HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR THE TRIANGLE COMMERCIAL SUB-AREA

BMI COMMON AREAS (EASTSIDE)
CLARK COUNTY, NEVADA

Prepared for:

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I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

September 22, 2015

Dr. Ranajit Sahu, C.E.M. (No. EM-1699, Exp. 10/07/2015) Date
BRC Project Manager

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ACRONYMS AND ABBREVIATIONS

µg/L	microgram per liter
µg/m^2,min^{-1}	micrograms per square meter per minute
µm	micrometer
µg/m^3	microgram per cubic meter
Aa	alluvial aquifer
ADD	average daily dose
AOC3	Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3
ARR	asbestos-related risk
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
BCL	Basic Comparison Level
bgs	below ground surface
BMI	Basic Management, Inc.
BRC	Basic Remediation Company
CAMU	Corrective Action Management Unit
CD	compact disc
cm	centimeter
cm^3	cubic centimeter
CoH	City of Henderson
COPC	chemical of potential concern
CSF	cancer slope factor
CSM	conceptual site model
DAF	dilution attenuation factor
DBS&A	Daniel B. Stephens & Associates, Inc.
DOE	U.S. Department of Energy
DQIs	data quality indicators
DQOs	data quality objectives
DVSR	Data Validation Summary Report
EC	exposure concentration
ECI	Environmental Conditions Investigation
ERM	Environmetal Resources Management
FSSOP	Field Sampling and Standard Operating Procedures
ft	feet
g	gram
GC/MS	gas chromatograph/mass spectrometry
GES	Geotechnical and Environmental Services
GiSdT®	Guided Interactive Statistical Decision Tools

ACRONYMS AND ABBREVIATIONS (Continued)

HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	hazard index
HQ	hazard quotient
IEUBK	Integrated Exposure Uptake Biokinetic Model
ILCR	incremental lifetime cancer risk
IRIS	Integrated Risk Information System
IRM	interim remedial measure
IUR	inhalation unit risk
J	USEPA data qualifier, which indicates an estimated value
LADD	lifetime average daily dose
LBCL	BCLs for protection of groundwater
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
LMS	linearized multi-stage
LOAEL	lowest-observed-adverse-effect-level
m^3/kg	cubic meter per kilogram
MDA	minimum detectable activities
mg/kg-d	milligram per kilogram per day
mg/kg	milligram per kilogram
mg/m^3	milligram per cubic meter
MS/MSD	matrix spike/matrix spike duplicate
msl	mean sea level
NDEP	Nevada Division of Environmental Protection
NFAD	No Further Action Determination
NOAEL	no-observable-adverse-effect-level
ORNL	Oak Ridge National Laboratory
PAH	polynuclear aromatic hydrocarbon
PARCC	precision, accuracy, representativeness, comparability, and completeness
PCB	polychlorinated biphenyl
pCi/g	picoCurie per gram
PEF	particulate emission factor
PNNL	Pacific Northwest National Laboratories
PPRTVs	Provisional Peer Reviewed Toxicity Values
ppt	part per trillion
PQL	practical quantitation limit
QA/QC	quality assurance/quality control
Qal	Quaternary alluvium
QAPP	Quality Assurance Project Plan

ACRONYMS AND ABBREVIATIONS (Continued)

R	rejected
RAGS	Risk Assessment Guidance for Superfund
RAS	Remedial Alternatives Study
RfC	reference concentration
RfD	reference dose
RIB	Rapid Infiltration Basin
ROD	Record of Decision
RPD	relative percent difference
SAP	Sampling and Analysis Plan
sec	second
SIM	selective ion mode
SOP	Standard Operating Procedure
SPLP	synthetic precipitation leaching procedure
SQL	sample quantitation limit
SRC	Site-related chemical
SVOC	semi-volatile organic compound
TCDD	tetrachlorodibenzo-*p*-dioxin
TEF	toxicity equivalency factor
TEQ	toxicity equivalency
TIC	tentatively identified compound
TIMET	Titanium Metals Corporation
TMCf	Tertiary Muddy Creek Formation
TPH	total petroleum hydrocarbon
U	undetected
UCL	upper confidence limit
UJ	USEPA data qualifier, which indicates a non-detect estimated value
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound
WRF	Water Reclamation Facility
WRS	Wilcoxon Rank Sum

EXECUTIVE SUMMARY

Basic Remediation Company LLC (BRC) has prepared this Human Health Risk Assessment (HHRA) and Closure Report for the Triangle Commercial Sub-Area (Site) of the Basic Management, Inc. (BMI) Common Areas (Eastside) in Clark County, Nevada. The Site comprises portions of the Staging and TIMET Ponds sub-areas as originally defined within the Eastside property. The purpose of this report is to support a request for a No Further Action Determination (NFAD) by the Nevada Division of Environmental Protection (NDEP) for the Site.

The HHRA evaluates the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and air following remediation of the Site. If the residual risks do not pose an unacceptable risk to human health and the environment, then an NFAD will be requested from the NDEP. Upon issuance of an NFAD by the NDEP, redevelopment of the Site is expected to proceed in a manner consistent with the Environmental Covenant (Instrument 201102030002818 Clark County Recorders Office) that is attached to the property. This report also describes the various remediation actions that were performed and presents the subsequent confirmation data collected between 2012 and 2014 at the Site.

BACKGROUND

Initial confirmation sampling investigations were conducted at the Site in 2010 in accordance with BRC's Sampling and Analysis Plans for the Staging and TIMET Ponds sub-areas (SAPs, approved by the NDEP on May 10, 2010, and January 29, 2010, respectively). The SAPs addressed sampling procedures such that remaining contaminants and their potential impacts to future Site uses (as discussed in Section 1.1 of the *BRC Closure Plan* for the BMI Common Areas [BRC, Environmental Resources Management (ERM), and Daniel B. Stephens & Associates, Inc. (DBS&A) 2007[1]]) can be determined. The Site investigations involved collection of soil matrix and surface flux samples from throughout the Site. The sampling plans performed for this purpose, as described in Section 4 of each SAP (BRC 2010a,b), were consistent with the approach presented in Section 2 of the *Statistical Methodology Report* (NewFields 2006). The *Statistical Methodology Report* describes the statistical methods that are

[1] The *BRC Closure Plan* was finalized and approved by NDEP in 2007. Subsequent to this date, revisions were made to Section 9 of the *BRC Closure Plan* (Risk Assessment Methodology–Human Health). The latest revision to Section 9 is March 2010. No other sections of the *BRC Closure Plan* have been revised since 2007.

used to confirm the final soils closure at each of the Eastside sub-areas of the BMI Common Areas. Several subsequent rounds of soil remediation and confirmation sampling were performed. The final number of samples collected was determined to be adequate for the completion of a statistically robust dataset upon which to perform an HHRA.

CONCEPTUAL SITE MODEL

The conceptual site model for the Site considers current and potential future land-use conditions. Currently, the Site is undeveloped except for Pabco Road, which transects the site from northwest to southeast. Current receptors that may be exposed to Site chemicals of potential concern (COPCs) include on-site trespassers, occasional on-site workers, and off-site residents. Future receptors identified as "on-site receptors" are defined as receptors located within the current Site boundaries (Figure 1), while future "off-site receptors" are those located outside the current Site boundaries. Under the prospective redevelopment plan, the Site is proposed for a variety of potential purposes, primarily urban core, retail/commercial and roads/parking. For the evaluation in this Closure Report, the focus is for retail/commercial land use and the HHRA assumes future receptors will include indoor commercial workers, outdoor maintenance workers, and construction workers.

Due to the requirement for use of default reasonable maximum exposure parameters for future receptors, exposures to future receptors are greater than current exposures. Accordingly, only future receptors were assessed in the HHRA. Potential exposures to off-site residents were qualitatively evaluated. The HHRA conforms to the methodology included in Section 9 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

The entire Site will be enhanced by restoration and redevelopment once remediation is complete. Therefore, there is no exposure to ecological receptors, because the Site will be prepared for retail/commercial land use.

DATA REVIEW AND USABILITY EVALUATION

A data review and usability evaluation was performed to identify appropriate data for use in the HHRA. The results of the data usability evaluation indicate that the data collected between 2010 and 2014 are adequate in terms of quality for use in a risk assessment.

HUMAN HEALTH RISK ASSESSMENT

An HHRA was conducted to determine if chemical concentrations in Site soils are either: (1) representative of background conditions; or (2) do not pose an unacceptable risk to human health and the environment under current and potential future use conditions. The HHRA followed the procedures outlined in U.S. Environmental Protection Agency (USEPA) and the NDEP guidance documents. As noted above, the HHRA also conforms to the methodology presented in Section 9 of the NDEP-approved *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010) and includes all COPCs for the Site. Results of the HHRA are summarized below.

TABLE ES-1: SUMMARY OF HUMAN HEALTH RISK ASSESSMENT CALCULATIONS

	Construction Worker	**Commercial (Indoor) Worker**	**Maintenance (Outdoor) Worker**
Site Chemical Non-Cancer HI[1]	1	0.05	0.1
Site Chemical Cancer Risk[2]	2×10^{-7}	6×10^{-7}	1×10^{-6}
Asbestos Risk[3]	0 to 6×10^{-7}	0 to 7×10^{-8}	0 to 2×10^{-7}

1 – HI = hazard index; the value presented is the total cumulative non-cancer HI.
2 – Cancer risk is the maximum theoretical upper-bound incremental lifetime cancer risk.
3 – Asbestos risk refers to the sum of cancer risks for mesothelioma and lung cancer. Asbestos risks represent the cumulative chrysotile and cumulative amphibole asbestos risks for chrysotile and amphibole fibers, respectively. Risks shown are the higher of the risks for chrysotile or amphibole fibers. Asbestos risks are not included in Site Cancer Risk (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

Air exposures to volatile organic compounds are evaluated on a sample-by-sample basis, per NDEP requirements, using the surface flux data measurements. Because of this, the minimum and maximum surface flux risks and HI estimates are summed with the soil risk and HI estimates to provide a range of cumulative risks and HIs. The risk estimates shown above incorporate the maximum surface flux risks. Primary risk contributors are discussed in the main body of the report.

