASS	SU-28 D,28
15	840	-262	2,588	PASS	SU-28 D,28
16	851	-251	2,622	PASS	SU-28 D,28
17	909	-193	2,801	PASS	SU-28 D,28
18	978	-124	3,013	PASS	SU-28 D,28
19	982	-120	3,026	PASS	SU-28 D,28
20	984	-118	3,032	PASS	SU-28 D,28
21	916	-186	2,822	PASS	SU-28 D,28
22	858	-244	2,643	PASS	SU-28 D,28
23	932	-170	2,871	PASS	SU-28 D,28
24	889	-213	2,739	PASS	SU-28 D,28
25	917	-185	2,825	PASS	SU-28 D,28
26	892	-210	2,748	PASS	SU-28 D,28
27	871	-231	2,684	PASS	SU-28 D,28
28	851	-251	2,622	PASS	SU-28 D,28
29	945	-157	2,912	PASS	SU-28 D,28
30	886	-216	2,730	PASS	SU-28 D,28
31	868	-234	2,674	PASS	SU-28 D,28
32	952	-150	2,933	PASS	SU-28 D,28
33	842	-260	2,594	PASS	SU-28 D,28
34	914	-188	2,816	PASS	SU-28 D,28
35	912	-190	2,810	PASS	SU-28 D,28
36	916	-186	2,822	PASS	SU-28 D,28
37	969	-133	2,985	PASS	SU-28 D,28
38	930	-172	2,865	PASS	SU-28 D,28

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	921	-181	2,838	PASS	SU-28 D,28
40	952	-150	2,933	PASS	SU-28 D,28
41	1,018	-84	3,136	PASS	SU-28 D,28
42	1,046	-56	3,223	PASS	SU-28 D,28
43	949	-153	2,924	PASS	SU-28 D,28
44	963	-139	2,967	PASS	SU-28 D,28
45	1,026	-76	3,161	PASS	SU-28 D,28
46	919	-183	2,831	PASS	SU-28 D,28
47	942	-160	2,902	PASS	SU-28 D,28
48	896	-206	2,761	PASS	SU-28 D,28
49	932	-170	2,871	PASS	SU-28 D,28
50	919	-183	2,831	PASS	SU-28 D,28
51	1,068	-34	3,290	PASS	SU-28 D,28
52	1,028	-74	3,167	PASS	SU-28 D,28
53	1,095	-7	3,374	PASS	SU-28 D,28
54	1,004	-98	3,093	PASS	SU-28 D,28
55	998	-104	3,075	PASS	SU-28 D,28
56	937	-165	2,887	PASS	SU-28 D,28
57	890	-212	2,742	PASS	SU-28 D,28
58	954	-148	2,939	PASS	SU-28 D,28
59	840	-262	2,588	PASS	SU-28 D,28
60	899	-203	2,770	PASS	SU-28 D,28
61	972	-130	2,995	PASS	SU-28 D,28
62	864	-238	2,662	PASS	SU-28 D,28
63	971	-131	2,992	PASS	SU-28 D,28
64	883	-219	2,720	PASS	SU-28 D,28
65	888	-214	2,736	PASS	SU-28 D,28
66	940	-162	2,896	PASS	SU-28 D,28
67	900	-202	2,773	PASS	SU-28 D,28
68	995	-107	3,066	PASS	SU-28 D,28
69	938	-164	2,890	PASS	SU-28 D,28
70	929	-173	2,862	PASS	SU-28 D,28
71	894	-208	2,754	PASS	SU-28 D,28
72	915	-187	2,819	PASS	SU-28 D,28
73	944	-158	2,908	PASS	SU-28 D,28
74	941	-161	2,899	PASS	SU-28 D,28
75	868	-234	2,674	PASS	SU-28 D,28
76	960	-142	2,958	PASS	SU-28 D,28

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	929	-173	2,862	PASS	SU-28 D,28
78	925	-177	2,850	PASS	SU-28 D,28
79	944	-158	2,908	PASS	SU-28 D,28
80	951	-151	2,930	PASS	SU-28 D,28
81	958	-144	2,952	PASS	SU-28 D,28
82	852	-250	2,625	PASS	SU-28 D,28
83	858	-244	2,643	PASS	SU-28 D,28
84	926	-176	2,853	PASS	SU-28 D,28
85	905	-197	2,788	PASS	SU-28 D,28
86	909	-193	2,801	PASS	SU-28 D,28
87	843	-259	2,597	PASS	SU-28 D,28
88	889	-213	2,739	PASS	SU-28 D,28
89	843	-259	2,597	PASS	SU-28 D,28
90	818	-284	2,520	PASS	SU-28 D,28
91	825	-277	2,542	PASS	SU-28 D,28
92	855	-247	2,634	PASS	SU-28 D,28
93	875	-227	2,696	PASS	SU-28 D,28
94	918	-184	2,828	PASS	SU-28 D,28
95	979	-123	3,016	PASS	SU-28 D,28
96	933	-169	2,875	PASS	SU-28 D,28
97	929	-173	2,862	PASS	SU-28 D,28
98	967	-135	2,979	PASS	SU-28 D,28
99	894	-208	2,754	PASS	SU-28 D,28
100	920	-182	2,834	PASS	SU-28 D,28
101	1,107	5	3,411	PASS	SU-28 D,28
102	1,099	-3	3,386	PASS	SU-28 D,28
103	1,010	-92	3,112	PASS	SU-28 D,28
104	993	-109	3,059	PASS	SU-28 D,28
105	938	-164	2,890	PASS	SU-28 D,28
106	915	-187	2,819	PASS	SU-28 D,28
107	879	-223	2,708	PASS	SU-28 D,28
108	925	-177	2,850	PASS	SU-28 D,28
109	935	-167	2,881	PASS	SU-28 D,28
110	936	-166	2,884	PASS	SU-28 D,28

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
111	926	-176	2,853	PASS	SU-28 D,28
112	1,015	-87	3,127	PASS	SU-28 D,28
113	890	-212	2,742	PASS	SU-28 D,28

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

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Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = 113
Fail = 0
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	805	-297	2,480	PASS	SU-29 E-29
2	893	-209	2,751	PASS	SU-29 E-29
3	958	-144	2,952	PASS	SU-29 E-29
4	1,004	-98	3,093	PASS	SU-29 E-29
5	1,019	-83	3,140	PASS	SU-29 E-29
6	903	-199	2,782	PASS	SU-29 E-29
7	1,010	-92	3,112	PASS	SU-29 E-29
8	1,074	-28	3,309	PASS	SU-29 E-29
9	1,105	3	3,404	PASS	SU-29 E-29
10	1,150	48	3,543	PASS	SU-29 E-29
11	1,080	-22	3,327	PASS	SU-29 E-29
12	1,044	-58	3,217	PASS	SU-29 E-29
13	897	-205	2,764	PASS	SU-29 E-29
14	871	-231	2,684	PASS	SU-29 E-29
15	840	-262	2,588	PASS	SU-29 E-29
16	851	-251	2,622	PASS	SU-29 E-29
17	909	-193	2,801	PASS	SU-29 E-29
18	978	-124	3,013	PASS	SU-29 E-29
19	982	-120	3,026	PASS	SU-29 E-29
20	984	-118	3,032	PASS	SU-29 E-29
21	916	-186	2,822	PASS	SU-29 E-29
22	858	-244	2,643	PASS	SU-29 E-29
23	932	-170	2,871	PASS	SU-29 E-29
24	889	-213	2,739	PASS	SU-29 E-29
25	917	-185	2,825	PASS	SU-29 E-29
26	892	-210	2,748	PASS	SU-29 E-29
27	871	-231	2,684	PASS	SU-29 E-29
28	851	-251	2,622	PASS	SU-29 E-29
29	945	-157	2,912	PASS	SU-29 E-29
30	886	-216	2,730	PASS	SU-29 E-29
31	868	-234	2,674	PASS	SU-29 E-29
32	952	-150	2,933	PASS	SU-29 E-29
33	842	-260	2,594	PASS	SU-29 E-29
34	914	-188	2,816	PASS	SU-29 E-29
35	912	-190	2,810	PASS	SU-29 E-29
36	916	-186	2,822	PASS	SU-29 E-29
37	969	-133	2,985	PASS	SU-29 E-29
38	930	-172	2,865	PASS	SU-29 E-29

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	921	-181	2,838	PASS	SU-29 E-29
40	952	-150	2,933	PASS	SU-29 E-29
41	1,018	-84	3,136	PASS	SU-29 E-29
42	1,046	-56	3,223	PASS	SU-29 E-29
43	949	-153	2,924	PASS	SU-29 E-29
44	963	-139	2,967	PASS	SU-29 E-29
45	1,026	-76	3,161	PASS	SU-29 E-29
46	919	-183	2,831	PASS	SU-29 E-29
47	942	-160	2,902	PASS	SU-29 E-29
48	896	-206	2,761	PASS	SU-29 E-29
49	932	-170	2,871	PASS	SU-29 E-29
50	919	-183	2,831	PASS	SU-29 E-29
51	1,068	-34	3,290	PASS	SU-29 E-29
52	1,028	-74	3,167	PASS	SU-29 E-29
53	1,095	-7	3,374	PASS	SU-29 E-29
54	1,004	-98	3,093	PASS	SU-29 E-29
55	998	-104	3,075	PASS	SU-29 E-29
56	937	-165	2,887	PASS	SU-29 E-29
57	890	-212	2,742	PASS	SU-29 E-29
58	954	-148	2,939	PASS	SU-29 E-29
59	840	-262	2,588	PASS	SU-29 E-29
60	899	-203	2,770	PASS	SU-29 E-29
61	972	-130	2,995	PASS	SU-29 E-29
62	864	-238	2,662	PASS	SU-29 E-29
63	971	-131	2,992	PASS	SU-29 E-29
64	883	-219	2,720	PASS	SU-29 E-29
65	888	-214	2,736	PASS	SU-29 E-29
66	940	-162	2,896	PASS	SU-29 E-29
67	900	-202	2,773	PASS	SU-29 E-29
68	995	-107	3,066	PASS	SU-29 E-29
69	938	-164	2,890	PASS	SU-29 E-29
70	929	-173	2,862	PASS	SU-29 E-29
71	894	-208	2,754	PASS	SU-29 E-29
72	915	-187	2,819	PASS	SU-29 E-29
73	944	-158	2,908	PASS	SU-29 E-29
74	941	-161	2,899	PASS	SU-29 E-29
75	868	-234	2,674	PASS	SU-29 E-29
76	960	-142	2,958	PASS	SU-29 E-29

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	929	-173	2,862	PASS	SU-29 E-29
78	925	-177	2,850	PASS	SU-29 E-29
79	944	-158	2,908	PASS	SU-29 E-29
80	951	-151	2,930	PASS	SU-29 E-29
81	958	-144	2,952	PASS	SU-29 E-29
82	852	-250	2,625	PASS	SU-29 E-29
83	858	-244	2,643	PASS	SU-29 E-29
84	926	-176	2,853	PASS	SU-29 E-29
85	905	-197	2,788	PASS	SU-29 E-29
86	909	-193	2,801	PASS	SU-29 E-29
87	843	-259	2,597	PASS	SU-29 E-29
88	889	-213	2,739	PASS	SU-29 E-29
89	843	-259	2,597	PASS	SU-29 E-29
90	818	-284	2,520	PASS	SU-29 E-29
91	825	-277	2,542	PASS	SU-29 E-29
92	855	-247	2,634	PASS	SU-29 E-29
93	875	-227	2,696	PASS	SU-29 E-29
94	918	-184	2,828	PASS	SU-29 E-29
95	979	-123	3,016	PASS	SU-29 E-29
96	933	-169	2,875	PASS	SU-29 E-29
97	929	-173	2,862	PASS	SU-29 E-29
98	967	-135	2,979	PASS	SU-29 E-29
99	894	-208	2,754	PASS	SU-29 E-29
100	920	-182	2,834	PASS	SU-29 E-29
101	1,107	5	3,411	PASS	SU-29 E-29
102	1,099	-3	3,386	PASS	SU-29 E-29
103	1,010	-92	3,112	PASS	SU-29 E-29
104	993	-109	3,059	PASS	SU-29 E-29
105	938	-164	2,890	PASS	SU-29 E-29
106	915	-187	2,819	PASS	SU-29 E-29
107	879	-223	2,708	PASS	SU-29 E-29
108	925	-177	2,850	PASS	SU-29 E-29
109	935	-167	2,881	PASS	SU-29 E-29
110	936	-166	2,884	PASS	SU-29 E-29

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **113**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
111	926	-176	2,853	PASS	SU-29 E-29
112	1,015	-87	3,127	PASS	SU-29 E-29
113	890	-212	2,742	PASS	SU-29 E-29

Prepared By: _____
Print Name: Don Wadsworth Date: 8/6/2014
Title: Health Physicist

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **94**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,035	-67	3,189	PASS	SU-30 D,30
2	991	-111	3,053	PASS	SU-30 D,30
3	942	-160	2,902	PASS	SU-30 D,30
4	867	-235	2,671	PASS	SU-30 D,30
5	928	-174	2,859	PASS	SU-30 D,30
6	945	-157	2,912	PASS	SU-30 D,30
7	1,001	-101	3,084	PASS	SU-30 D,30
8	1,040	-62	3,204	PASS	SU-30 D,30
9	1,015	-87	3,127	PASS	SU-30 D,30
10	995	-107	3,066	PASS	SU-30 D,30
11	1,038	-64	3,198	PASS	SU-30 D,30
12	1,077	-25	3,318	PASS	SU-30 D,30
13	994	-108	3,062	PASS	SU-30 D,30
14	991	-111	3,053	PASS	SU-30 D,30
15	1,028	-74	3,167	PASS	SU-30 D,30
16	983	-119	3,029	PASS	SU-30 D,30
17	912	-190	2,810	PASS	SU-30 D,30
18	1,062	-40	3,272	PASS	SU-30 D,30
19	922	-180	2,841	PASS	SU-30 D,30
20	970	-132	2,989	PASS	SU-30 D,30
21	947	-155	2,918	PASS	SU-30 D,30
22	992	-110	3,056	PASS	SU-30 D,30
23	1,072	-30	3,303	PASS	SU-30 D,30
24	1,061	-41	3,269	PASS	SU-30 D,30
25	1,169	67	3,602	PASS	SU-30 D,30
26	1,074	-28	3,309	PASS	SU-30 D,30
27	1,064	-38	3,278	PASS	SU-30 D,30
28	1,077	-25	3,318	PASS	SU-30 D,30
29	1,014	-88	3,124	PASS	SU-30 D,30
30	1,057	-45	3,257	PASS	SU-30 D,30
31	960	-142	2,958	PASS	SU-30 D,30
32	973	-129	2,998	PASS	SU-30 D,30
33	1,001	-101	3,084	PASS	SU-30 D,30
34	939	-163	2,893	PASS	SU-30 D,30
35	1,011	-91	3,115	PASS	SU-30 D,30
36	1,022	-80	3,149	PASS	SU-30 D,30
37	1,021	-81	3,146	PASS	SU-30 D,30
38	953	-149	2,936	PASS	SU-30 D,30

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Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **94**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
39	1,072	-30	3,303	PASS	SU-30 D,30
40	1,087	-15	3,349	PASS	SU-30 D,30
41	1,057	-45	3,257	PASS	SU-30 D,30
42	948	-154	2,921	PASS	SU-30 D,30
43	990	-112	3,050	PASS	SU-30 D,30
44	874	-228	2,693	PASS	SU-30 D,30
45	922	-180	2,841	PASS	SU-30 D,30
46	987	-115	3,041	PASS	SU-30 D,30
47	1,021	-81	3,146	PASS	SU-30 D,30
48	1,005	-97	3,096	PASS	SU-30 D,30
49	1,041	-61	3,207	PASS	SU-30 D,30
50	1,066	-36	3,284	PASS	SU-30 D,30
51	1,156	54	3,562	PASS	SU-30 D,30
52	1,125	23	3,466	PASS	SU-30 D,30
53	1,060	-42	3,266	PASS	SU-30 D,30
54	1,003	-99	3,090	PASS	SU-30 D,30
55	961	-141	2,961	PASS	SU-30 D,30
56	896	-206	2,761	PASS	SU-30 D,30
57	976	-126	3,007	PASS	SU-30 D,30
58	943	-159	2,905	PASS	SU-30 D,30
59	978	-124	3,013	PASS	SU-30 D,30
60	1,069	-33	3,294	PASS	SU-30 D,30
61	1,036	-66	3,192	PASS	SU-30 D,30
62	1,091	-11	3,361	PASS	SU-30 D,30
63	1,136	34	3,500	PASS	SU-30 D,30
64	1,039	-63	3,201	PASS	SU-30 D,30
65	934	-168	2,878	PASS	SU-30 D,30
66	937	-165	2,887	PASS	SU-30 D,30
67	1,037	-65	3,195	PASS	SU-30 D,30
68	946	-156	2,915	PASS	SU-30 D,30
69	1,007	-95	3,103	PASS	SU-30 D,30
70	968	-134	2,982	PASS	SU-30 D,30
71	914	-188	2,816	PASS	SU-30 D,30
72	1,007	-95	3,103	PASS	SU-30 D,30
73	952	-150	2,933	PASS	SU-30 D,30
74	952	-150	2,933	PASS	SU-30 D,30
75	1,025	-77	3,158	PASS	SU-30 D,30
76	947	-155	2,918	PASS	SU-30 D,30

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Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Scans **Ref: MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 0.03 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 1540 \text{ dpm/100cm}^2$$

Pass = **94**
Fail = **0**
0.0%

Isotope Tc-99 **Fail = 3881 dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
77	970	-132	2,989	PASS	SU-30 D,30
78	960	-142	2,958	PASS	SU-30 D,30
79	888	-214	2,736	PASS	SU-30 D,30
80	970	-132	2,989	PASS	SU-30 D,30
81	997	-105	3,072	PASS	SU-30 D,30
82	1,033	-69	3,183	PASS	SU-30 D,30
83	993	-109	3,059	PASS	SU-30 D,30
84	950	-152	2,927	PASS	SU-30 D,30
85	990	-112	3,050	PASS	SU-30 D,30
86	1,028	-74	3,167	PASS	SU-30 D,30
87	1,032	-70	3,180	PASS	SU-30 D,30
88	1,002	-100	3,087	PASS	SU-30 D,30
89	1,079	-23	3,324	PASS	SU-30 D,30
90	1,013	-89	3,121	PASS	SU-30 D,30
91	927	-175	2,856	PASS	SU-30 D,30
92	847	-255	2,610	PASS	SU-30 D,30
93	937	-165	2,887	PASS	SU-30 D,30
94	912	-190	2,810	PASS	SU-30 D,30

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

Appendix D. Static Data

D. 1. Alpha Static Data

D. 2. Beta Static Data

D. 3. Gamma Static Data

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Static **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 20 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 1.00 min
Instrument Efficiency = 35.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 35 \text{ dpm/100cm}^2$$

Pass = **30**
Fail = **0**
0.0%

Isotope Th-230 **Fail =** **123** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	27	7	76	PASS	SU-1 A,01
2	33	13	93	PASS	SU-2 B,02
3	10	-10	28	PASS	SU-3 C,03
4	31	11	87	PASS	SU-4 D,04
5	6	-14	17	PASS	SU-5 E,05
6	22	2	62	PASS	SU-6 D,06
7	33	13	93	PASS	SU-7 C,07
8	39	19	110	PASS	SU-8 B,08
9	18	-2	51	PASS	SU-9 A,09
10	23	3	65	PASS	SU-10 B,10
11	36	16	101	PASS	SU-11 C,11
12	8	-12	23	PASS	SU-12 D,12
13	43	23	121	PASS	SU-13 E,13
14	43	23	121	PASS	SU-14 D,14
15	33	13	93	PASS	SU-15 C,15
16	37	17	104	PASS	SU-16 B,16
17	23	3	65	PASS	SU-17 A,17
18	43	23	121	PASS	SU-18 B,18
19	3	-17	8	PASS	SU-19 C,19
20	31	11	87	PASS	SU-20 D,20
21	22	2	62	PASS	SU-21 E,21
22	33	13	93	PASS	SU-22 D,22
23	33	13	93	PASS	SU-23 C,23
24	2	-18	6	PASS	SU-24 B,24
25	26	6	73	PASS	SU-25 A,25
26	33	13	93	PASS	SU-26 B,26
27	3	-17	8	PASS	SU-27 C,27
28	10	-10	28	PASS	SU-28 D,28
29	12	-8	34	PASS	SU-29 E,29
30	12	-8	34	PASS	SU-30 D,30

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 27-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Beta Static Measurements **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685 **Probe:** 43-37 **Probe SN:** PR148504

Average Bkg = 1102 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 1.00 min
Instrument Efficiency = 32.5 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 240 \text{ dpm/100cm}^2$$

Pass = **30**
Fail = **0**
0.0%

Isotope Tc-99 **Fail =** **3881** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	1,024	-78	3,155	PASS	SU-1 A,01
2	968	-134	2,982	PASS	SU-2 B,02
3	890	-212	2,742	PASS	SU-3 C,03
4	1,146	44	3,531	PASS	SU-4 D,04
5	776	-326	2,391	PASS	SU-5 E,05
6	879	-223	2,708	PASS	SU-6 D,06
7	957	-145	2,948	PASS	SU-7 C,07
8	1,022	-80	3,149	PASS	SU-8 B,08
9	993	-109	3,059	PASS	SU-9 A,09
10	938	-164	2,890	PASS	SU-10 B,10
11	907	-195	2,794	PASS	SU-11 C,11
12	967	-135	2,979	PASS	SU-12 D,12
13	876	-226	2,699	PASS	SU-13 E,13
14	953	-149	2,936	PASS	SU-14 D,14
15	882	-220	2,717	PASS	SU-15 C,15
16	1,007	-95	3,103	PASS	SU-16 B,16
17	989	-113	3,047	PASS	SU-17 A,17
18	957	-145	2,948	PASS	SU-18 B,18
19	956	-146	2,945	PASS	SU-19 C,19
20	944	-158	2,908	PASS	SU-20 D,20
21	981	-121	3,022	PASS	SU-21 E,21
22	876	-226	2,699	PASS	SU-22 D,22
23	1,087	-15	3,349	PASS	SU-23 C,23
24	902	-200	2,779	PASS	SU-24 B,24
25	1,107	5	3,411	PASS	SU-25 A,25
26	1,107	5	3,411	PASS	SU-26 B,26
27	981	-121	3,022	PASS	SU-27 C,27
28	1,083	-19	3,337	PASS	SU-28 D,28
29	1,099	-3	3,386	PASS	SU-29 E,29
30	913	-189	2,813	PASS	SU-30 D,30

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jun-14
Location: B-317 Former El-Toro MCAS
Title: Gamma Static **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2350 **Inst. SN:** 95338 **Probe:** 44-10 **Probe SN:** PR085041

Average Bkg = 6722 cpm
Bkg Count time = 30 min
Sample&Bkg Count time = 1.00 min
Instrument Efficiency = 5.8 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 19{,}075 \text{ dpm/100cm}^2$$

Pass = **30**
Fail = **0**
0.0%

Isotope Cs-137 **Fail =** **122,257** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	6356	-366	109344	PASS	SU-1 A,01
2	6328	-394	108862	PASS	SU-2 B,02
3	6448	-274	110927	PASS	SU-3 C,03
4	6624	-98	113955	PASS	SU-4 D,04
5	6664	-58	114643	PASS	SU-5 E,05
6	6584	-138	113266	PASS	SU-6 D,06
7	6888	166	118496	PASS	SU-7 C,07
8	6740	18	115950	PASS	SU-8 B,08
9	6848	126	117808	PASS	SU-9 A,09
10	6608	-114	113679	PASS	SU-10 B,10
11	6660	-62	114574	PASS	SU-11 C,11
12	6400	-322	110101	PASS	SU-12 D,12
13	6732	10	115813	PASS	SU-13 E,13
14	6564	-158	112922	PASS	SU-14 D,14
15	6784	62	116707	PASS	SU-15 C,15
16	6752	30	116157	PASS	SU-16 B,16
17	6628	-94	114023	PASS	SU-17 A,17
18	6872	150	118221	PASS	SU-18 B,18
19	6712	-10	115469	PASS	SU-19 C,19
20	6560	-162	112854	PASS	SU-20 D,20
21	6708	-14	115400	PASS	SU-21 E,21
22	6812	90	117189	PASS	SU-22 D,22
23	6496	-226	111753	PASS	SU-23 C,23
24	7096	374	122075	PASS	SU-24 B,24
25	6736	14	115881	PASS	SU-25 A,25
26	6720	-2	115606	PASS	SU-26 B,26
27	6900	178	118703	PASS	SU-27 C,27
28	6540	-182	112510	PASS	SU-28 D,28
29	6904	182	118772	PASS	SU-29 E,29
30	6652	-70	114436	PASS	SU-30 D,30

Prepared By: _____

Print Name: Don Wadsworth Date: 8/6/2014

Title: Health Physicist

Appendix E. Swipe Data

E.1 Liquid Scintillation Counting for ^{3}H Survey Units 1 through 30

E.2 Gross α/β Swipes for Survey Units 1 through 30

E.1 Liquid Scintillation Counting for ^{3}H Survey Units 1 through 30

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jul-14
Location: B-317 Former El-Toro MCAS
Title: H-3 Wipes **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. # NA **Job No:** HR1462-02
Survey Inst: BECKMAN 6500 **Inst. SN:** 615068 **Probe:** NA **Probe SN:** NA

Average Bkg = 7 cpm
Bkg Count time = 10 min
Sample&Bkg Count time = 2.00 min
Instrument Efficiency = 37.4 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 89 \text{ dpm/100cm}^2$$

Pass = **31**
Fail = **0**
0%

Isotope H-3 **Fail =** **60** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	10.0	2.91	26.74	PASS	SU-1 A,01
2	8.3	1.24	22.27	PASS	SU-2 B,02
3	5.3	-1.76	14.25	PASS	SU-3 C,03
4	9.3	2.24	24.95	PASS	SU-4 D,04
5	8.7	1.58	23.18	PASS	SU-5 E,05
6	9.7	2.58	25.85	PASS	SU-6 D,06
7	8.7	1.58	23.18	PASS	SU-7 C,07
8	9.3	2.24	24.95	PASS	SU-8 B,08
9	8.3	1.24	22.27	PASS	SU-9 A,09
10	10.7	3.58	28.53	PASS	SU-10 B,10
11	6.0	-1.09	16.04	PASS	SU-11 C,11
12	8.0	0.91	21.39	PASS	SU-12 D,12
13	6.7	-0.42	17.83	PASS	SU-13 E,13
14	8.7	1.58	23.18	PASS	SU-14 D,14
15	11.7	4.58	31.20	PASS	SU-15 C,15
16	8.3	1.24	22.27	PASS	SU-16 B,16
17	9.7	2.58	25.85	PASS	SU-17 A,17
18	10.3	3.24	27.62	PASS	SU-18 B,18
19	4.3	-2.76	11.58	PASS	SU-19 C,19
20	4.0	-3.09	10.69	PASS	SU-20 D,20
21	9.3	2.24	24.95	PASS	SU-21 E,21
22	5.7	-1.42	15.16	PASS	SU-22 D,22
23	7.3	0.24	19.60	PASS	SU-23 C,23
24	7.7	0.58	20.51	PASS	SU-24 B,24
25	9.7	2.58	25.85	PASS	SU-25 A,25
26	8.7	1.58	23.18	PASS	SU-26 B,26
27	10.3	3.24	27.62	PASS	SU-27 C,27
28	7.3	0.24	19.60	PASS	SU-28 D,28
29	10.3	3.24	27.62	PASS	SU-29 E,29
30	11.3	4.24	30.29	PASS	SU-30 D,30
31	12.3	5.24	32.97	PASS	BKG

Print Name: Don Wadsworth Date: 7/16/2014
Title: Health Physicist

F.2 Gross α/β Swipes for Survey Units 1 through 30

New World Environmental Inc.

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jul-14
Location: B-317 Former El-Toro MCAS
Title: Alpha Wipes **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. # NA **Job No:** HR1462-02
Survey Inst: Protean 9050 **Inst. SN:** 615068 **Probe:** NA **Probe SN:** NA

Average Bkg = 0 cpm
Bkg Count time = 10 min
Sample&Bkg Count time = 2.00 min
Instrument Efficiency = 50.7 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 21 \text{ dpm/100cm}^2$$

Pass = **31**
Fail = **0**
0%

Isotope Th-230 **Fail =** **10** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	0.0	-0.20	0.00	PASS	SU-1 A,01
2	0.0	-0.20	0.00	PASS	SU-2 B,02
3	0.0	-0.20	0.00	PASS	SU-3 C,03
4	0.0	-0.20	0.00	PASS	SU-4 D,04
5	0.0	-0.20	0.00	PASS	SU-5 E,05
6	0.0	-0.20	0.00	PASS	SU-6 D,06
7	0.0	-0.20	0.00	PASS	SU-7 C,07
8	0.5	0.30	0.99	PASS	SU-8 B,08
9	0.5	0.30	0.99	PASS	SU-9 A,09
10	0.0	-0.20	0.00	PASS	SU-10 B,10
11	0.5	0.30	0.99	PASS	SU-11 C,11
12	0.0	-0.20	0.00	PASS	SU-12 D,12
13	0.0	-0.20	0.00	PASS	SU-13 E,13
14	0.0	-0.20	0.00	PASS	SU-14 D,14
15	0.0	-0.20	0.00	PASS	SU-15 C,15
16	0.0	-0.20	0.00	PASS	SU-16 B,16
17	0.0	-0.20	0.00	PASS	SU-17 A,17
18	0.0	-0.20	0.00	PASS	SU-18 B,18
19	0.0	-0.20	0.00	PASS	SU-19 C,19
20	0.0	-0.20	0.00	PASS	SU-20 D,20
21	0.0	-0.20	0.00	PASS	SU-21 E,21
22	0.0	-0.20	0.00	PASS	SU-22 D,22
23	0.0	-0.20	0.00	PASS	SU-23 C,23
24	0.0	-0.20	0.00	PASS	SU-24 B,24
25	0.0	-0.20	0.00	PASS	SU-25 A,25
26	0.0	-0.20	0.00	PASS	SU-26 B,26
27	0.0	-0.20	0.00	PASS	SU-27 C,27
28	0.0	-0.20	0.00	PASS	SU-28 D,28
29	0.0	-0.20	0.00	PASS	SU-29 E,29
30	0.5	0.30	0.99	PASS	SU-30 D,30
31	0.0	-0.20	0.00	PASS	BKG

Print Name: Don Wadsworth Date: 7/16/2014
Title: Health Physicist

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Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report **Sample collection date:** 30-Jul-14
Location: B-317 Former El-Toro MCAS
Title: Beta Wipes **Ref:** **MARSSIM/NUREG-1575, NUREG 1507**
Rad Lic. # NA **Job No:** HR1462-02
Survey Inst: Protean 9050 **Inst. SN:** 615068 **Probe:** NA **Probe SN:** NA

Average Bkg = 17 cpm
Bkg Count time = 10 min
Sample&Bkg Count time = 2.00 min
Instrument Efficiency = 41.6 %

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100\,cm^2}\right)} = 116 \text{ dpm/100cm}^2$$

Pass = **31**
Fail = **0**
0%

Isotope C-14 **Fail =** **95** **dpm**

Location	CPM	Net CPM (CPMs - CPMb)	DPM	Pass/ Fail	Comment
1	22.0	4.70	52.85	PASS	SU-1 A,01
2	20.5	3.20	49.25	PASS	SU-2 B,02
3	24.0	6.70	57.66	PASS	SU-3 C,03
4	16.0	-1.30	38.44	PASS	SU-4 D,04
5	17.0	-0.30	40.84	PASS	SU-5 E,05
6	19.0	1.70	45.65	PASS	SU-6 D,06
7	25.5	8.20	61.26	PASS	SU-7 C,07
8	21.5	4.20	51.65	PASS	SU-8 B,08
9	15.5	-1.80	37.24	PASS	SU-9 A,09
10	20.0	2.70	48.05	PASS	SU-10 B,10
11	21.5	4.20	51.65	PASS	SU-11 C,11
12	20.0	2.70	48.05	PASS	SU-12 D,12
13	16.0	-1.30	38.44	PASS	SU-13 E,13
14	23.0	5.70	55.26	PASS	SU-14 D,14
15	18.5	1.20	44.44	PASS	SU-15 C,15
16	18.0	0.70	43.24	PASS	SU-16 B,16
17	23.5	6.20	56.46	PASS	SU-17 A,17
18	15.5	-1.80	37.24	PASS	SU-18 B,18
19	22.0	4.70	52.85	PASS	SU-19 C,19
20	19.5	2.20	46.85	PASS	SU-20 D,20
21	18.5	1.20	44.44	PASS	SU-21 E,21
22	21.0	3.70	50.45	PASS	SU-22 D,22
23	24.0	6.70	57.66	PASS	SU-23 C,23
24	21.5	4.20	51.65	PASS	SU-24 B,24
25	22.0	4.70	52.85	PASS	SU-25 A,25
26	20.0	2.70	48.05	PASS	SU-26 B,26
27	22.0	4.70	52.85	PASS	SU-27 C,27
28	18.0	0.70	43.24	PASS	SU-28 D,28
29	20.5	3.20	49.25	PASS	SU-29 E,29
30	17.5	0.20	42.04	PASS	SU-30 D,30
31	20.5	3.20	49.25	PASS	BKG