EVALUATION OF UNCERTAINTIES

Risk estimates are values that have uncertainties associated with them. These uncertainties, which arise at every step of a risk assessment, are evaluated in the report to provide an indication of the uncertainty associated with a risk estimate. Uncertainties from different sources are compounded in the HHRA. Because the uncertainties are compounded and because the exposure assumptions and toxicity criteria used are considered conservative, the risk estimates calculated in this HHRA are likely to overestimate rather than underestimate potential risks. A detailed discussion of these uncertainties is provided in the Uncertainty Analysis (Section 7) of the report.

POTENTIAL IMPACTS TO GROUNDWATER

As noted in a letter dated September 17, 2012, from Greg Lovato, NDEP, to Mark Paris, BRC, HHRA reports for the project no longer evaluate the potential leaching impacts to groundwater for any sub-area. This issue will be addressed in the Eastside groundwater remedial alternatives study (GW RAS). As provided for in Section XVII of the Phase III Administrative Order on Consent, No Further Action Determinations issued for sub-areas are subject to Continuing Work to Address Water Pollution Conditions, Operation and Maintenance, Maintenance of Existing Institutional Controls, and/or Efficacy Review.

SUMMARY

Based on the results of the 2010 to 2014 sampling, the HHRA, and the conclusions presented there from in this report, exposures to residual levels of chemicals in soil at the Triangle Commercial Sub-Area should not result in adverse health effects to any of the future receptors evaluated. As a result, an NFAD for the Triangle Commercial Sub-Area is warranted, given the following provisos:

1. The NFAD does not pertain to groundwater. BRC retains the responsibility to address any environmental impacts to groundwater beneath the Site, pursuant to the *Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3* (NDEP 2006). As such, additional investigation may be necessary on the Site as it relates to BRC's responsibilities for groundwater. BRC must be granted access to the Site for activities such as well or soil boring installations or other investigative or remedial efforts.

2. The soils beneath 10 feet below ground surface of the Recorded Environmental Covenant (Instrument 201102030002818 Clark County Recorders Office) redevelopment grading plan for the Site have not been evaluated to date. Accordingly, the NFAD does not pertain to soil below the top 10 feet of the redevelopment grading plan for the Site. The property owner should note that these soils should not be disturbed without additional investigation or evaluation. BRC understands that this provision will be reflected in an Environmental Covenant for the Site.

3. The property owner should ensure that activities at the Site do not exacerbate existing, sub-surface, environmental conditions. The redevelopment grading plan (Figure 2) that has been prepared for redevelopment of the Site has been incorporated as an Environmental Covenant for the Site to control subsurface excavation.

4. Site use is otherwise suitable for purposes as retail/commercial land use.

1.0 INTRODUCTION

Basic Remediation Company LLC (BRC) has prepared this Human Health Risk Assessment (HHRA) and Closure Report for the Triangle Commercial Sub-Area (Site; Figure 1) of the Basic Management, Inc. (BMI) Common Areas (Eastside) in Clark County, Nevada. The Site comprises portions of the Staging and TIMET Ponds sub-areas as originally defined within the Eastside property. The purpose of this report is to support a request for a No Further Action Determination (NFAD) by the Nevada Division of Environmental Protection (NDEP) for the Site.[2] As presented in Section XVII.1.a. of the *Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3* (AOC3; NDEP 2006), the NDEP acknowledges that discrete Eastside areas may be issued an NFAD as remedial actions are completed for selected environmental media. Any such NFAD request shall identify the remedial actions and other work completed at the property in question, the results of such remedial actions and other work, the proposed land use(s), and the reasons supporting the eligibility of the property for an NFAD. This report provides this information for the Site.

BRC recognizes that the following conditions will be included in a Recorded Environmental Covenant (Instrument 201102030002818 Clark County Recorders Office) as a condition to receiving an NFAD from the NDEP:

1. The NFAD does not pertain to groundwater. BRC retains the responsibility to address any environmental impacts to groundwater beneath the Site, pursuant to the AOC3. As such, additional investigation may be necessary on the Site as it relates to BRC's responsibilities for groundwater. BRC must be granted access to the Site for activities such as well or soil boring installations or other investigative or remedial efforts.

2. The soils beneath 10 feet below ground surface (bgs) of the redevelopment grading plan for the Site have not been evaluated to date. Accordingly, the NFAD does not pertain to soil below the top 10 feet of the redevelopment grading plan for the Site. The property owner should note that these soils should not be disturbed without additional investigation or evaluation.

[2] Note that a small portion of the Site was granted an NFAD by the NDEP on October 6, 1998. This NFAD was granted for purposes of construction of the Pabco Road extension. This portion has been included in this current report as part of the Site such that the NFAD will be extended to include retail/commercial land use, along with the rest of the Site.

3. The property owner should ensure that activities at the Site do not exacerbate existing, sub-surface, environmental conditions. The grading plan (Figure 2), which has been prepared for redevelopment of the Site, has been incorporated as an Environmental Covenant for the Site to control subsurface excavation.

4. Site use is otherwise suitable for purposes as retail/commercial land use.

As stated in Section VI of the NDEP's *Record of Decision, Remediation of Soils and Sediments in the Upper and Lower Ponds at the BMI Complex* (ROD; NDEP 2001), cleanup of the Site proceeded under Alternative 4B (soils transferred from the Site to a dedicated Corrective Action Management Unit [CAMU] within the BMI Complex),[3] as identified and described in Section 9 of the Remedial Alternatives Study (RAS) for the Eastside. The *Remedial Alternatives Study for Soils and Sediments in the Upper and Lower Ponds at the BMI Complex* (Environmental Resources Management [ERM] 2000) was submitted to the NDEP in March 2000. The RAS is documented via issuance of the ROD, dated November 2, 2001, by the NDEP.

This report is consistent in format with prior closure reports for other study areas, and incorporates comments received from the NDEP on those reports. Appendix A has been reserved for potential future NDEP comments on this report and BRC's response to these comments. An electronic version of the entire report, as well as original format files (MS Word and MS Excel) of all text, tables, modeling, and risk calculations are included on the report compact disc (CD) in Appendix B.

1.1 PURPOSE OF THE RISK ASSESSMENT

The purpose of the HHRA is to evaluate the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and air following remediation, and to assess whether any additional remedial actions are necessary in order to request an NFAD from the NDEP to allow redevelopment of the Site to proceed. The results of the risk assessment provide risk managers an understanding of the potential human health risks associated with background conditions and additional risks

[3] Under this alternative, the Site could be developed in accordance with the current development plan and the recorded Environmental Covenant for the Site that assures appropriate management of soils beneath 10 feet bgs (post-graded), should they need to be disturbed in the future.

associated with past Site activities.[4] Pending issuance of an NFAD by the NDEP, redevelopment of the Site is expected to proceed in a manner consistent with the Recorded Environmental Covenant attached to the property.

As presented in Section 2.5 of the Sampling and Analysis Plans for the Staging and TIMET Ponds sub-areas, BMI Common Areas (Eastside) Clark County, Nevada (BRC 2010a,b; hereinafter "SAPs"; approved by the NDEP on May 10, 2010, and January 29, 2010, respectively), remediation activities conducted at the Site prior to sampling in accordance with the SAPs involved the following:

- In 2000, a localized Interim Remedial Measure (IRM) was initiated in the Beta Ditch (Figure 3) to address elevated detections of metals, hexachlorobenzene and dioxins, but BRC elected to pursue further remediation, as needed, in accordance with the standard closure process set forth in the Closure Plan. The initial IRM was not performed in accordance with an NDEP-approved work plan.

- Starting in summer 2008, the TIMET ponds were dewatered, and their contents were removed and transported to the off-site CAMU for disposal. Certain pond contents were temporarily staged in secured locations within the Site and adjacent sub-areas for further dewatering to reduce the moisture content to a level appropriate for placement into the CAMU. These stockpile locations were along the Beta Ditch, as noted on Figure 3. As of the date of this report submittal, these stockpiled soils have been removed to the CAMU. During soil handling, the soils were treated to prevent generation of wind-blown dusts and runoff. Activities associated with stockpile management and disposal in the CAMU are documented in daily progress reports and monthly Interim Status Reports submitted to NDEP.

When the sampling conducted in accordance with the SAPs was performed, areas within the Site that warranted remediation were identified, as discussed in Section 3.3. These areas have been addressed. The overall goal of the risk assessment presented in this report, therefore, is to

[4] The HHRA presents total Site-related risk. Background risk is the risk to which a population is normally exposed, and does not include risks from Site contamination. Total Site-related risk includes both incremental (Site only) and background risks. Because naturally occurring constituents are typically included in a risk assessment (i.e., metals and radionuclides), the total Site-related risk will have some element of total risk included. However, because risks are only calculated for a subset of metal and radionuclides, a 'total' risk is not calculated. In instances where the total Site-related risk is calculated to exceed a cancer risk of 10^{-5} (typically when radionuclides are included in the risk assessment calculations) or a non-cancer hazard index greater than 1.0, then a background risk, only including those naturally occurring constituents included in the risk assessment, will also be calculated to provide context to the risk assessment results.

confirm that residual chemical concentrations are: (1) either representative of background conditions; or (2) do not pose an unacceptable risk to human health and the environment under current and potential future land use conditions. Findings of the HHRA are intended to support the Site closure process. While, in general, BRC's overall goal is to remediate Site soils for human health protection such that they are suitable for residential uses, that is not appropriate nor necessary for this Site since its intended use is as retail/commercial land use.

Project-specific risk level and remediation goals consistent with USEPA precedents and guidelines have been established, as summarized below. It should be noted that: (1) all comparisons to risk or chemical-specific goals are made on an exposure area basis consistent with likely exposure assumptions; and (2) these comparisons are demonstrated through the use of spatial statistical analysis to apply to each one-eighth-acre exposure area.

Human health risks are represented by estimated theoretical upper-bound cancer risks and non-cancer hazards derived in accordance with standard USEPA and NDEP methods. If the carcinogenic risks or non-cancer hazards exceed USEPA acceptable levels or NDEP risk goals, then remedial action alternatives must be considered. The acceptable risk levels defined by USEPA for the protection of human health, as identified in Section 9.1.1 of the *BRC Closure Plan* (BRC, ERM, and Daniel B. Stephens & Associates, Inc. [DBS&A] 2007; Section 9 revised March 2010), are:

- Post-NFAD chemical and radionuclide concentrations in Site soils are targeted to have an associated residual, cumulative theoretical upper-bound incremental lifetime cancer risk (ILCR) level point of departure of 10^{-6}. This is the target risk goal for the project. For cases where the NDEP identifies this goal to be unfeasible, it is BRC's understanding that the NDEP will re-evaluate the goal in accordance with USEPA (1991a) guidance. In no case will the residual, cumulative theoretical upper-bound carcinogenic risk levels exceed those allowed per USEPA guidance.

- Post-NFAD chemical concentrations in Site soils are targeted to have an associated cumulative, non-carcinogenic hazard index (HI) of 1.0 or less. If the screening HI is determined to be greater than 1.0, target organ-specific HIs will be calculated for primary and secondary organs. The final risk goal will be to achieve target organ-specific non-carcinogenic HIs of 1.0 or less.

- Where background levels exceed risk level goals or chemical-specific remediation goals, metal concentrations and radionuclide activities in Site soils are targeted to have risks no greater than those associated with background conditions.

In addition to the risk goals discussed above, chemical-specific remediation goals have been established for lead and dioxins/furans. The target goal for lead is 400 milligrams per kilogram (mg/kg) for residential land use, which is a residential soil concentration identified by USEPA (based on the Integrated Exposure Uptake Biokinetic Model [IEUBK] model) as protective of any exposure scenario (USEPA 2004a).

For dioxins/furans and polychlorinated biphenyl (PCB) congeners, the USEPA toxicity equivalency (TEQ) procedure, developed to describe the cumulative toxicity of these compounds, is used. This procedure involves assigning individual toxicity equivalency factors (TEFs) to the 2,3,7,8 substituted dioxin/furan and PCB congeners. TEFs are estimates of the toxicity of dioxin-like compounds relative to the toxicity of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD), which is assigned a TEF of 1.0. Calculating the TEQ of a mixture involves multiplying the concentration of individual congeners by their respective TEF. One-half the detection limit is used for calculating the TEQ for individual congeners that are non-detect in a particular sample. The sum of the TEQ concentrations for the individual congeners is the TCDD TEQ concentration for the mixture. TEFs from USEPA (2010) are used.[5] The calculation of the TCDD TEQs are included in the data file on the report CD in Appendix B. Consistent with the Agency for Toxic Substances and Disease Registry (ATSDR) *Update to the ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil* (2008), the target goal for retail/commercial land use is the ATSDR screening value and the NDEP worker Basic Comparison Level (BCL; NDEP 2013) of 1,000 parts per trillion (ppt) TCDD TEQ.

1.2 METHODOLOGY AND REGULATORY GUIDANCE

This risk assessment follows procedures outlined in USEPA *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual* (RAGS; USEPA 1989), and conforms to Section 9 (Risk Assessment Methodology–Human Health) of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010) which was approved by the NDEP on July 16, 2007. Various NDEP guidance documents are also relied on for the risk assessment (as

[5] Consistent with the letter dated November 9, 2010, from Greg Lovato, NDEP, to Mark Paris, BRC. BRC will revise the *BRC Closure Plan* accordingly.

referenced throughout this report). In addition, the NDEP's BCLs (NDEP 2013) are used for comparison of Site characterization data to provide for an initial screening evaluation, assist in the evaluation of data usability, and aid in determination of extent of contamination. A full list of guidance documents consulted is provided in Section 6 and the References section at the end of this document.

This report also relies upon methodology and information provided in the NDEP-approved *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010). The main text of the *BRC Closure Plan* provides discussions of the following elements relative to the BMI Common Areas project as a whole:

- The project history, including cleanup goals and project objective (Closure Plan Sections 1 and 2);
- The list of Site-related chemicals (SRCs; Closure Plan Section 3);
- The conceptual site model (CSM) addressing potential contaminant sources, the nature and extent of chemical of potential concern (COPC) occurrence, and potential exposure pathways (Closure Plan Section 4; a CSM discussion specific to the Site is provided in Section 5 of this report);
- Data verification and validation procedures (Closure Plan Section 5);
- The procedures used to evaluate the usability and adequacy of data for use in the risk assessment (Closure Plan Sections 6 and 9 [2010 revision]);
- The data quality objectives (DQOs; Closure Plan Section 7[6]);
- The RAS process for the Site (Closure Plan Section 8);
- Risk assessment procedures that will be used for Site closure (Closure Plan Section 9 for human health [2010 revision] and Section 10 for ecological); and
- Data quality assessment (Closure Plan Section 5).

[6] As noted in the *BRC Closure Plan*, per discussions with the NDEP, the DQO process is addressed, on an Eastside sub-area by sub-area basis (for soils), in the respective sub-area SAPs developed for each sub-area relating to the soils cleanup. Therefore, the DQO process for the Site is presented in the SAP and is not repeated here. This DQO process was incorporated in the data usability/data adequacy evaluation for the Site data used in the risk assessment.

As discussed in this report, the risk assessment for the Site is conducted primarily using the data collected during implementation of the Site-specific SAPs and subsequent confirmation sampling events, which have been designed to produce data representative of the conditions to which current (non-remediation workers) and future users would be exposed.

1.3 REPORT ORGANIZATION

The closure report is composed of 11 sections, as outlined below:

- This section (Section 1) presents the purpose of the risk assessment and the methods used in this assessment.
- Section 2 presents Site background, the environmental setting for the Site, and a summary of previous investigations. Section 2 also presents the CSM for the risk assessment. This includes identification of potentially exposed populations, and the potential pathways of human exposure.
- Section 3 presents the confirmation data collected between 2010 and 2014, as well as discussions on the various remedial actions conducted at the Site.
- Section 4 presents data evaluation procedures, including statistical analysis of background concentrations, and data usability and quality.
- Section 5 presents the selection of COPCs recommended for further assessment, including comparisons of Site metals and radionuclides to background conditions.
- Section 6 presents the HHRA. This includes relevant statistical analyses, determination of representative exposure point concentrations, applicable fate and transport modeling, exposure assessment, toxicity assessment, and risk characterization.
- In Section 7, the uncertainties associated with the risk assessment are discussed.
- A summary of the risk assessment results is provided in Section 8.
- The data quality assessment for the risk assessment is presented in Section 9.
- A summary of the HHRA and Closure Report is provided in Section 10.
- A list of references is provided in Section 11.

Smaller tables with supporting information are inserted in the text at the place of reference. The text is followed by the figures, larger tables, and appendices.

2.0 SITE DESCRIPTION

This section presents a description of the Site, including Site background and history, the environmental setting, and a summary of previous investigations. The area known as the "BMI Common Areas," of which the Triangle Commercial Sub-Area is a part, is delineated in Appendix A of the AOC3. The subject Site is near the BMI Industrial Complex, in Clark County, Nevada, approximately 13 miles southeast of Las Vegas, within the City of Henderson (CoH) corporate limits, northeast of the City Hall (Figure 1). The total extent of the Site is 19.6 acres. The Site is a portion of the sub-areas within the Eastside property that were previously defined as the Staging and TIMET Ponds sub-areas in Section 1 and Figure 1-2 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), as subsequently modified in the Staging and TIMET Ponds SAPs (BRC 2010a,b). As seen on Figure 3, the majority of the Site falls within the former Staging sub-area (18.7 acres); 0.9 acre is within the former TIMET Ponds sub-area.

The Site is an irregularly shaped, generally triangular area immediately north of the Warm Springs Road right-of-way, where it intersects with Boulder Highway. Pabco Road was previously located immediately west of the Site, but the southern portion of this roadway was diverted to the east in the late 1990s and Pabco Road now transects the Site from northwest to southeast. Pabco Road is paved and in use.

The Joker's Wild Casino is located immediately west of most of the Site; vacant land and residential housing is present to the northwest. The Site is bounded to the south by the Southern Rapid Infiltration Basins (RIBs) sub-area, and to the east and north by the Eastside Main sub-area. Each of these surrounding sub-areas has received an NFAD from the NDEP.

In addition to the Pabco Road segment, the Site contains the following historical features:

- Portions of unlined wastewater effluent evaporation/infiltration ponds (Figure 3) that were built and into which various plant wastewaters were discharged from 1942 through 1976;
- Portions of two former effluent conveyance ditches, the Alpha Ditch and the Beta Ditch, associated with the historical effluent discharge (Figure 3);
- An outlet that leads to a subsurface, culverted extension to the Beta Ditch (historically known as the BMI Siphon) that passes beneath Boulder Highway; and

- A cross-over pipe within the Staging sub-area that allowed operators of ditch effluent to divert flows between the Alpha and Beta Ditches, as desired.

Since 1976, when wastewater discharge to the Alpha Ditch ceased, the Site has been vacant and unused other than activities associated with Pabco Road.