Print Name: Don Wadsworth Date: 7/16/2014
Title: Health Physicist

Appendix F. Minimum Detectable Activity/Minimum Detectable Count Rate Calculations

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685

Sample collection date: 25-Jun-14
Ref: **MARSSIM/NUREG-1575, NUREG 1507**
Probe: 43-37 **Probe SN:** PR148504

Calibration Date: 12/16/2013 **Due Date:** 12/16/2014
Isotope: Th-230
Alpha

Probe Active Area (cm^2): 585
Note:

	Instrument BKG cpm	
1	18	13
2	12	19
3	8	34
4	29	22
5	39	15
6	34	9
7	22	35
8	15	35
9	19	23
10	24	15
11	28	10
12	18	15
13	12	10
14	17	17
15	20	14

BKG Ave: 20 cpm

BKG Ave: 56 dpm

$$MDCR(cpm) = 3 + 1.38\sqrt{B_i x\left(\frac{i}{60}\right)}\ x\left(\frac{60}{i}\right) =$$ 24 cpm

Fail Level = (bkg +MDCR)= 44 cpm/585cm^2

$$MDC = \frac{MDCR}{\left(\sqrt{0.5}\,(\varepsilon_i)(\varepsilon_s)\left(\frac{A}{100cm^2}\right)\right)} =$$ 65 dpm

Fail Level (DPM) (bkg dpm+L_d dpm)= 121 dpm/585cm^2

Fail Level - MARSSIM Ch.6

Instrument System Efficiency Documentation

Isotope: Th-230 SN: G4-411 Activity dpm: 118,560

DPM (2π) 55,100 β/min

Date: 1-Sep-02 Source Manufacturer: Isotope Products

Instrument reading : 19,577 cpm

Instrument Efficiency: 35.53 % (2π)

Note: Wipe samples were collected for analysis of removable be contamination and calculations were based on thirty (30) one minute background counts. Other factors used unless otherwise noted include source efficiency/ probe efficiency = 0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

Ref: MARSSIM/NUREG-1575
NUREG-1507

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Alpha Scans
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685

Sample collection date: 25-Jun-14
Ref: **MARSSIM/NUREG-1575, NUREG 1507**
Probe: 43-37 **Probe SN:** PR148504

Calibration Date: 12/16/2013 **Due Date:** 12/16/2014
Isotope: Th-230
Alpha

Probe Active Area (cm^2): 585
Note:

Static Minimum Detectable Activity (MDA) Count Calculations

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100cm^2}\right)} = \underline{\quad 35 \quad} \; dpm \; / 100 \; cm^2$$

Where:

R_b =	System bkg count rate (cpm)	20	cpm
T_{s+b} =	Gross Sample count time	1	min
T_b =	Background count time	30	min
ε_i =	Instrument 4π surface emission eff.	0.36	
ε_s =	Source Surface efficiency (1, 0.5, 0.25)	0.25	
	0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)		
b_i =	**Background counts during the observation interval**	1.34	
i =	**observation interval in seconds**	4	
$\sqrt{0.5}$	**= MARSSIM determined level of performance for the surveyor**	0.71	
	d' =	1.38	

Ref: MARSSIM/NUREG-1575
NUREG-1507

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Beta Scans
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685

Sample collection date: 6-Jun-13
Ref: **MARSSIM/NUREG-1575, NUREG 1507**
Probe: 43-37 **Probe SN:** PR148504

Calibration Date: 12/17/2012 **Due Date:** 12/17/2013
Isotope: Tc-99
Medium elergy beta

Probe Active Area (cm^2): 585

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

	Instrument BKG cpm	
1	1027	1059
2	1031	1085
3	1153	1162
4	1159	1075
5	1188	1091
6	1052	1107
7	1151	1152
8	1151	1160
9	996	1052
10	1043	1132
11	1185	1049
12	1165	1034
13	1172	1164
14	1005	1104
15	1040	1122

BKG Ave: 1102 cpm

BKG Ave: 3396 dpm

$$MDCR(cpm) = 3 + 1.38\sqrt{B_i x\left(\frac{i}{60}\right)}\ x\left(\frac{60}{i}\right) =$$ 177 cpm

Fail Level = (bkg +MDCR)= 1280 cpm/585cm^2

$$MDC = \frac{MDCR}{\left(\sqrt{0.5}\,(\varepsilon_i)(\varepsilon_s)\left(\frac{A}{100cm^2}\right)\right)} =$$ 529 dpm

Fail Level (DPM) (bkg dpm+L $_d$ dpm)= 3924 dpm/585cm^2

Fail Level - MARSSIM Ch.6

Instrument System Efficiency Documentation

Isotope: Tc-99 SN: G4-411 Activity dpm: 118,560

DPM (2π) 63,930 β/min

Date: 15-Nov-02 Source Manufacturer: Isotope Products

Instrument reading : 20,750 cpm

Instrument Efficiency: 32.46 % (2π)

Note: Wipe samples were collected for analysis of removable be contamination and calculations were based on thirty (30) one minute background counts. Other factors used unless otherwise noted include source efficiency/ probe efficiency = 0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

Ref: MARSSIM/NUREG-1575
NUREG-1507

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Beta Scans
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2360 **Inst. SN:** 164685

Sample collection date: 6-Jun-13

Ref: MARSSIM/NUREG-1575, NUREG 1507

Probe: 43-37 **Probe SN:** PR148504

Calibration Date: 12/17/2012 **Due Date:** 12/17/2013
Isotope: Tc-99
Medium elergy beta

Probe Active Area (cm^2): 585

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

Static Minimum Detectable Activity (MDA) Count Calculations

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100cm^2}\right)} = \underline{\mathbf{240}}\ dpm\ /100\ cm^2$$

Where:

R_b =	System bkg count rate (cpm)	1102	cpm
T_{s+b} =	Gross Sample count time	1	min
T_b =	Background count time	30	min
ε_i =	Instrument 4π surface emission eff.	0.32	
ε_s =	Source Surface efficiency (1, 0.5, 0.25)	0.25	
	0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)		
b_i =	**Background counts during the observation interval**	73.48	
i =	**observation interval in seconds**	4	
$\sqrt{0.5}$	**= MARSSIM determined level of performance for the surveyor**	0.71	
	d' =	1.38	

Ref: MARSSIM/NUREG-1575
NUREG-1507

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Wipes
Rad Lic. # NA **Job No:** HR1462-02
ırvey Inst: Protean 9050 **Inst. SN:** 615068

Sample collection date: 30-Jul-14

Ref: **MARSSIM/NUREG-1575, NUREG 1507**

Probe: NA **Probe SN:** NA

Calibration Date: 7/16/2014 **Due Date:** 7/16/2015
Isotope: Th-230

Probe Active Area (cm^2): 100

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

	Instrument BKG cpm	
1	0.2	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

BKG Ave: 0 cpm

BKG Ave: 0 dpm

$$L_d\ (cpm) = 3 + 4.65\sqrt{BKG_{cpm}} =$$ 5 cpm

Fail Level (CPM) (bkg +L $_d$ cpm)= 5 cpm/100cm^2

$$L_d\ (dpm) = \frac{3 + 4.65\sqrt{BKG_{cpm}}}{eff_i} =$$ 10 dpm

Fail Level (DPM) (bkg dpm+L $_d$ dpm)= 10 dpm/100cm^2

Fail Level - MARSSIM Ch.6

Instrument System Efficiency Documentation

Isotope: Th-230 SN: A7-271 Activity dpm: 100,600

DPM (2π) 50,300 β/min

Date: 16-Jul-14 Source Manufacturer: Isotope Products

Instrument reading : 25,491 cpm

Instrument Efficiency: 50.68 % (2π)

Note: Wipe samples were collected for analysis of removable be contamination and calculations were based on thirty (30) one minute background counts. Other factors used unless otherwise noted include source efficiency/ probe efficiency = 0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Wipes
Rad Lic. # NA **Job No:** HR1462-02
ırvey Inst: Protean 9050 **Inst. SN:** 615068

Calibration Date: 7/16/2014 **Due Date:** 7/16/2015
Isotope: Th-230

Sample collection date: 30-Jul-14

Ref: **MARSSIM/NUREG-1575, NUREG 1507**

Probe: NA **Probe SN:** NA

Probe Active Area (cm^2): 100

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

Minimum Detectable Activity (MDA) Count Calculations

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100cm^2}\right)} = \underline{\mathbf{21}}\ dpm\ /100\ cm^2$$

Where:

R_b =	System bkg count rate (cpm)	0	cpm
T_{s+b} =	Gross Sample count time	2	min
T_b =	Background count time	10	min
ε_i =	Instrument 4π surface emission eff.	0.51	
ε_s =	Source Surface efficiency (1, 0.5, 0.25)	0.25	

0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Beta Wipes MDA
Rad Lic. # NA **Job No:** HR1462-02
ırvey Inst: Protean 9050 **Inst. SN:** 615068

Sample collection date: 30-Jul-14

Ref: **MARSSIM/NUREG-1575, NUREG 1507**

Probe: NA **Probe SN:** NA

Calibration Date: 7/16/2014 **Due Date:** 7/16/2015
Isotope: C-14

Probe Active Area (cm^2): 100

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

	Instrument BKG cpm	
1	17.3	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

BKG Ave: 17 cpm

BKG Ave: 42 dpm

$$L_d\ (cpm) = 3 + 4.65\sqrt{BKG_{cpm}} =$$ 22 cpm

Fail Level (CPM) (bkg +L $_d$ cpm)= 40 cpm/100cm^2

$$L_d\ (dpm) = \frac{3 + 4.65\sqrt{BKG_{cpm}}}{eff_i} =$$ 54 dpm

Fail Level (DPM) (bkg dpm+L $_d$ dpm)= 95 dpm/100cm^2

Fail Level - MARSSIM Ch.6

Instrument System Efficiency Documentation

Isotope: C-14 SN: A7-277 Activity dpm: 99,460

DPM (2π) 26,830 β/min

Date: 16-Jul-14 Source Manufacturer: Isotope Products

Instrument reading : 11,168 cpm

Instrument Efficiency: 41.63 % (2π)

Note: Wipe samples were collected for analysis of removable be contamination and calculations were based on thirty (30) one minute background counts. Other factors used unless otherwise noted include source efficiency/ probe efficiency = 0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Beta Wipes MDA
Rad Lic. # NA **Job No:** HR1462-02
ırvey Inst: Protean 9050 **Inst. SN:** 615068

Calibration Date: 7/16/2014 **Due Date:** 7/16/2015
Isotope: C-14

Sample collection date: 30-Jul-14

Ref: **MARSSIM/NUREG-1575, NUREG 1507**

Probe: NA **Probe SN:** NA

Probe Active Area (cm^2): 100

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

Minimum Detectable Activity (MDA) Count Calculations

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100cm^2}\right)} = \underline{\mathbf{116}}\ dpm\ /100\ cm^2$$

Where:

R_b =	System bkg count rate (cpm)	17	cpm
T_{s+b} =	Gross Sample count time	2	min
T_b =	Background count time	10	min
ε_i =	Instrument 4π surface emission eff.	0.42	
ε_s =	Source Surface efficiency (1, 0.5, 0.25)	0.25	

0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: H-3 Wipes MDA
Rad Lic. # NA **Job No:** HR1462-02
ırvey Inst: BECKMAN 6500 **Inst. SN:** 615068

Sample collection date: 30-Jul-14

Ref: **MARSSIM/NUREG-1575, NUREG 1507**

Probe: NA **Probe SN:** NA

Calibration Date: 7/16/2014 **Due Date:** 7/16/2015
Isotope: H-3

Probe Active Area (cm^2): 100

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

	Instrument BKG cpm	
1	7.0	4.3
2	5.3	6.7
3	7.0	8.3
4	9.7	9.0
5	9.7	7.0
6	6.7	10.0
7	6.3	5.3
8	5.0	6.7
9	8.0	4.7
10	6.3	10.3
11	6.0	6.3
12	6.7	7.0
13	6.3	7.7
14	6.0	7.7
15	8.3	7.3

BKG Ave: 7 cpm

BKG Ave: 19 dpm

$$L_d\ (cpm) = 3 + 4.65\sqrt{BKG_{cpm}} =$$ 15 cpm

Fail Level (CPM) (bkg +L $_d$ cpm)= 22 cpm/100cm^2

$$L_d\ (dpm) = \frac{3 + 4.65\sqrt{BKG_{cpm}}}{eff_i} =$$ 41 dpm

Fail Level (DPM) (bkg dpm+L $_d$ dpm)= 60 dpm/100cm^2

Fail Level - MARSSIM Ch.6

Instrument System Efficiency Documentation

Isotope: H-3 SN: A7-271 Activity dpm: 21,841

DPM (2π) 21,841 β/min

Date: 16-Jul-14 Source Manufacturer: Isotope Products

Instrument reading : 8,169 cpm

Instrument Efficiency: 37.40 % (2π)

Note: Wipe samples were collected for analysis of removable be contamination and calculations were based on thirty (30) one minute background counts. Other factors used unless otherwise noted include source efficiency/ probe efficiency = 0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: H-3 Wipes MDA
Rad Lic. # NA **Job No:** HR1462-02
ırvey Inst: BECKMAN 6500 **Inst. SN:** 615068

Calibration Date: 7/16/2014 **Due Date:** 7/16/2015
Isotope: H-3

Sample collection date: 30-Jul-14

Ref: **MARSSIM/NUREG-1575, NUREG 1507**

Probe: NA **Probe SN:** NA

Probe Active Area (cm^2): 100

Note: Since the wipe covers an average area of 100cm ^{2}, the area of the detector is considered as the same. The efficiency is calculated from the average of all efficiencies of background samples taken.

Minimum Detectable Activity (MDA) Count Calculations

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100cm^2}\right)} = \underline{\mathbf{89}}\ dpm\ /100\ cm^2$$

Where:

R_b =	System bkg count rate (cpm)	7	cpm
T_{s+b} =	Gross Sample count time	2	min
T_b =	Background count time	10	min
ε_i =	Instrument 4π surface emission eff.	0.37	
ε_s =	Source Surface efficiency (1, 0.5, 0.25)	0.25	

0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Gamma Static
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2350 **Inst. SN:** 95338

Sample collection date: 25-Jun-14
Ref: **MARSSIM/NUREG-1575, NUREG 1507**
Probe: 44-10 **Probe SN:** PR085041

Calibration Date: 12/16/2013 **Due Date:** 12/16/2014
Isotope: Cs-137
Gamma

Probe Active Area (cm^2): NA
Note:

	Instrument BKG cpm	
1	7012	6764
2	6596	6500
3	6900	6844
4	6784	7016
5	6792	6524
6	6612	6728
7	6752	6508
8	6696	6336
9	6760	6644
10	6984	7006
11	6676	6524
12	7084	6628
13	6748	6508
14	6804	6536
15	6920	6484

BKG Ave: 6722 cpm

BKG Ave: 115646 dpm

$$L_d\ (cpm) = 3 + 4.65\sqrt{BKG_{cpm}} =$$ 384 cpm

Fail Level (CPM) (bkg +L_d cpm)= 7107 cpm/NAcm^2

$$L_d\ (dpm) = \frac{3 + 4.65\sqrt{BKG_{cpm}}}{eff_i} =$$ 6610 dpm

Fail Level (DPM) (bkg dpm+L_d dpm)= 122,257 dpm/NAcm^2

Fail Level - MARSSIM Ch.6

Instrument System Efficiency Documentation

Isotope: Cs-137 SN: A7-274 Activity dpm: 102,900
DPM (2π) 42,819 β/min
Date: 1-Sep-02 Source Manufacturer: Isotope Products

Instrument reading : 2,489 cpm

Instrument Efficiency: 5.81 % (2π)

Note: Wipe samples were collected for analysis of removable be contamination and calculations were based on thirty (30) one minute background counts. Other factors used unless otherwise noted include source efficiency/ probe efficiency = 0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

Ref: MARSSIM/NUREG-1575
NUREG-1507

New World Environmental Inc.

Restoring the environment for future generations

Phone: 925.443.7967 Fax: 925.443.0119

Name: Radiological Survey Report
Location: B-317 Former El-Toro MCAS
Title: Gamma Static
Rad Lic. Nos. NA **Job No:** HR1462-02
Survey Inst: Ludlum 2350 **Inst. SN:** 95338

Sample collection date: 25-Jun-14
Ref: **MARSSIM/NUREG-1575, NUREG 1507**
Probe: 44-10 **Probe SN:** PR085041

Calibration Date: 12/16/2013 **Due Date:** 12/16/2014
Isotope: Cs-137
Gamma

Probe Active Area (cm^2): NA
Note:

Minimum Detectable Activity (MDA) Count Calculations

$$MDA_{(dpm/100cm^2)} = \frac{3 + 3.29\sqrt{R_b * T_{s+b} * \left(1 + \frac{T_{s+b}}{T_b}\right)}}{\varepsilon_i * T_{s+b} * \varepsilon_s * \left(\frac{\text{Probe Active Area}(cm^2)}{100cm^2}\right)} = \underline{\mathbf{19075}}\ dpm\ /100\ cm^2$$

Where:

R_b =	System bkg count rate (cpm)	6722	cpm
T_{s+b} =	Gross Sample count time	1	min
T_b =	Background count time	30	min
ε_i =	Instrument 4π surface emission eff.	0.06	
ε_s =	Source Surface efficiency (1, 0.5, 0.25)	0.25	

0.25 for low energy betas (H-3, C-14, S-35, P-33, Tc-99, I-129)

Ref: MARSSIM/NUREG-1575
NUREG-1507

SUMMARY REPORT:
PRE-RENOVATION HAZARDOUS BUILDING MATERIALS SURVEY

WAREHOUSE BUILDING #317
FORMER MARINE CORPS AIR STATION (MCAS) EL TORO
IRVINE, CALIFORNIA 92618

Prepared For:

GEOSYNTEC CONSULTANTS

&

LOWE ENTERPRISES
8001 IRVINE CENTER DRIVE
SUITE 1460
IRVINE, CALIFORNIA 92618

Prepared By:

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SCA/LA PROJECT NO.: 14-053N
AUGUST 2014

SUMMARY REPORT:
PRE-RENOVATION HAZARDOUS BUILDING MATERIALS SURVEY

WAREHOUSE BUILDING #317
FORMER MARINE CORPS AIR STATION (MCAS) EL TORO
IRVINE, CALIFORNIA 92618

PREPARED FOR:

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List of Common Acronyms and Abbreviations

AAA	= Assumed Asbestos-Containing Materials
ACM	= Asbestos-Containing Materials
AHERA	= Asbestos Hazard Emergency Response Act
BBMAS	= vinyl baseboard mastic
BK	= black paints
CAC	= Certified Asbestos Consultant
Cal/OSHA	= the California Division of Occupational Safety and Health
Cal/EPA	= the California Environmental Protection Agency
CAULK	= window and door perimeter caulking
CCR	= California Code of Regulations
CDPH	= California Department of Public Health (formerly Dept. of Health Services)
CERCLA	= Comprehensive Environmental Response, Compensation, and Liability Act
CFR	= Code of Federal Regulations
CHMM	= Certified Hazardous Materials Manager
CIH	= Certified Industrial Hygienist
CLLI	= ceiling tile laid-in
CLPL	= ceiling plaster
CMU	= concrete masonry units (concrete block)
CPSC	= Consumer Product Safety Commission
CSST	= Certified Site Surveillance Technician
DS/PLM	= Polarized Light Microscopy with Dispersion Staining
EPA	= the U.S. Environmental Protection Agency
EPRI	= Electric Power Research Institute
EXPJNT	= expansion joint
FIFRA	= Federal Insecticide, Fungicide, and Rodenticide Act
FIHW	= fitting hot water
FISTM	= fitting steam pipe
FLVCS	= linoleum flooring
FLVCT	= vinyl composite floor tiles
ft^2	= square feet
GROUT	= ceramic tile and concrete grouts
HUD	= the U.S. Department of Housing and Urban Development
LBP	= Lead-Based Paints
LF	= linear feet
$\mu g/cm^2$	= micrograms per centimeter squared
$\mu g/g$	= microgram per gram or equivalent to parts per million
$\mu g/m^3$	= micrograms per cubic meter
μm	= microns
mg/cm^2	= milligrams per squared centimeter
mg/kg	= milligrams per kilogram
NESHAP	= National Emission Standards for Hazardous Air Pollutants

List of Common Acronyms and Abbreviations *(Continued)*

OSHA	= the federal Occupational Safety and Health Administration
PCB	= Polychlorinated Biphenyl
PEL	= Permissible Exposure Level
Penta	= Pentachlorophenol
PIHW	= pipe hot water
PISTM	= steam thermal system pipe insulation
ppm	= parts per million
QA/QC	= Quality Assurance/Quality Control
RACM	= Regulated Asbestos Containing Material
RCRA	= Resource Conservation and Recovery Act
RCW	= Regulated Controlled Waste
REA	= Registered Environmental Assessor
RFFLT	= roofing felt
RFBU	= built-up asphalt tar roof
RFPTCH	= roof patching compounds
RFROLL	= rolled roofing
RWQCB	= the Regional Water Quality Control Board
SCAQMD	= South Coast Air Quality Management District
SF	= square feet
TIGR	= tile grout
TN	= tan paints
TSI	= Thermal System Insulation
UNK	= unknown material
WLCER	= ceramic wall tiles
WLPL	= wall plaster
WLSH	= gypsum wallboard
WNGL	= window glazing putty
XRF	= X-Ray Fluorescence

1.0 Executive Summary

This report summarizes the results of the bulk asbestos containing material and lead-based paint survey conducted for Lowe Enterprises of the warehouse/office (Building #317), at the former U.S. Marine Corps Air Station (MCAS) El Toro, in Irvine, California. Building 317 (the building) was constructed circa 1945, with a subsequent [circa 1960s] office addition on the southwest side (south offices). Apparently more recent renovations include the replacement of most of the original steel frame windows with aluminum windows. The building is an approximately 124,200-square-foot, one-story wood and concrete warehouse and office building. The purpose of this report is to provide an assessment of hazardous building materials, including asbestos containing materials (ACM), lead-based paints (LBP) and other environmental issues in the building, such as polychlorinated biphenyls (PCBs) in lighting ballasts; mercury in fluorescent light tubes and thermostats; and bio-hazards such as mold, fungi and animal waste. The survey was performed prior to planned renovations of the building.

SCA/LA also reviewed a 1999 survey report (by others) of several MCAS El Toro buildings (which included Building 317) in conjunction with this survey. Applicable findings from that report are included herein. It should be noted that SCA makes no warranty regarding information provided by third parties.

A summary of SCA/LA's findings is presented below.

Asbestos-containing materials (ACM, containing >1% asbestos) were identified in the building as follows:

- Beige/gray/black mastic associated with HVAC equipment, pads, and supports, on the south office roof, totaling about 300 ft^2 [SCA/LA Sample ID# RFMAS-006-01 through -03, containing 5% Chrysotile asbestos (CH)].
- Gray mastic associated with patching at the cracked exterior stucco wall on the southwest side of the building at the lower roof level, totaling about 120 ft^2 [SCA/LA Sample ID# RFMAS-007-01 through -03, containing 5% CH].
- 12" x 12" beige vinyl floor tiles (with tan streaks) and associated yellow mastic in the Storage Room, totaling about 250 ft^2 [SCA/LA Sample ID# FLVCT-025-01 through -03, containing 2% CH (in the tiles only; and ND in the mastic].
- 12" x 12" tan vinyl floor tiles (with brown and white streaks) and associated black mastic in the restrooms and lobby and under carpeting throughout the office areas, totaling about 7,600 ft^2 [SCA/LA Sample ID# FLVCT-026-01 through -03, containing 3% CH in the tiles; and 5% CH in the mastic].
- White undercoat material associated with stainless steel sink in the kitchen of the south office addition area, totaling < 3 ft^2 [SCA/LA Sample ID# MISC-029-01, containing 3% CH].
- White thermal system pipe insulation (TSI) on 4"-diameter hot water lines observed above ceilings near the restrooms, totaling about 40 linear feet (or 43 ft^2) [SCA/LA Sample ID# PIHW-030-01 through -03, containing 35% CH].
- Mudded TSI pipe insulation elbows associated with hot water lines above ceilings (mostly concealed) near the restrooms, totaling about 10 elbows [SCA/LA Sample

ID# FIHW-031-01 through -03, containing 10% CH and 5% Amosite asbestos (AM)].

- Waterproof floor membrane *may* be present, concealed beneath (or within) the concrete floor slab, throughout the warehouse areas, totaling about 144,000 ft^2 [Material I.D. FLMEMB-AAA, assumed asbestos containing (ACM > 1%), *if present*].
- Gray corrugated Transite® (asbestos cement) interior wall panels throughout the warehouse areas, totaling about 2,940 ft^2; not sampled in order to preserve the integrity of the material [Material I.D. WLTRAN-AAA, assumed ACM > 1%]. (Material has "Asbestos" labeling.)
- Transite® (asbestos cement) interior wall panels, in the restrooms and electrical and storage rooms in the south office area, totaling about 1,400 ft^2; not sampled in order to preserve the integrity of the material [Material I.D. WLTRAN-AAA, assumed ACM > 1%]. (Material has "Asbestos" labeling.)
- Inaccessible window putty associated with old, [mostly] concealed steel windows, totaling about 16 windows (< 50 ft^2) in the Boiler Room and above the office ceilings [Material I.D. PUTTY-AAA, assumed ACM > 1%, not sampled due to inaccessibility]. *Note: All other steel frame windows have been replaced by newer, aluminum windows.*
- One HVAC flex connector (vibration reducer fabric) was identified in a previous survey, dated 6/15/99, associated with an attic vent. *Note: This material was not observed by SCA/LA, but was referenced in the 1999 survey report that was reviewed by SCA/LA in conjunction with this survey. This material would require abatement and disposal as RACM, if encountered.*

Asbestos Containing Construction Materials (ACCM, containing <1% asbestos) (i.e. "trace" asbestos) as defined by Cal/OSHA, were not identified in the building in conjunction with this survey.

Prior to renovations, the National Emission Standard for Hazardous Air Pollutants (NESHAP) mandated by the Environmental Protection Agency (EPA) and locally enforced by the South Coast Air Quality Management District (SCAQMD), require that buildings be inspected for asbestos-containing materials, and ACM >1% that is subject to damage or which will be made friable, be removed.

HUD-defined Lead-Based Paints and coatings greater than 5,000 parts per million (by bulk sampling) or greater than 1.0 mg/cm^2 (by XRF testing) were identified by bulk and/or XRF sampling of representative paints and coatings throughout and on the exterior of the building by SCA/LA.

Eleven (11) of the 22 bulk paint samples were determined to be lead-based paints (LBP), and most of the other paints were lead-containing, except for a few apparently newer paints. Many of the paints were found to be chipped, peeling, and/or water-damaged. LBP were identified by bulk sampling as follows:

- Tan/orange LBP on exterior stucco walls peeling in numerous locations; typical throughout except for lower, unpainted concrete areas [SCA/LA Sample ID# OR-02, containing 6,800 parts per million (ppm) lead].

- Peeling beige LBP on the sheet metal HVAC screens on the lower office roof [SCA/LA Sample ID# BE-04, containing 28,000 ppm lead].
- Peeling red LBP on metal the water meters ("1945" placards) sampled at the exterior east side [SCA/LA Sample ID# RD-07, containing 25,000 ppm lead].
- Peeling yellow LBP on exterior steel bollards [SCA/LA Sample ID# YW-08, containing 83,000 ppm lead].
- Peeling beige LBP on wood roof rafters, eaves and framing in the north (rail) Loading Dock area [SCA/LA Sample ID# BE-09, containing 220,000 ppm lead].
- Peeling brown LBP on the wood roof fascia at the Loading Dock area [SCA/LA Sample ID# BR-10, containing 210,000 ppm lead].
- Chipped yellow LBP on metal rails protecting the fire hydrant near the northwest end of the building [SCA/LA Sample ID# YW-11, containing 110,000 ppm lead].
- Chipped yellow LBP striping on the concrete floor slab, where present in the Warehouse [SCA/LA Sample ID# YW-14, containing 27,000 ppm lead].
- Intact brown (over blue) LBP on wood doors in the restrooms of the south office area [SCA/LA Sample ID# BR/BL-16, containing 33,000 ppm lead].
- Chipped and peeling red LBP on exterior cast iron fire standpipes [SCA/LA Sample ID# RD-23, containing 35,000 ppm lead].
- Peeling tan LBP on 1x wood roof fascia at the Loading Dock area [SCA/LA Sample ID# TN-24, containing 81,000 ppm lead].

The following paints or coatings were determined to be lead-based paints by SCA/LA, based on XRF testing:

- Tan/orange LBP (in poor condition) on exterior stucco walls, throughout (XRF Samples #20, #26, #153, #154, and #159; with 1.7 to 2.6 mg/cm^2 lead).
- Beige LBP (in poor condition) on the radiators in the Men's Restroom (XRF Sample #51, with 2.1 mg/cm^2 lead); the Women's Restroom (XRF Samples #59 and #60, with 5.6 and 3.4 mg/cm^2 lead, respectively) and the radiator in the Storage Room (XRF Sample #65, with 4.8 mg/cm^2 lead).
- Off-white LBP (in poor condition) on Transite® interior wall panels, sampled in the Men's Restroom (XRF Sample #55, with 3.3 mg/cm^2 lead), the Women's Restroom (XRF Sample #64, with 2.4 mg/cm^2 lead), the Storage Room (XRF Sample #66, with 2.8 mg/cm^2 lead) and the Electrical Room (XRF Sample #67, with 1.4 mg/cm^2 lead).
- White porcelain sink (in poor condition) in the Janitor's Closet (XRF Sample #57, with 7.0 mg/cm^2 lead).
- Off-white LBP (in poor condition) on metal sanitation piping, sampled in the Janitor's Closet (XRF Sample #58, with 5.6 mg/cm^2 lead) and where present throughout.
- Off-white LBP (in poor condition) on the concrete chimney in the Boiler Room (XRF Sample #73, with 2.7 mg/cm^2 lead).

- Yellow LBP (in poor condition) concrete floor striping, sampled in the Warehouse (XRF Samples #95, #102, #103, #109 and #111; with 1.4 to 1.9 mg/cm^2 lead).
- Yellow LBP (in poor condition) on wood stair rails and guardrails in the Warehouse (XRF Sample #104, with 6.2 mg/cm^2 lead, and #118, with 6.5 mg/cm^2 lead).
- Yellow LBP (in poor condition) on concrete stairs in the Warehouse (XRF Samples #105 and #119, with 1.6 to 1.9 mg/cm^2 lead).
- Black (over yellow) LBP (in poor condition) numbering labels on the concrete walls throughout the Warehouse (XRF Samples #114 and #122, with 3.2 to 3.8 mg/cm^2 lead).
- Yellow LBP (in poor condition) on the steel bollards adjacent to the south offices in the Warehouse (XRF Sample #124, with 1.9 ± 0.5 mg/cm^2 lead) and exterior steel bollards throughout (XRF Samples #140, #142, #147, #152, and #158; with 1.7 to 4.7 mg/cm^2 lead).
- Red LBP (in poor condition) on steel mounts (brackets) for the wood columns throughout the Warehouse (XRF Samples #125 through #127, with 2.6 to 3.4 mg/cm^2 lead).
- Red LBP (in fair condition) on steel components (angles and wide flange beams) associated with the bridge crane in the Warehouse (XRF Samples #128 and #129, with 9.5 to 10.1 mg/cm^2 lead).
- Yellow LBP (in poor condition) on steel framing angles at the Loading Dock doors (XRF Samples #144 and #150, with 1.1 to 2.2 mg/cm^2 lead).
- Yellow LBP (in poor condition) on exterior steel door angle guards throughout (XRF Sample #155, with 1.1 mg/cm^2 lead).

Based on the representative bulk paint and XRF testing, SCA/LA concludes that painted exterior stucco walls, HVAC screens on the roof, water meters, steel bollards (with the exception of those protecting the fire-rated wall in the warehouse), fire hydrant rails and fire standpipes, painted wood structural components (eaves, rafters, fascia, and trim), structural steel (including brackets, angles and wide flange beams, and the bridge crane), concrete floor striping and labeling in the warehouse, painted wood doors, radiators, painted Transite® interior wall panels, porcelain sinks, painted sanitation piping, the painted chimney in the Boiler Room, and paints on interior stairways (concrete) and railings (wood) are lead-based.

Refer to Section 5.3 for information on SCA/LA's lead sampling and results, and Attachment 5 for complete XRF lead sampling data tables.