2.1 SITE HISTORY

Approximately 400 of the more than 2,200 acres comprising the BMI Common Areas contained a network of ditches, canals, flumes, and unlined ponds that were used for the disposal of aqueous waste from the original magnesium plant and, later, other industrial plants and the adjacent municipality. Effluent wastes discharged to the ponds of the BMI Common Areas from the war-time Basic Magnesium operations can be characterized as salts from the production process (chloride salts of a variety of metals and radionuclides), organic solids, and inorganic solids and dissolved components of various types. Chlorinated organic chemicals were included in the effluent. Notable processes that contributed to the waste stream from the plants that succeeded Basic Magnesium included effluents from the manufacture of the following types of products: chlorine and sodium hydroxide (caustic soda); a variety of chlorate and perchlorate compounds, and halogenated boron compounds; manganese dioxide; titanium and related compounds; and a variety of pesticides. Among these wastes were salts, organic and inorganic chemicals, and metals. A more detailed description of these processes and their effluents is found in Sections 2.2 and 2.3 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

As described in the Staging sub-area SAP (BRC 2010b), the following additional activities were identified as having occurred historically within the Site:

- Based on historical topographic maps, borrow pits are noted as being present in the 1970s and 1980s near the intersection of the Alpha and Beta Ditches. No documentation of use of this area for borrow pits has been found; however, surface expressions of disturbances in this area are apparent in aerial photographs through the 1980s. Subsequent aerial photographs suggest that these depressions were filled in over time, and current aerial photographs show no obvious surface expressions of these features. An area of buried debris was observed in 1998 in this area during site walks conducted in preparation for the then-proposed Warm Springs/Pabco Road realignment. Trenches were dug in this area prior to the realignment construction activities to evaluate environmental conditions within the then-proposed realignment. Demolition debris (*e.g.*, primarily soil, concrete, glass, asphalt, rebar, and piping) was observed to depths of approximately 7 feet bgs in those trenches. The source of this debris is unknown. Because debris tends to be preferentially placed into depressions, it is plausible that borrow pits once existed in this area.

- Starting in 2008, staging activities associated with the excavation of soils from other Eastside areas were conducted at the Site. These activities primarily involved employee/visitor parking. Additional remediation-related activities included construction management, including construction trailers that provided storage of supplies and offices for management and field personnel and construction and use of designated haul roads that transected the Site for transport of impacted materials to the off-site CAMU. As indicated on Figure 3, a portion of the Beta Ditch within the Site was used as a temporary staging area for materials removed from the TIMET Ponds prior to transportation of these materials to the CAMU.

2.2 ENVIRONMENTAL SETTING

The BMI Common Areas and Complex are located in Clark County, Nevada, and are situated approximately 2 miles west of the River Mountains and 1 mile north of the McCullough Range. The local surface topography slopes in a westerly to northwesterly direction from the River Mountains and in a northerly to northeasterly direction from the McCullough Range. Near the BMI Common Areas and Complex, the surface topography slopes north toward the Las Vegas Wash. The River Mountains and McCullough Range consist of volcanic rocks: dacite in the River Mountains and andesite in the McCullough Range (Umhoefer et al. 2010).

The Site (Figure 3) comprises 19.6 acres of undeveloped land with little surface relief that is gently sloping to the northeast. The Site is currently undeveloped, except for Pabco Road, the previously noted ditch segments and associated features, and former effluent ponds (remnants that are no longer readily apparent). The native soils are compacted, poorly sorted, non-plastic, light brown to red silty sand with varying amounts of gravel.

2.2.1 Site Location, Climate and Physical Attributes

The Site is in the northeastern quarter of Section 5, Township 22 South, Range 63 East Mount Diablo Base and Meridian. The Site is in the Las Vegas Valley, a broad alluvial valley that occupies a structural basin in the Basin and Range Physiographic Province. The valley is about 1,550 square miles in size, and the structural and topographical axis is aligned approximately northwest to southeast. The eastern edge of the valley is about 5 miles west of Lake Mead, a major multipurpose artificial reservoir on the Colorado River. The Las Vegas Valley is surrounded mostly by mountains, ranging from 2,000 to 10,000 feet higher than the valley floor. The valley floor ranges in elevation from about 3,000 feet above mean sea level (msl), in the west at the mountain front, to 1,500 feet above msl, in the east at the Wash (Clark County GIS Management Office 2003). The surrounding mountain ranges are:

- Sheep Range to the north;
- Frenchman and Sunrise Mountains to the northeast;
- River Range to the east;
- McCullough Range to the south; and
- Spring Mountains and Sierra Nevada mountain range of California to the west.

The Site is within the CoH corporate limits, northeast of the City Hall, and approximately 13 miles southeast of the city of Las Vegas (Figure 1). At its closest point, the Site is approximately 2.3 miles south of the Las Vegas Wash.

The Site is situated in a natural desert area, where evaporation/evapotranspiration rates are high, due to high temperatures, high winds, and low humidity. Precipitation in this area averages approximately 0.4 inch per month or 4.8 inches per year (Western Regional Climate Center 2008). As discussed in the *Sources/Sinks and Input Parameters for Groundwater Flow Model Revised Technical Memorandum* (DBS&A 2009), in arid settings, recharge from precipitation is typically a small percentage of annual precipitation. Based on values from Scanlon et al. (2006), recharge as a percentage of annual precipitation for the Site area was estimated to be between 0.1 and 5 percent. Recharge is thus estimated to be between 0.0048 and 0.24 inch per year.

According to the Southern Nevada Water Authority's document entitled *Extent and Potential Use of the Shallow Aquifer and Wash Flow in Las Vegas Valley, Nevada* (1996), annual potential evapotranspiration exceeds 86 inches. Pan evaporation data measured from 1985 through 1988 were as high as 17 inches per month; the months with the highest evaporation (May through September) coincide with those months with the highest intensity of rainfall (Law Engineering 1993). However, evaporation and evapotranspiration are functions of vegetation type and density and other Site-specific conditions (especially anthropogenic conditions). Therefore, Site-specific evaporation/evapotranspiration may vary from these regional conditions. These climatic parameters may be appreciably influenced by future redevelopment (e.g., vegetation removal, pavement extent, and construction).

Wind flow patterns are fairly consistent from one month to another, but vary slightly between measurement stations (McCarran International Airport and a station within the BMI Complex adjacent to the employee parking lot at the Titanium Metals Corporation [TIMET] plant entrance). For the McCarran station, the prevailing wind direction is from the southwest. The TIMET station also showed a predominant wind direction from the southwest, with southeasterly components. Wind velocity at both locations tends to be the highest in the spring and early summer months (April through July).

2.2.2 Geology/Hydrology

As is common throughout the Las Vegas Valley, Site soils are primarily sand and gravel, with occasional cobbles. This is consistent with the depositional environment of an alluvial fan. The Site is located on alluvial fan sediments, with a surface that slopes to the north-northeast at a gradient of approximately 0.02 foot per foot towards the Las Vegas Wash. Regional drainage is generally to the east.

The uppermost strata beneath the Site consist primarily of alluvial sands and gravels derived from the volcanic source rocks in the McCullough Range, located southwest of the Site. These uppermost alluvial sediments were deposited within the last 2 million years and are of Quaternary Age, and are thus mapped and referred to as the Quaternary alluvium (Qal; Carlsen et al. 1991). The Qal is typically on the order of 50 feet thick at the Site with variations due, in part, to the non-uniform contact between the Qal and the underlying Tertiary Muddy Creek Formation (TMCf).

The TMCf underlies the Qal. The Muddy Creek formation, of which the TMCf is the uppermost part, is a lacustrine deposition from the Tertiary Age, and it underlies much of the Las Vegas Valley. It is more than 2,000 feet thick in places. The lithology of the TMCf underlying the Site is typically fine-grained (sandy silt and clayey silt), although layers with increased sand content are sporadically encountered. These TMCf materials have typically low permeability, with hydraulic conductivities on the order of 10^{-6} to10^{-8} centimeters per second (Weston 1993). The TMCf in the vicinity of the Site was encountered to the maximum explored depth of 430 feet bgs. Lithologic cross sections are shown on Figures 4 and 5.

Two distinct, laterally continuous water-bearing zones are present within the upper 400 feet of the Site subsurface: (1) an upper, unconfined water-bearing zone primarily within the Qal referred to herein as the alluvial aquifer (Aa); and (2) a deep, confined water-bearing zone that occurs in a sandier depth interval within the silts of the deeper TMCf. Both of these water-bearing zones contain high concentrations of total dissolved solids. Between these two distinct water-bearing zones, a series of saturated sand stringers was sporadically and unpredictably encountered during drilling.

The Aa is an unconfined, shallower, water-bearing zone that occurs across the Site. For the most part, water in the Aa occurs in the Qal. The water surface in the Aa generally follows topography, with the water surface sloping towards the Las Vegas Wash. The depth from the surface to first groundwater at the Site is approximately 40 to 47 feet bgs (Figure 3). Wells completed in the Aa are not highly productive, with sustainable flows typically less than 5 gallons per minute.

2.2.3 Surface Water

Surface water flow occurs for brief periods of time during periodic precipitation events. The Las Vegas Wash collects storm water, shallow groundwater, urban runoff, and treated municipal wastewater. It is the receiving water body for all major Las Vegas area discharges. In dry weather, flow in the Wash comprises mainly treated effluent from the Clark County Water Reclamation District City of North Las Vegas, City of Las Vegas Water Pollution Control Facility, and the CoH Water Reclamation Facility (WRF). The CoH contributes smaller amounts. Aggregate flow is in excess of 160 million gallons per day (Las Vegas Wash Coordination Committee 2000). Discharge from these sources is sufficient to maintain surface flows in the Wash throughout the year. In winter, low-intensity rains fall over broad areas; in the spring and fall, thunderstorms provide short periods of high-intensity rainfall. The latter creates high run-off conditions. Run-off is also affected by human development, which tends to (1) create conduits for surface water flow and (2) decrease infiltration into native soils by covering them with man-made structures or materials (e.g., pavement).

Under current conditions, it is unlikely that ephemeral surface waters generated within the Site will migrate via overland transport to the Las Vegas Wash from the Site due to (1) the distance to the Wash (greater than 2 miles); (2) the intervening presence of the existing berms associated with the former effluent ponds, and the CoH WRF between the Site and the Wash. However, the presence of the drainage ditches suggests the current potential for rainfall to be carried from those portions of the Site to the Wash. After redevelopment, when the ditches have been removed, there will be an even lower likelihood that ephemeral surface waters generated within the Site will migrate via overland transport to the Las Vegas Wash from the Site because of the proposed design of the future storm water facilities and the regional requirement that nuisance flows not be discharged directly into the Las Vegas Wash unless they do so under existing conditions. (Flows from future development do not meet this criterion.)

Groundwater seeps currently exist at various locations north of the BMI Common Areas near the Las Vegas Wash. No seeps currently exist within the Site. An evaluation of historical aerial photos taken between 1964 and 1970 indicates apparent historical seeps within Eastside and at nearby off-site locations in association with past effluent infiltration at the Eastside ponds and with infiltration of municipal wastewater at the southern RIBs. Evidence of seeps was not observed within the Site in these aerial photographs.

2.3 SUMMARY OF HISTORICAL INVESTIGATIONS

Several historical field investigations were conducted at the Site to characterize the nature and extent of chemical occurrence in Site soils and groundwater. Based on these sampling events, BRC identified portions of the Site that warranted remediation for protection of human health and the environment,[7] and subsequently performed remediation in those areas. The SAPs present a detailed analysis of data collected during the historical field investigations conducted at the Staging and TIMET Ponds sub-areas. Of those investigations, the following sampling events included sampling within the Site boundaries:

- The BMI Common Areas Environmental Conditions Investigation (ECI) conducted during March and April 1996 (dataset 1a). The soil investigation activities were performed in accordance with a work plan approved by NDEP in February 1996 (ERM 1996a). The soil sampling results for the investigation activities were presented in the ECI report (ERM 1996b), which was approved by NDEP in March 1997. Data validation results are presented in the Data Validation Summary Report (DVSR) for dataset 1a (ERM 2006a), which was approved by NDEP on September 12, 2006.

- An investigation conducted in 1998 in the rights-of way for the Pabco Road realignment and Warm Springs Road extension (dataset 2). The soil investigation activities were performed in accordance with a March 26, 1998, work plan. The soil sampling results for the investigation activities were presented in a July 9, 1998 letter report that was submitted to NDEP (ERM 1998). NDEP granted a No Further Action Status of the rights-of-way on

[7] It should be noted that this determination was based on comparison of chemical detections to then-applicable human-health risk-based screening levels.

October 6, 1998. Data validation results are presented in the DVSR for dataset 2 (ERM 2006b), which was approved by NDEP on October 25, 2006;

- An investigation conducted during December 2000/January 2001 (dataset 14) to assess conditions in this area to support potential transfer of the property for educational uses. The soil investigation activities were not performed in accordance with an NDEP-approved work plan and the soil sampling results have not been formally presented to NDEP prior to this SAP. Data validation results are presented in the DVSR for dataset 14 (MWH 2006a), which was approved by NDEP on 8 November 2006;

- Waste characterization conducted in July and August 2006 (dataset 39). The soil investigation activities were performed in accordance with BRC's SAP submitted on June 29, 2006, and approved by NDEP in July 2006. The soil sampling results for the investigation activities were previously presented in the *Remedial Action Plan* (RAP; BRC 2007), which was approved by NDEP on September 24, 2007. Data validation results are presented in the DVSR for dataset 39 (MWH 2006b), which was approved by NDEP on November 3, 2006.

The Site-related data from the above investigations were also presented in Appendix B of the SAPs. During these investigations, soil samples at various depths were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine pesticides, organophosphorus pesticides, PCBs, chlorinated herbicides, dioxins/furans, metals, perchlorate, and/or radionuclides. The data from these investigations have been validated, as noted above. Data validations are presented in the respective DVSRs for each of the datasets, and all have been approved by the NDEP.

Several of the samples collected during these historical investigations were composite samples and were collected more than 10 years ago; few of the previous samples were analyzed for all of the major chemicals or chemical families now mandated; several analyses used different analytical methods than established in the current analytical program for the BMI Common Areas; and spatial coverage of the Site was incomplete. Therefore, because of these various factors, the data collected as part of the SAPs (as discussed in Section 3) are considered more representative of current Site conditions[8] than data collected from previous investigations, and

[8] This determination is also based on the data usability evaluation summarized in Section 4.2.

these recent data (collected between 2010 and 2014) are therefore relied upon for risk assessment purposes as described in this report.

2.4 HISTORICAL REMEDIAL ACTIVITIES

Remediation activities conducted at the Site prior to sampling in accordance with the SAPs involved the following:

- In 2000, a localized IRM was initiated in the Beta Ditch (Figure 3) to address elevated detections of metals, hexachlorobenzene, and dioxins; but BRC elected to pursue further remediation, as needed, in accordance with the standard closure process set forth in the Closure Plan. The initial IRM was not performed in accordance with an NDEP-approved work plan.

- Starting in Summer 2008, the TIMET ponds were dewatered, and their contents were removed and transported to the off-site CAMU for disposal. Certain pond contents were temporarily staged in secured locations within the Site and adjacent sub-areas for further dewatering to reduce the moisture content to a level appropriate for placement into the CAMU. These stockpile locations were along the Beta Ditch, as noted on Figure 3. As of the date of this report submittal, these stockpiled soils have been removed to the CAMU. During soil handling, the soils were treated to prevent generation of wind-blown dusts and runoff. Activities associated with stockpile management and disposal in the CAMU are documented in daily progress reports and monthly Interim Status Reports submitted to NDEP.

These IRM areas are shown on Figure 3.

2.5 CONCEPTUAL SITE MODEL

The CSM is a tool used in risk assessment to describe relationships between chemicals and potentially exposed human receptor populations, thereby delineating the relationships between the suspected sources of chemicals identified at the Site, the mechanisms by which the chemicals might be released and transported in the environment, and the means by which the receptors could come in contact with the chemicals. The CSM provides a basis for defining DQOs, guiding Site characterization, and developing exposure scenarios. The Site history; land uses; climate; physical attributes, including geology and hydrogeology; and various field investigations are described in Sections 2.1 through 2.4 of this HHRA. The history and environmental conditions of the BMI Common Areas are described in Sections 2 and 4 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), and in the Site-wide CSM (in preparation).

The HHRA evaluates current and potential future land-use conditions. The Site is currently undeveloped with the exception of Pabco Road. The potential on- and off-site receptors are currently trespassers, occasional on-site workers, and off-site residents. Exposures to current receptors are being managed through Site access control. Under the prospective redevelopment plan, the Site will have urban core and retail/commercial land uses, including roads, parking and landscaping. Therefore, for the evaluation in this Closure Report, the HHRA assumes future receptors will include indoor commercial workers, outdoor maintenance workers, and construction workers.

The entire Site will be enhanced by restoration and redevelopment once remediation is complete. Therefore, exposures to ecological receptors will be mitigated or removed. Future receptors identified as "on-site receptors" are defined as receptors located within current Site boundaries (Figure 1), while future "off-site receptors" are those located outside current Site boundaries. Many potential human receptors are possible at the Site in the period during and after redevelopment. The potentially exposed populations and their potential routes of exposure are discussed in Section 2.5.3.

The current development plan for the Site is shown on Figure 6. This is an example and actual features may change in the future. To construct the retail/commercial buildings, as well as roads, parking, landscaping and associated features, the land will be cut and/or filled and nurtured with imported top soils[9] as needed. As identified on Figure 6, 'Urban Core' is defined as retail and office space, and a casino/resort. This is consistent with the land use and potential human receptors evaluated in this HHRA. Figure 2 shows the Redevelopment Grading Plan for the Site, indicating which areas will be filled and which areas will be cut.

The CSM includes the planned redevelopment of the Site. All potential transfer pathways are included in the CSM. The human health aspects of the CSM for the Site are presented on Figure 7.

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[9] Imported soil data are not included in risk assessment calculations because imported soils are not expected to be used. However, the chemical data for fill material from a given site within the Eastside property may be useful for evaluating sub-areas to receive fill from that site. Any soil that is imported to a sub-area will be from a sub-area that has received an NFAD.

Numerous release mechanisms influence chemical behavior in environmental media. Under both current and future land use conditions at the Site, the principal release mechanisms involved are:

- Vertical migration in the vadose zone;
- Storm/surface water runoff into surface water and sediments;
- Fugitive dust generation and transport; and
- Vapor emission and transport.

Although these release mechanisms are identified here, no quantitative modeling is presented in this section. Instead, those primary release mechanisms identified for particular receptors are presented in this section, and are quantitatively evaluated in Section 6.

2.5.1 Impacted Environmental Media

Environmental media at the Site consist of five categories: surface soil, subsurface soil, groundwater, indoor air, and ambient outdoor air. Samples relative to Site baseline conditions have been collected at the Site for soil. Generally, impacted soil is the source of chemical exposures for other media at the Site.

Because the background water quality of groundwater beneath the Site and in the surrounding area is generally poor (viz., high total dissolved solids concentration) and because BRC has placed Environmental Covenants in the form of a deed restriction to prevent future users from utilizing groundwater beneath the Site, the use of private water wells by businesses for drinking water, irrigation water, or other non-potable uses (e.g., washing cars, filling swimming pools) will not occur in the post-redevelopment phase. Furthermore, there are no anticipated groundwater uses associated with the proposed retail/commercial land use. Therefore, exposure pathways relating to this type of use are incomplete, as defined by USEPA (1989).

Although direct exposures to groundwater will not occur; indirect exposures are possible. The primary indirect exposure pathway from groundwater is the infiltration of VOCs from soil and groundwater to indoor air. In addition, residual levels of chemicals in soil may leach and impact groundwater quality beneath the Site.