Polychlorinated Biphenyls (PCBs) are assumed present in older fluorescent light ballasts due to their age. Ballasts shall be assumed to contain PCBs, unless specifically labeled as "PCB-Free" or "No PCBs." PCB ballasts will require disposal as a hazardous waste. Suspect ballasts were observed throughout the building in the office and warehouse areas, totaling about 130 in the warehouse and about 340 in the offices, or a total of about 470 ballasts.

Also due to age, the building's exterior caulking was sampled for PCBs but tested below the practical quantification limits (PQL). The hydraulic fluid for the bridge crane and wet transformers may also contain PCBs.

Mercury is also assumed present in the fluorescent light tubes and thermostats throughout the building. Two (2) mercury-containing thermostats were observed, and certain types of switches may also contain mercury. About 1,330 tubes are present throughout the building, including about 430 in the Warehouse and about 900 in the office areas. Broken tubes (constituting a hazardous waste) were observed in the north area of the warehouse's east bay.

Additionally, about 30 high-intensity discharge (HID) lamps were noted in the Warehouse. These lamps are known to contain mercury, sodium, or other metals. Two battery-powered "Exit" signs were also observed, in the offices.

PCBs are a human health hazard and regulated waste, and mercury is a neurotoxin and a hazardous waste. Cal/EPA currently regulates disposal and recycling of these materials as universal waste.

Bio-hazards, such as animal waste, mold and fungi, are present in the warehouse and offices (including concealed areas of the building, such as beneath the warehouse offices and above ceilings). Areas with previous water damage (such as the extensive water damage throughout the office areas) were observed by SCA/LA. These areas are potentially conducive to mold growth. Animal wastes (including rabbit, rat, and bird droppings) were observed by SCA/LA in numerous locations, particularly in the crawlspace beneath the warehouse offices (rabbit droppings), above the office ceilings (rat/rodent droppings), and in the loading dock areas (bird droppings). Occupied swallows' [bird] nests are also present in numerous exterior locations.

Some level of worker protection, including protective clothing and HEPA-filtered respirators, is warranted when addressing these bio-hazards. Bio-contaminated materials are often removed in conjunction with asbestos abatement, using similar methods.

CFC-containing refrigerants (chlorofluorocarbon), such as R-22, are anticipated in the HVAC units throughout, due to the units' age. Window-mounted air conditioning units were noted in the west (warehouse) and south (main) offices, with the main units on the south office roof. CFCs are damaging to the ozone layer and have been phased out of production by the Montreal Protocol. The recycling/reclamation of recovered refrigerant is regulated by Cal/EPA. For more information on refrigerant recycling, go to:

- http://www.epa.gov/ozone/title6/608/608fact.html.

Coal-tar **Creosote**, associated with wood railroad ties (including a stockpile of former ties exterior to the southwest side of the building) and power poles (exterior to the southeast of the building) were observed by SCA/LA. Some of the framing members in the warehouse were observed to be pressure-treated, and may also contain creosote. Potentially Title 22 regulated metals may also be present in these materials. Creosote is a skin irritant and probable carcinogen, and "Title 22" regulated metals present a variety of human-health concerns, environmental hazards and waste disposal issues. Worker protection, including engineering controls and protective clothing, are required by Cal/OSHA when encountering creosote, and Title 22 metals may require disposal as hazardous waste, as regulated by the Resource Conservation and Recovery Act (RCRA) and the California Department of Toxic Substances Control (DTSC). For more information on creosote and Title 22, respectively, go to:

- http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=18
- http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/OEARA_REG_Title22_Tables.cfm

Should additional hazardous materials be uncovered during the renovation process, these materials shall be managed and disposed of or recycled in accordance with Cal/EPA requirements and may not be shipped to a municipal landfill.

2.0 Introduction

This report summarizes the results of the bulk asbestos containing material and lead-based paint survey conducted for Lowe Enterprises (and their consultant, Geosyntec Consultants) of the warehouse/office (Building #317), at the former U.S. Marine Corps Air Station (MCAS) El Toro, in Irvine, California. The survey was conducted on June 12th and 13th, 2014. The purpose of the survey was to evaluate the extent of asbestos-containing materials (ACM), lead-based paints (LBP), and other potential environmental hazards such as Polychlorinated Biphenyls (PCBs), mercury, and bio-hazards throughout the building.

Individuals involved in the survey, and their technical certifications, include:

Geosyntec Staff	**Role**	
Matt Thomas, Ph.D. Civil/Environmental Engineer	Geosyntec Project Manager	
SCA/LA Staff	**Role**	**Certifications**
Mark Osborn, AIA, CAC, CHMM, CDPH Lead	Project Consultant	• Certified Asbestos Consultant (CAC #96-1959); • Registered Architect (#C-17478) since 1986; • Certified Hazardous Materials Manager (CHMM #9353); • CDPH Lead Project Monitor (CDPH #M-6167).
Jeff Schmidt, CSSTCDPH Lead Inspector/Assessor	Environmental Scientist	• Certified Site Surveillance Technician (CSST # 02-3135); • CDPH Lead Inspector/Assessor (CDPH #I-13634).

The contract laboratory that provided analytical services for the project was the following:

Laboratory	**Analysis Type**	**Accreditation**
AmeriSci Laboratories, Carson, CA	Bulk Asbestos Analysis by Polarized Light Microscopy (PLM); Bulk Lead Analysis by Flame Atomic Absorption (FAA); and PCB Analysis (EPA Method 8082).	• National Voluntary Laboratory Accreditation Program (NVLAP); • National Lead Laboratory Accreditation Program (NLLAP); • California Environmental Laboratory Accreditation Program (ELAP); • American Industrial Hygiene Association (AIHA); and • California CDPH Certified Laboratory (Environmental Laboratory Accreditation Program).

Building 317 was constructed circa 1945 and served as a major supply building used in receipt, storage, and shipment of materials and equipment associated with operation of MCAS El Toro. It stands as an approximately 601-foot long by 204-ft wide wood frame and concrete warehouse, built on a slab on grade, with its length oriented in a northwest to southeast direction. The building is comprised of approximately 120,000 square feet of open warehouse space, with approximately 6,400 square feet of office space located along the southwestern side of the building (south offices). Of the south offices, approximately 4,200 square feet are external to main warehouse while the other approximately 2,200 square feet is converted warehouse space. Another approximately 700 square feet of warehouse space above the former railroad ties in the northwest portion of the warehouse have been converted to office space (warehouse offices). The multi-level roof of the building is supported by heavy timber trusses with the center third of the roof (i.e., the "high roof" which extends along the length of the building) being approximately twice the height of the lower roofs. An overhead bridge crane spans the gap above the floor and below the high roof in the center third of the warehouse. The south office roof is lower than the warehouse roofs (i.e., the "higher" and "lower roofs"). Truck loading docks are present along the northwest side of the building and rail loading docks are present on the northwest and northeast sides of the building.

Accessible areas of the building, including interior and exterior building surfaces, the roof, accessible crawlspaces (under the warehouse offices and the computer floor in the south offices), attic and ceiling spaces, and mechanical/electrical and boiler rooms, were included in this survey.

Interior finishes throughout the south offices include gypsum board walls, and throughout both the south and warehouse offices include laid-in ceiling tiles and vinyl cove base (none of which were found to contain asbestos), with ACM "Transite®" wall panels in the south office restrooms, electrical room, and janitor's closet. Various types of ACM vinyl floor tiles and mastics are present in the south offices (over concrete and often under carpeting). The warehouse offices have non-ACM flooring on a plywood substrate. The warehouse floor is a concrete slab on grade. Due to its age, a moisture barrier (or waterproof membrane) possibly containing asbestos, may be present beneath or within the slab, although this has not been verified.

The high roof consists of rolled composition roofing and the lower roofs consist of membrane-type roofing, with numerous patches and debris in some areas, particularly the southwest lower roof. Asbestos was not detected in the roofing materials, with the exception of the mastics associated with the HVAC equipment and pads on the south office roof and a patched area on the southwest-facing exterior stucco wall (adjacent to the south office roof).

The building is serviced by roof-mounted and smaller window-type HVAC units, the ages of which suggest they contain R-22 refrigerant. Ductwork is sheet metal or flex duct, with fiberglass insulation (non-suspect for asbestos) although an "assumed ACM" duct flex connector was reported in a 1999 survey of the building (but not observed by SCA/LA). ACM thermal systems insulation (TSI) was observed by SCA/LA in one location, adjacent to the office restrooms areas and assumed present in concealed locations. ACM sink undercoat was also found on the stainless sink in the south office kitchen. Additionally, the inaccessible steel frame windows located in the Boiler Room and above the ceilings in the south offices are assumed to have ACM putty, but other aluminum frame replacement windows are non-suspect. The exterior caulking was neither asbestos- or PCB-containing, based on SCA/LA's sampling.

Numerous Lead-Based Paints (as defined by the HUD Standard of 5,000 ppm) were identified throughout the building, and many were in poor condition (with cracking, peeling, and water damage noted in several locations). The painted exterior stucco walls, roof HVAC screens, painted exterior wood framing (particularly the Loading Dock awning roof structure), water meters, fire hydrant rails, painted sanitation piping, fire standpipes and steel bollards (with one exception), structural steel (including the bridge crane), paints on concrete striping and labels in the warehouse, wood doors and frames, radiators, ACM Transite® interior wall panels, the chimney in the Boiler Room, painted interior stairs and associated wood railings were found to be lead-based. The porcelain sink in the Janitor's Closet was found to have lead glazing.

Other hazards include suspect devices such as thermostats, switches, "Exit" signs, etc. Potentially creosote-treated railroad ties and power poles were observed around the exterior of the building, and some of the framing members within the building were observed to be potentially creosote-containing pressure-treated lumber. SCA/LA also noted mercury-containing thermostats, and fluorescent lamps and fixtures with suspect PCB-containing ballasts throughout the building. Potential bio-hazards, such as mold and fungi, bird and animal wastes were observed throughout.

3.0 Methodology

3.1 Asbestos Containing Materials

Asbestos sampling was performed in a fashion designed to limit exposure of the surveyors or building occupants to airborne asbestos fibers. Samples were typically removed from the substrate utilizing a knife or hollow drill bit bored through a wet sponge; the sample material was then placed into an airtight plastic vial. The vial's exterior was decontaminated with a wet sponge, and a unique Sample ID# was written on the vial. The vial was then stored in a plastic bag. Sample substrates were sealed with an encapsulating compound, where required.

Samples of suspect materials were collected using triplicate sampling procedures. Under these procedures, the first sample is analyzed by the laboratory. If it tests positive for asbestos (>1%), the analysis is suspended for further samples of that material. If the first sample tests only trace positive (between 0.1 to 1%), or negative, then the second and third samples are analyzed sequentially, in order to further evaluate the possible presence of asbestos. If all three samples test negative, the material is considered as non-asbestos. If one or more samples test "trace" positive (<1%), the material is considered to be trace positive. If one or more samples are positive (> 1%) for asbestos, the material is considered positive.

Certain materials, such as the gypsum wallboard systems, are frequently non-homogeneous in content. For such materials, multiple samples were gathered at various points in the building, with each of those samples being analyzed to evaluate the possible presence of asbestos. In this case, using a modified "AHERA 3-5-7" protocol, seven gypsum wallboard samples were collected in the office areas of the building, plus additional samples in fire-rated areas (considered a separate functional space), and the warehouse partition, for a total of 17 samples collected throughout the building.

Collected asbestos samples were submitted to AmeriSci Laboratories in Carson for analysis by polarized light microscopy with dispersion staining (DS/PLM), as specified by the South Coast Air Quality Management District (SCAQMD), the Federal Environmental Protection Agency (EPA), and California Environmental Protection Agency (Cal/EPA).

SCA/LA's survey included an inspection of the interior and exterior of the building, including the roof, accessible ceiling spaces, and mechanical/electrical rooms. The survey did not include buried utilities or subterranean piping.

3.2 Lead

3.2.1 Lead-Based Paints

Floor plans of the building were provided by Geosyntec and used by SCA/LA to record sample locations. A total of 22 paint chip samples of loose and peeling paints were collected by SCA/LA from a variety of interior and exterior surfaces. These samples were analyzed for lead content in compliance with EPA Method 3050B/7000B.

Please note that although LBP were defined against the HUD Standard, Cal/OSHA's Construction Lead Standard, 8 CCR 1532.1, applies to all paints with any measured lead content, requiring dust control measures to reduce airborne and ingestion of lead dust hazards.

3.3 Polychlorinated Biphenyls

PCB-containing ballasts in fluorescent light fixtures can be identified by visually examining the ballasts in a representative number of light fixtures in the building. The ballast manufacturing industry has taken the active step of labeling new non-PCB containing ballasts, so that any ballast not labeled as non-PCB can reasonably be assumed to contain PCBs. PCBs may also be found in wet electrical transformers. PCBs are a human health hazard and a Resource Conservation and Recovery Act (RCRA) hazardous waste.

3.4 Mercury

Fluorescent lamps, which contain mercury vapors, were visually observed by SCA/LA during the survey of the building. Mercury is a neurotoxin and a hazardous waste and Cal/EPA currently regulates its disposal as universal waste. The thermostats and certain switches, as well as the HID lamps, are also assumed to contain mercury.

3.5 Other Hazardous Materials

Other hazardous chemicals are also assumed present within suspect devices such thermostats, A/C units, battery-powered "Exit" signs, etc., observed by SCA/LA. Creosote-treated railroad ties were also observed exterior to the building. Creosote is a skin irritant and likely carcinogen. Refer to Section 5.7 for additional information.

SCA/LA performed a limited visual inspection for potential bio-hazards such as mold and fungi and bird and animal waste. Mold and fungi are allergens to some individuals and may be toxic to humans under certain circumstances. Likewise, bird and animal waste may contain pathogens (including bloodborne), or present other bio-hazards to humans.

4.0 Applicable Standards

4.1 Asbestos-Containing Materials

ACM is defined by EPA regulations as those substances containing greater than one percent (>1%) asbestos. The SCAQMD and Cal/EPA provide local enforcement of these regulations. Friable ACM with greater than 1% asbestos that is abated must be disposed of as asbestos waste.

Federal Occupational Safety and Health Administration (OSHA) regulations, locally enforced by Cal/OSHA, define ACM as substances that contain greater than 1% asbestos. Cal/OSHA also mandates special training, medical exams, personal protective equipment, and record keeping for employees working with ACM. If a material contains less than 1% asbestos but more than 0.1% asbestos (i.e. "trace" asbestos), the material may be disposed of as non-ACM, but the Cal/OSHA requirements regarding workers' protection and Contractor licensing are still enforceable.

"Trace" materials (ACCM < 1%) are currently regulated in California and require the following if disturbed or removed in conjunction with a renovation or demolition project:

- Removal using wet methods;
- Prohibition of removal using abrasive saws or methods which would aerosolize the material;
- Prompt clean-up of the impacted zone, using HEPA-filtered vacuums, as applicable;
- Employer registration by Cal/OSHA for removal quantities exceeding 100 sq. ft. per year; and
- Cal/OSHA Carcinogen Registration by the Demolition or Abatement Contractor impacting such materials.

4.2 Lead

4.2.1 Lead-Based Paints

Elemental lead is a suspect carcinogen, a known teratogen, and neurotoxin in high doses. Therefore, lead-containing materials need to be identified prior to initiation of renovation activities. Using a combination of engineering controls and personal protective equipment, lead-containing materials can be safely remediated. Several sources of applicable standards are listed as follows:

1. Lead exposures in the workplace are regulated by Cal/OSHA, which has certain regulatory requirements for identifying and controlling potential lead exposures. Currently applicable regulations for the construction industry have been adopted by Cal/OSHA (8 CCR 1532.1) from the Federal OSHA regulations, with possibly more stringent regulations being drafted by Cal/OSHA. The current OSHA 8-hour Permissible Exposure Limit (PEL) for lead is 50 $\mu g/m^3$.

Current EPA and Cal/EPA regulations do not require lead containing paints to be removed prior to renovations, unless loose and peeling. Provided that the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling), disposal of the debris may be handled in California as non-hazardous and non-RCRA waste, pending characterization of the waste.

In California, loose and peeling LBP or other wastes exceeding the Total Threshold Level Concentration (TTLC) of 1,000 ppm (μg/g) are required to be disposed of as non-RCRA hazardous waste. However, if the leachable lead contents of the wastes exceed the Toxicity Characteristic Leaching Procedure (TCLP) of 5 mg/liter, the wastes must be disposed of as RCRA hazardous waste.

3. The major definitions of LBP or lead-coated surfaces are listed as follows:

   a. HUD defines LBP as paint that contains either 0.5%, or greater, by weight of lead (5,000 parts per million), or 1.0 mg/cm^2, or greater.

   b. Consumer Product Safety Commission (CPSC) prohibits the manufacturing of paint that contains 90 ppm.

   Please note that compliance to Cal/OSHA's Construction Lead Standard is required for all paints with any measurable lead content.

4. Lead is on the "Proposition 65" list due to its toxic potential in causing reproductive hazards.

5. The California Department of Public Health (CDPH) regulation 17 CCR Sections 35001 through 36100 requires all demolition, stabilization, or scraping for repainting of paints defined under the HUD Guidelines as "lead-based paints" equal to or greater than 5,000 ppm to be completed by Certified Lead Workers and Supervisors. This regulation affects all public, non-industrial buildings, including schools, offices, and housing for permanent renovations, expected to last over 20 years. Furthermore, the CDPH regulations require the use of dust controls, medical surveillance and respiratory protection, oftentimes exceeding the minimum standards outlined under Cal/OSHA's regulation 8 CCR 1532.1.

4.3 PCB Ballasts and Mercury Lamps

To reduce liability concerns, many building owners opt to have PCB ballasts incinerated, with a record of destruction generated. A slightly less expensive approach involves recycling of the components (and incineration of the small amount of PCBs separately). However, this method may pose liability concerns for building owners.

Mercury lamps are best treated by bundling and recycling. Limited disposal is allowed by Cal/EPA, but not in the quantities typically generated during a major renovation project.

4.4 Mold, Fungi and Bio-Hazards

Although mold is not currently regulated in California, the presence of active mold growth on building substrates would represent a potential bio-hazard to workers during renovation/repair work. Often mold remediation is accomplished in conjunction with other hazardous materials remediation (such as asbestos abatement), since many of the work practices and worker protection procedures are similar. Damaged porous substrates (such as gypsum board) are typically removed, while non-porous materials (such as metals, concrete, etc.) may be cleaned and disinfected. Some level of worker protection, including protective clothing and HEPA-filtered respirators, is recommended when encountering substantial bio-hazards.

4.5 CFC-Containing Refrigerant

CFC-containing refrigerant (chlorofluorocarbon) was noted in the HVAC units throughout the building. CFCs are damaging to the ozone layer and have been phased out of production by the Montreal Protocol. The recycling/reclamation of recovered refrigerant is regulated by Cal/EPA. For more information on refrigerant recycling, go to:

- http://www.epa.gov/ozone/title6/608/608fact.html.

4.6 Creosote

Since creosote is a skin irritant and probable carcinogen, handling creosote-treated wood is regulated by Cal/OSHA (8 CCR 5141). Using a combination of engineering controls and personal protective equipment, creosote-treated wood can be safely removed from the site. Abrasive activities should be avoided to minimize potential vapors and inhalation, and workers must use appropriate protective clothing and equipment, such as coveralls, gloves, face shields, or impervious clothing. See the following links for more information:

- http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=18
- http://www.dir.ca.gov/dosh/dosh_publications/ConstGuideOnline.pdf

5.0 Results and Conclusions

5.1 Asbestos

A total of 113 bulk samples of suspect ACM were collected from the building, with 122 separate analyses performed. The analytical results are shown in the laboratory reports included in Attachment 1. Sample locations are shown on the drawings included as Attachment 6. Asbestos-containing materials identified include the following:

Location	Sample	Description	% Asbestos	EPA Category	Estimated Quantity
Roof – South, Lower Office Area	RFMAS-006-01 through -03	Black/beige/gray mastic associated with HVAC equipment, pads and supports.	5% CH	Category 1, non-friable asbestos	~ 300 ft^2
	RFMAS-007-01 through -03	Gray mastic patches associated with south exterior stucco wall of the warehouse.	5% CH	Category 1, non-friable asbestos	~ 120 ft^2
South Offices - Storage Room	FLVCT-025-01 through -03	12" x 12" beige vinyl floor tiles (with tan streaks) and associated yellow mastic.	2% CH (tiles); & ND (mastic)	Category 1, non-friable asbestos	~ 250 ft^2
South Offices - Where present throughout	FLVCT-026-01 through -03	12" x 12" tan (with brown and white specks) vinyl floor tiles and associated mastic (including under carpeting).	3% CH (tiles); & 5% CH (mastic)	Category 1, non-friable asbestos	~ 7,600 ft^2
South Offices - Kitchen	MISC-029-01	White undercoat associated with a stainless steel sink.	3% CH	Category 1, non-friable asbestos	< 3 ft^2
South Offices - Near Restrooms	PIHW-030-01 through -03	White thermal systems pipe insulation on 4" diameter hot water lines, above ceilings (may also be present in concealed locations).	35% CH	RACM	~ 40 LF (43 ft^2)
	FIHW-031-01 through -03	Mudded thermal systems pipe insulation elbows associated with hot water lines, above ceilings (mostly concealed).	10% CH & 5% AM	RACM	~ 10 elbows
South Offices - Restrooms, Storage and Electrical Rooms	WLTRAN-AAA	Asbestos cement ("Transite®") interior wall panels (labeled "Asbestos").	*Assumed ACM >1%**	Category 2, non-friable asbestos	~ 1,400 ft^2
Warehouse	FLMEMB-AAA	Waterproof membrane associated with (beneath or within) concrete floor slab; assumed present and asbestos containing.	*Assumed ACM >1%***	Category 1, non-friable asbestos	*~ 144,000 ft^2*

* *Not sampled, in order to avoid destruction of the components.*
** *Not verified or sampled, due to inaccessibility.*

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Location	Sample	Description	% Asbestos	EPA Category	Estimated Quantity
Warehouse (rafter areas)	WLTRAN-AAA	Gray corrugated asbestos cement "Transite®" fire partitions (labeled "Asbestos").	*Assumed ACM >1%**	Category 2, non-friable asbestos	~ 2,940 ft^2
South Offices - Boiler Room & above ceilings	PUTTY-AAA	Inaccessible window putty associated with old, concealed steel frame windows.	*Assumed ACM >1%***	Category 1, non-friable asbestos	about 16 windows (~ 250 ft^2)
South Offices - above ceilings	*HFLEX-AAA*	*One suspect ACM HVAC flex connector (vibration reducer fabric) was identified in a 1999 survey by another consultant. This material was not observed by SCA/LA during its June 2014 survey.*	*Assumed ACM >1%*	*RACM*	*1 connector (previously identified)*

* *Not sampled, in order to avoid destruction of the components.*
** *Not sampled, due to inaccessibility.*

CH denotes Chrysotile asbestos; AM denotes Amosite asbestos; RACM denotes Regulated Asbestos Containing Material; ft^2 denotes square feet; LF denotes linear feet; and AAA denotes "assumed asbestos containing."

Note: Quantities are estimates only. The renovation/abatement contractor shall verify actual quantities of materials to be abated.

The identified asbestos materials are required to be abated, if impacted by the renovations. Category 1, non-friable materials (such as floor tiles and various mastics, etc.) and Category 2, non-friable materials (such as the "Transite®") can be disposed of as non-hazardous waste, at a significant cost savings over disposal as asbestos waste (Cal/EPA and USEPA allow disposal of non-friable materials as non-hazardous waste, assuming the materials are not made friable in the process of being abated). Some building owners choose to lower their liability by disposing of their non-friable ACM at a classified ACM landfill. The non-friable materials must be abated in accordance with OSHA Class II procedures.

Friable ACM (RACM), such as the pipe insulation, must be fully abated within full negative pressure containments (or by glovebag procedures with secondary containment) in accordance with OSHA Class I procedures prior to renovation activities. RACM must be disposed as "Asbestos Waste" (hazardous) at a certified ACM landfill.

Currently, Cal/OSHA allows demolition of "trace" positive materials (none identified in the bulk sampling) under non-containment conditions, as long as adequate dust control measures are used, and demolition personnel have received notification of the material's presence. Depending on results of air sampling during demolition, a low level of personal protection may also be required under the Cal/OSHA requirements.

5.2 Non-Asbestos Materials (non-ACM)

Materials that were sampled in which asbestos was not detected (or non-suspect materials observed) include the following:

Location	Sample	Description	% Asbestos
High Roof (Center Area)	RFROLL-001-01 through –05	Gray rolled roof composition sheeting over black felt, tar, and membrane, with non-suspect fiberglass underlayment.	ND
	RFMAS-002-01 through –03	Black roof patching & penetration mastic associated with curbs, vents, and brackets.	ND
Low Roofs (North and South Areas)	RFMEMB-003-01 through –07	White membrane roofing material with yellow foam underlayment.	ND
Low Roof (South Area and on ground)	RFROLL-004-01 through -03	Gray rolled roof composition sheeting and felt (debris).	ND
Roof –South Lower Office Area	RFMEMB-005-01 through –03	Gray membrane roofing material and associated black tar.	ND
	RFMAS-008-01 through -03	Silver (over black) roof patching & penetration mastic; at access hatch.	ND
Exterior	STUCCO-009-01 through -07	Exterior stucco wall plaster with sand finish and "orange/tan" lead-based paint.	ND
	CAULK-010-01 through -03	Gray resilient exterior caulking at wall penetrations. (also sampled for PCBs, with none detected).	ND
Exterior – South Office Addition	STUCCO-011-01 through -03	Exterior stucco with sand finish.	ND
	SKIM-012-01 through -03	Exterior "dash coat" plaster skim coat on lower concrete walls.	ND
	CAULK-013-01 through -03	Brown resilient exterior caulking.	ND
Exterior (North and South Sides)	STUCCO-014-01 through -03	Exterior stucco (with sand finish) patches at former roll-up door locations.	ND
Warehouse	FLEJ-015-01 through -03	Expansion joint material between floor slab sections.	ND
Exterior	BARPAP-016-01 through -03	Black, thick barrier paper associated with exterior stucco walls.	ND
Warehouse	WLSH-018-01 through -07	Gypsum board and associated joint compound on the fire-rated divider wall between the east and west warehouse.	ND
	WLSH-019-01 through -03	Gypsum board wall partitions (with no joint compound) in the northwest portion of the warehouse.	ND
Warehouse – West Offices	FLVCS-020-01 through -03	Simulated "wood plank" patterned vinyl floor sheeting, on plywood.	ND
	CLLI-021-01 through -03	2' x 4' white laid-in ceiling tiles, with fissures.	ND
South Offices - Boiler Room	CHASE-023-01 through -03	Miscellaneous debris in the concrete flue.	ND

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Location	Sample	Description	% Asbestos
South Offices – Boiler Room	DEBRIS-024-01	Miscellaneous debris on the Boiler Room floor.	ND
South Offices	WLSH-027-01 through -07	Gypsum wallboard and associated joint compound throughout office areas.	ND
	CLLI-028-01 through -03	2' x 4' white laid-in ceiling tiles with fissures, throughout office areas.	ND
Warehouse – West Offices	FLVCT-032-01 through -03	12" x 12" beige vinyl floor tiles and associated yellow mastic (under carpeting).	ND
	FLMAS-033-01 through -03	Yellow/brown mastic under parquet wood flooring.	ND
	BBDMAS-034-01	Brown mastic associated with vinyl cove base.	ND
South Offices – Computer Room	BBDMAS-035-01 through -03	Black mastic associated with black 4" vinyl cove base.	ND
Exterior	WINDOWS-NNN	Brown, anodized aluminum clerestory windows (non-suspect).	*NNN*
Exterior – Lower Walls	CONCRETE-NNN	Unpainted, poured concrete walls (non-suspect).	*NNN*
Warehouse – West Offices	WLPNL-NNN	"Marlite®" interior wall partitions (non-suspect).	*NNN*
	BBDMAS-NNN	Yellow mastic associated with 4" brown vinyl cove base (non-suspect).	*NNN*
	CLLI-NNN	2' x 4' white fiberglass laid-in ceiling tiles (non-suspect).	*NNN*
South Offices - Boiler Room	CONCRETE-NNN	Concrete fire-stop material at the boiler flue (non-suspect).	*NNN*
Where present throughout	BBDMAS-NNN	Yellow mastic associated with vinyl cove base (non-suspect).	*NNN*
South Office Addition	HDUCT-NNN	Bare or fiberglass insulation (non-suspect) on sheet metal HVAC ducts.	*NNN*
	HDUCT-NNN	HVAC "flex ducts" with plastic wrap and fiberglass insulation (non-suspect).	*NNN*
	FLOOR-NNN	2' x 2' white laminated plastic raised computer floor (non-suspect).	*NNN*

ND denotes "non-detect" for asbestos, and NNN denotes non-suspect material (as determined by visual inspection by a Certified Asbestos Consultant).

5.3 Lead

5.3.1 Lead-Based Paints

A total of 22 paint samples were collected from painted surfaces on the interior and exterior of the building (many of which were chipped or peeling) and were analyzed for lead content. **Lead-based paints** (LBP), defined by the Department of Housing and Urban Development (HUD) as containing 0.5% by weight of lead or 5,000 parts per million (> 5,000 ppm), were identified in 11 of the 22 samples; lead was also detected in most of the other paints. Results are presented in the table below.

Location	Material Description	SCA/LA Sample IDs	Sample Results (Concentration, ppm)
Roof	Chipped and peeling orange paint on galvanized sheet metal rain gutters.	OR-01	120
Exterior	**Intact orange or tan LBP on exterior stucco walls; typical throughout, except the lower, unpainted concrete areas.**	**OR-02**	**6,800**
	Chipped and peeling orange paint on galvanized sheet metal downspouts.	OR-03	150
Roof – South Lower Office Areas	**Peeling beige LBP on sheet metal HVAC screens.**	**BE-04**	**28,000**
Exterior – Loading Dock Areas	Chipped and peeling yellow paint on exterior steel angle edge guards.	YW-05	160
	Peeling orange paint on 4x wood framing of the door openings.	OR-06	960
Exterior	**Peeling red LBP on the water meters ("1945" placard).**	**RD-07**	**25,000**
	Peeling yellow LBP on steel bollards, typical.	**YW-08**	**83,000**
Exterior – Loading Dock Areas	**Peeling beige LBP on wood rafters, eaves and framing of the awning roof.**	**BE-09**	**220,000**
	Peeling brown LBP on wood fasciae of the awning roof.	**BR-10**	**210,000**
Exterior	**Chipped yellow LBP on steel rails protecting the fire hydrant.**	**YW-11**	**110,000**
	VOID – Sample #s 12 and 13 not used.		
Warehouse	**Chipped yellow LBP striping on the concrete floor slab, typical.**	**YW-14**	**27,000**
	Chipped yellow paint on interior steel bollards adjacent to the fire-rated wall.	YW-15	< 100*
South Offices – Restrooms	**Intact brown (over blue) LBP on wood doors.**	**BR/BL-16**	**33,000**
South Offices	Intact off-white paint on wood door frames.	OW-17	< 100*
	Intact off-white paint on gypsum board walls.	OW-18	< 100*
Roof	Peeling beige paint on sheet metal roof vents and associated flashing.	BE-19	310
	Peeling orange paint on sheet metal roof flashing.	OR-20	270

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Location	Material Description	SCA/LA Sample IDs	Sample Results (Concentration, ppm)
Roof	Peeling brown paint on sheet metal downspout "splashes."	BR-21	990
Exterior – South	Peeling beige paint (over red primer) on exterior steel door frames.	BE/RD-22	< 100*
	Chipped and peeling red LBP on cast iron fire standpipes.	**RD-23**	**35,000**
Exterior – Loading Dock Areas	**Peeling tan LBP on 1x wood roof fascia.**	**TN-24**	**81,000**

** Below the practical quantification limit (PQL) of 100 ppm for EPA Method 3050B/7000B.*

ppm denotes parts per million. HUD-defined Lead Based Paints are highlighted in ***bold text.***

LBP or coatings greater than 1.0 mg/cm^2 by XRF testing of paints and coatings (the HUD definition of lead-based paints) were identified in the following areas of the building:

- Tan/orange LBP (in poor condition) on exterior stucco walls throughout (XRF Samples #20, #26, #153, #154, and #159; with 1.7 to 2.6 mg/cm^2 lead).
- Beige LBP (in poor condition) on the radiators in the Men's Restroom (XRF Sample #51, with 2.1 mg/cm^2 lead); the Women's Restroom (XRF Samples #59 and #60, with 5.6 and 3.4 mg/cm^2 lead, respectively), and the radiator in the Storage Room (XRF Sample #65, with 4.8 mg/cm^2 lead).
- Off-white LBP (in poor condition) on Transite® interior wall panels sampled in the Men's Restroom (XRF Sample #55, with 3.3 mg/cm^2 lead), the Women's Restroom (XRF Sample #64, with 2.4 mg/cm^2 lead), the Storage Room (XRF Sample #66, with 2.8 mg/cm^2 lead), and the Electrical Room (XRF Sample #67, with 1.4 mg/cm^2 lead).
- White porcelain sink (in poor condition) in the Janitor's Closet (XRF Sample #57, with 7.0 mg/cm^2 lead).
- Off-white LBP (in poor condition) on metal sanitation piping sampled in the Janitor's Closet (XRF Sample #58, with 5.6 mg/cm^2 lead) and where present throughout.
- Off-white LBP (in poor condition) on the concrete chimney in the Boiler Room (XRF Sample #73, with 2.7 mg/cm^2 lead).
- Yellow LBP (in poor condition) concrete floor striping sampled in the Warehouse (XRF Samples #95, #102, #103, #109 and #111; with 1.4 to 1.9 mg/cm^2 lead).
- Yellow LBP (in poor condition) on wood stair rails and guardrails in the Warehouse (XRF Sample #104, with 6.2 mg/cm^2 lead, and #118, with 6.5 mg/cm^2 lead).
- Yellow LBP (in poor condition) on concrete stairs in the Warehouse (XRF Samples #105 and #119, with 1.6 to 1.9 mg/cm^2 lead).
- Black (over yellow) LBP (in poor condition) numbering labels on the concrete walls throughout the Warehouse (XRF Samples #114 and #122, with 3.2 to 3.8 mg/cm^2 lead).