2.5.2 Inter-Media Transfers

Exposure to Site chemicals may be direct, as in the case of impacted surface soil, or indirect following inter-media transfers. Impacted soil is the initial source for inter-media transfers at the Site, which can be primary or secondary. For example, upward migration of VOCs from impacted subsurface soil into ambient air thereby reaching a point of human inhalation represents a secondary inter-media transfer.

These inter-media transfers represent the potential migration pathways that may transport one or more chemicals to an area away from the Site where a human receptor could be exposed. Discussions of each of the identified potential transfer pathways are presented below. Figure 7 presents a conceptualized diagram of the inter-media transfers and fate and transport modeling for the Site.

Five initial transfer pathways for which chemicals can migrate from impacted soil to other media have been identified. The first of these pathways is volatilization from soil and upward migration from soil into ambient air. Ambient air can be both indoor and outdoor air. The pathway of volatilization from both soil and groundwater and upward migration into ambient air was evaluated using the surface flux measurements collected. The secondary transfer pathway is downward migration of chemicals from soil to groundwater. The third transfer pathway is migration of chemicals in surface soil via surface runoff to sediments or surface water bodies. However, as discussed in Section 2.2.3, because of the distance to the Wash (greater than 2 miles) and the intervening presence of the existing berms associated with the former effluent ponds, and the CoH WRF, it is unlikely that surface waters (which are ephemeral) will drain to the Las Vegas Wash from the Site. Therefore, the surface water pathway was not evaluated in this risk assessment. The fourth transfer pathway is on-site fugitive dust generation. Finally, chemicals in soil can be transferred to plants grown on the Site via uptake through the roots. However, the plant uptake pathway is only evaluated for residential receptors, and therefore is not included for the Site.

2.5.3 Potential Human Exposure Scenarios

The following subsections summarize land use and the human exposure scenarios that are assessed herein.

2.5.3.1 Current and Future Land Use

Current receptors that may use the Site include trespassers, occasional on-site workers, and off-site residents. Current exposures to native soils at the Site are minimal, but exposures to future receptors will be much greater. For example, future receptors evaluated in the HHRA include on-site workers who are assumed to be exposed to soil at the Site for 250 days per year for 25 years, which is much greater than any current exposure scenario. In addition, as discussed above, exposures to current receptors are limited through Site access control. Therefore, a current land use scenario is not quantitatively evaluated in this risk assessment.

USEPA risk assessment guidance (1989) states that potential future land use should be considered in addition to current land use when evaluating the potential for human exposure at a site. As indicated above, under the prospective redevelopment plan, the Site will be used for retail/commercial land use, including parking and landscaping. The entire Eastside property will be redeveloped in several phases. Throughout the redevelopment process, the sub-areas of the Site will be redeveloped sequentially. Future receptors identified as "on-site receptors" are defined as receptors located within the current Site boundaries (Figure 1), while future "off-site receptors" are those located outside the current Site boundaries. "On-site receptors" are those future receptors that will be located within the Site under evaluation. "Off-site receptors" are those future receptors that will be located outside the Site under evaluation that may have complete exposure pathways associated with sources within the Site. As noted above, remediation of the Site is to on-site indoor/outdoor/construction worker standards. Consequently, risks to off-site receptors are addressed qualitatively in this risk assessment.

2.5.3.2 Identification of Potentially Exposed Populations and Pathways

Many potential human receptors are possible at the Site in the period during and after redevelopment. The potentially exposed populations and their potential routes of exposure are presented on Figure 7 and summarized below. For a complete exposure pathway to exist, each of the following elements must be present (USEPA 1989):

- A source and mechanism for chemical release;
- An environmental transport medium (i.e., air, water, soil);
- A point of potential human contact with the medium; and
- A route of exposure (e.g., inhalation, ingestion, dermal contact).

As presented in Section 9 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), the following are the primary exposure pathways for each of the potential receptors following remediation and redevelopment at the Site.

- Indoor commercial workers
  - Incidental soil ingestion*
  - External exposure from soil†
  - Indoor inhalation of VOCs from soil and groundwater

- Outdoor maintenance workers
  - Incidental soil ingestion*
  - External exposure from soil†
  - Dermal contact with soil
  - Outdoor inhalation of dust*‡
  - Outdoor inhalation of VOCs from soil and groundwater

- Construction workers
  - Incidental soil ingestion*
  - External exposure from soil†
  - Dermal contact with soil
  - Outdoor inhalation of dust*‡
  - Outdoor inhalation of VOCs from soil and groundwater

*Includes radionuclide exposures
†Only radionuclide exposures
‡Includes asbestos exposures

Although trespassers/recreational users and downwind off-site residents are another potential receptor identified in the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), exposures for these receptors are less than those evaluated above. As noted in Sections 9.1.1 and 9.7.1 of the *Closure Plan*, potential exposures for trespassers/recreational users will only be evaluated in areas of the BMI Common Areas that are designated as recreational end use (specifically the Western Hook-Open Space sub-area shown on Figure 1). Also, as noted in Section 9.5.4 of the *Closure Plan*, off-site dust levels based on USEPA's model are much lower than those generated for on-site, construction-related activities. Therefore, risks evaluated for an on-site construction worker, as performed in this HHRA, are considered protective of off-site residents.

3.0 CONFIRMATION DATA PROCESS AND SUMMARY

Based on the historical data for the Site, the IRMs discussed in Section 2.4 were conducted prior to implementing the sampling prescribed in the SAPs. Decisions for excavation during SAP implementation were based on the initial data (discussed below) in accordance with the Risk Assessment Methodology provided in the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010). The following is the initial scope of work for investigating the Site and meeting the SAP objectives. Much of the discussion below regarding confirmation soil sampling is taken from the *Statistical Methodology Report* (NewFields 2006).

3.1 INITIAL CONFIRMATION SOIL SAMPLING

As per Section 2 of the *Statistical Methodology Report*, the initial confirmation sampling at the Site was conducted on the basis of combined random and biased (judgmental) sampling, as follows:

- **Stratified Random Locations:** For this purpose, the Site was covered by a 3-acre cell grid network. Within each 3-acre cell, a sampling location was randomly selected. Sampling locations were randomly selected within both full and partial grid cells if they were greater than 50 percent of the total grid cell area (based on the project-wide grid cell network and the Site boundaries; those partial grid cells that contain less than 50 percent of their area within the Site were included in the adjacent sub-area SAPs). The main objective of this stratified random sampling was to provide uniform coverage of each Site within the Eastside property.

- **Biased Locations:** Additional sampling locations were selected within or near small-scale contamination points of interests, including but not limited to previous debris locations, ponds, and berms. For this purpose, the randomly selected location within a corresponding 3-acre cell was adjusted to cover a nearby point of interest. In the event that currently unknown impacted areas were identified during remediation, the presence of these areas were drawn to the NDEP's attention, the need for additional biased sampling points to address those areas was evaluated, and the sampling program modified as needed.

Within the Site, biased sampling was conducted along the length of the Alpha and Beta ditches, at approximately 200-foot linear spacing (16 locations within the Site). In addition, a biased sampling location (STC1-JB12) was added to provide a non-ditch sampling point within cell AJ,17. Figure 8 and accompanying Table 3-1 (Tables section) show the initial sampling locations within the Site.

The following discusses the multi-depth soil samples that were collected and analyzed for the SRC list at each selected location. Samples were collected at:

1. Existing surface (0 foot bgs) and 10 feet bgs for sample locations in relatively flat (ungraded) locations;

2. Existing surface (0 foot bgs), post-grading surface (post-redevelopment as shown on Figure 2), and post-grade 10 feet bgs for sample locations with substantial grading (that is, cut depths greater than 2 feet[10]) and the uppermost sampled soil is expected to be used as surface fill;

3. Existing surface (0 foot bgs) and 10 feet bgs for sample locations with minimal grading (that is, cut depths less than 2 feet) and the uppermost sampled soil is expected to be used as surface fill (at any Eastside location); and

4. Existing surface (0 foot bgs) and 10 feet bgs for sampling locations in an area expected to be covered by fill material.

The analytical sample results were then divided into surface (0- to 2-foot depth), subsurface (2- to 10-foot depth), and deep (>10-foot depth) layers, according to the following rules:

- **Rule 1: IF** the sample is collected in a relatively flat (ungraded) part of the Site (i.e., an area not targeted for substantial grading), **THEN** the depth of the collected soil sample is used to designate its soil layer grouping.

- **Rule 2: IF** the sample is collected in a part of the Site targeted for substantial grading, **AND** the sampled soil is located in an area expected to be covered by fill material (e.g., exposed excavated surfaces of ponds), **THEN** the current surface soil sample is classified as a surface (0- to 2-foot depth) sample, and the soil layer grouping of the remaining deeper sampled soil is determined based on the difference between its elevation and the final (post-graded) surface elevation in that part of the Site.

- **Rule 3: IF** the sample is collected in a part of the Site targeted for substantial grading, **AND** the cut depth is expected to be greater than 2 feet, **AND** the sampled soil is expected to be

[10] Because sample collection was over a 2- to 3-foot depth interval, locations with an anticipated cut depth less than 3 feet were only sampled at the surface and one post-grade subsurface depth. The sample depth designation (e.g., 10 feet bgs) is based on the center depth of the sample collection interval.

used as surface fill (e.g., soil within a berm), **THEN** the current surface soil sample is classified as a fill material sample, a final (post-graded) surface sample is classified as a surface (0- to 2-foot depth) sample, and the soil layer grouping of the remaining deeper sampled soil is determined based on the difference between its elevation and the final (post-development, graded) surface elevation in that part of the Site.