- Yellow LBP (in poor condition) on the steel bollards adjacent to the south offices in the Warehouse (XRF Sample #124, with 1.9 ± 0.5 mg/cm^2 lead) and exterior steel bollards throughout (XRF Samples #140, #142, #147, #152, and #158; with 1.7 to 4.7 mg/cm^2 lead).
- Red LBP (in poor condition) on steel mounts (brackets) for the wood columns throughout the Warehouse (XRF Samples #125 through #127, with 2.6 to 3.4 mg/cm^2 lead).
- Red LBP (in fair condition) on steel components (angles and wide flange beams) associated with the bridge crane in the Warehouse (XRF Samples #128 and #129, with 9.5 to 10.1 mg/cm^2 lead).
- Yellow LBP (in poor condition) on steel framing angles at the Loading Dock doors (XRF Samples #144 and #150, with 1.1 to 2.2 mg/cm^2 lead).
- Yellow LBP (in poor condition) on exterior steel door angle guards throughout (XRF Sample #155, with 1.1 mg/cm^2 lead).

Based on the representative bulk paint and XRF testing, SCA/LA concludes that painted exterior stucco walls, HVAC screens on the roof, water meters, steel bollards (with the exception of those protecting the fire-rated wall in the warehouse), fire hydrant protective rails and fire standpipes, painted wood structural components (eaves, rafters, fascia, and trim), structural steel (including brackets, angles and wide flange beams, and the bridge crane), concrete floor striping and labeling in the warehouse, painted wood doors, radiators, painted Transite® interior wall panels, porcelain sinks and fixtures, painted sanitation piping, the painted chimney in the Boiler Room, and paints on interior stairways (concrete) and railings (wood) are lead-based. Glazed porcelain sinks observed in the restrooms and Janitor's Closet should also be treated as lead-containing.

The majority of interior and exterior paints were in poor condition (chipped, peeling, and/or water damaged) at the time of SCA/LA's survey. It should be noted that dust control procedures are required throughout the demolition of painted elements, regardless of identified lead content, to comply with the Cal/OSHA regulations, under 8 CCR 1532.1.

Any loose or peeling paints or glazed finishes (such as the porcelain fixtures) that will be impacted by proposed renovations must be removed under controlled procedures, prior to renovations, regardless of identified lead content. None of the applicable regulations require removal of LBP prior to renovations, if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal requirements for the architectural waste in this case shall be determined by the results of the waste characterization process.

Conventional demolition techniques should be employed for all painted and coated surfaces with any measured lead content, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding:

- Worker awareness training;
- Exposure monitoring, as needed;
- Medical examinations, including blood lead level testing; and
- Establishing a written respiratory protection program.

Refer to Attachment 5 for complete XRF lead sampling data tables and Attachment 6 for drawings showing the sample locations.

5.4 Polychlorinated Biphenyls

Fluorescent light fixtures should be treated as having suspect PCB ballasts, unless specifically labeled "PCB-free" or "No PCBs." PCB ballasts will require disposal as a hazardous waste. Approximately 470 total "older" fluorescent light fixtures with potentially PCB-containing ballasts were observed by SCA/LA throughout the building, about 130 ballasts in the warehouse areas and 340 in the office areas. Ballasts not specifically labeled "PCB-free" are assumed to contain PCBs. The hydraulic fluid for the bridge crane and wet transformers may also contain PCBs. Cal/EPA allows for the regulated incineration or disposal at an approved, regulated landfill, depending on actual PCB content.

Also due to age, the building's exterior caulking was sampled for PCBs, but tested below the practical quantification limit (PQL), as shown in the table below.

Location	Material Description	SCA/LA Sample ID	Testing Parameter (PCBs)	Sample Results (µg/kg)
Exterior	Exterior gray and brown patching and penetration caulking.	CAULK-013-PCB	PCB-1016	< 220
			PCB-1221	< 220
			PCB-1232	< 220
			PCB-1242	< 220
			PCB-1248	< 220
			PCB-1254	< 220
			PCB-1260	< 220
			PCB-1262	< 220
			PCB-1268	< 220

< 220 ppm is below the test's practical quantification limit (PQL).

5.5 Fluorescent Lamps

Mercury-containing fluorescent lamps may be present in the building, associated with the fluorescent light fixtures. Cal/EPA allows disposal of limited numbers of fluorescent tubes (although not in number typically produced by major renovation projects). About 1,330 tubes are present throughout the building, including about 430 in the Warehouse and about 900 in the office areas. Broken tubes (constituting a contamination issue) were observed in the north area of the warehouse's east bay. Two (2) mercury-containing thermostats were also observed, and certain types of switches may also contain mercury.

Additionally, about 30 high-intensity discharge (HID) lamps were noted in the warehouse. These lamps are known to contain mercury, sodium, or other Title 22 regulated metals as well as having associated ballasts. Two (2) battery-powered "Exit" signs were also observed in the offices. Cal/EPA currently regulates disposal and recycling of these materials as universal waste.

5.6 Mold, Fungi and Bio-Hazards

Bio-hazards, such as animal waste, mold and fungi, are present in the warehouse and offices (including concealed areas of the building, such as beneath the warehouse offices and above ceilings). Areas with previous water damage (such as the extensive water damage throughout the office areas) were observed by SCA/LA. These areas are potentially conducive to mold growth. Animal waste (including rabbit, rat and bird droppings) were observed by SCA/LA in numerous locations, particularly in the crawlspace beneath the warehouse [west] offices (rabbit droppings), above the [south] office ceilings (rat/rodent droppings) and in the loading dock areas (bird droppings). Occupied swallows' [bird] nests are also present in numerous exterior locations, particularly at the northeast loading dock.

Some level of worker protection, including protective clothing and HEPA-filtered respirators, is warranted when addressing these bio-hazards. Bio-contaminated materials are often removed in conjunction with asbestos abatement, using similar methods.

5.7 Other Hazards

CFC-containing refrigerants (chlorofluorocarbon), such as R-22, are anticipated in the HVAC units throughout, due to the units' age. The main HVAC units are located on the low roof above the south offices. Window-mounted air conditioning units were also noted: in the west (warehouse) and south (main) offices. CFCs are damaging to the ozone layer and have been phased out of production by the Montreal Protocol. The recycling/reclamation of recovered refrigerant is regulated by Cal/EPA. For more information on refrigerant recycling, go to:

- http://www.epa.gov/ozone/title6/608/608fact.html.

Coal-tar **Creosote**, associated with wood railroad ties (including a stockpile of former ties on the south end of the building, in addition to the railroad tracks elsewhere on the property) and power poles (east of the building) were observed by SCA/LA. Some of the framing members in the warehouse were observed to be pressure-treated, and may also contain creosote. Potentially Title 22 regulated metals may also be present in these materials. Creosote is a skin irritant and probable carcinogen, and "Title 22" regulated metals present a variety of human-health concerns, environmental hazards and waste disposal issues. Worker protection, including engineering controls and protective clothing, are required by Cal/OSHA when encountering creosote, and Title 22 metals may require disposal as hazardous waste, as regulated by the Resource Conservation and Recovery Act (RCRA) and the California Department of Toxic Substances Control (DTSC). For more information on creosote and Title 22, respectively, go to:

- http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=18
- http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/OEARA_REG_Title22_Tables.cfm

Should additional hazardous materials be uncovered during the renovation process, these materials shall be managed and disposed of or recycled in accordance with Cal/EPA requirements and shall not be shipped to a municipal landfill.

6.0 Limitations and Exclusions

SCA/LA warrants that this survey was performed using due care and state of the art techniques. Beyond this, SCA/LA does not warrant or guarantee the survey. Despite the care exercised, some materials may not have been identified, or may have been incompletely identified. This condition may occur due to renovations or original construction practices that concealed older materials, and/or visually similar materials with different compositions.

While this document is a stand-alone document; abatement of materials is recommended to be completed under the oversight and design of an AHERA-accredited Project Designer and Certified Asbestos Consultant. Although due care was exercised in the course of the survey, concealed materials may be found in the course of performing the abatement or renovations; a contingency budget should be included in any cost estimates to cover unexpected conditions.

If you have any questions regarding this report, please feel free to contact SCA/LA, at (562) 988-8401.

Attachment 1

Laboratory Results - Asbestos

AmeriSci Los Angeles
24416 S. Main Street, Ste 308
Carson, California 90745
TEL: (310) 834-4868 • FAX: (310) 834-4772

PLM Bulk Asbestos Report

SCA LA Environmental, Inc.
Attn: Mark Osborn
3605 Long Beach Blvd.
Suite #108
Long Beach, CA 90807

Date Received 06/16/14
Date Examined 06/23/14

AmeriSci Job # 914061607
P.O. #

RE: 14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
RFROLL-01-01 01 **Location:**	914061607-01	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 3 %, Non-fibrous 97 %			
RFROLL-01-02 01 **Location:**	914061607-02	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 2 %, Non-fibrous 98 %			
RFROLL-01-03 01 **Location:**	914061607-03	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 2 %, Non-fibrous 98 %			
RFROLL-01-04 01 **Location:**	914061607-04	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 3 %, Non-fibrous 97 %			
RFROLL-01-05 01 **Location:**	914061607-05	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 2 %, Non-fibrous 98 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
RFROLL-01-06 01 **Location:**	914061607-06	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 2 %, Non-fibrous 98 %			
RFROLL-01-07 01 **Location:**	914061607-07	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 3 %, Non-fibrous 97 %			
RFMAS-02-01 02 **Location:**	914061607-08	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
RFMAS-02-02 02 **Location:**	914061607-09	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
RFMAS-02-03 02 **Location:**	914061607-10	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
RFMEM-03-01 03 **Location:**	914061607-11	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Tan/White/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 35 %, Synthetic fibers 5 %, Non-fibrous 60 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
RFMEM-03-02 03 **Location:**	914061607-12	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Brown/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 5 %, Synthetic fibers 5 %, Non-fibrous 90 %			
RFMEM-03-03 03 **Location:**	914061607-13	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Brown/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 30 %, Synthetic fibers 5 %, Non-fibrous 65 %			
RFMEM-03-04 03 **Location:**	914061607-14	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Brown/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 27 %, Synthetic fibers 5 %, Non-fibrous 68 %			
RFMEM-03-05 03 **Location:**	914061607-15	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Brown/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 35 %, Synthetic fibers 5 %, Non-fibrous 60 %			
RFMEM-03-06 03 **Location:**	914061607-16	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Brown/White/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 35 %, Synthetic fibers 5 %, Non-fibrous 60 %			
RFMEM-03-07 03 **Location:**	914061607-17	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Brown/White/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 7 %, Synthetic fibers 8 %, Non-fibrous 85 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
RFROLL-04-01 04 **Location:**	914061607-18	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 10 %, Non-fibrous 90 %			
RFROLL-04-02 04 **Location:**	914061607-19	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 10 %, Non-fibrous 90 %			
RFROLL-04-03 04 **Location:**	914061607-20	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Fibrous glass 7 %, Non-fibrous 93 %			
RFMEM-05-01 05 **Location:**	914061607-21	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/White/Tan, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 10 %, Fibrous glass 2 %, Non-fibrous 88 %			
RFMEM-05-02 05 **Location:**	914061607-22	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/White/Tan, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 10 %, Fibrous glass 2 %, Non-fibrous 88 %			
RFMEM-05-03 05 **Location:**	914061607-23	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/White/Tan, Heterogeneous, Fibrous, Roofing **Asbestos Types:** **Other Material:** Cellulose 10 %, Fibrous glass 2 %, Non-fibrous 88 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
RFMAS-06-01 06 **Location:**	914061607-24	***Yes***	5 % (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Grey, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** Chrysotile 5.0 % **Other Material:** Non-fibrous 95 %			
RFMAS-06-02 06 **Location:**	914061607-25		NA/PS
Analyst Description: Roofing Mastic **Asbestos Types:** **Other Material:**			
RFMAS-06-03 06 **Location:**	914061607-26		NA/PS
Analyst Description: Roofing Mastic **Asbestos Types:** **Other Material:**			
REMAS-07-01 07 **Location:**	914061607-27	***Yes***	5 % (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** Chrysotile 5.0 % **Other Material:** Non-fibrous 95 %			
REMAS-07-02 07 **Location:**	914061607-28		NA/PS
Analyst Description: Mastic **Asbestos Types:** **Other Material:**			
REMAS-07-03 07 **Location:**	914061607-29		NA/PS
Analyst Description: Mastic **Asbestos Types:** **Other Material:**			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
RFMAS-08-01 08 **Location:**	914061607-30	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
RFMAS-08-02 08 **Location:**	914061607-31	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
RFMAS-08-03 08 **Location:**	914061607-32	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Roofing Mastic **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
STUCCO-09-01 09 **Location:**	914061607-33	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-09-02 09 **Location:**	914061607-34	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-09-03 09 **Location:**	914061607-35	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
STUCCO-09-04 09 **Location:**	914061607-36	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-09-05 09 **Location:**	914061607-37	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-09-06 09 **Location:**	914061607-38	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-09-07 09 **Location:**	914061607-39	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CAULK-10-01 10 **Location:**	914061607-40	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Caulking **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CAULK-10-02 10 **Location:**	914061607-41	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Caulking **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
CAULK-10-03 10 **Location:**	914061607-42	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Caulking **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-11-01 11 **Location:**	914061607-43	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-11-02 11 **Location:**	914061607-44	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-11-03 11 **Location:**	914061607-45	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
SKIM-12-01 12 **Location:**	914061607-46	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Cementitious, Stucco-Skim Coat **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
SKIM-12-02 12 **Location:**	914061607-47	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Cementitious, Stucco-Skim Coat **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
SKIM-12-03 12 **Location:**	914061607-48	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Cementitious, Stucco-Skim Coat **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CAULK-13-01 13 **Location:**	914061607-49	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Grey, Homogeneous, Non-Fibrous, Caulking **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CAULK-13-02 13 **Location:**	914061607-50	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Grey, Homogeneous, Non-Fibrous, Caulking **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CAULK-13-03 13 **Location:**	914061607-51	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Grey, Homogeneous, Non-Fibrous, Caulking **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-14-01 14 **Location:**	914061607-52	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
STUCCO-14-02 14 **Location:**	914061607-53	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
STUCCO-14-03 14 **Location:**	914061607-54	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Off-White/Grey, Heterogeneous, Non-Fibrous, Cementitious, Stucco **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLEJ-15-01 15 **Location:**	914061607-55	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLEJ-15-02 15 **Location:**	914061607-56	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Yellow/Grey, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLEJ-15-03 15 **Location:**	914061607-57	***No***	NAD (by CVES) by Arturo A. Aldana on 06/23/14
Analyst Description: Black/Orange, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

Reporting Notes:

Analyzed By: Arturo A. Aldana aaaldana, Date Analyzed: 6/23/2014 6/23/14

*NAD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; NVA = No Visible Asbestos; PLM (polarized light microscopy) Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0, CA ELAP lab #2322); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: 6/23/14

914061607

CHAIN OF CUSTODY FORM

SCA/LA — 3605 Long Beach Boulevard, Suite 102, Long Beach, CA 90807 — Phone: (562) 988-8401

Project #	Site Name/Address	Date	Mngr. Initials
14-053N Geosyntec	EL Toro	6-13-14	MO

LAB	Address
■ Amerisci Labs	24416 S. Main Street, Carson, CA 90745 (Tel: 888-724-5226) [Fax 310-834-4772]
☐ EMS Pasadena	117 W. Bellevue Dr. / Pasadena, CA 91105 (Tel: 800- 675-5777) [Fax 626-796-5282]
☐ EMLab P&K	1010 N. Central Ave #420, Glendale, CA 91202 (Tel: 818-245-1143) [Fax 818-245-1144]
☐ EMLab P&K	3585 Cadillac Ave #A, Costa Mesa, CA 92626 (Tel: 714-656-4318)

COURIER: SCA/LA Tech.

LAB REP NOTIFIED: Notification DATE/TIME:

AIRBILL/FLIGHT NO.: Shipper REFERENCE I.D.

EST ARRIVAL DATE: EST. ARRIVAL TIME:

Method Reference: ☐ 7400PCM ☐ AHERA TEM ☐ Flame AA (Lead) ■ PLM (asbestos)

Sample Media: ☐ 25 ☐ 37 mm ☐ 0.45 ☐ 0.8 micron ☐ MCEF ☐ Bulk ☐ Water ☐ Wipe

RESULTS DUE: 6-20-14 AM / PM — Analysis For Lead, Cadmium + Chromium

CHAIN OF CUSTODY DATA:

Sending info: 57 samples submitted by [signature] (SCA) on 6-16-14 at ____

Received by Lab: ____ samples received by [signature] on 6/16/14 at 0730

Received by Analyst: ____ samples received by ____ on ____ at ____

SAMPLE ID	LITERS	Results
RF ROLL-01-01,02,03,04,05,06,07		
RFMAS-02-01,02,03		
RFMEM-03-01,02,03,04,05,06,07		
RFROLL-04-01,02,03		
RFMEM-05-01,02,03		
RFMAS-06-01,02,03		
RFMAS-07-01,02,03		
RFMAS-08-01,02,03		
STUCCO-09-01,02,03,04,05,06,07		
CAULK-10-1,2,3		
STUCCO-11-01,02,03		
SKIM-12-01,02,03		
CAULK-13-01,02,03		
STUCCO-14-01,02,03		
FLEJ-15-01,02,03		
BLANK	0 LITERS	
BLANK	0 LITERS	
BLANK	0 LITERS	

INSTRUCTIONS TO LAB (delete items not applicable AND circle those apply):

1. ATEM Pickup requested:
   ATEM Contact: ____
   Time of Call: ____
2. Call SCA/LA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.
12. : ____

Please CALL with results: ( ) -

Email Rpt, COC & Invoice:
☐ Janet Hilliard-Osborn
jhilliardosborn@scala-enviro.com

Email Prj Mgr Name:
■ Mark Osborn
mosborn@scala-enviro.com
■ Paige Osborn
posborn@scala-Enviro.Com
■ Jeff Schmidt
jschmidt@scala-enviro.com

SCA/LA In-House Accounting Data:

Analysis	Quantity	TAT
TEM		
PCM		
PLM (bulk)	57	5 day
Lead Air		
Lead Bulk		

Comments:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cas. (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	

Accounting Data from Lab:

Lab: Amerisci LA

Billable TAT (HRS): 5 Day

Samples Analyzed: 57 Samples

$ Total to Invoice:

Lab Report #: 914061607

Lab Invoice #: 914061607

$/Analysis:

Approved by SCA/LA Rep.:

Comments: * Normal TAT

AmeriSci Los Angeles
24416 S. Main Street, Ste 308
Carson, California 90745
TEL: (310) 834-4868 • FAX: (310) 834-4772

PLM Bulk Asbestos Report

SCA LA Environmental, Inc.
Attn: Mark Osborn
3605 Long Beach Blvd.
Suite #108
Long Beach, CA 90807

Date Received 06/16/14
Date Examined 06/23/14

AmeriSci Job # 914061606
P.O. #

RE: 14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
BARPAP-16-01 16 **Location:**	914061606-01	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Heterogeneous, Fibrous, Barrier Paper **Asbestos Types:** **Other Material:** Cellulose 65 %, Non-fibrous 35 %			
BARPAP-16-02 16 **Location:**	914061606-02	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Heterogeneous, Fibrous, Barrier Paper **Asbestos Types:** **Other Material:** Cellulose 65 %, Non-fibrous 35 %			
BARPAP-16-03 16 **Location:**	914061606-03	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Heterogeneous, Fibrous, Barrier Paper **Asbestos Types:** **Other Material:** Cellulose 65 %, Non-fibrous 35 %			
WLSH-18-01 18 **Location:**	914061606-04	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
WLSH-18-02 18 **Location:**	914061606-05.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Off-White/Brown, Heterogeneous, Fibrous, Drywall **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WLSH-18-02 18 **Location:**	914061606-05.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
WLSH-18-03 18 **Location:**	914061606-06	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Drywall **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-18-04 18 **Location:**	914061606-07.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Off-White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-18-04 18 **Location:**	914061606-07.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
WLSH-18-05 18 **Location:**	914061606-08	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Off-White/Brown, Heterogeneous, Fibrous, Drywall **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-18-06 18 **Location:**	914061606-09	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Off-White/Brown, Heterogeneous, Fibrous, Drywall **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WLSH-18-07 18 **Location:**	914061606-10	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Off-White/Brown, Heterogeneous, Fibrous, Drywall **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-19-01 19 **Location:**	914061606-11	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Off-White, Homogeneous, Non-Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
WLSH-19-02 19 **Location:**	914061606-12	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White, Homogeneous, Non-Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 5 %, Non-fibrous 95 %			
WLSH-19-03 19 **Location:**	914061606-13	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White, Homogeneous, Non-Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 3 %, Non-fibrous 97 %			
FLVCS-20-01 20 **Location:**	914061606-14L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCS-20-01 20 **Location:**	914061606-14L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FLVCS-20-02 20 **Location:**	914061606-15L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCS-20-02 20 **Location:**	914061606-15L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCS-20-03 20 **Location:**	914061606-16L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Brown, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCS-20-03 20 **Location:**	914061606-16L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CLLT-21-01 21 **Location:**	914061606-17	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 45 %, Fibrous glass 25 %, Non-fibrous 30 %			
CLLT-21-02 21 **Location:**	914061606-18	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 45 %, Fibrous glass 25 %, Non-fibrous 30 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
CLLT-21-03 21 **Location:**	914061606-19	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 45 %, Fibrous glass 25 %, Non-fibrous 30 %			
Chase-23-01 23 **Location:**	914061606-20	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
Chase-23-02 23 **Location:**	914061606-21	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
Chase-23-03 23 **Location:**	914061606-22	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Heterogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
Debris-24-01 24 **Location:**	914061606-23	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Brown, Heterogeneous, Fibrous, Debris **Asbestos Types:** **Other Material:** Cellulose 20 %, Fibrous glass 10 %, Non-fibrous 70 %			
FLVCT-25-01 25 **Location:**	914061606-24L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FLVCT-25-01 25 **Location:**	914061606-24L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow/Black, Heterogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-25-02 25 **Location:**	914061606-25L1	***Yes***	2 % (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** Chrysotile 2.0 % **Other Material:** Non-fibrous 98 %			
FLVCT-25-02 25 **Location:**	914061606-25L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-25-03 25 **Location:**	914061606-26L1		NA/PS
Analyst Description: Floor Tile **Asbestos Types:** **Other Material:**			
FLVCT-25-03 25 **Location:**	914061606-26L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-26-01 26 **Location:**	914061606-27L1	***Yes***	3 % (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Tan, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** Chrysotile 3.0 % **Other Material:** Non-fibrous 97 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FLVCT-26-01 26 **Location:**	914061606-27L2	***Yes***	5 % (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Black, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** Chrysotile 5.0 % **Other Material:** Non-fibrous 95 %			
FLVCT-26-02 26 **Location:**	914061606-28L1		NA/PS
Analyst Description: Floor Tile **Asbestos Types:** **Other Material:**			
FLVCT-26-02 26 **Location:**	914061606-28L2		NA/PS
Analyst Description: Mastic **Asbestos Types:** **Other Material:**			
FLVCT-26-02 26 **Location:**	914061606-28L3	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White, Homogeneous, Non-Fibrous, Leveling Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-26-03 26 **Location:**	914061606-29L1		NA/PS
Analyst Description: Floor Tile **Asbestos Types:** **Other Material:**			
FLVCT-26-03 26 **Location:**	914061606-29L2		NA/PS
Analyst Description: Mastic **Asbestos Types:** **Other Material:**			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WLSH-27-01 27 **Location:**	914061606-30.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-27-01 27 **Location:**	914061606-30.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige/Yellow, Heterogeneous, Fibrous, Wallpaper/ Glue **Asbestos Types:** **Other Material:** Cellulose 10 %, Non-fibrous 90 %			
WLSH-27-02 27 **Location:**	914061606-31.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-27-02 27 **Location:**	914061606-31.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
WLSH-27-03 27 **Location:**	914061606-32.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 10 %, Non-fibrous 90 %			
WLSH-27-03 27 **Location:**	914061606-32.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WLSH-27-04 27 **Location:**	914061606-33.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-27-04 27 **Location:**	914061606-33.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
WLSH-27-05 27 **Location:**	914061606-34.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-27-05 27 **Location:**	914061606-34.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
WLSH-27-06 27 **Location:**	914061606-35.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-27-06 27 **Location:**	914061606-35.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WLSH-27-07 27 **Location:**	914061606-36.1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Brown, Heterogeneous, Fibrous, Wallboard **Asbestos Types:** **Other Material:** Cellulose 15 %, Non-fibrous 85 %			
WLSH-27-07 27 **Location:**	914061606-36.2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Joint Compound **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
CLLT-28-01 28 **Location:**	914061606-37	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 45 %, Fibrous glass 25 %, Non-fibrous 30 %			
CLLT-28-02 28 **Location:**	914061606-38	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 45 %, Fibrous glass 25 %, Non-fibrous 30 %			
CLLT-28-03 28 **Location:**	914061606-39	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White/Grey, Heterogeneous, Fibrous, Ceiling Tile **Asbestos Types:** **Other Material:** Cellulose 45 %, Fibrous glass 25 %, Non-fibrous 30 %			
MISC-29-01 29 **Location:**	914061606-40	***Yes***	3 % (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Light Purple, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.0 % **Other Material:** Non-fibrous 97 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
PIHW-30-01 30 **Location:**	914061606-41	***Yes***	35 % (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige/Grey, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 35.0 % **Other Material:** Cellulose 25 %, Non-fibrous 40 %			
PIHW-30-02 30 **Location:**	914061606-42		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
PIHW-30-03 30 **Location:**	914061606-43		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
FIHW-31-01 31 **Location:**	914061606-44	***Yes***	15 % (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: White, Homogeneous, Fibrous, Insulation **Asbestos Types:** Chrysotile 10.0 %, Amosite 5.0 % **Other Material:** Non-fibrous 85 %			
FIHW-31-02 31 **Location:**	914061606-45		NA/PS
Analyst Description: Insulation **Asbestos Types:** **Other Material:**			
FIHW-31-03 31 **Location:**	914061606-46		NA/PS
Analyst Description: Insulation **Asbestos Types:** **Other Material:**			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FLVCT-32-01 32 **Location:**	914061606-47L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-32-01 32 **Location:**	914061606-47L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-32-02 32 **Location:**	914061606-48L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-32-02 32 **Location:**	914061606-48L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-32-03 32 **Location:**	914061606-49L1	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Beige, Homogeneous, Non-Fibrous, Floor Tile **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLVCT-32-03 32 **Location:**	914061606-49L2	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FLMAS-33-01 33 **Location:**	914061606-50	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLMAS-33-02 33 **Location:**	914061606-51	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
FLMAS-33-03 33 **Location:**	914061606-52	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
BBDMAS-34-01 34 **Location:**	914061606-53	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
BBDMAS-35-01 35 **Location:**	914061606-54	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
BBDMAS-35-02 35 **Location:**	914061606-55	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14
Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

14-153N Geosyntec; EL Toro

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
BBDMAS-35-03 35 **Location:**	914061606-56	***No***	NAD (by CVES) by Paola Ducoing on 06/23/14

Analyst Description: Dark Brown, Homogeneous, Non-Fibrous, Mastic
Asbestos Types:
Other Material: Non-fibrous 100 %

Reporting Notes:
Analyzed By: Paola Ducoing Paola; Date Analyzed: 6/23/2014 6/23/14
*NAD = no asbestos detected; Detection Limit <1%; Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; NA = not analyzed; NA/PS = not analyzed / positive stop; NVA = No Visible Asbestos; PLM (polarized light microscopy) Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab #200346-0, CA ELAP lab #2322); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full with the approval of the laboratory. This PLM report relates ONLY to the items tested.
Reviewed By: 6/23/14

9140b1b0b

CHAIN OF CUSTODY FORM

SCA/LA
3605 Long Beach Boulevard, Suite 102
Long Beach, CA 90807
Phone: (562) 988-8401

Project #	Site Name/Address	Date	Mngr. Initials
14-053N Geosyntec	EL Toro	6-13-14	MO

LAB	Address
■ Amerisci Labs	24416 S. Main Street, Carson, CA 90745 (Tel: 888-724-5226) [Fax 310-834-4772]
☐ EMS Pasadena	117 W. Bellevue Dr. / Pasadena, CA 91105 (Tel: 800- 675-5777) [Fax 626-796-5282]
☐ EMLab P&K	1010 N. Central Ave #420, Glendale, CA 91202 (Tel: 818-245-1143) [Fax 818-245-1144]
☐ EMLab P&K	3585 Cadillac Ave #A, Costa Mesa, CA 92626 (Tel: 714-656-4318)

COURIER | SCA/LA Tech.

LAB REP NOTIFIED: | Notification DATE/TIME:
AIRBILL/FLIGHT NO.: | Shipper REFERENCE I.D.
EST ARRIVAL DATE: | EST. ARRIVAL TIME:

Method Reference ☐7400PCM ☐ AHERA TEM ☐ Flame AA (Lead) ☐ PLM (asbestos)

Sample Media ☐ 25 ☐ 37 mm ☐ 0.45 ☐ 0.8 micron ☐ MCEF ☐ Bulk ☐ Water ☐ Wipe

RESULTS DUE: 6-20-14 AM / PM (PM circled)

Analysis For Lead, Cadmium + Chromium

CHAIN OF CUSTODY DATA:

Sending Info: 56 samples submitted by Jeff Schmidt (SCA) on 6-16-14 at ____

Received by Lab: ____ samples received by JP Bom on 6/16/14 at 12:30

Received by Analyst: ____ samples received by ____ on ____ at ____

SAMPLE ID	LITERS	Results
BARPAP-16-01,02,03		
WLSH-018-01,02,03,04,05,06,07		
WLSH-19-01,02,03		
FLVCS-20-01,02,03		
CLLT-21-01,02,03		
Chase-23-01,02,03		
Debris-24-01		
FLVCT-25-01,02,03		
FLVCT-26-01,02,03		
WLSH-27-01,02,03,04,05,06,07		
CLLT-28-01,02,03		
MISC-29-01		
PIHW-30-01,02,03		
FIHW-31-01,02,03		
FLVCT-32-01,02,03		
FLMAS-33-01,02,03		
BBDMAS-34-01		
BBDMAS-35-01,02,03		

INSTRUCTIONS TO LAB (delete items not applicable AND circle those apply):

1. ATEM Pickup requested:
   ATEM Contact: ____
   Time of Call: ____
2. Call SCA/LA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples. (circled)
11. Analyze all bulk samples, unless otherwise indicated.
12. : ____

Please CALL with results:
( ) -

Email Rpt, COC & Invoice:
☐ Janet Hilliard-Osborn
jhilliardosborn@scala-enviro.com

Email Prj Mgr Name:
■ Mark Osborn
mosborn@scala-enviro.com
■ Paige Osborn
posborn@scala-Enviro.Com
■ Jeff Schmidt
jschmidt@scala-enviro.com

SCA/LA In-House Accounting Data:

Analysis	Quantity	TAT
TEM		
PCM		
PLM (bulk)	56	5 day
Lead Air		
Lead Bulk		

Comments:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cas. (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	

Accounting Data from Lab:

Lab: Amerisci LA

Billable TAT (HRS): 5 Day

Samples Analyzed: 56 Samples

$ Total to Invoice:

Lab Report #: 9140b1b0b

Lab Invoice #: 9140b1b0b

$/Analysis:

Approved by SCA/LA Rep.:

Comments: X No Samples 17 + 22 Normal TAT

Attachment 2

Field Data Sheets - Asbestos

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317		
DEPT CODE:	(ROOF)	Date Inspected: 6/12-13/14	Page 1 of 7
PROJECT NO.	14-053N	Inspected By: M.O.	