- **Rule 4: IF** the sample is collected in a part of the Site targeted for substantial grading, **AND** the cut depth is expected to be less than 2 feet, **AND** the sampled soil is expected to be used as surface fill (e.g., soil within a berm), **THEN** the current surface soil sample is classified as both a fill material sample and as a surface (0- to 2-foot depth) sample, and the soil layer grouping of the remaining deeper sampled soil is determined based on the difference between its elevation and the final (post-graded) surface elevation in that part of the Site.

A schematic example of these rules is shown on Figure 9. The Redevelopment Grading Plan for the Site is shown on Figure 2.[11] The sample-specific collection depths are presented in Table 3-1 (Tables section).

As noted above, soil samples were generally collected over a 2- to 3-foot depth interval. This was because of volume of soil required for completion of all analyses. The 10 feet bgs (and deeper) samples were collected in 2- to 3-foot intervals centered on 10 feet (or centered on the deeper sampling depth as indicated in Table 3-1). Confirmation samples, which usually have a shortened analyte list, were collected over a smaller sampling interval. Contamination by the historical manufacturing processes upgradient is usually found predominantly in surface soils. The objective of remedial actions at the Site was to remove surface soils that were impacted by surface releases of off-site chemicals. Therefore, higher concentrations are expected—and have been generally observed—in surface samples. However, to adequately characterize the vertical extent of possible contamination, one or more deeper samples were also collected at each sampling location, as described above.

As discussed in Section 6.1.1, given the potential for change to the prospective grading plan, these samples were classified into two different exposure depths: surface and all (surface and subsurface) depths. These different soil exposure depth classifications are considered to represent

[11] Note that the grading plan is reflected in an Environmental Covenant for the Site as a condition to receiving an NFAD from NDEP.

all possible exposure potential for all receptors, and thus a reasonable worst-case scenario has been assessed.

Although some samples are designated as Fill samples, the grading across the Site is anticipated to be primarily shallow grading with limited ‘cut’ areas. The separate evaluation of fill data is done primarily to determine if fill material from a particular sub-area can be used elsewhere. Given the limited amount of cut areas across the Site, the few samples designated as ‘Fill,’ that more fill areas exist than cut areas, and that the limited amount of fill material will likely be used within the Site, the separate evaluation of the fill data was not conducted for the Site.

Initial sampling for the Site was conducted in June 2010 for locations in the former Staging sub-area, and March 2010 for locations in the former TIMET Ponds sub-area. All soil samples were tagged in the database with numeric designations of their corresponding assigned soil layer grouping based on the rules presented above. During these initial sampling events (Table 3-1), 60 soil samples were collected from 24 locations (including field duplicates, but not including deep samples collected for soil physical parameter data).[12] This included seven “random”[13] and 17 “biased” sample locations. At these locations, BRC initially collected 32 surface samples (one at each location, and duplicates at eight locations in accordance with the duplicate frequency specified in the *BRC Quality Assurance Project Plan* (QAPP; BRC and ERM 2009a) and 28 subsurface soil samples. Six of the surface soil samples also represent Fill samples. All sampling results are presented electronically on the report CD in Appendix B, and in Tables B-1 through B-11.

3.2 CHEMICALS SELECTED FOR ANALYSIS

The analyte list for soil samples collected during the initial 2010 investigation comprised the BRC project SRC list, and was consistent with the analytical program presented in Section 3 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010)[14] and Table 3-2 (Tables section), with the following exceptions for this Site:

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[12] Note that in Table 3-4, which summarizes the analyses performed on Site samples, the number of samples reported in that table for a given analysis does not always equal 60. This is due to (1) inclusion in the final dataset of supplemental samples collected to assess the extent of chemical impacts in certain areas; (2) certain analytes were not included in the subsurface samples, as noted in the following section; some samples were remediated for particular analytes, and confirmation samples collected, and (3) rejected data are not included in the statistical summary in Table 3-4.

[13] As noted before, in some cases, random sampling locations were shifted slightly to address debris locations.

[14] Specific analytes and analyte-specific reporting limits for each analysis are listed in Table 4 of the QAPP.

- Asbestos and dioxins/furans were only analyzed for in surface soil samples.[15]

- USEPA Method 8141A for organophosphorus pesticides was not conducted. There have been only 47 detections of these compounds in over 10,000 soil sample records (<0.5 percent) from throughout the Eastside. The few detections are well below the NDEP BCLs.

- USEPA Method 8151A for chlorinated herbicides was not conducted. There have been no detections of these compounds in over 1,400 soil sample records from throughout the Eastside. Detection limits are below the NDEP BCLs.

- High performance liquid chromatography (HPLC) Method for organic acids was not conducted. There have been only three detections of these compounds in 567 soil sample records (<0.5 percent) from throughout the Eastside. Moreover, the NDEP has not established BCLs for these compounds.

- USEPA Method 8015B for non-halogenated organics (e.g., methanol and glycols) was not conducted. There have been only five detections of these compounds in 420 soil sample records (1 percent) from throughout the Eastside. The few detections have been well below the NDEP BCLs.

- USEPA Method 8015 for total petroleum hydrocarbons (TPH) was not conducted. There have been only three detections of these compounds in over 299 soil sample records (1 percent) from throughout the Eastside. The few detections have been below 100 mg/kg, which is the typical low-end aesthetic threshold used for these compounds There are no indications of possible TPH source areas (e.g., abandoned vehicles, dumping of oils/ hydraulic fluids) at the Site. While TPH was not analyzed for, its components were via other methods. In addition, TPH cannot be included in a risk assessment while its components can.

- Consistent with the current project analyte list, the following radionuclides were analyzed for: radium-226, radium-228, thorium-228, thorium-230, thorium-232, uranium-233/234, uranium-235/236, and uranium-238.

[15]Note that all samples collected at the Site were discrete samples, with the exception of asbestos samples, which were composite samples collected as per the NDEP-approved Standard Operating Procedure [SOP]-12 as provided in the *Field Sampling and Standard Operating Procedures* [FSSOP; BRC, ERM and MWH 2009]).

The soil analyte list consisted of 272 of the 418 compounds (including water-only parameters) on the project SRC list. The analytical and preparatory methods (Table 3-2) used in accordance with the SAPs adhered to the most recent version of the BRC QAPP (BRC and ERM 2009a; see Section B4, Table 4 of that document). As noted in Section 3.6, the analyte list for surface flux samples was composed of the list specified in the NDEP-approved Standard Operating Procedure (SOP)-16, as provided in the *Field Sampling and Standard Operating Procedures* (FSSOP; BRC, ERM and MWH 2009). Surface flux samples were analyzed for VOCs by USEPA Method TO-15 full scan, plus selective ion mode (SIM) analyses for a subset of the analytes.

3.3 INTERMEDIATE SAMPLING AND CLEANUP

All initial data were reviewed and a determination made, in consultation with the NDEP, as to whether localized soil removals were warranted. The initial round of remediation conducted in the summer of 2012 (Figure 10) targeted portions of the Alpha ditch and two non-ditch areas between the Alpha Ditch and Pabco Road, including a 140-foot portion of Pabco Road. The constituents triggering the remediation activities were asbestos, metals, dioxins/furans, organochlorine pesticides, aldehydes, polynuclear aromatic hydrocarbons (PAHs)/SVOCs, PCBs, perchlorate and/or radionuclides.

The second and third rounds of remediation (conducted December 2012 through February 2013) expanded the Alpha Ditch and the northern non-ditch excavation areas, and added excavation within and near the Beta Ditch. These remediation events addressed soils with asbestos and elevated metals, dioxin/furan, organochlorine pesticide, aldehydes, PAH/SVOC and/or PCB concentrations.

The fourth round of remediation, which was conducted between November 2013 and January 2014, included additional excavation within the Beta Ditch and expanded the non-ditch excavation areas from the first round of remediation west of Pabco Road. These remedial actions were undertaken to address elevated detections of SVOCs in the Beta Ditch, and metals, dioxin/furans, aldehydes organochlorine pesticides, PAHs/SVOCs, PCBs, and radionuclides in the area west of Pabco Road.

The fifth round of remediation (May 2014) involved additional (deeper) excavation within and immediately adjacent to the footprint of the fourth round excavation. This additional remediation was conducted to address elevated concentrations of metals, dioxins/furans, organochlorine pesticides, PAHs/SVOCs, and/or PCBs at the following locations STC9-JD11, -JW02, and -JW11. The sixth round of remediation (August 2014) involved additional (deeper) excavation within the footprint of the fourth round excavation. This additional remediation was conducted to address elevated concentrations of dioxin/furans, PCBs, and SVOCs at STC10-JW02.

The non-ditch remediation areas were developed based on a Thiessen map overlaid across the Site. Thiessen maps are constructed from a series of polygons formed around each sampling location. Thiessen polygons are created so that every location within a polygon is closer to the sampling location in that polygon than any other sampling location. These polygons do not take into account the respective concentrations at each location. These polygons were used as the basis for the areal extent of remediation for each of the non-ditch locations with elevated asbestos or perchlorate levels.

For the ditch location, the remediation areas were centered about the initial sampling locations that triggered remediation. The extent of excavation at these areas was a 50-foot-wide segment of the ditch, extended such that the limits of excavation reached half the distance to the adjacent ditch samples on either side. In addition certain areas adjacent to the Beta Ditch were excavated during the second and third rounds of remediation based on visual evidence of impacts. These areas are indicated on Figure 10.

Remediation consisted of excavation and removal of impacted soils to the CAMU. The extent of the excavations is depicted on Figure 10. Following remediation, confirmation surface soil samples were collected at each of the original sample locations associated with the remediation area polygons and ditch segments described above.[16] All sampling locations are shown on Figure 11. The analyte list was composed of those analytes that triggered the remediation at each sampling location.