Sample ID (include BLDG no.)				Sample Location Data					
Predominance Group Codes Allowed: blank, A to Z				Functional Space					1. Aircell Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Troweled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder
HOMOGENEOUS MATERIAL ID	Linked Material No.	Sample Type B D	Sample Type Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID		Material Comments (building wide)
RFROLL	001					HIGH CENTER ROOF 70' X 570'			GRAY ROLLED COMP. ROOF SHEETING OVER BLACK FELT, TAR & MEMBRANE, W/ FIBER GLASS UNDERLAYMENT
RFMAS	002								BLACK ROOF PATCHING & PENETRATION MASTIC ON CURBS, VENTS & BRACKETS
RF MEMB	003					NORTH SOUTH LOWER ROOFS	&		WHITE MEMBRANE ROOFING
RFROLL	004					SOUTH LOWER ROOF	WH		GRAY ROLLED COMP. ROOF SHEETING DEBRIS & FELT*
RFMEM	005					SOUTH LOWER OFFICE ROOF			GRAY MEMBRANE ROOF W/ BLACK TAR
(+) RFMAS 5% CH	006								BEIGE/GRAY/BLACK MASTIC ON HVAC PADS & SUPPORTS
(+) RFMAS 5% CH	007								GRAY MASTIC PATCH ON SOUTH EXTERIOR STUCCO WALL @ WAREHOUSE

Comments: (please number each comment and reference above)

DAY & NIGHT HVAC W/ R-22 REFRIGERANT (SOUTH ROOF)
2 UNITS + (1) CARRIER UNIT IN ATTIC

* ALSO ON GROUND

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317		
DEPT CODE:	ROOF & EXTER.	Date Inspected:	6/12-13/14
			Page 2 of 7
PROJECT NO.	14-053N	Inspected By:	M.O.

Sample ID (Include BLDG no.)				Sample Location Data					
Predominance Group Codes Allowed: blank, A to Z				Functional Space				1. Aircell Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Troweled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder	
HOMOGENEOUS MATERIAL ID	Linked Material No.	Sample Type B D	Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID		Material Comments (building wide)
RFMAS	008	-				LOWER OFFICE ROOF	S		SILVER (OVER BLACK) ROOF PATCHING & PENETRATION MASTIC (@ HATCH)
STUCCO	009	-				EXTERIOR WALLS			EXTERIOR STUCCO W/ SAND FINISH W/ "ORANGISH" FINISH
WINDOWS	NNN	-	-						BROWN ANODIZED ALUM CLERESTORY WINDOWS - NON SUSPECT
* CAULK	010	-				EXTERIOR WALL PENETRATIONS			RESILIENT GRAY EXTERIOR CAULKING
STUCCO	011	-				SOUTH OFFICE ADDITION			EXTERIOR STUCCO W/ SAND FINISH
SKIM	012	-							EXTERIOR "DASH COAT" ON LOWER CONCRETE WALL
* CAULK	013	-							BROWN RESILIENT EXTERIOR CAULKING

Comments: (please number each comment and reference above)

*ALSO SAMPLE FOR PCBS

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317		
DEPT CODE:		Date Inspected:	6/12-13/14
			Page 3 of 7
PROJECT NO.	14-053N	Inspected By:	M.O.

1. Arced Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Troweled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder

Sample ID (Include BLDG no.)				Sample Location Data					
Predominance Group Codes Allowed: blank, A to Z				Functional Space					
HOMOGENEOUS MATERIAL ID		Linked Material No.	Sample Type B D	Sample Type Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID	Material Comments (building wide)
STUCCO		014	–	–		EXT. SOUTH SIDE & NORTH			EXTERIOR STUCCO W/ SAND FINISH - PATCH OF FORMER ROLL-UP DOORS SEVERAL LOCATIONS
CONCRETE		NNN		–		LOWER EXTERIOR WALLS			UNPAINTED POURED CONCRETE - NON SUSPECT
FLEJ		015	–	–		WAREHOUSE FLOOR			EXPANSION JOINT MATERIAL BETWEEN FLOOR SLAB SECTIONS
(+) FLMEMB Assumed		AAA	–	–		WAREHOUSE FLOOR SLAB			WATERPROOF MEMBRANE MAY BE PRESENT BENEATH OR WITHIN CONCRETE FLOOR SLAB (ASSUMED ASBESTOS CONTAINING)
BARPAP		016	–	–		EXTERIOR WALLS TYP.			THICK BLACK BARRIER PAPER ASSOC. WITH EXTERIOR STUCCO WALLS
(+) WLTRAN Assumed		017 AAA	– –	– –		WAREHOUSE INTERIOR			CORRUGATED GRAY TRANSITE WALL PANELS 7x70x3 = 1470 ft x 2 2940 ft
WLPNL		NNN		–		WEST WAREHOUSE OFFICES			"MARLITE" INTERIOR WALL PARTITIONS NON SUSPECT

Comments: (please number each comment and reference above)

RAILROAD TIES @ SOUTH END OF BUILDING

BROKEN MERCURY TUBES IN NORTH WAREHOUSE (EAST BAY CENTER)

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse	SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317	
DEPT CODE:	WAREHOUSE	Date Inspected: 6/12-13/14
PROJECT NO.	14-053N	Inspected By: M.O.

1. Aircell Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Troweled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder

Sample ID (include BLDG no.)				Sample Location Data					
Predominance Group Codes Allowed: blank, A to Z			Sample Type	Functional Space					
HOMOGENEOUS MATERIAL ID	Linked Material No.	B D	Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID		Material Comments (building wide)
WLSH	018	-	01		CENTER				GYPSUM WALLBOARD & JOINT COMPOUND
		-	02		WAREHOUSE				
		-	03		FIRE-RATED				
		-	04		DIVIDER				
		-	05		WALL				
		-	06						
		-	07						
WLSH	019	-	01		NW				GYPSUM BOARD WAREHOUSE PARTITION WALLS - NO JOINT COMPOUND
		-	02		WAREHOUSE				
		-	03						
BBDMAS	NNN		—		WEST WAREHOUSE OFFICES				YELLOW MASTIC ASSOC. W/ 4" BROWN VINYL COVE BASE - NON SUSPECT
FLVCS	020	-	01			WOOD FLOORS			~~BARRIER PAPER BENEATH~~ VINYL PLANK OR WOOD ~~PARQUET~~ PATTERN FLOORING IN WEST WAREHOUSE OFFICES
		-	02						
		-	03						
CLL1	021	-	01						2 X 4 WHITE LAID-IN CEILING TILES W/ FISSURES
		-	02						
		-	03						
CLL1	NNN		—						2x4 WHITE FIBERGLASS LAID-IN CEILING TILES, NON-SUSPECT

Comments: (please number each comment and reference above)

(2) INTERIOR WINDOW AIR CONDITIONERS @ WEST WAREHOUSE OFFICES (CFC ISSUE)

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317		
DEPT CODE:	S. OFFICES	Date Inspected: 6/12-13/14	Page 5 of 7
PROJECT NO.	14-053N	Inspected By: M.O.	

Sample ID (include BLDG no.)				Sample Location Data					
Predominance Group Codes Allowed: blank, A to Z				Functional Space				1. Aircell Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Troweled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder	
HOMOGENEOUS MATERIAL ID	Linked Material No.	Sample Type B D	Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID		Material Comments (building wide)
(+) PUTTY INACCESSIBLE Assumed	022	-	AA			SOUTH OFFICES BOILER RM.			WINDOW PUTTY ON OLD (CONCEALED) STEEL WINDOWS (1 WINDOW)
✓ CHASE ↓	023 ↓	- - -	01 02 03			SOUTH OFFICES BOILER RM.			DEBRIS IN CONCRETE CHASE
✓ CONC	NNN	- -				SOUTH OFFICES BOILER RM.			WHITE FIRE-STOP MATERIAL @ FLUE/ CONCRETE CHASE INTERSECTION
✓ DEBRIS	24	-	01			DEBRIS ON BOILER ROOM FLOOR			
(+) FLVCT ↓ 2% CH (tiles only)	025 ↓	- - -	01 02 03			STORAGE ROOM			12 X 12 BEIGE VINYL FLOOR TILES W/ TAN STREAKS & MASTIC
BBDMAP	NNN		—			OFFICE			YELLOW
(+) FLVCT ↓ 3% CH (tiles) 5% CH (mastic)	026 ↓	- - -	01 02 03	MEN K OFF S		WOMEN'S & MEN'S RR'S & UNDER CARPET THRU-OUT OFFICES, LOBBY			12x12 TAN VINYL FLOOR TILES W/ BROWN & WHITE SPECKS & MASTIC
✓ WLSH ↓	027 ↓	- - - - -	01 02 03 04 05	STOR WH BACK K. OFF W		THROUGHOUT SOUTH OFFICE ADDITION			GYPSUM WALLBOARD TAPE & JOINT COMPOUND
↓	↓	- -	06 07	OFF S OFF E		↓			

Comments: (please number each comment and reference above)

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317		
DEPT CODE:	OFFICES	Date Inspected: 6/12-13/14	Page 6 of 7
PROJECT NO.	14-053N	Inspected By: M.O.	

1. Accell Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Troweled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder

	Sample ID (Include BLDG no.)				Sample Location Data					
	Predominance Group Codes Allowed: blank, A to Z				Functional Space					
	HOMOGENEOUS MATERIAL ID	Linked Material No.	Sample Type B D	Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID		Material Comments (building wide)
✓	CLL1	028	-	01	W	SOUTH				2X4 WHITE LAID-IN CEILING TILES WITH FISSURES
	↓	↓	-	02	C	OFFICE				
			-	03	E	ADDITION				
(+) 3% CH	MISC	029	-	01		KITCHEN OF SOUTH OFFICE				WHITE STAINLESS STEEL SINK UNDER COAT
✓	HDUCT	NNN	—							FIBERGLASS OR BARE SHEET METAL HVAC DUCTS, NON SUSPECT
✓	FLOOR	NNN	—							2X2 WHITE LAMINATE RAISED COMPUTER FLOOR NON-SUSPECT
(+) Assumed	WL TRAN	AAA				RESTROOMS				TRANSITE WALL PANELS, ASSUMED ACM
✓(+) 35% CH	PIHW	030	-	01		ABOVE CEILING @ RESTROOMS				4" ϕ WHITE TSI ON HOT WATER LINES ~60LF
(+) 10% CH 5% AM	FIHW	031	-	01						MUDDED TSI PIPE ELBOWS MOSTLY CONCEALED EST. 10

Comments: (please number each comment and reference above)

WATER DAMAGE THROUGHOUT SOUTH OFFICES.
ALSO RABBIT WASTE (2) MERCURY THERMOSTATS

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		SCA/ LA Environmental, Inc. Asbestos Material Sampling Data Sheet
BLDG NO:	BUILDING 317		
DEPT CODE:		Date Inspected:	6/12-13/14
			Page 7 of 7
PROJECT NO.	14-053N	Inspected By:	M.O./J.S.

Sample ID (include BLDG no.)				Sample Location Data					
Predominance Group Codes Allowed: blank, A to Z				Functional Space				1. Aircell Type 2. Block Type 3. Board Type 4. Paper Wrap 5. Loose Fill 6. Trowelled On 7. Mud Type 8. Sprayed On 9. Wool Felt 10. Beneath ACM 11. Mult. Layers 12. Chunk/Powder	
HOMOGENEOUS MATERIAL ID	Linked Material No.	Sample Type B D	Sub-No.	Space/Room Type	Floor Level	Room or Space Number	DWG ID		Material Comments (building wide)
FLVCT	32		01			WH OFFICE			12X12 BEIGE UNDER CARPET, W/YELLOW MASTIC
			02						
			03						
FLMAS	33		01						YELLOW/ BROWN MASTIC UNDER PARQUET FLOOR
			02						
			03						
BBDMAS	34		01			WH OFFICES			BROWN BASEBOARD MASTIC (MINIMAL)
			—						
			—						<10SF
BBDMAS	35		-01			COMPUTER ROOM			BLACK MASTIC ASSOC. W/ BLACK 4" VINYL COVE BASE
↓	↓		-02						
			-03						

Comments: (please number each comment and reference above)

Attachment 3

Laboratory Results – Lead

AmeriSci Los Angeles
24416 S. Main Street, Ste 308
Carson, California 90745
TEL: (310) 834-4868 • FAX: (310) 834-4772

AmeriSci Job #: 414061208

Date Received: 06/16/14
Date Analyzed: 06/18/14

Lead Analysis Results

Paint

EPA Method 3050B/7000B

SCA LA Environmental, Inc.

Long Beach, CA

Job Site: 14-153N Geosyntec; El Toro

AmeriSci # 414061208	Client Number	Sample Location	% Lead (w/w)	Lead Content (mg/kg = ppm)
01	OR-01		0.012	120
02	OR-02 LBP		0.68	6,800(+)
03	OR-03		0.015	150
04	BE-04 LBP		2.8	28,000(+)
05	YW-05		0.016	160
06	OR-06		0.096	960
07	RD-07 LBP		2.5	25,000(+)
08	YW-08 LBP		8.3	83,000(+)
09	BE-09 LBP		22	220,000(+)
10	BR-10 LBP		21	210,000(+)
11	YW-11 LBP		11	110,000(+)
12	YW-14 LBP		2.7	27,000(+)
13	YW-15		<0.01	<100
14	BR/BL-16 LBP		3.3	33,000(+)
15	O/W-17		<0.01	<100
16	OW-18		<0.01	<100
17	BE-19		0.031	310
18	OR-20		0.027	270
19	BR-21		0.099	990
20	BE/RD-22		<0.01	<100
21	RD-23 LBP		3.5	35,000(+)
22	TN-24 LBP		8.1	81,000(+)

AmeriSci Reporting Limit is 0.01%, or 100mg/kg prior to any dilutions due to high analyte concentrations or matrix interferences. AmeriSci does not correct sample results by the blank value. All analytical batch data met quality control criteria unless otherwise noted. CA ELAP No. 2322. AIHA Lab No. 100530.

Reviewed by:

Analyzed by:

Minh Phung, Chemist

ELAP No: CA 2322

414061208 1 of 2

CHAIN OF CUSTODY FORM

SCA/LA 3605 Long Beach Boulevard, Suite 102 Long Beach, CA 90807 Phone: (562) 988-8401

Project #	Site Name/Address	Date	Mngr. Initials
14-053N Geosyntec	EL Toro	6-13-14	MO

LAB	Address
■ Amerisci Labs	24416 S. Main Street, Carson, CA 90745 (Tel: 888-724-5226) [Fax 310-834-4772]
☐ EMS Pasadena	117 W. Bellevue Dr. / Pasadena, CA 91105 (Tel: 800- 675-5777) [Fax 626-796-5282]
☐ EMLab P&K	1010 N. Central Ave #420, Glendale, CA 91202 (Tel: 818-245-1143) [Fax 818-245-1144]
☐ EMLab P&K	3585 Cadillac Ave #A, Costa Mesa, CA 92626 (Tel: 714-656-4318)

COURIER | SCA/LA Tech.

LAB REP NOTIFIED: | Notification DATE/TIME:

AIRBILL/FLIGHT NO.: | Shipper REFERENCE I.D.

EST ARRIVAL DATE: | EST. ARRIVAL TIME:

Method Reference ☐7400PCM ☐ AHERA TEM ■ Flame AA (Lead) ☐ PLM (asbestos)

Sample Media ☐ 25 ☐ 37 mm ☐ 0.45 ☐ 0.8 micron ☐ MCEF ☐ Bulk ☐ Water ☐ Wipe

RESULTS DUE: 6-20-14 AM / PM Analysis For Lead, Cadmium + Chromium

CHAIN OF CUSTODY DATA:

Sending Info 15 samples submitted by [signature] (SCA) on 6-16-14 at

Received by Lab: samples received by [signature] on 6/16/14 at 12:30

Received by Analyst: samples received by on at

SAMPLE ID	LITERS	Results
OR-01		
OR-02		
OR-03		
BE-04		
PW-05		
OR-06		
BD-07		
PW-08		
BE-09		
BR-10		
PW-11		
PW-14		
PW-15		
BR/BL-16		
OW-17		
* No -12 + -13 Samples		

INSTRUCTIONS TO LAB (delete items not applicable AND circle those apply):

1. ATEM Pickup requested:
   ATEM Contact:
   Time of Call:
2. Call SCA/LA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.
12. :

Please CALL with results:
( ) -

Email Rpt, COC & Invoice:
☐ Janet Hilliard-Osborn
jhilliardosborn@scala-enviro.com

Email Prj Mgr Name:
■ Mark Osborn
mosborn@scala-enviro.com
■ Paige Osborn
posborn@scala-Enviro.Com
■ Jeff Schmidt
jschmidt@scala-enviro.com

SCA/LA In-House Accounting Data:

Analysis	Quantity	TAT
TEM		
PCM		
PLM (bulk)		
Lead Air		
Lead Bulk	15	5 day

Comments:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cas. (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	

Accounting Data from Lab:

Lab: Amerisci LA

Billable TAT (HRS): 5 Day

Samples Analyzed: 15 Samples

$ Total to Invoice:

Lab Report #: 414061208

Lab Invoice #: 414061208

$/Analysis:

Approved by SCA/LA Rep.:

Comments: * AA Flame Samples (No -12 + -13)

414061208

2 of 2

CHAIN OF CUSTODY FORM

SCA/LA — 3605 Long Beach Boulevard, Suite 102, Long Beach, CA 90807 — Phone: (562) 988-8401

Project #	Site Name/Address	Date	Mngr. Initials
14-053N Geosyntec	El Toro	6-13-14	MO

LAB	Address
■ Amerisci Labs	24416 S. Main Street, Carson, CA 90745 (Tel: 888-724-5226) [Fax 310-834-4772]
☐ EMS Pasadena	117 W. Bellevue Dr. / Pasadena, CA 91105 (Tel: 800- 675-5777) [Fax 626-796-5282]
☐ EMLab P&K	1010 N. Central Ave #420, Glendale, CA 91202 (Tel: 818-245-1143) [Fax 818-245-1144]
☐ EMLab P&K	3585 Cadillac Ave #A, Costa Mesa, CA 92626 (Tel: 714-656-4318)

COURIER — SCA/LA Tech.

LAB REP NOTIFIED: — Notification DATE/TIME:

AIRBILL/FLIGHT NO.: — Shipper REFERENCE I.D.

EST ARRIVAL DATE: — EST. ARRIVAL TIME:

Method Reference: ☐ 7400PCM ☐ AHERA TEM ● Flame AA (Lead) ☐ PLM (asbestos)

Sample Media: ☐ 25 ☐ 37 mm ☐ 0.45 ☐ 0.8 micron ☐ MCEF ☐ Bulk ☐ Water ☐ Wipe

RESULTS DUE: 6-20-14 AM / PM — Analysis For Lead, Cadmium + Chromium

CHAIN OF CUSTODY DATA:

Sending Info: 7 samples submitted by Jeff Schmidt (SCA) on 6-16-14 at ____

Received by Lab: ____ samples received by [illegible] on 6/16/14 at 07:30

Received by Analyst: ____ samples received by ____ on ____ at ____

SAMPLE ID	LITERS	Results
OW-18		
BE-19		
OR-20		
BR-21		
BE/RD-22		
RD-23		
TN-24		
BLANK	0 LITERS	
BLANK	0 LITERS	
BLANK	0 LITERS	

INSTRUCTIONS TO LAB (delete items not applicable AND circle those apply):

1. ATEM Pickup requested:
   ATEM Contact: ____
   Time of Call: ____
2. Call SCA/LA's contact to acknowledge receipt of samples.
3. Analyze samples by PCM only.
4. Analyze inside samples by PCM first; if any sample >0.01 f/cc, contact SCA.
5. If all samples are <0.01 f/cc, proceed with items 6, 7 or 8, as noted.
6. Analyze inside samples only; stop if Avg >70 str/mm^2, contact SCA before analyzing outsides or blanks.
7. Analyze all samples, including outside samples and blanks.
8. Do NOT analyze outside or blank samples.
9. Analyze by TEM only the inside air sample with the highest PCM result.
10. Serial analysis; stop at first positive (>1%); first trace (<0.1%);except sheetrock and plaster samples.
11. Analyze all bulk samples, unless otherwise indicated.
12. : ____

Please CALL with results:

( ) -

Email Rpt, COC & Invoice:
☐ Janet Hilliard-Osborn
jhilliardosborn@scala-enviro.com

Email Prj Mgr Name:
■ Mark Osborn
mosborn@scala-enviro.com
■ Paige Osborn
posborn@scala-Enviro.Com
■ Jeff Schmidt
jschmidt@scala-enviro.com

SCA/LA In-House Accounting Data:

Analysis	Quantity	TAT
TEM		
PCM		
PLM (bulk)		
Lead Air		
Lead Bulk	7	5 day

Comments:

Supplies /Equipment	Qty
Hi-Vol (3040)	
Lo-Vol (3020)	
TEM / Pb cas. (3520)	
PCM cassettes (3500)	
Bulk sampling supply (3710)	

Accounting Data from Lab:

Lab: Amerisci LA

Billable TAT (HRS): 5 Day

Samples Analyzed: 7 Samples

$ Total to Invoice:

Lab Report #: 414061208

Lab Invoice #: 414061208

$/Analysis:

Approved by SCA/LA Rep.:

Comments: * AA Flame Samples

Attachment 4

Field Data Sheets - Lead

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		LEAD Material/Sampling Data Sheet
BLDG NO:	Building #317	Date Inspected: 6/12-13/14	
DEPT CODE:	EXTERIOR	Inspected By: M.O. / JS (initials)	Page 1 of 4 (MSDS for this Building)
PROJECT NO.	14-043N		

Sample Identification: Color	Sub-No.	Sequential No.	XRF="X" AA="A" TTLC="T" Sample Type	Photo?	Typical Substrate Component	Sample Location Data: Typical Substrate Material	Functional Space: Space/Room Type	Floor Level	Space or Room Type	ht ft	Coordinates: Distance to wall or column line: N/S from column line #	N/S ft	E/W from column line #	E/W ft	K-SHELL	L-SHELL	TIME (secs.)	DEPTH INDEX	CONF. INTERVAL	Condition: Intact	Peeling	Chipped	Comment #	
OR	-01				G.I. RAIN GUTTERS	STEEL			ROOF												X	X		120 PPM
• OR	-02				EXT. WALLS	STUCCO			EXTERIOR TYP. (LOWER WALLS ARE UNPAINTED CONCRETE TYP.)											X				• 6800 PPM LBP
OR	-03				G.I. DOWN SPOUTS	STEEL			EXT												X	X		150 PPM
• BE	-04				HVAC SCREENS	ALUM SHT. METAL			ROOF												X			• 28,000 PPM LBP
YW	-05				LOADING DOCK GUARDS	STEEL ANGLES			EXT. S PEELING YELLOW												X	X		160 PPM
OR	-06				LOADING DOCK FRAME	4x WOOD FRAMING			PEELING ORANGE												X			960 PPM

Comments: (please number each comment and reference above)

Color ID:	BK=black	OW=off-white	TN=tan	GY=gray	BR=brown	YW=yellow	PE=purple	PK=pink
BL=blue	BE=beige	WH=white	GR=green	RD=red	CR= cream	OE=orange	CN=crimson	

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		LEAD Material/Sampling Data Sheet
BLDG NO:	Building #317	Date Inspected: 6/13-14/14	
DEPT CODE:	EXTERIOR	Inspected By: M.O. / JS initials	Page 2 of 4 MSDS for this Building
PROJECT NO.	14-043N		

Sample Identification					Sample Location Data															Condition			
Color	Sequential No. / Sub-No.	XRF="X" AA="A" TTLC="T" Sample Type	Photo?	Typical Substrate Component	Typical Substrate Material	Functional Space: Space/Room Type	Floor Level	Space or Room Type	ht ft	Coordinates: Distance to wall or column line N/S from column line #	N/S ft	E/W from column line #	E/W ft	K-SHELL	L-SHELL	TIME (secs.)	DEPTH INDEX	CONF. INTERVAL	Intact	Peeling	Chipped	Comment #	
RD	-07			1945 WATER METER	IRON		EXT.	EAST												X			• 25000 PPM LBP
YW	-08			BOLLARDS	STL.															X			• 83,000 PPM (LBP)
BE	-09			LOADING DOCK FRAM'G.	WOOD RAFTERS															X			• 220,000 PPM (LBP)
BR	-10				FASCIA 2X WOOD															X			• 210000 PPM (LBP)
YW	-11			FIRE HYDRANT	STEEL RAILS		NW	EXT.													X		• 110,000 PPM (LBP)
~~BL~~	~~-13~~			~~SMERS METAL AWNING~~	~~STEEL~~		~~W~~	~~FACADE~~				(NOT SAMPLED)							X				N/A

Comments: (please number each comment and reference above)

NOTE: NO SAMPLE #12 OR 13

Color ID:	BK=black	OW=off-white	TN=tan	GY=gray	BR=brown	YW=yellow	PE=purple	PK=pink
	BL=blue	BE=beige	WH=white	GR=green	RD=red	CR= cream	OE=orange	CN=crimson

BLDG NAME:	Geosyntec (Lowe) El Toro Warehouse		LEAD Material/Sampling Data Sheet
BLDG NO:	Building #317	Date Inspected: 6/13-14/14	
DEPT CODE:		Inspected By: M.O. /JS (initials)	Page 3 of 4 (MSDS for this Building)
PROJECT NO.	14-043N		

Sample Identification: Color	Sequential No. / Sub-No.	XRF="X" AA="A" TTLC="T" Sample Type	Photo?	Typical Substrate Component	Sample Location Data: Typical Substrate Material	Functional Space: Space/Room Type	Floor Level	Space or Room Type	ht ft	Coordinates: Distance to wall or column line N/S from column line #	N/S ft	E/W from column line #	E/W ft	K-SHELL	L-SHELL	TIME (secs.)	DEPTH INDEX	CONF. INTERVAL	Condition: Intact	Peeling	Chipped	Comment #	
YW	-14			FLOOR	CONC SLAB			WAREHOUSE YELLOW STRIPING													X	•	• 27,000 PPM LBP
YW	-15			BOLLARDS	STL.			YELLOW PAINT ON STEEL BOLLARDS													X		<100 PPM
BR/BL	-16			DOOR	WOOD			RESTROOMS SOUTH OFFICES INTACT		BROWN OVER BLUE									X			•	• 33,000PPM LBP
OW	-17			DOOR	WOOD FRAME			SOUTH OFFICES											X				<100 PPM
OW	-18			WALL	GYP BOARD			↓											X				<100 PPM
BE	-19			ROOF VENT	G.I. FLASHING			ROOF												X			310 PPM

Comments: (please number each comment and reference above)

PORCELAIN SINKS / TOILETS / JANITOR'S SINK NO CERAMIC TILES

Color ID:	BK=black	OW=off-white	TN=tan	GY=gray	BR=brown	YW=yellow	PE=purple	PK=pink
BL=blue	BE=beige	WH=white	GR=green	RD=red	CR= cream	OE=orange	CN=crimson	

BLDG NAME:	Geosynentec (El Toro) Building 317		**LEAD Material/Sampling Data Sheet**
BLDG NO:	BLDG. 317	Date Inspected: 6/13/14	
DEPT CODE:			
		Inspected By: M.O. / JS (initials)	Page 4 of 4 MSDS for this Building
PROJECT NO.	14-053N		

Sample Identification					Sample Location Data																Condition			
Color	Sequential No. / Sub-No.	XRF="X" AA="A" TTLC="T" Sample Type	Photo?	Typical Substrate Component	Typical Substrate Material	Functional Space: Space/Room Type	Floor Level	Space or Room Type	ht ft	Coordinates: Distance to wall or column line N/S from column line #	N/S ft	E/W from column line #	E/W ft	K-SHELL	L-SHELL	TIME (secs.)	DEPTH INDEX	CONF. INTERVAL	Intact	Peeling	Chipped	Comment #	
OR	-20			ROOF FLASH'G	G.I. (SHT. MTL.)	ROOF														X			270 PPM
BR	-21		"	DOWN-SPOUT SPLASH	" G.I. (SHT. MTL.)	ROOF														X			990 PPM
BE/RD	-22			DOOR FRAME	STEEL	EXT. S.		OVER RED PRIMER												X			<100 PPM
• RD	-23			FIRE STAND-PIPE	IRON	EXT. S														X	X		• 35,000 PPM (LBP)
• TN	-24			ROOF FASCIA	1x WOOD	LOADING DOCK (NORTH)														X			• 81,000 PPM (LBP)

Comments: (please number each comment and reference above)

Color ID:	BK=black	OW=off-white	TN=tan	GY=gray	BR=brown	YW=yellow	PE=purple	PK=pink
BL=blue	BE=beige	WH=white	GR=green	RD=red	CR= cream	OE=orange	CN=crimson	

Attachment 5

XRF Data Tables - Lead

El Toro Building 317 HazMat Survey
XRF Results

Reading	Type	Duration	Units	COMPONENT	SUBSTRATE	COND	CLR	INSP	FLR	ROOM	Results	Depth Index	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
1	ShutterCa	80.61	cps	CALIBRATION									5	0	0.96	0	0.01	0
2	Paint	2.06	mg / cm ^2	CALIBRATION							Negative	1	0	0.02	0	0.02	-0.65	1.4
3	Paint	1.24	mg / cm ^2	CALIBRATION							Positive	1.3	3.7	1.3	3.7	1.3	3.2	3.2
4	Paint	7.85	mg / cm ^2	CALIBRATION							Negative	1.05	0.9	0.1	0.9	0.1	0.9	0.6
5	Paint	2.49	mg / cm ^2	CALIBRATION							Positive	1.11	1.4	0.3	1.4	0.3	0.3	1.59
6	Paint	2.07	mg / cm ^2	CALIBRATION							Negative	1	0.6	0.2	0.6	0.2	0.14	1.59
7	Paint	2.07	mg / cm ^2	CALIBRATION							Negative	1	0.27	0.12	0.27	0.12	-0.21	1.53
8	Paint	7.47	mg / cm ^2	Ladder	Steel	Poor	RD	J.S.	Roof	Lower Roof	Negative	1	0.01	0.02	0.01	0.02	-0.07	0.75
9	Paint	2.9	mg / cm ^2	Hatch	Metal	Poor	GY	J.S.	Roof	Lower Roof	Negative	1.77	0.01	0.05	0.01	0.05	-0.23	1.7
10	Paint	2.49	mg / cm ^2	Hatch	Metal	Poor	GY	J.S.	Roof	Lower Roof	Negative	1.14	0.01	0.03	0.01	0.03	0.3	1.96
11	Paint	2.09	mg / cm ^2	A/C Shield	Metal	Poor	OW	J.S.	Roof	Lower Roof	Negative	1.18	0.16	0.12	0.16	0.12	0.4	1.6
12	Paint	2.09	mg / cm ^2	Gutter	Metal	Poor	BR	J.S.	Roof	Lower Roof	Negative	1	0	0.02	0	0.02	-0.01	1.62
13	Paint	2.07	mg / cm ^2	A/C Shield Frame	Steel	Poor	GY	J.S.	Roof	Lower Roof	Negative	4.23	0.06	0.17	0.06	0.17	0.23	2.13
14	Paint	2.5	mg / cm ^2	WH Vent	Metal	Poor	OW	J.S.	Roof	Lower Roof	Negative	1	0	0.02	0	0.02	0.09	1.28
15	Paint	2.49	mg / cm ^2	Vent	Metal	Poor	OW	J.S.	Roof	Lower Roof	Negative	1	0	0.02	0	0.02	0.17	1.4
16	Paint	2.06	mg / cm ^2	Vent Pipe	Steel	Poor	GY	J.S.	Roof	Lower Roof	Negative	1.83	0.13	0.17	0.13	0.17	0.6	2.3
17	Paint	2.48	mg / cm ^2	Hatch	Metal	Poor	OW	J.S.	Roof	Middle Roof	Negative	4.21	0.04	0.12	0.04	0.12	0.3	1.9
18	Paint	2.09	mg / cm ^2	Whirly Base	Metal	Poor	BR	J.S.	Roof	Middle Roof	Negative	1	0	0.02	0	0.02	0.1	1.86
19	Paint	4.12	mg / cm ^2	Vent Pipe	Metal	Poor	OW	J.S.	Roof	Middle Roof	Negative	1.03	0.01	0.02	0.01	0.02	-0.19	1
20	**Paint**	**2.07**	**mg / cm ^2**	**Wall**	**Stucco**	**Poor**	**TN**	**J.S.**	**Roof**	**Middle Roof**	**Positive**	**3.37**	**2.2**	**0.8**	**2.2**	**0.8**	**3.3**	**2.7**
21	Paint	2.05	mg / cm ^2	Gutter	Metal	Poor	BR	J.S.	Roof	Middle Roof	Negative	4.16	0.04	0.13	0.04	0.13	0.06	1.63
22	**Paint**	**3.32**	**mg / cm ^2**	**Wall**	**Stucco**	**Poor**	**TN**	**J.S.**	**Roof**	**Middle Roof**	**Positive**	**10**	**3.4**	**1.3**	**1.1**	**0.5**	**3.4**	**1.3**
23	Paint	2.07	mg / cm ^2	Gutter	Metal	Poor	BR	J.S.	Roof	Upper Roof	Negative	1.48	0.01	0.03	0.01	0.03	-0.18	1.49
24	Paint	2.07	mg / cm ^2	Whirly Base	Metal	Poor	BR	J.S.	Roof	Upper Roof	Negative	1	0	0.02	0	0.02	0.7	1.6
25	Paint	2.48	mg / cm ^2	Base Flooding	Metal	Poor	TN	J.S.	Roof	Lower Roof	Negative	1	0	0.02	0	0.02	0.26	1.38
26	**Paint**	**2.89**	**mg / cm ^2**	**Wall**	**Stucco**	**Poor**	**TN**	**J.S.**	**Roof**	**Lower Roof**	**Positive**	**2.16**	**2.5**	**0.6**	**2.5**	**0.6**	**3.5**	**2.2**
27	Paint	7.45	mg / cm ^2	Stair	Steel	Poor	OW	J.S.	Roof	Roof Access	Negative	1	0.01	0.02	0.01	0.02	0.06	0.71
28	Paint	2.48	mg / cm ^2	Door	Metal	Good	BR	J.S.	1	Offices	Negative	2.22	-0.76	1.59	0.01	0.03	-0.76	1.59
29	Paint	3.31	mg / cm ^2	Door	Metal	Good	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.59	0.9
30	Paint	2.89	mg / cm ^2	Window	Metal	Good	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.58	1.44
31	Paint	2.47	mg / cm ^2	Wall	Gypsum	Poor	YW	J.S.	1	Offices	Negative	1.52	0	0.02	0	0.02	0.05	1.23
32	Paint	3.75	mg / cm ^2	Wall	Gypsum	Poor	YW	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.09	0.68
33	Paint	2.48	mg / cm ^2	Door	Wood	Poor	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.35	1.04
34	Paint	7.45	mg / cm ^2	Door Frame	Metal	Poor	BR	J.S.	1	Offices	Negative	2.82	0.02	0.02	0.02	0.02	-0.11	0.67
35	Paint	4.55	mg / cm ^2	Door Frame	Metal	Fair	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.37	0.75
36	Paint	7.43	mg / cm ^2	Cabinet	Wood	Fair	BR	J.S.	1	Offices	Negative	1.86	0	0.02	0	0.02	-0.13	0.46
37	Paint	2.91	mg / cm ^2	Door	Metal	Fair	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.58	1.26
38	Paint	2.06	mg / cm ^2	Door	Wood	Poor	OW	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.17	1.3
39	Paint	2.06	mg / cm ^2	Door	Wood	Poor	OW	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	0.04	1.1
40	Paint	2.5	mg / cm ^2	Door	Wood	Poor	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	0.1	1.22
41	Paint	7.41	mg / cm ^2	Wall	Gypsum	Poor	YW	J.S.	1	Offices	Negative	1.05	0	0.02	0	0.02	0.21	0.44

Reading	Type	Duration	Units	COMPONENT	SUBSTRATE	COND	CLR	INSP	FLR	ROOM	Results	Depth Index	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
42	Paint	3.3	mg / cm ^2	Door	Metal	Poor	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.5	0.88
43	Paint	2.08	mg / cm ^2	Railing	Steel	Poor	BR	J.S.	1	Offices	Negative	2.93	0.28	0.27	0.28	0.27	1	2.3
44	Paint	4.55	mg / cm ^2	Door Frame	Metal	Poor	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.17	0.7
45	Paint	7.85	mg / cm ^2	Railing	Steel	Poor	BR	J.S.	1	Offices	Negative	2.47	0.14	0.06	0.14	0.06	0.6	0.7
46	Paint	3.3	mg / cm ^2	Door	Metal	Poor	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	-0.36	0.83
47	Paint	2.08	mg / cm ^2	Door	Wood	Poor	BR	J.S.	1	Offices	Negative	1	0	0.02	0	0.02	0.15	1.18
48	Paint	7.85	mg / cm ^2	Door	Wood	Poor	GY	J.S.	1	WH Offices	Negative	1.4	0	0.02	0	0.02	0.06	0.41
49	Paint	2.05	mg / cm ^2	Door	Metal	Poor	GY	J.S.	1	WH Offices	Negative	1.25	0	0.02	0	0.02	0.5	2
50	Paint	7.45	mg / cm ^2	Wall	Gypsum	Poor	YW	J.S.	1	WH Offices	Negative	1	0	0.02	0	0.02	0.27	0.46
51	**Paint**	**2.9**	**mg / cm ^2**	**Heater Cover**	**Metal**	**Poor**	**BE**	**J.S.**	**1**	**Men's RR**	**Positive**	**4.69**	**2.1**	**0.8**	**2.1**	**0.8**	**2**	**1.9**
52	Paint	2.08	mg / cm ^2	Toilet	Porcelain	Poor	WH	J.S.	1	Men's RR	Negative	1	0.01	0.03	0.01	0.03	0.24	2.31
53	Paint	2.09	mg / cm ^2	Urinal	Porcelain	Poor	WH	J.S.	1	Men's RR	Negative	1	0.01	0.03	0.01	0.03	0.04	2.21
54	Paint	2.05	mg / cm ^2	Sink	Porcelain	Poor	WH	J.S.	1	Men's RR	Negative	1.49	0.16	0.14	0.16	0.14	0.05	2.41
55	**Paint**	**2.48**	**mg / cm ^2**	**Wall**	**Paneling**	**Poor**	**OW**	**J.S.**	**1**	**Men's RR**	**Positive**	**5.23**	**3.3**	**1.3**	**3.3**	**1.3**	**2.9**	**2.3**
56	Paint	2.91	mg / cm ^2	Wall	Gypsum	Poor	YW	J.S.	1	Men's RR	Negative	1	0	0.02	0	0.02	0.01	1.15
57	**Paint**	**1.25**	**mg / cm ^2**	**Sink**	**Porcelain**	**Poor**	**WH**	**J.S.**	**1**	**Janitor Closet**	**Positive**	**1.94**	**29.6**	**10.1**	**7**	**2.9**	**29.6**	**10.1**
58	**Paint**	**1.25**	**mg / cm ^2**	**Pipe**	**Metal**	**Poor**	**OW**	**J.S.**	**1**	**Janitor Closet**	**Positive**	**2.63**	**5.6**	**2**	**5.6**	**2**	**5.2**	**4.7**
59	**Paint**	**1.66**	**mg / cm ^2**	**Heater Cover**	**Metal**	**Poor**	**BE**	**J.S.**	**1**	**Women's RR**	**Positive**	**4.28**	**5.1**	**3.5**	**5.6**	**2.2**	**5.1**	**3.5**
60	**Paint**	**7.83**	**mg / cm ^2**	**Heater Cover**	**Metal**	**Poor**	**BE**	**J.S.**	**1**	**Women's RR**	**Positive**	**6.51**	**3.4**	**0.6**	**3.4**	**0.6**	**2.8**	**0.8**
61	Paint	2.08	mg / cm ^2	Toilet	Porcelain	Poor	WH	J.S.	1	Women's RR	Negative	2.17	0.03	0.07	0.03	0.07	1.1	2.3
62	Paint	2.48	mg / cm ^2	Sink	Porcelain	Poor	WH	J.S.	1	Women's RR	Negative	1.17	0.7	0.2	0.7	0.2	0.7	2.3
63	Paint	2.08	mg / cm ^2	Wall	Paneling	Poor	YW	J.S.	1	Women's RR	Negative	1	0	0.02	0	0.02	0.5	1.4
64	**Paint**	**2.48**	**mg / cm ^2**	**Wall**	**Paneling**	**Poor**	**OW**	**J.S.**	**1**	**Women's RR**	**Positive**	**3.39**	**2.4**	**0.8**	**2.4**	**0.8**	**2.2**	**2.3**
65	**Paint**	**2.48**	**mg / cm ^2**	**Heater Cover**	**Metal**	**Poor**	**OW**	**J.S.**	**1**	**Storage**	**Positive**	**8.65**	**4.3**	**2.5**	**4.8**	**2.4**	**4.3**	**2.5**
66	**Paint**	**2.48**	**mg / cm ^2**	**Wall**	**Paneling**	**Poor**	**OW**	**J.S.**	**1**	**Storage**	**Positive**	**4.99**	**2.8**	**1.1**	**2.8**	**1.1**	**2.2**	**1.8**
67	**Paint**	**2.9**	**mg / cm ^2**	**Wall**	**Paneling**	**Poor**	**OW**	**J.S.**	**1**	**Electric Room**	**Positive**	**1.65**	**1.4**	**0.3**	**1.4**	**0.3**	**1.5**	**1.5**
68	Paint	2.06	mg / cm ^2	Tank	Steel	Poor	RD	J.S.	1	Boiler Room	Negative	3.6	0.08	0.14	0.08	0.14	0.4	2.2
69	Paint	3.31	mg / cm ^2	Wall	Gypsum	Poor	OW	J.S.	1	Boiler Room	Negative	1	0	0.02	0	0.02	0.5	0.6
70	Paint	3.72	mg / cm ^2	Wall	Gypsum	Poor	OW	J.S.	1	Boiler Room	Negative	1	0	0.02	0	0.02	0.5	0.7
71	Paint	2.47	mg / cm ^2	Pipe	Steel	Poor	SV	J.S.	1	Boiler Room	Negative	1.24	0.13	0.09	0.13	0.09	0.4	2
72	Paint	4.54	mg / cm ^2	Pipe	Steel	Poor	RD	J.S.	1	Boiler Room	Negative	1.19	0.8	0.1	0.8	0.1	0.7	1
73	**Paint**	**2.48**	**mg / cm ^2**	**Chimney**	**Concrete**	**Poor**	**OW**	**J.S.**	**1**	**Boiler Room**	**Positive**	**2.67**	**2.7**	**0.8**	**2.7**	**0.8**	**2.9**	**2.5**
74	Paint	2.46	mg / cm ^2	Door	Wood	Poor	BL	J.S.	1	Outer Office	Negative	3.25	0.02	0.08	0.02	0.08	0.06	1.13
75	Paint	2.07	mg / cm ^2	Door Frame	Metal	Poor	BL	J.S.	1	Outer Office	Negative	1	0	0.02	0	0.02	0.04	1.94
76	Paint	2.5	mg / cm ^2	Wall	Gypsum	Poor	BL	J.S.	1	Outer Office	Negative	1	0	0.02	0	0.02	-0.02	1.26
77	Paint	2.07	mg / cm ^2	Door Frame	Metal	Poor	BL	J.S.	1	Outer Office	Negative	1	0	0.02	0	0.02	0.6	2.1
78	Paint	2.06	mg / cm ^2	Wall	Gypsum	Poor	BL	J.S.	1	Outer Office	Negative	1	0	0.02	0	0.02	0.3	1.33
79	Paint	2.5	mg / cm ^2	Door Frame	Metal	Poor	BL	J.S.	1	Outer Office	Negative	1	0	0.02	0	0.02	-0.03	1.76
80	Paint	2.89	mg / cm ^2	Wall	Gypsum	Poor	BL	J.S.	1	Outer Office	Negative	1	0	0.02	0	0.02	0.23	1.13
81	ShutterCa	78.64	cps										5.56	0	0.78	0	0.01	0
82	Paint	2.49	mg / cm ^2								Negative	1	0	0.02	0	0.02	-0.65	1.37

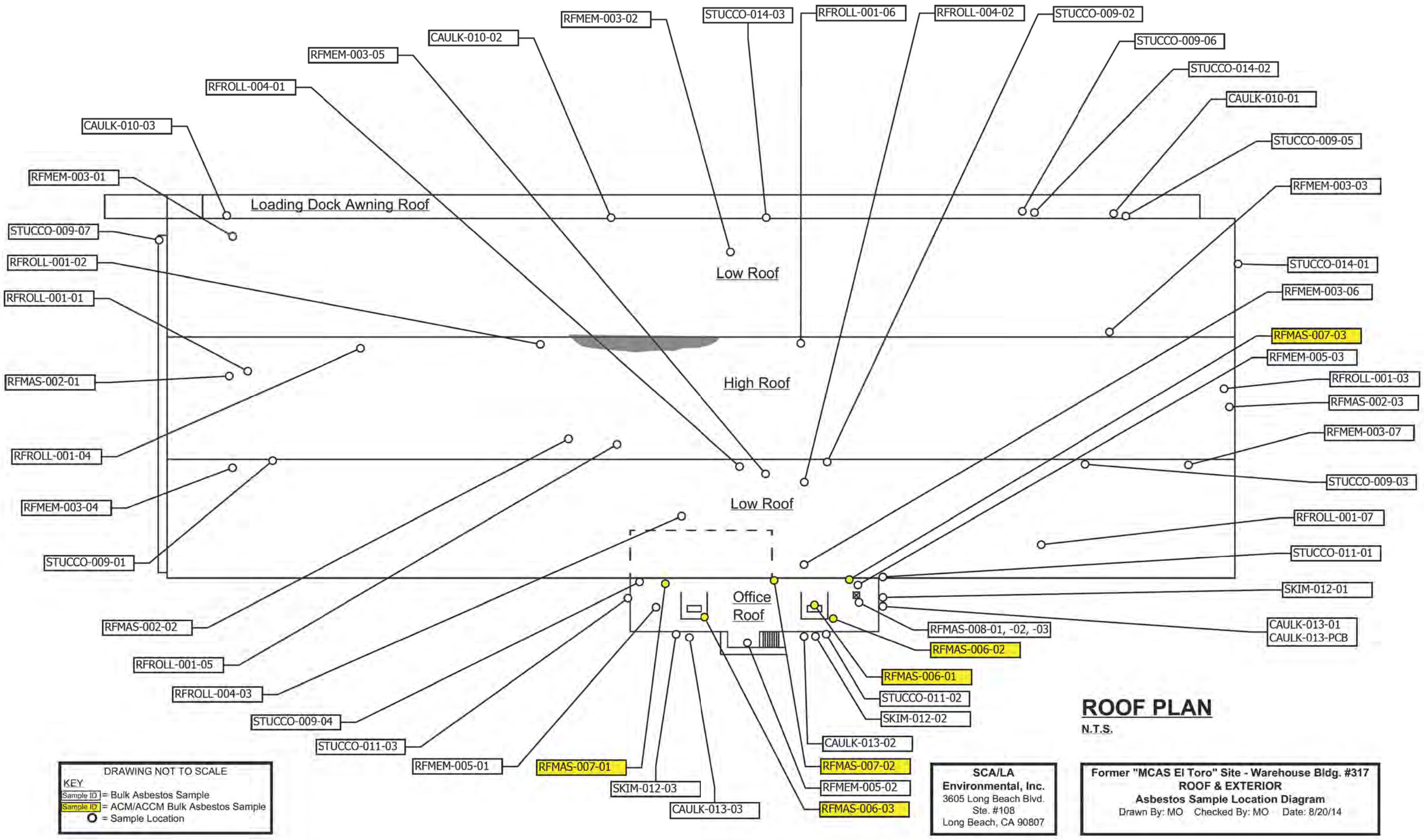
Reading	Type	Duration	Units	COMPONENT	SUBSTRATE	COND	CLR	INSP	FLR	ROOM	Results	Depth Index	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
83	Paint	1.24	mg / cm ^2	CALIBRATION							Positive	1.34	3.6	1.3	3.6	1.3	3.3	3.3
84	Paint	20.7	mg / cm ^2	CALIBRATION							Positive	1.08	1	0.1	1	0.1	0.4	0.4
85	Paint	2.47	mg / cm ^2	CALIBRATION							Positive	1.14	1.5	0.3	1.5	0.3	0.9	1.8
86	Paint	2.05	mg / cm ^2	CALIBRATION							Negative	1	0.6	0.2	0.6	0.2	0.16	1.76
87	Paint	2.49	mg / cm ^2	CALIBRATION							Negative	1	0.28	0.12	0.28	0.12	-0.2	1.48
88	Paint	7.46	mg / cm ^2	Door	Wood	Poor	WH	J.S.	1	Warehouse Off	Negative	1	0.02	0.02	0.02	0.02	-0.82	0.45
89	Paint	2.07	mg / cm ^2	Wall	Paneling	Poor	WH	J.S.	1	Warehouse Off	Negative	1	0.02	0.03	0.02	0.03	-0.71	1.33
90	Paint	2.49	mg / cm ^2	Wall	Paneling	Poor	BR	J.S.	1	Warehouse Off	Negative	1	0	0.02	0	0.02	-0.57	1.22
91	Paint	1.65	mg / cm ^2	Door	Wood	Poor	BR	J.S.	1	Warehouse Off	Negative	1	0	0.02	0	0.02	-1.22	1.54
92	Paint	2.07	mg / cm ^2	Rollup Door	Steel	Poor	GY	J.S.	1	Warehouse Off	Negative	1	0	0.02	0	0.02	0.2	2.32
93	Paint	2.46	mg / cm ^2	Wall	Wood	Poor	GY	J.S.	1	Warehouse Off	Negative	1	0	0.02	0	0.02	0.02	1.17
94	Paint	2.48	mg / cm ^2	Piping	Steel	Poor	RD	J.S.	1	N Warehouse	Negative	1	0.22	0.11	0.22	0.11	0.4	2.1
95	**Paint**	**2.07**	**mg / cm ^2**	**Floor Striping**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**N Warehouse**	**Positive**	**1.12**	**1.8**	**0.4**	**1.8**	**0.4**	**1.3**	**2.8**
96	Paint	6.63	mg / cm ^2	Expansion Gate	Steel	Poor	BK	J.S.	1	N Warehouse	Negative	1	0	0.02	0	0.02	-0.38	0.63
97	Paint	2.07	mg / cm ^2	Door	Steel	Poor	BR	J.S.	1	N Warehouse	Negative	2.91	0.05	0.14	0.05	0.14	0.17	1.62
98	Paint	4.13	mg / cm ^2	Floor Stripping	Concrete	Poor	YW	J.S.	1	N Warehouse	Negative	1.56	0.4	0.1	0.4	0.1	0.4	1.1
99	Paint	2.48	mg / cm ^2	Door	Steel	Fair	GN	J.S.	1	N Warehouse	Negative	2.8	0.04	0.11	0.04	0.11	0.5	1.7
100	Paint	2.91	mg / cm ^2	Floor Striping	Concrete	Fair	YW	J.S.	1	N Warehouse	Negative	1	0	0.02	0	0.02	-0.44	1.95
101	Paint	2.91	mg / cm ^2	Wall	Gypsum	Poor	BL	J.S.	1	N Warehouse	Negative	5.38	0.02	0.09	0.02	0.09	0.2	1.22
102	**Paint**	**1.66**	**mg / cm ^2**	**Floor Striping**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**N Warehouse**	**Positive**	**1.14**	**1.9**	**0.5**	**1.9**	**0.5**	**2.1**	**3.4**
103	**Paint**	**2.47**	**mg / cm ^2**	**Floor Striping**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**N Warehouse**	**Positive**	**1.17**	**1.4**	**0.3**	**1.4**	**0.3**	**0.8**	**2.3**
104	**Paint**	**1.25**	**mg / cm ^2**	**Stair Railing**	**Wood**	**Poor**	**YW**	**J.S.**	**1**	**N Warehouse**	**Positive**	**1.48**	**6.1**	**3.8**	**6.2**	**2.3**	**6.1**	**3.8**
105	**Paint**	**2.07**	**mg / cm ^2**	**Stair**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**N Warehouse**	**Positive**	**1.33**	**1.9**	**0.5**	**1.9**	**0.5**	**1.7**	**2.8**
106	Paint	7.43	mg / cm ^2	Rollup Door	Steel	Poor	GY	J.S.	1	S Warehouse	Negative	1.02	0	0.02	0	0.02	0.19	0.73
107	Paint	2.07	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	S Warehouse	Negative	1	0	0.02	0	0.02	0.5	2.3
108	Paint	2.89	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	S Warehouse	Negative	1	0	0.02	0	0.02	0.01	1.86
109	**Paint**	**2.08**	**mg / cm ^2**	**Floor Striping**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**S Warehouse**	**Positive**	**1.06**	**1.7**	**0.4**	**1.7**	**0.4**	**1.5**	**2.8**
110	Paint	7.45	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	S Warehouse	Negative	2.44	0.01	0.02	0.01	0.02	0.14	0.74
111	**Paint**	**2.07**	**mg / cm ^2**	**Floor Striping**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**S Warehouse**	**Positive**	**1.18**	**1.7**	**0.4**	**1.7**	**0.4**	**1.5**	**2.8**
112	Paint	7.45	mg / cm ^2	Door	Metal	Poor	BR	J.S.	1	S Warehouse	Negative	2.34	0.01	0.02	0.01	0.02	0.13	0.64
113	Paint	7.45	mg / cm ^2	Door Frame	Metal	Poor	OW	J.S.	1	S Warehouse	Negative	3.58	0.01	0.02	0.01	0.02	0.12	0.69
114	**Paint**	**1.24**	**mg / cm ^2**	**Wall (Numbering)**	**Concrete**	**Poor**	**BK/YW**	**J.S.**	**1**	**S Warehouse**	**Positive**	**1.4**	**3.8**	**1.4**	**3.8**	**1.4**	**5.1**	**4.5**
115	Paint	2.05	mg / cm ^2	Pipe	Steel	Fair	RD	J.S.	1	S Warehouse	Negative	1.13	0.4	0.2	0.4	0.2	0.4	2.3
116	Paint	3.32	mg / cm ^2	Floor Stripping	Concrete	Poor	RD	J.S.	1	S Warehouse	Negative	1.15	0.14	0.08	0.14	0.08	-0.57	1.22
117	Paint	3.72	mg / cm ^2	Floor Stripping	Concrete	Poor	YW	J.S.	1	S Warehouse	Negative	1.01	0.17	0.05	0.17	0.05	0.01	1.11
118	**Paint**	**1.65**	**mg / cm ^2**	**Railing**	**Wood**	**Poor**	**YW**	**J.S.**	**1**	**S Warehouse**	**Positive**	**1.44**	**5.8**	**3.1**	**6.5**	**1.5**	**5.8**	**3.1**
119	**Paint**	**2.05**	**mg / cm ^2**	**Step**	**Concrete**	**Poor**	**YW**	**J.S.**	**1**	**S Warehouse**	**Positive**	**1.02**	**1.6**	**0.4**	**1.6**	**0.4**	**2**	**2.8**
120	Paint	2.07	mg / cm ^2	Door	Metal	Poor	BR	J.S.	1	S Warehouse	Negative	1.92	0.01	0.04	0.01	0.04	-0.34	2.03
121	Paint	2.49	mg / cm ^2	Door	Metal	Poor	WH	J.S.	1	S Warehouse	Negative	1	0	0.02	0	0.02	0.3	2.03
122	**Paint**	**1.25**	**mg / cm ^2**	**Wall Numbering**	**Concrete**	**Poor**	**BK/YW**	**J.S.**	**1**	**S Warehouse**	**Positive**	**1.29**	**3.2**	**1.1**	**3.2**	**1.1**	**1.8**	**4.2**
123	Paint	7.44	mg / cm ^2	Fire Main Pipe	Steel	Poor	RD	J.S.	1	S Warehouse	Negative	4.09	0.01	0.03	0.01	0.03	-0.06	0.73

Reading	Type	Duration	Units	COMPONENT	SUBSTRATE	COND	CLR	INSP	FLR	ROOM	Results	Depth Index	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
124	Paint	2.06	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	S Warehouse	Positive	1.08	1.9	0.5	1.9	0.5	2.1	2.8
125	Paint	1.24	mg / cm ^2	Column Base	Steel	Poor	RD	J.S.	1	S Warehouse	Positive	1.3	3.4	1.2	3.4	1.2	3.6	3.9
126	Paint	1.65	mg / cm ^2	Column Base	Steel	Poor	RD	J.S.	1	S Warehouse	Positive	1.29	2.6	1	2.6	1	2.3	3.7
127	Paint	1.24	mg / cm ^2	Column Base	Steel	Poor	RD	J.S.	1	S Warehouse	Positive	1.19	3.1	1.1	3.1	1.1	3.1	4.1
128	Paint	4.16	mg / cm ^2	Crane Steel Angle	Steel	Poor	RD	J.S.	1	S Warehouse	Positive	1.44	10	1.8	9.5	1.5	10	1.8
129	Paint	3.71	mg / cm ^2	Crane WF Beam	Steel	Poor	RD	J.S.	1	S Warehouse	Positive	1.48	11.4	2	10.1	1.8	11.4	2
130	Paint	7.43	mg / cm ^2	Switch Gear	Cast Iron	Poor	GY	J.S.	1	S Warehouse	Negative	1	0.02	0.02	0.02	0.02	-0.12	0.67
131	Paint	17.31	mg / cm ^2	Rain Gutter	Steel	Poor	BR	J.S.	1	SW Exterior	Negative	10	0.4	0.5	0.16	0.15	0.4	0.5
132	Paint	15.35	mg / cm ^2	Loading Dock Guard	Steel	Poor	YW	J.S.	1	SW Exterior	Negative	1.07	0.9	0.1	0.9	0.1	1.1	0.5
133	Paint	2.48	mg / cm ^2	Drainpipe	Steel	Poor	BR	J.S.	1	SW Exterior	Negative	7.17	0.13	0.35	0.13	0.35	0.1	2.07
134	Paint	7.45	mg / cm ^2	Hydrant	Steel	Poor	RD	J.S.	1	SW Exterior	Negative	1.07	0.4	0.1	0.4	0.1	0.23	0.77
135	Paint	2.07	mg / cm ^2	Railing	Steel	Poor	BR	J.S.	1	W Exterior	Negative	4.2	0.19	0.28	0.19	0.28	1.5	2.4
136	Paint	0.42	mg / cm ^2								Null	1	0	0.03	0	0.03	-0.36	5.89
137	Paint	4.97	mg / cm ^2	Wall	Stucco	Poor	YW	J.S.	1	W Exterior	Negative	1	0	0.02	0	0.02	0.6	0.7
138	Paint	21.01	mg / cm ^2	Wall	Stucco	Poor	BE	J.S.	1	W Exterior	Negative	4.71	0.01	0.02	0.01	0.02	0.7	0.4
139	Paint	2.06	mg / cm ^2	Railing	Steel	Poor	BR	J.S.	1	W Exterior	Negative	2.4	0.17	0.18	0.17	0.18	1.4	2.4
140	Paint	1.24	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	W Exterior	Positive	1.71	4.7	1.8	4.7	1.8	4.6	4.4
141	Paint	7.02	mg / cm ^2	Standpipe	Steel	Poor	RD	J.S.	1	W Exterior	Positive	2.05	2	0.9	0.9	0.1	2	0.9
142	Paint	1.66	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	W Exterior	Positive	1.42	3	0.8	3	0.8	3.1	3.4
143	Paint	4.15	mg / cm ^2	Loading Dock	Steel	Poor	YW	J.S.	1	W Exterior	Negative	1.05	0.8	0.1	0.8	0.1	0.7	1.1
144	Paint	12.02	mg / cm ^2	L. Dock Steel Angle	Steel	Poor	YW	J.S.	1	W Exterior	Positive	1.19	1.1	0.1	1.1	0.1	1	0.6
145	Paint	2.07	mg / cm ^2	Door	Steel	Poor	BR	J.S.	1	W Exterior	Negative	1.11	0	0.02	0	0.02	-0.03	2.06
146	Paint	2.07	mg / cm ^2	Door Frame	Steel	Poor	BR	J.S.	1	W Exterior	Negative	1.35	0.01	0.02	0.01	0.02	0.4	2.3
147	Paint	1.65	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	NW Exterior	Positive	1.28	2.2	0.6	2.2	0.6	2	3.2
148	Paint	2.07	mg / cm ^2	Steel Step	Steel	Poor	BR	J.S.	1	N Exterior	Negative	2.27	0.02	0.05	0.02	0.05	0.4	2.3
149	Paint	2.48	mg / cm ^2	Steel Bumper	Steel	Poor	BK	J.S.	1	N Exterior	Negative	1	0	0.02	0	0.02	-0.34	1.98
150	Paint	7.46	mg / cm ^2	L. Dock Steel Angle	Steel	Poor	YW	J.S.	1	N Exterior	Positive	1.21	2.2	0.2	2.2	0.2	2.4	0.9
151	Paint	2.48	mg / cm ^2	Loading Door	Steel	Poor	BR	J.S.	1	N Exterior	Negative	10	0.27	0.68	0.27	0.68	0.04	2.01
152	Paint	1.65	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	N Exterior	Positive	1.23	3.8	0.8	3.8	0.8	4.1	3.5
153	Paint	2.06	mg / cm ^2	Exterior Wall	Stucco	Poor	TN	J.S.	1	NE Exterior	Positive	2.48	2.6	0.8	2.6	0.8	3.8	2.9
154	Paint	2.48	mg / cm ^2	Exterior Wall	Stucco	Poor	TN	J.S.	1	E Exterior	Positive	2.65	2.6	0.8	2.6	0.8	3.5	2.5
155	Paint	10.34	mg / cm ^2	Angle Guard Door	Steel	Poor	YW	J.S.	1	E Exterior	Positive	1.08	1.1	0.1	1.1	0.1	1.5	0.7
156	Paint	2.89	mg / cm ^2	Exterior Wall	Stucco	Poor	TN	J.S.	1	E Exterior	Positive	3.7	1.9	0.7	1.9	0.7	4	2.3
157	Paint	2.48	mg / cm ^2	Rain Gutter	Metal	Poor	BR	J.S.	1	SE Exterior	Negative	7.49	0.17	0.35	0.17	0.35	0.5	2.2
158	Paint	2.48	mg / cm ^2	Bollard	Steel	Poor	YW	J.S.	1	S Exterior	Positive	1.22	1.7	0.4	1.7	0.4	1.9	2.4
159	Paint	2.89	mg / cm ^2	Exterior Wall	Stucco	Poor	TN	J.S.	1	S Exterior	Positive	3.47	1.7	0.6	1.7	0.6	3.8	2.3
160	Paint	2.08	mg / cm ^2	CALIBRATION							Negative	1	0	0.02	0	0.02	-0.1	1.45
161	Paint	1.66	mg / cm ^2	CALIBRATION							Positive	1.33	3.6	1.3	3.6	1.3	3.4	3.3
162	Paint	21.12	mg / cm ^2	CALIBRATION							Positive	1.08	1	0.1	1	0.1	0.7	0.3
163	Paint	3.32	mg / cm ^2	CALIBRATION							Positive	1.04	1.3	0.3	1.3	0.3	0.8	0.9
164	Paint	2.06	mg / cm ^2	CALIBRATION							Negative	1.03	0.6	0.2	0.6	0.2	-0.07	1.6

Reading	Type	Duration	Units	COMPONENT	SUBSTRATE	COND	CLR	INSP	FLR	ROOM	Results	Depth Index	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
165	Paint	2.07	mg / cm ^2	CALIBRATION							Negative	1	0.27	0.13	0.27	0.13	0.04	1.36

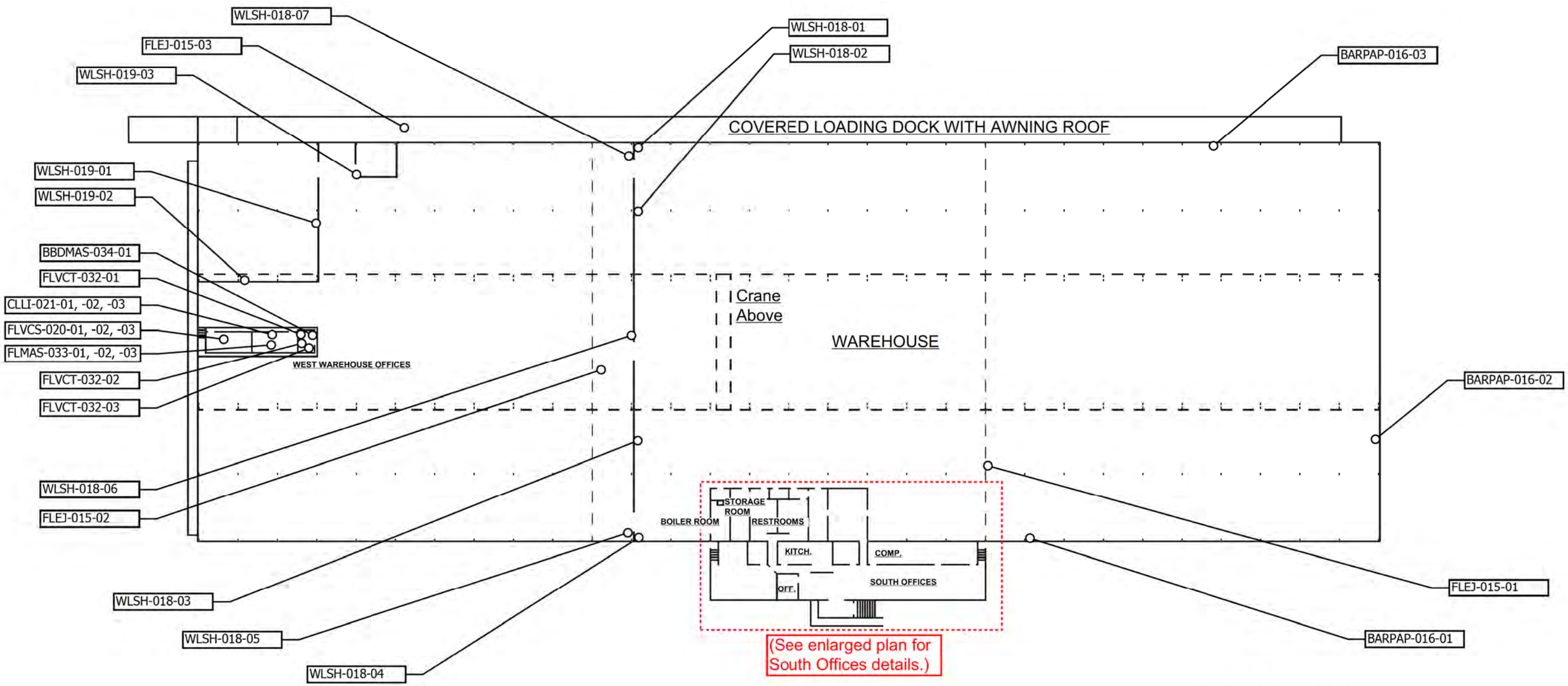
Attachment 6

Sample and Material Location Drawings



ROOF PLAN

N.T.S.



FLOOR PLAN

N.T.S.

DRAWING NOT TO SCALE

KEY

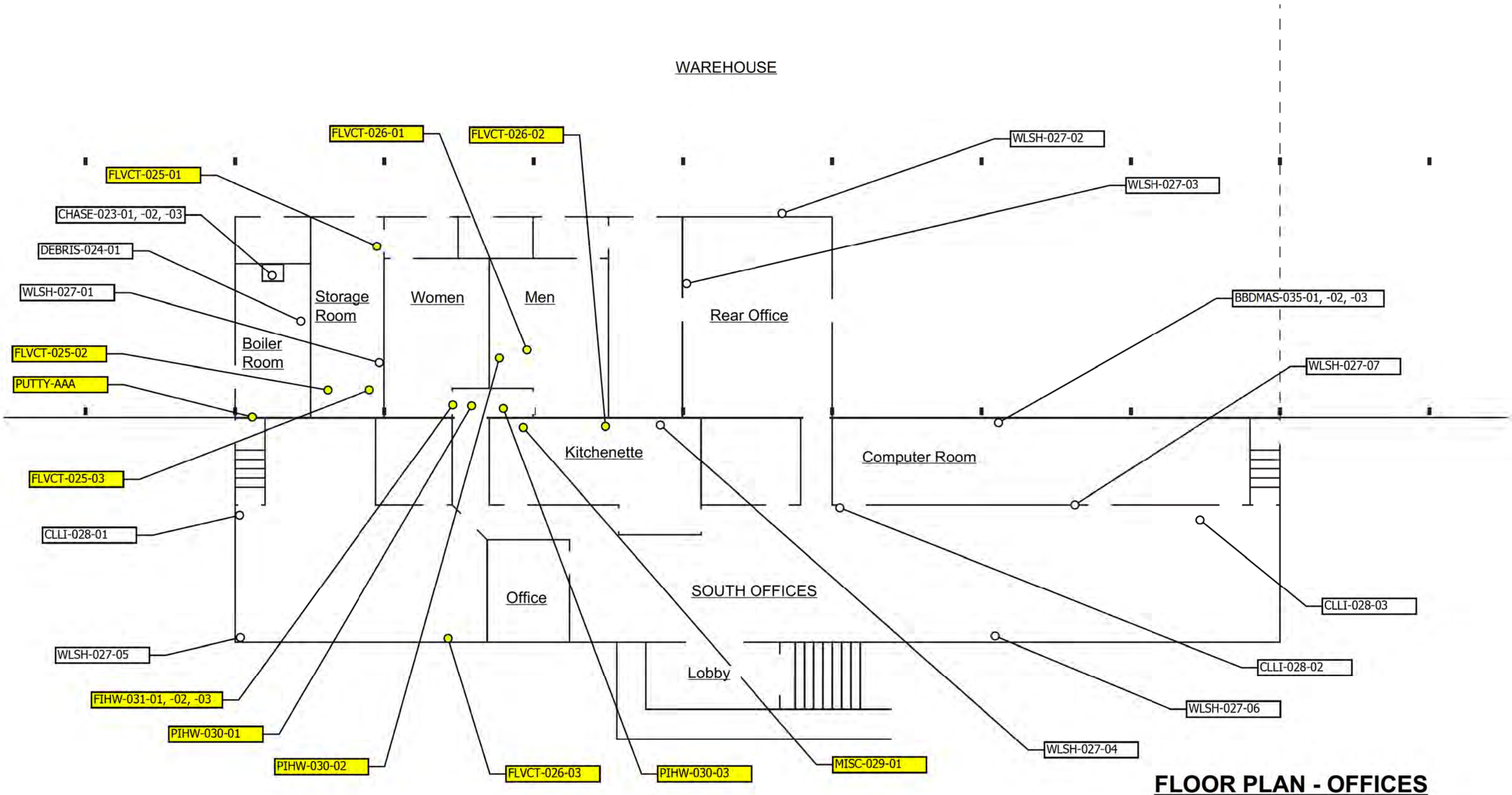
Sample ID = Bulk Asbestos Sample

Sample ID = ACM/ACCM Bulk Asbestos Sample

O = Sample Location

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
INTERIOR
Asbestos Sample Location Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



FLOOR PLAN - OFFICES

N.T.S.

DRAWING NOT TO SCALE

KEY

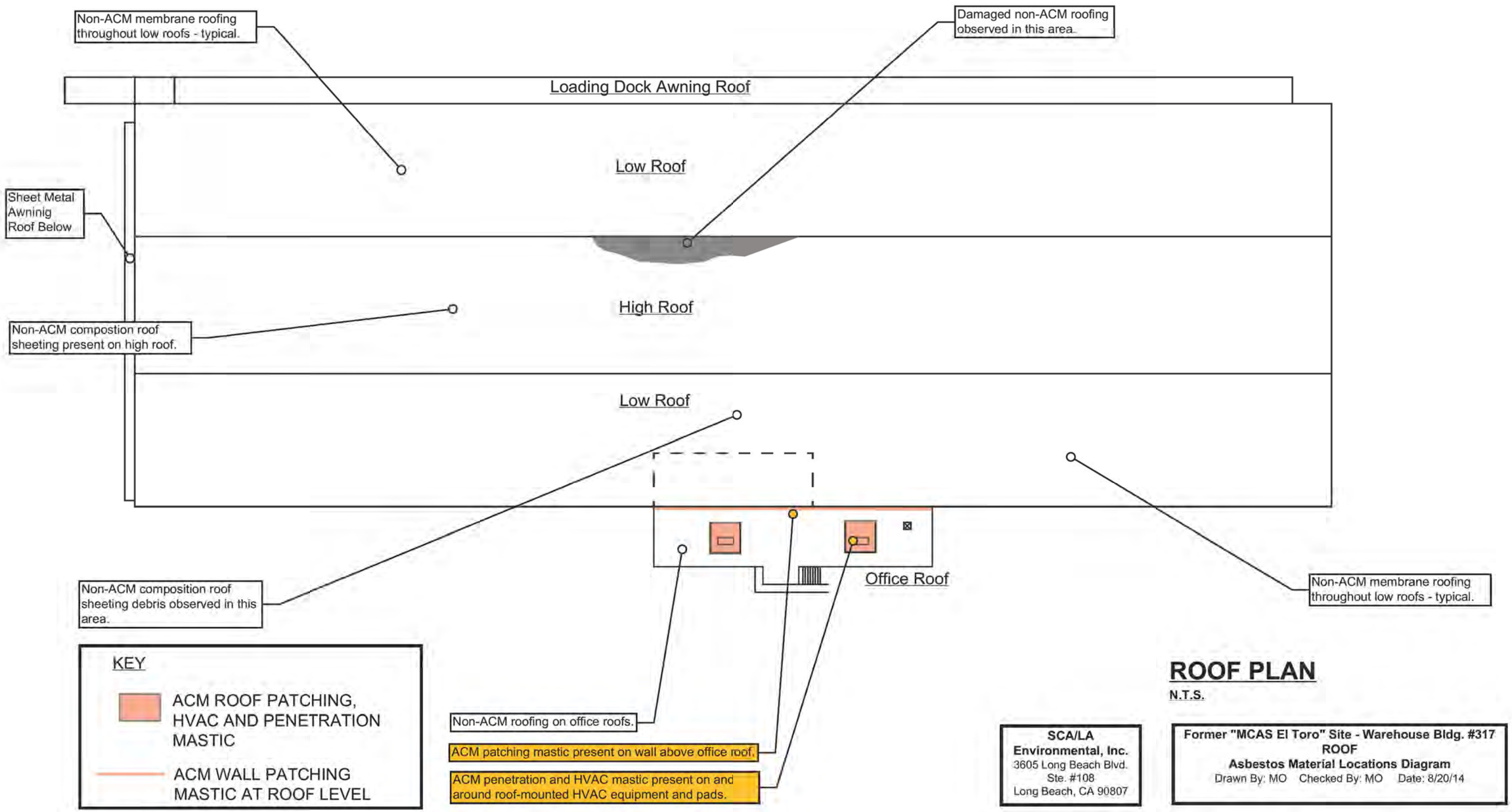
Sample ID = Bulk Asbestos Sample

Sample ID = ACM/ACCM Bulk Asbestos Sample

O = Sample Location

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
INTERIOR (OFFICE AREAS)
Asbestos Sample Location Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



ROOF PLAN

N.T.S.

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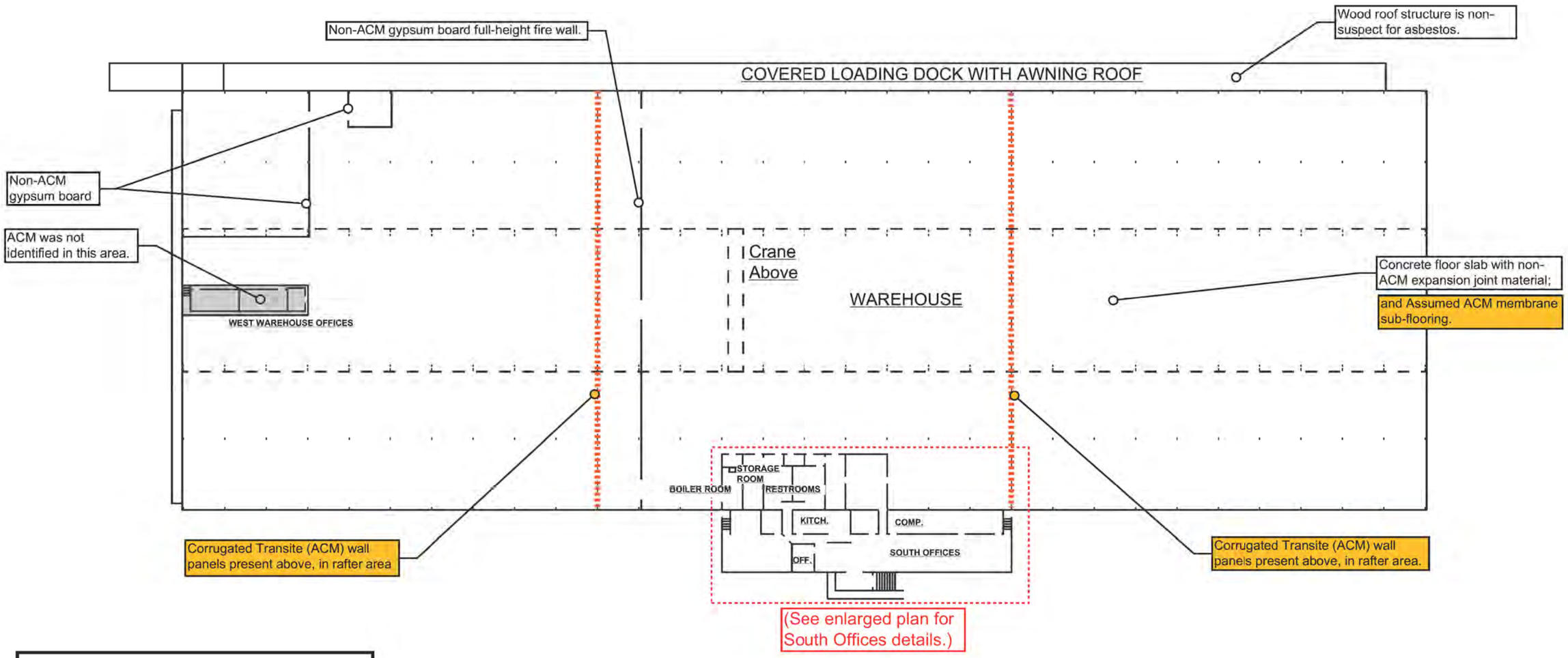
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
ROOF
Asbestos Material Locations Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



KEY

CORRUGATED TRANSITE (ACM) WALL PANELS

FLOOR PLAN

N.T.S.

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Environmental, Inc.
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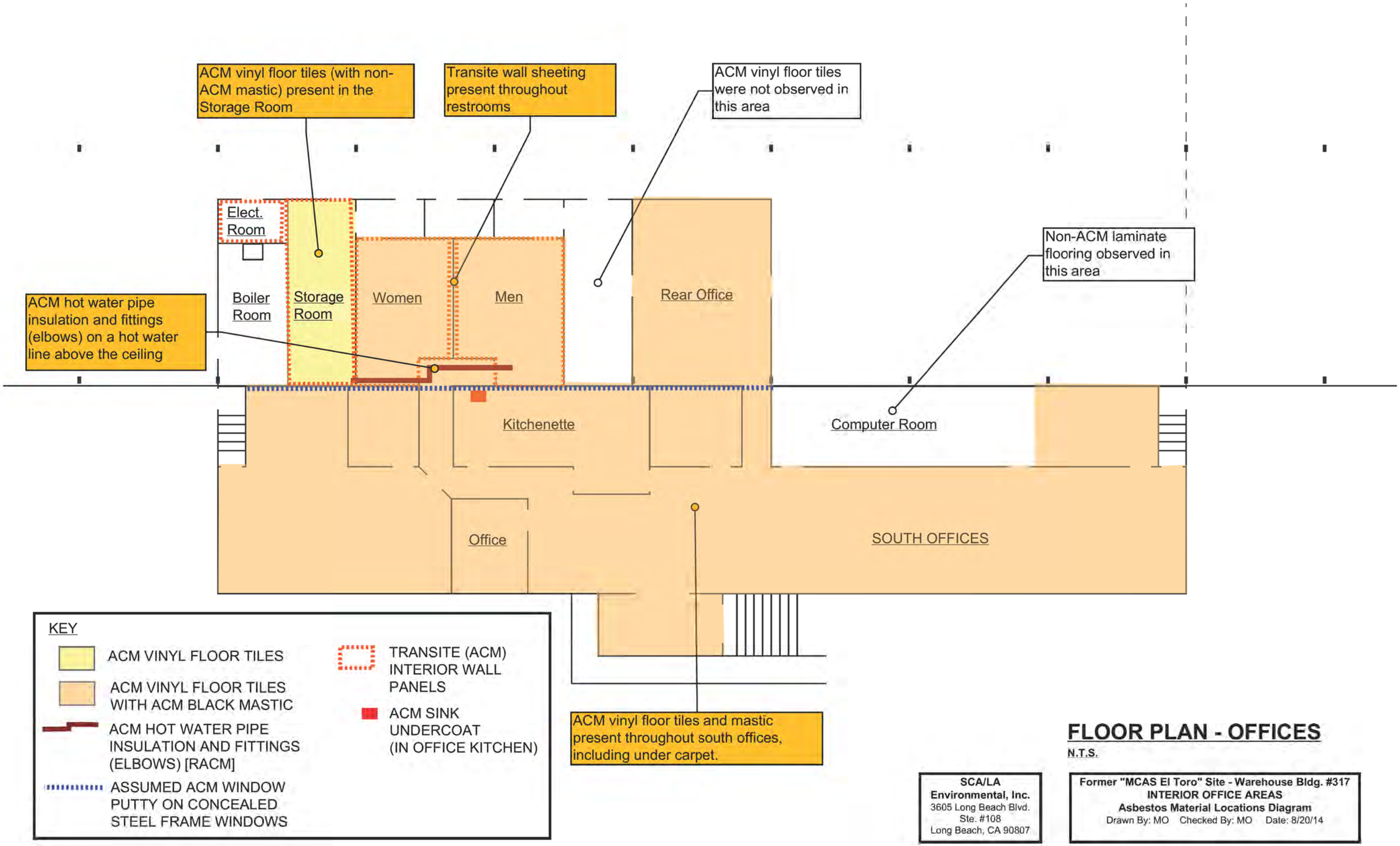
Former "MCAS El Toro" Site - Warehouse Bldg. #317
WAREHOUSE INTERIOR
Asbestos Material Locations Diagram
Drawn By: MO Checked By: MO Date: 8/20/14

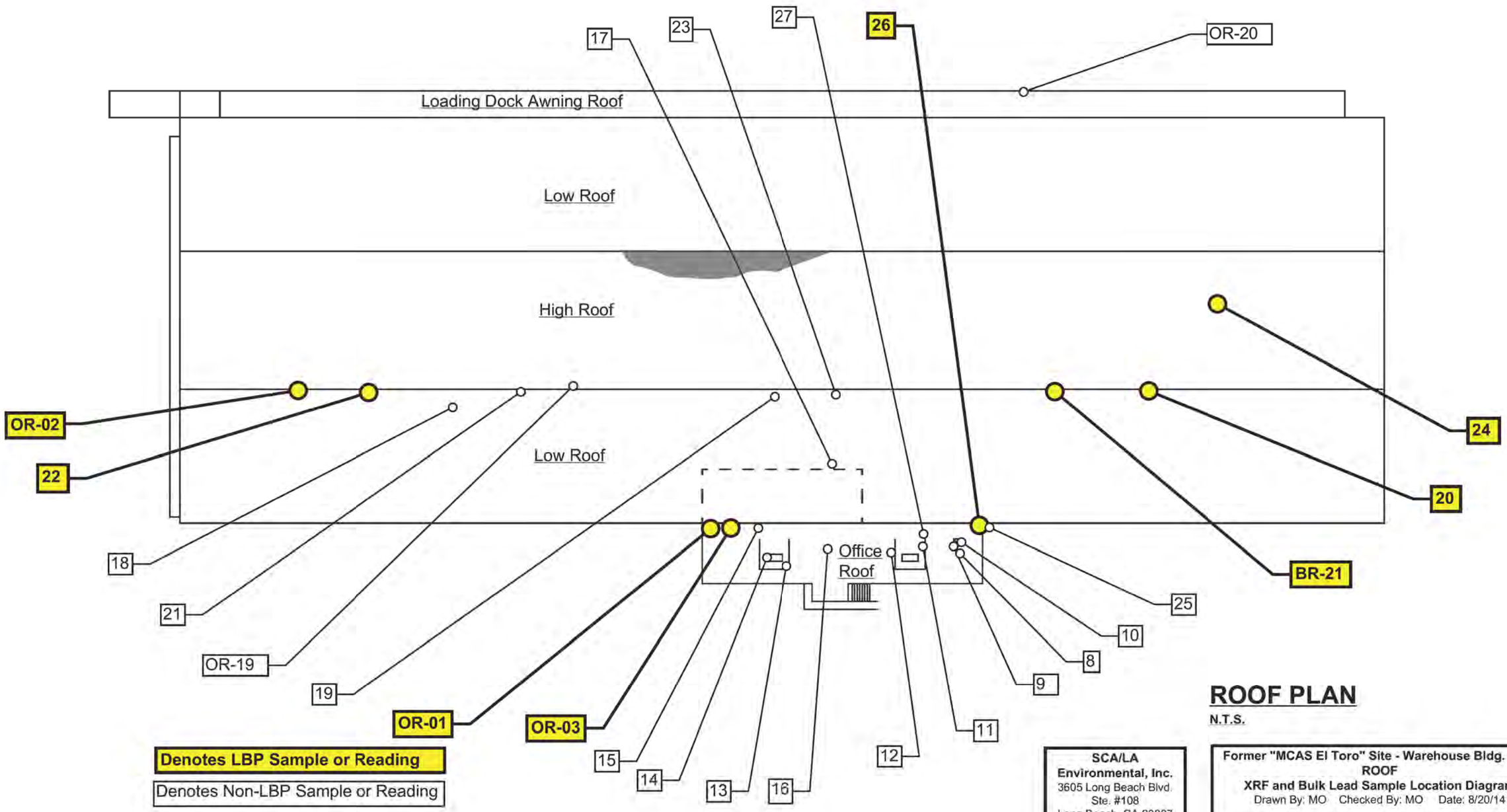


FLOOR PLAN - OFFICES

N.T.S.

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
INTERIOR OFFICE AREAS
Asbestos Material Locations Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



ROOF PLAN

N.T.S.

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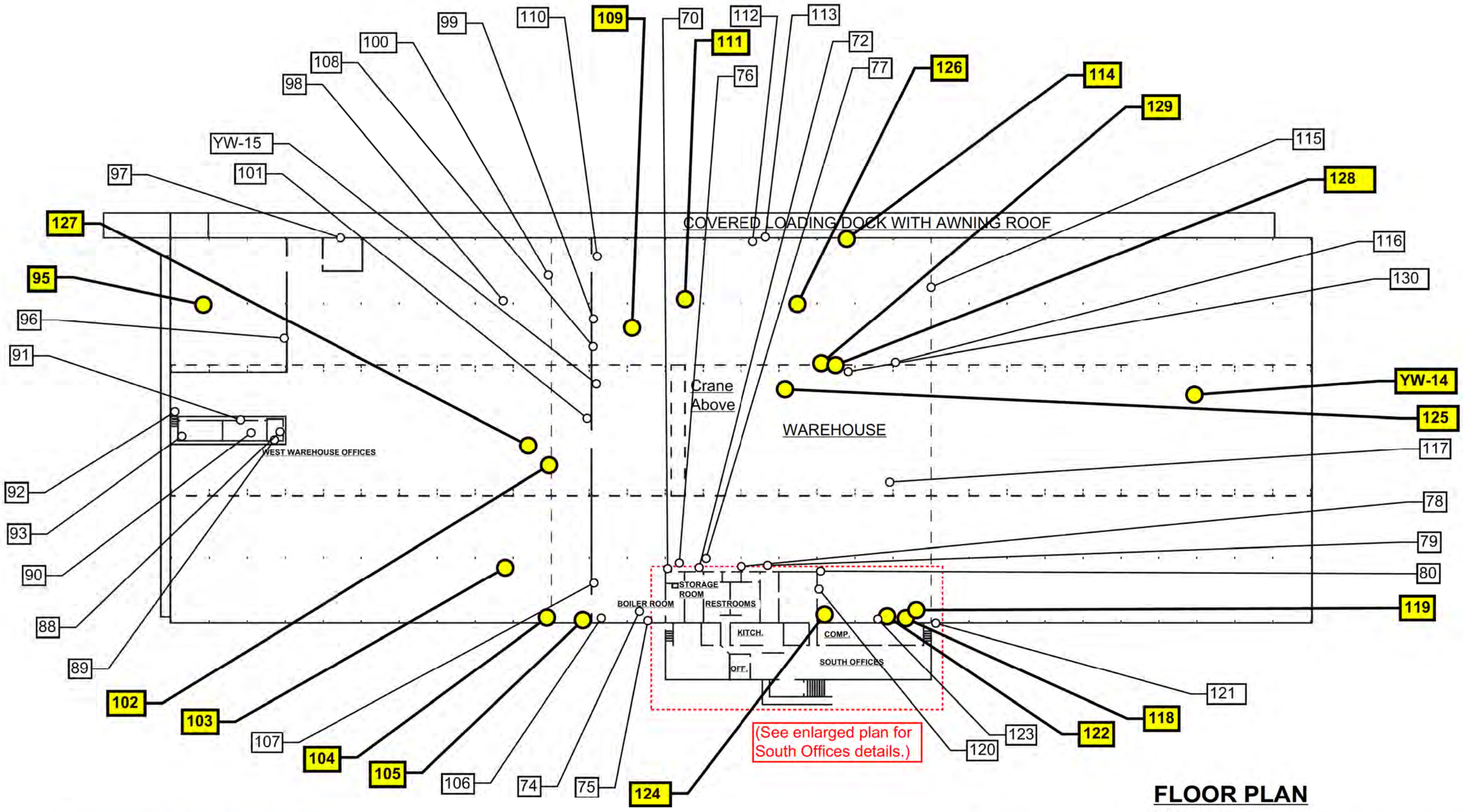
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
ROOF
XRF and Bulk Lead Sample Location Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



Denotes LBP Sample or Reading

Denotes Non-LBP Sample or Reading

FLOOR PLAN

N.T.S.

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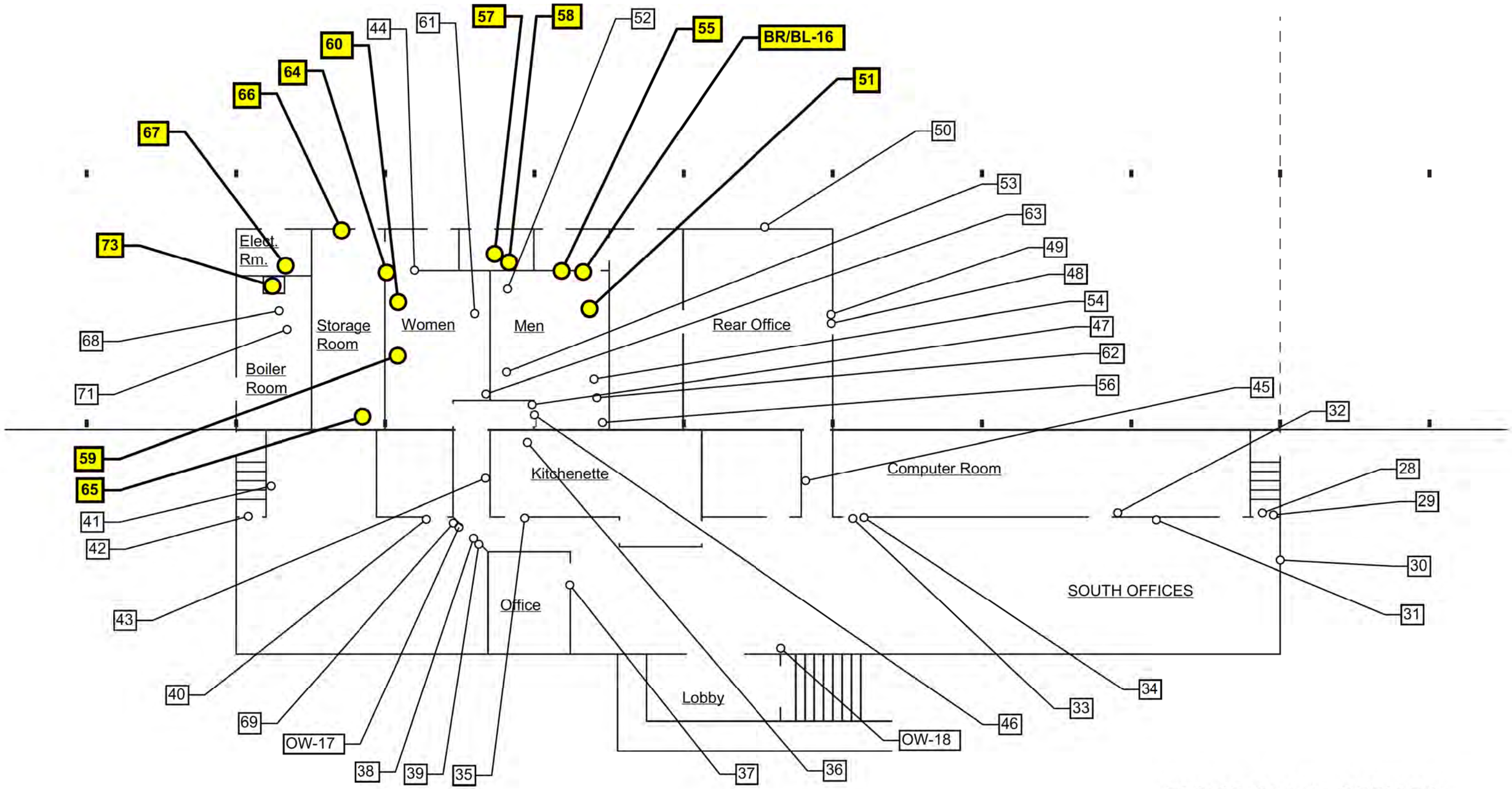
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
WAREHOUSE INTERIOR
XRF and Bulk Lead Sample Location Diagram
Drawn By: MO Checked By: MO Date: 08/20/14



FLOOR PLAN - OFFICES

N.T.S.

Denotes LBP Sample or Reading

Denotes Non-LBP Sample or Reading

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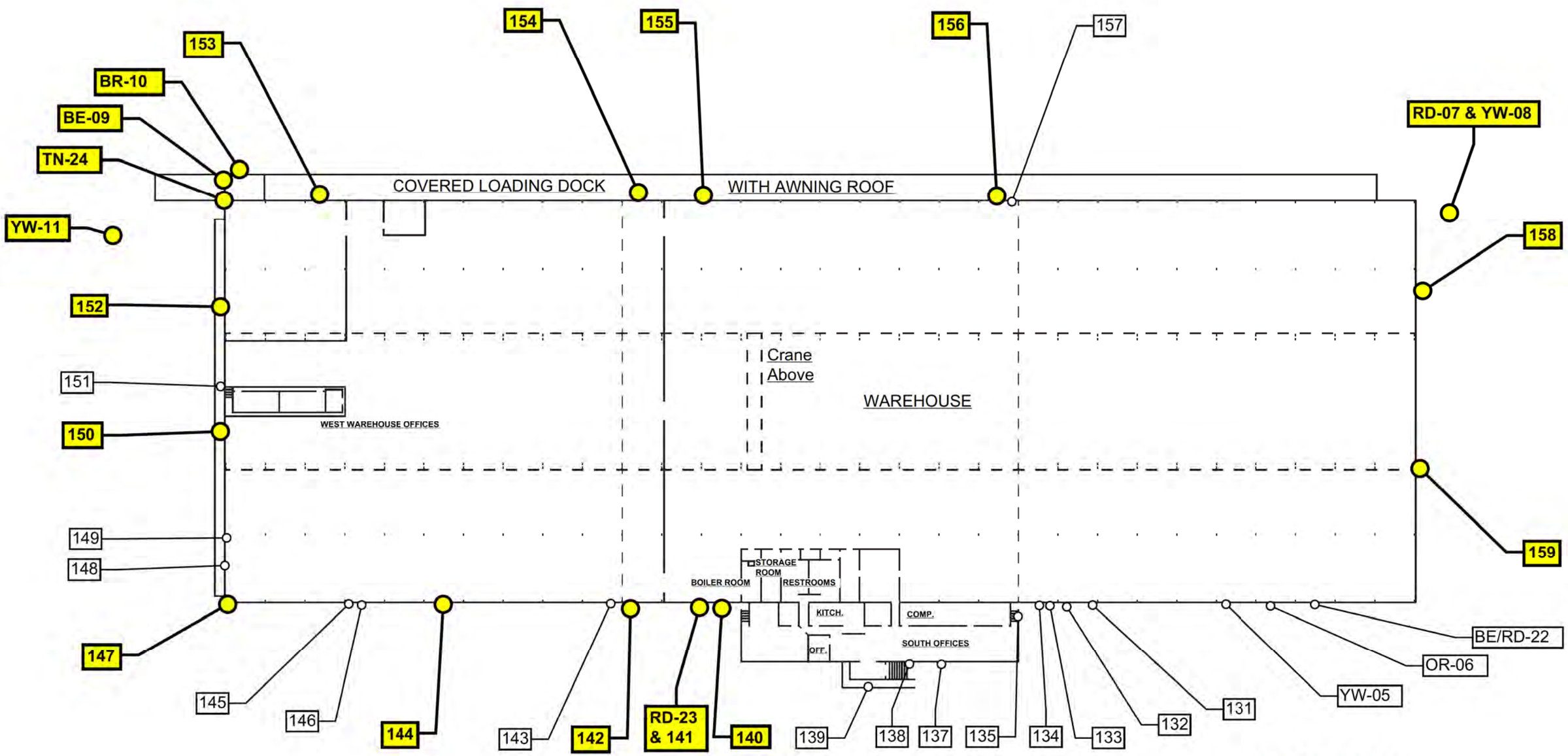
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
INTERIOR OFFICE AREAS
XRF and Bulk Lead Sample Location Diagram
Drawn By: MO Checked By: MO Date: 08/20/14



FLOOR PLAN

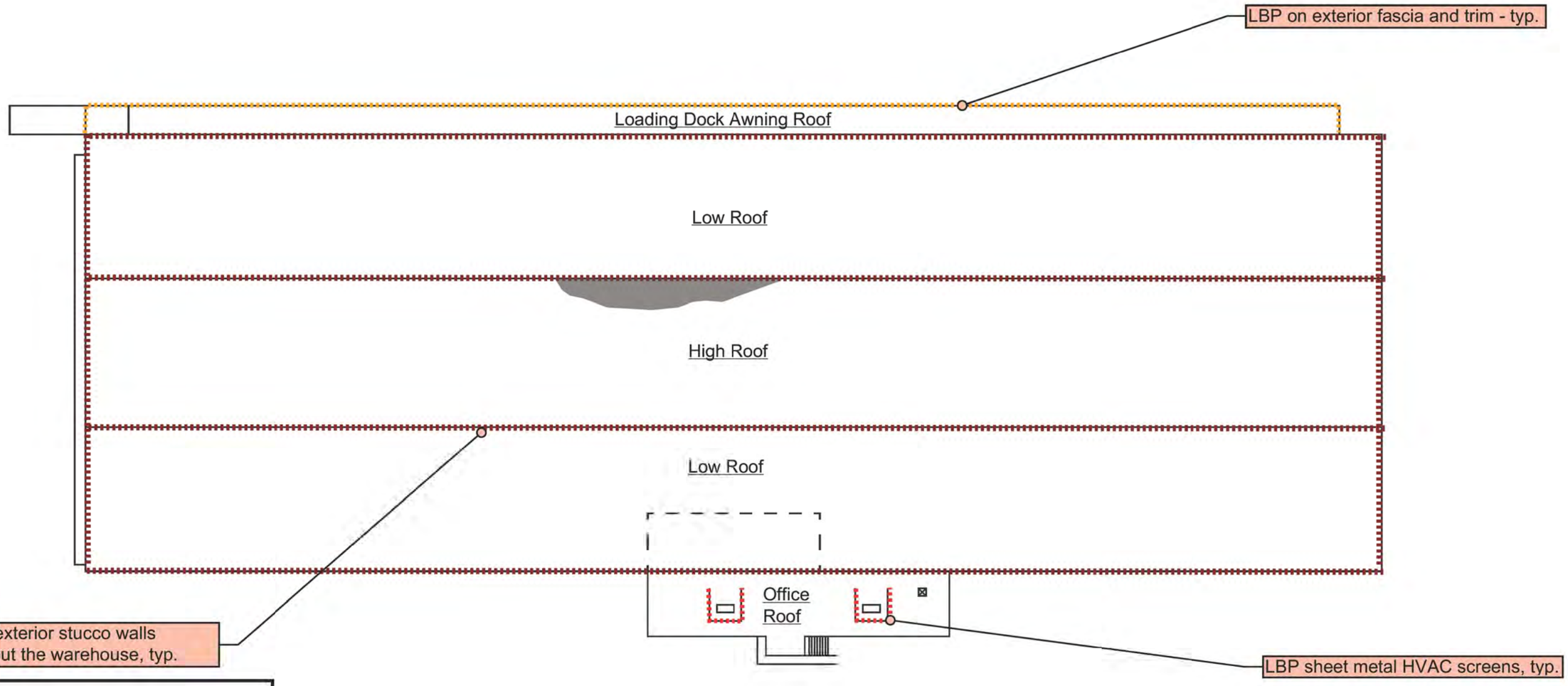
N.T.S.

Denotes LBP Sample or Reading

Denotes Non-LBP Sample or Reading

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
EXTERIOR
XRF & Bulk Lead Sample Location Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



KEY

- LBP ON EXTERIOR STUCCO WALLS, TYP.
- LBP ON HVAC EQUIPMENT SCREENS ON THE ROOF
- LBP ON WOOD EXTERIOR FASCIA

ROOF PLAN

N.T.S.

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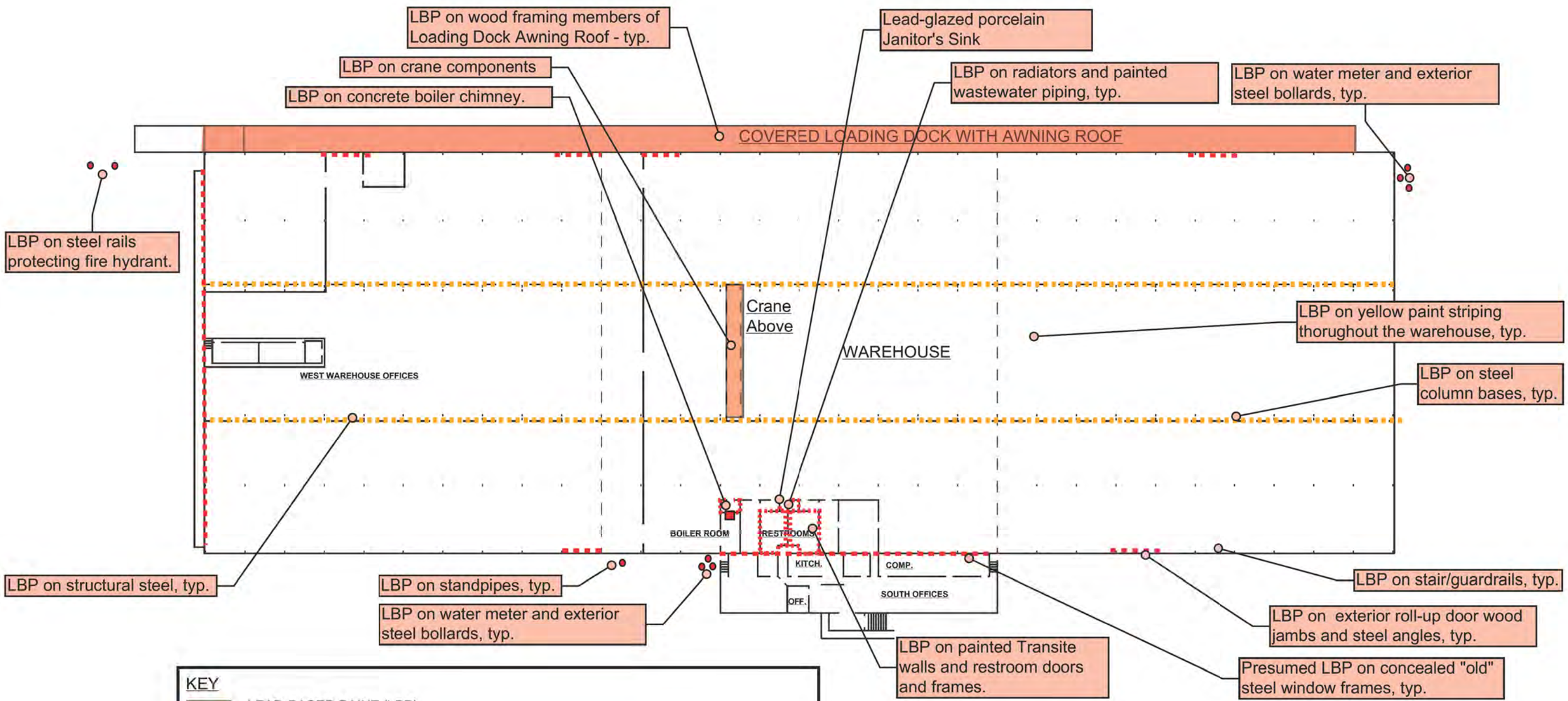
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
ROOF & EXTERIOR WALLS
Lead Paint Location Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



KEY

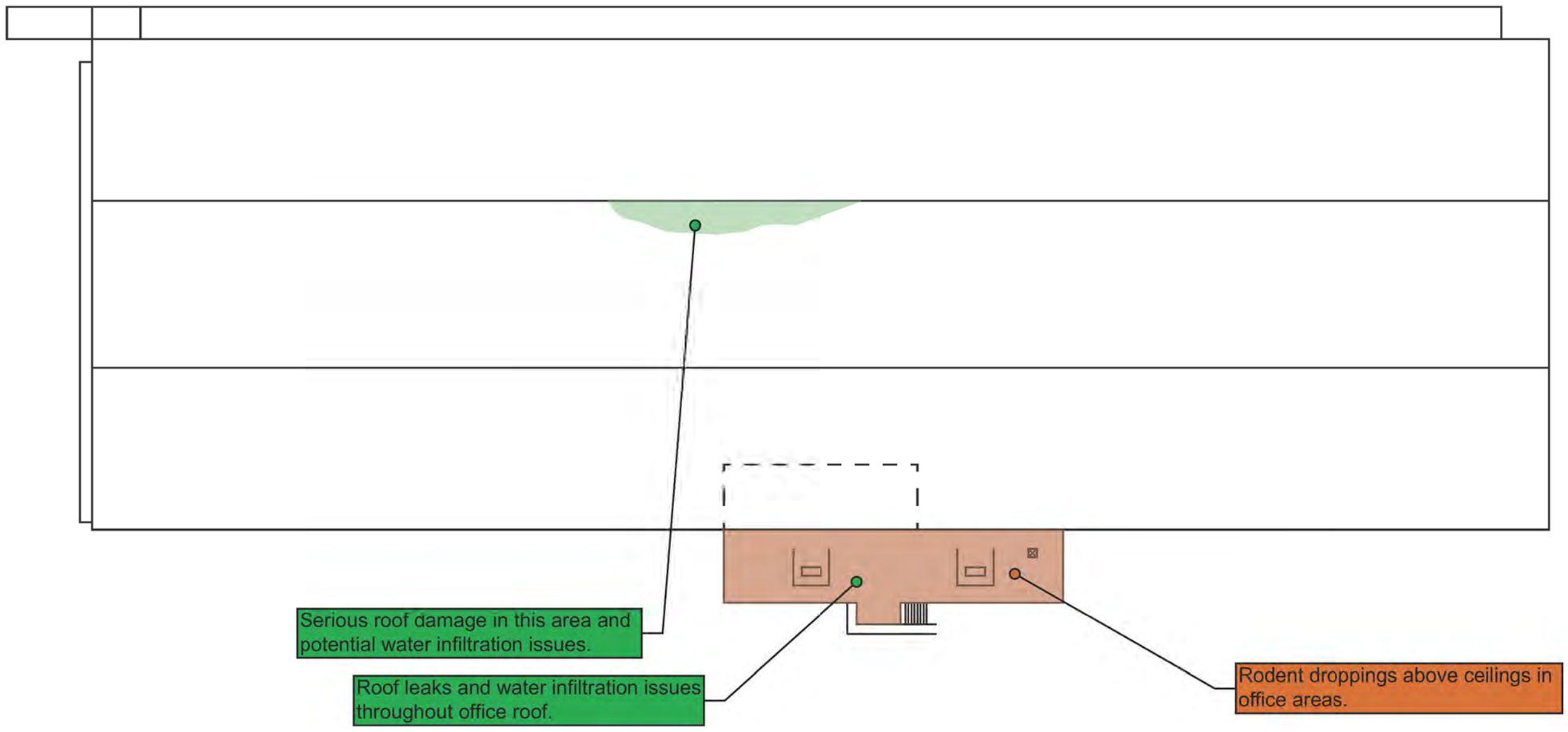
- LEAD-BASED PAINT (LBP) ON WOOD FRAMING MEMBERS
- LBP ON STEEL CRANE
- LBP ON STRUCTURAL STEEL
- LBP ON ROLL-UP DOOR FRAMES, STEEL ANGLES AND WINDOW FRAMES
- LBP ON TRANSITE INTERIOR WALL PANELS
- LBP ON CONCRETE CHIMNEY
- LBP ON STANDPIPES, RAILS AND STEEL BOLLARDS

FLOOR PLAN

N.T.S.

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
INTERIOR & EXTERIOR
Lead Paint Location Diagram
Drawn By: MO Checked By: MO Date: 8/20/14



ROOF PLAN

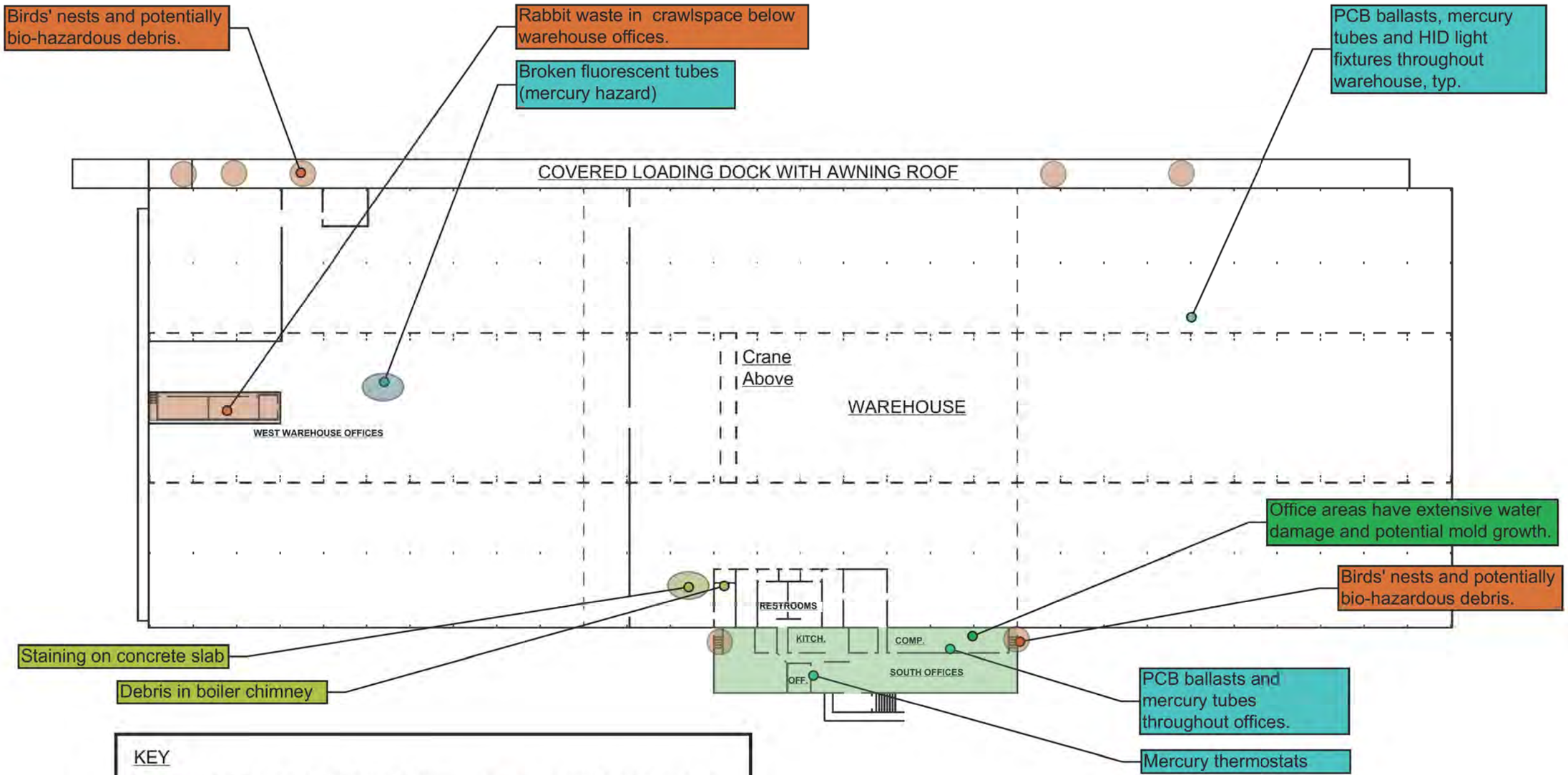
N.T.S.

KEY

RABBIT OR RODENT WASTE (INCLUDING ABOVE CEILINGS AND BELOW FLOORS)

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
ROOF & ABOVE CEILINGS
Other Hazardous Materials
Drawn By: MO Checked By: MO Date: 8/20/14



KEY

- EXTENSIVE WATER DAMAGE AND POTENTIAL MOLD GROWTH
- ACTIVE BIRDS' NESTS AND RELATED BIO-HAZARDOUS WASTE
- RABBIT OR RODENT WASTE (INCLUDING ABOVE CEILINGS AND BELOW FLOORS)
- DEBRIS FROM BROKEN MERCURY TUBES
- AREA OF SLAB DISCOLORATION AND DAMAGE (MAY BE CHEMICALLY RELATED)

FLOOR PLAN

N.T.S.

SCA/LA Environmental, Inc.
3605 Long Beach Blvd.
Ste. #108
Long Beach, CA 90807

Former "MCAS El Toro" Site - Warehouse Bldg. #317
INTERIOR
Other Hazardous Materials
Drawn By: MO Checked By: MO Date: 8/20/14

Attachment 7

SCA/LA Staff Certifications

STATE OF CALIFORNIA
Edmund G. Brown, Jr. *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2424 Arden Way, Suite 495
Sacramento, CA 95825-2417
(916) 574-2993 Office (916) 483-0572 Fax
http://www.dir.ca.gov/dirdatabases.html actu@dir.ca.gov

605101959C **124**

May 13, 2014

Mark H Osborn
202 East Bixby Rd.
Long Beach , CA 90807

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address, fax number or email; of any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

acknowledges by this

Certificate of Completion

that

MARK OSBORN

successfully completed AQMD's Rule 1403 -
Asbestos Emissions from Demolition / Renovation Activities
Compliance Promotion Class
Certification Number: ***159780***

May 16, 2007

Date of completion

Edwin L. Pupka

Edwin L. Pupka, Senior Manager
Refinery, Energy & Air Toxics
Engineering & Compliance

Mr. Mark H. Osborn
SCA/LA Environmental, Inc.
3605 Long Beach Boulevard Suite 108
Long Beach, California 90807

STATE OF CALIFORNIA

dca

DEPARTMENT OF CONSUMER AFFAIRS

Renewal License

ARCHITECT

CALIFORNIA ARCHITECTS BOARD
2420 DEL PASO ROAD, SUITE 105
SACRAMENTO, CA 95834
916 574-7220

LICENSE NO. C 17478
RECEIPT NO. 31810841

VALID UNTIL JUNE 30, 2015

In accordance with the Provision of Section 5500 of the Business and Professions Code, the individual named hereon is licensed as an Architect and is subject to the rules and regulations of the California Architects Board.

MARK H. OSBORN
202 E BIXBY RD
LONG BEACH CA 90807

07/08/13

07/08/13

----- NON-TRANSFERABLE --- POST IN PUBLIC VIEW -----

WAEC 12/31/07

Institute of Hazardous Materials Management

This certifies that

Mark H. Osborn

has successfully met all the requirements of education, experience and examination, and is hereby designated a

Certified Hazardous Materials Manager®

October 1998
Date of Certification

09353
Credential Number

October 31, 2016
Certification Expires

Executive Director

Valid so long as this credential is renewed according to schedule and is not otherwise revoked.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2424 Arden Way, Suite 495
Sacramento, CA 95825-2417
(916) 574-2993 Office (916) 483-0572 Fax
http://www.dir.ca.gov/dirdatabases.html actu@dir.ca.gov

Edmund G. Brown, Jr. *Governor*

204153135T **238**

SCA Environmental, Inc.
Jeffrey W Schmidt
3605 Long Beach Blvd., #108
Long Beach , CA 90807

April 16, 2014

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address, fax number or email; of any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 10/24/2012)

State of California Department of Public Health
Lead-Related Construction Certificate
Certificate Type
Expiration Date
Inspector/Assessor
01/27/2015
Jeffrey W. Schmidt
ID #: 13634

Attachment 8

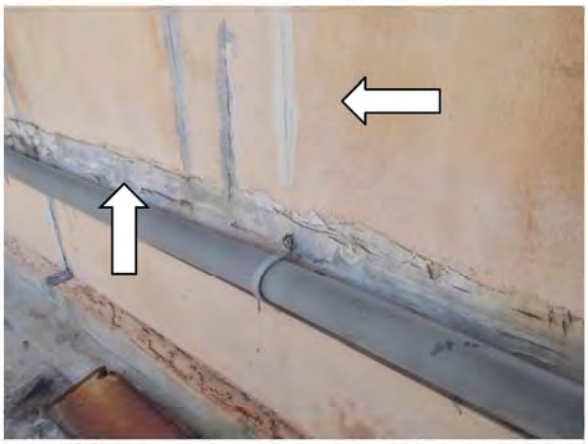
Photographs

Photographs: Former MCAS El Toro Site
Warehouse Building (#317)

1. Overview of Warehouse Building – from West.

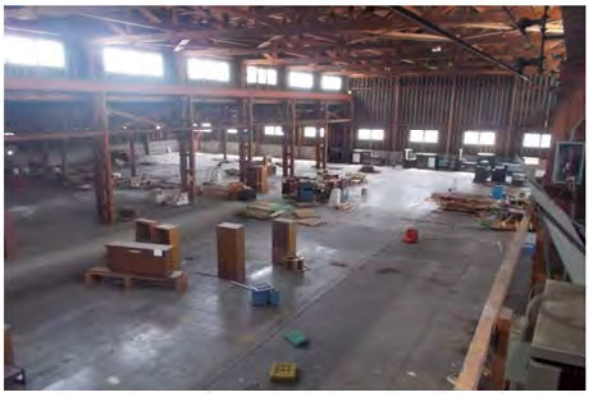
2. Overview of the Warehouse Building – from Southwest.

3. ACM silver/black/beige roof and HVAC mastic on south lower roof in HVAC enclosures [RFMAS-006, with 5% CH].



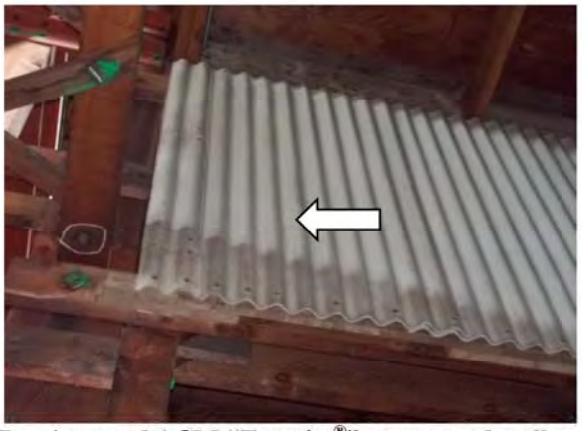
4. ACM gray roof mastic, south roof at non-ACM stucco wall. [RFMAS-007 with 5% CH]. Orange/tan paint is LBP throughout [OR-02, with 6,800 ppm lead and XRF testing].

5. Peeling beige LBP on HVAC screen wall at south lower roof [BE-04, with 28,000 ppm].



6. Overview of Warehouse Interior. (Membrane *may* be present under concrete floor.) [FLMEMB-AAA, assumed asbestos containing].

Photographs: Former MCAS El Toro Site
Warehouse Building (#317) – *Continued*



7. Assumed ACM "Transite®" corrugated wall panels, warehouse interior [WLTRAN-AAA, assumed >1%].

8. Assumed ACM inaccessible window putty (concealed windows), in Boiler Room and above offices [PUTTY-AAA, assumed >1%].

9. LBP on concrete chimney in Boiler Room [XRF #73, with 2.7 mg/cm^2]; Miscellaneous debris in chase is non-ACM.

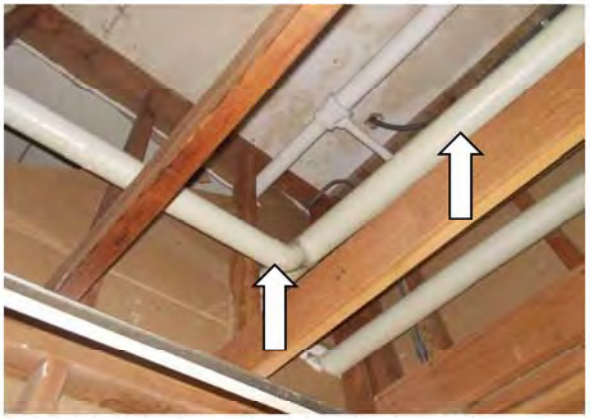
10. ACM beige vinyl floor tiles and non-ACM mastic, in Storage Room [FLVCT-025, with 2% CH]. Note: Waste has been removed.

11. ACM 12" x 12" tan vinyl floor tiles and mastic at south offices & under carpeting [FLVCT-026, with 3% CH (tiles) & 5% CH (black mastic)].

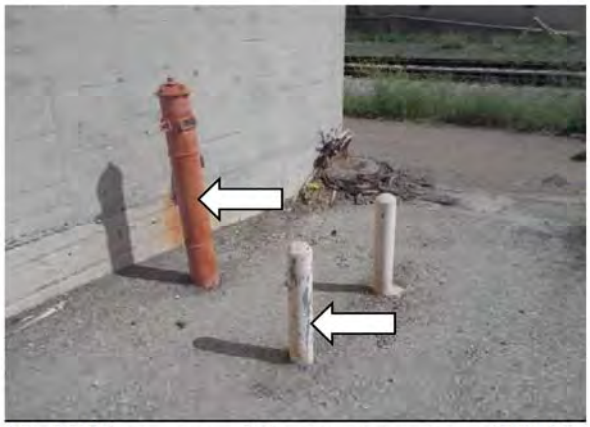
12. ACM white undercoat on stainless steel sink in Kitchen at south offices [MISC-029, with 3% CH].

Photographs: Former MCAS El Toro Site
Warehouse Building (#317) - *Continued*

13. Assumed ACM "Transite®" interior wall panels in Restrooms, Electrical Room and Janitor's Closet [WLTRAN-AAA, assumed ACM >1%]. Paint is LBP [XRF readings > 1.0 mg/cm^2].



14. RACM (friable asbestos) pipe insulation and fittings (elbows) above ceiling near restrooms at south offices [PIHW-030, with 35% CH, and FIHW-31, with 10% CH & 5% AM].



15. LBP in poor condition on water meter [RD-07 with 25,000 ppm] and steel bollards [YW-08, with 83,000 ppm], exterior east side

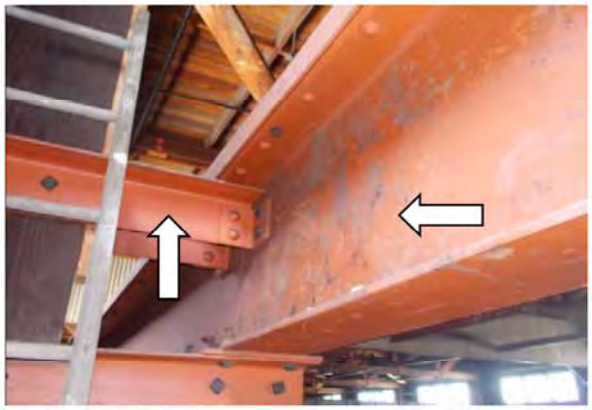
16. LBP in poor condition on wood rafters and framing of Loading Dock [BE-09, with 220,000 ppm, BR-10 with 210,000 ppm, and TN-24, with 81,000 ppm].

17. LBP in poor condition on fire hydrant protective steel rails, exterior northwest of building [YW-11, with 110,000 ppm].

18. LBP yellow striping on concrete floor, where present throughout Warehouse [YW-14, with 27,000 ppm and XRF readings > 1.0 mg/cm^2].

Photographs: Former MCAS El Toro Site
Warehouse Building (#317) - *Continued*

19. Non-LBP yellow paint on steel bollards at the warehouse fire-rated wall *only*. Others are LBP. [YW-15, with < 100 ppm, & XRF readings].



20. Red LBP (primer) on structural steel associated with the crane, throughout warehouse interior [XRF Readings 128 & 129, with 9.5 to 10.1 mg/cm^2].

21. Suspect PCB-ballasts and mercury-containing tubes associated with fluorescent lighting.

22. Broken mercury tube debris, in Warehouse (hazardous waste).

23. Mercury-containing thermostat in south offices.

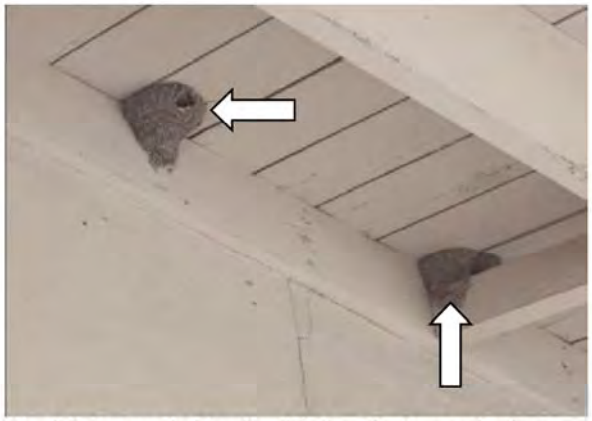
24. Bio-hazard: Bird waste at north Loading Dock.

Photographs: Former MCAS El Toro Site
Warehouse Building (#317) - *Continued*

25. Bio-hazard: Rabbit waste in crawlspace beneath west warehouse offices, and elsewhere.

26. Bio-hazard: Termite waste. ***Note: Some, but not all, termite debris has been removed.***

27. Bio-hazard: Rodent waste above ceiling of south offices.



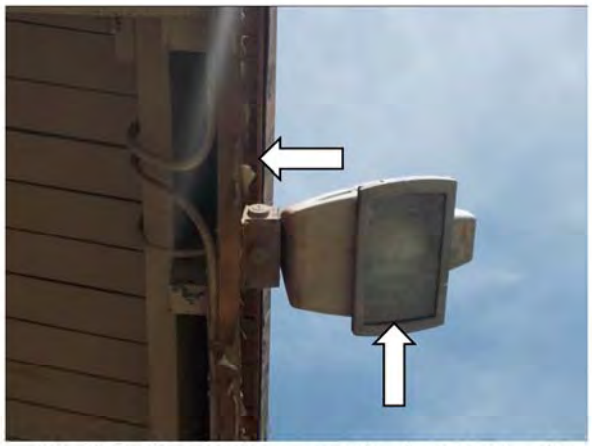
28. Bio-hazard: Nesting birds, photographed at north Loading Dock and also present elsewhere.

29. HVAC Units on roof and interior walls with suspect CFC-containing refrigerants.

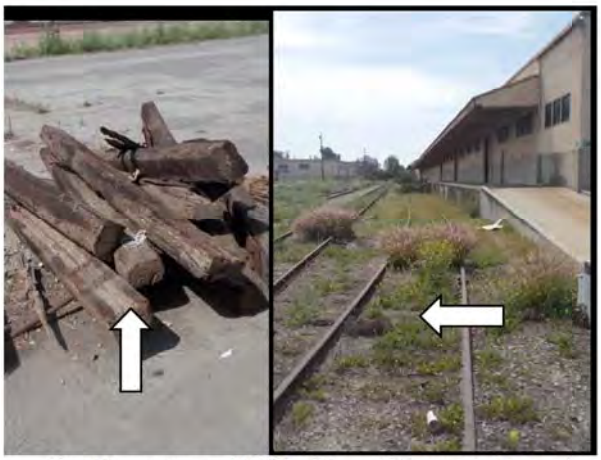
30. Extensively water-damaged south offices; and battery "Exit" sign.

Photographs: Former MCAS El Toro Site
Warehouse Building (#317) - *Continued*

31. Warehouse – west end. Bio-hazardous rabbit droppings, mostly in crawlspace under warehouse offices. *Note: Some has been removed.*



32. Exterior: LBP on wood fascia [TN-24, with 81,000 ppm] (upper); and high-intensity discharge light fixture (mercury, or other regulated metals containing (lower).



33. Creosote and Title 22 metals-treated wood and rail contamination (south of warehouse – left; and north loading dock – right).

34. Creosote and Title 22 metals treated wood electrical pole, east of Warehouse.

Attachment 9

CDPH Lead Form 8552

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation June 13, 2014

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

- [x] Lead Inspection
- [ ] Risk assessment
- [ ] Clearance Inspection
- [ ] Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
Unoccupied Warehouse Building	Irvine	Orange	92618

Construction date (year) of structure: 1945

Type of structure:
- [ ] Multi-unit building
- [ ] School or daycare
- [ ] Single family dwelling
- [x] Other Unoccupied

Children living in structure?
- [ ] Yes
- [x] No
- [ ] Don't Know

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
Lowe	

Address [number, street, apartment (if applicable)]	City	State	Zip Code
Unoccupied Building at former MCAS El Toro	Irvine	CA	92618

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

- [ ] No lead-based paint detected
- [ ] Intact lead-based paint detected
- [x] Deteriorated lead-based paint detected
- [ ] No lead hazards detected
- [ ] Lead-contaminated dust found
- [ ] Lead-contaminated soil found
- [ ] Other _____

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
Jeff Schmidt	562/988-8401

Address [number, street, apartment (if applicable)]	City	State	Zip Code
3605 Long Beach Blvd., Suite 108	Long Beach	CA	90807

CDPH certification number	Signature	Date
I-13634	Jeffrey W. Schmidt	6/13/2014

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656