3.4 FINAL CONFIRMATION DATASET

Post-scrape analyses associated with follow-up rounds of remediation focused on the constituents triggering that additional remediation and, therefore, did not include the full suite analyses of the original analytical program. Analytical results from the original SAPs dataset were retained for all constituents except those that were re-analyzed after additional scraping. The final confirmation dataset included the following sampling results:

[16] The naming convention for confirmation samples uses the same sample identification as the initial (pre-remediation) sample, with an updated numerical prefix. For example, confirmation samples associated with STC1-JD02 are named STC6-JD02, etc.

- SAP sampling data, retaining the results that were not superseded by subsequent sampling;
- Supplemental data collected subsequent to the initial SAP sampling; and
- Additional samples collected for confirmation after completion of remediation activities.

The soil dataset was subjected to a series of statistical analyses to determine representative exposure concentrations for the sub-area, as described in Sections 4 and 5 of the NDEP-approved *Statistical Methodology Report* (NewFields 2006). Consistent with the project *Statistical Methodology Report*, kriging or geostatistical analysis was not performed on the data because each measurement was assumed to be equally representative for that chemical at any point in each sub-area of the Eastside property. Hence, calculation of the 95 percent upper confidence limit (UCL) by exposure area directly from the data is considered reasonable.

As discussed in Section 4, all data have been validated. Results of all confirmation sampling and analysis are presented in Appendix B, and electronically on the report CD in Appendix B, as is the dataset used in the HHRA for the Site. All confirmation sampling locations for the Site are shown on Figure 11. Table 3-3 provides a matrix of which analytical suite was analyzed for in each of the samples collected from the Site. Geotechnical and Environmental Services (GES) conducted all fieldwork at the Site. The GES field reports, including boring logs, for each investigation are provided electronically in Appendix C (included on the report CD in Appendix B).

3.5 FINAL CONFIRMATION DATA SUMMARY

Using the compound-specific information presented in Table 2 of the QAPP (BRC and ERM 2009a), the comparison levels for each chemical included in the investigation were compiled for comparison to Site data. Specific soil comparison levels used for this effort were as follows:

- NDEP BCLs for worker soil (NDEP 2013; lower of either indoor or outdoor worker BCLs were used);
- NDEP BCLs for protection of groundwater (LBCL), assuming dilution attenuation factors (DAF) of 1 and 20 (NDEP 2013); and

- The maximum background concentration (for metals and radionuclides only), derived from the shallow Qal McCullough background soil dataset presented in Section 5.[17]

A DAF of 1 is used when little or no dilution or attenuation of soil leachate concentrations is expected, and a DAF of 20 may be used when significant attenuation of the leachate is expected due to Site-specific conditions. For the Site, the LBCLs based on a DAF of 1 were used for discussion purposes. Data for the Site, including the number of instances in which chemical concentrations exceed each of the comparison levels, are listed in Table 3-4,[18] and summarized below. It is important to note that these comparisons are used to provide for an initial screening evaluation, assist in the evaluation of data usability, and determine the extent of contamination. They are not used for decision-making purposes or as an indication of the risks associated with the Site.

Aluminum

Aluminum was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 100,000 mg/kg BCL, but were higher than the 75 mg/kg $LBCL_{DAF1}$. Nine of these samples were also above the 15,300 mg/kg maximum shallow Qal McCullough background level, as listed in Table 3-5 below.

TABLE 3-5: ALUMINIUM $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL04-3	3	20000
STC9-FALL02-3	3	19000
STC9DP-JW07	3	18000
STC9-FALL04-2	2	18000
STC9-JW22	0	18000

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9DP-JW07	2	16000
STC9-FALL02-2	2	16000
STC9-JW06	0	16000
STC9-JW09	0	16000

[17] This value, for the shallow Qal McCullough background dataset, is used for comparison only; as discussed in Section 5.1, background comparisons were performed for the Site dataset using statistical tests.

[18] Pre-scrape data for the target constituents are not included in Table 3-4. That is, these have been replaced by post-scrape data; however, pre-scrape data for the non-target constituents are included in Table 3-4. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in the tables in Appendix B, which include all data, regardless of status.

Antimony

Antimony was detected in 20 of the 75 soil samples in which it was analyzed for (41 surface and 34 subsurface samples; Table B-4). All of the detections were lower than the 454 mg/kg BCL, but all of the detections were higher than the 0.3 mg/kg $LBCL_{DAF1}$. Of these, 18 were also higher than the 0.5 mg/kg maximum shallow Qal McCullough background level, as listed in Table 3-6 below.

TABLE 3-6: ANTIMONY $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC8-JD12	10	4 J-	STC9-JW12	0	1.5 J
STC9-FALL03-2	2	2.9 J-	STC9-JW06	0	1.4 J
STC9-FALL04-2	2	2.7 J-	STC9-JW09	0	1.4 J
STC9-FALL03-3	3	2.5 J-	STC9-FALL02-3	3	1.3 J-
STC9-FALL04-3	3	2.2 J-	STC9-FALL02-2	2	1.3 J
STC9-JW10	0	2.2 J	STC9-JW03	0	1.2 J
STC9-JW05	0	1.8 J	STC9-JW18	0	1.1 J-
STC9-JW08	0	1.8 J	STC10-JD11	0	1 J-
STC9-JW05	0	1.6 J	STC9-JW14	0	0.94 J-

In addition, antimony was reported as non-detect in 55 soil samples; the associated analytical reporting limits for these samples were routinely higher than the 0.5 mg/kg background concentration for antimony, with reporting limits ranging up to 0.94 mg/kg.

Arsenic

Arsenic was detected in 61 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were higher than the 1.77 mg/kg BCL and the 1 mg/kg $LBCL_{DAF1}$. Of these, 14 of the detections were higher than the maximum shallow Qal McCullough background level (7.2 mg/kg), as listed in Table 3-7 below.

TABLE 3-7: ARSENIC BCL AND $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL03-3	3	15	STC9-JW10	0	11
STC9-FALL03-2	2	13	STC1-JD15	6	10.5
STC9-JW18	0	13	STC8-Prov4	0	10
STC9-FALL04-2	2	12	STC9-FALL02-2	2	9.4
STC10-JD11	0	11	STC9-JW06	0	9.3
STC9-FALL02-3	3	11	STC9-JW12	0	8.6
STC9-FALL04-3	3	11	STC9-JW05	0	8

In addition, arsenic was reported as a non-detection in 16 surface soil samples; the associated analytical reporting limits (5.2 to 5.8 mg/kg) were sufficiently low to indicate that these 16 samples did not contain arsenic at concentrations above background.

Barium

Barium was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 100,000 mg/kg BCL, but were higher than the 82 mg/kg $LBCL_{DAF1}$. Four of the samples were also above the much higher maximum shallow Qal McCullough background level (445 mg/kg). These four samples are listed below:

- STC9-JW18, 0 ft bgs, 720 J+ mg/kg
- STC9-JW10, 0 ft bgs, 590 J+ mg/kg
- STC9-JW06, 0 ft bgs, 480 J+ mg/kg
- STC9-JW12, 0 ft bgs, 460 J+ mg/kg

Boron

Boron was detected in four of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 100,000 mg/kg BCL. One detection was higher than the 23.4 mg/kg $LBCL_{DAF1}$ and the 11.6 mg/kg maximum shallow Qal McCullough background level (surface sample STC9-JD11 [40 J mg/kg]). For the 73 non-detect results, reporting limits were generally lower than the $LBCL_{DAF1}$.

Cadmium

Cadmium was detected in 45 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 1,110 mg/kg BCL. The following two detections were higher than the 0.4 mg/kg $LBCL_{DAF1}$ and the 0.1291 mg/kg maximum shallow Qal McCullough background level for this compound: the surface sample at STC9-JW18 (1.7 mg/kg) and the 3 feet bgs sample from STC9-FALL03-3 (0.42 mg.kg).

Chromium (VI)

Chromium (VI) was detected in 43 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 1,230 mg/kg BCL. Eleven surface samples were higher than the 2 mg/kg $LBCL_{DAF1}$ and the maximum shallow Qal McCullough background level (0.32 mg/kg). The 11 samples that exceeded the chromium (VI) $LBCL_{DAF1}$ are listed in Table 3-8 below.

TABLE 3-8: CHROMIUM (VI) $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC6-JD14	0	13
STC9-FALL03-3	3	9.6 J-
STC6-JD15	0	8
STC9-FALL04-2	2	6.4 J-
STC9-FALL02-3	3	4.6 J-
STC9-FALL04-3	3	4.3 J-
STC9-FALL03-2	2	4.2 J-
STC9-FALL02-2	2	3.9 J-
STC8-Prov4	0	3.1
STC10-JD11	0	3
STC8-Prov4	0	3

The analytical reporting limits for non-detections were generally lower than the BCL, $LBCL_{DAF1}$, and maximum background.

Cobalt

Cobalt was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 337 mg/kg BCL, but all detections were higher than the 0.495 mg/kg $LBCL_{DAF1}$. Of these, 13 exceeded the 16.3 mg/kg maximum shallow Qal McCullough background level. The 13 cobalt detections above background that exceeded the $LBCL_{DAF1}$ are listed in Table 3-9 below.

TABLE 3-9: COBALT $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW18	0	36
STC9-JW05	0	30
STC9-JW10	0	26
STC9-FALL02-3	3	20
STC9-JW05	0	20
STC1-JD02	10	19.2
STC9-FALL04-2	2	19
STC9DP-JW01	2	18
STC9-FALL03-3	3	18
STC9DP-JW01	3	17
STC9-FALL02-2	2	17
STC9-FALL03-2	2	17
STC9-FALL04-3	3	17

Copper

Copper was detected in all but one of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 42,200 mg/kg BCL; however, six of the detections were higher than the 45.8 mg/kg $LBCL_{DAF1}$ and the maximum shallow Qal McCullough background level (25.9 mg/kg). The six samples that were above the $LBCL_{DAF1}$ are listed below.

- TMC1-JD02, 0 ft bgs, 186 J mg/kg
- STC9-FALL02-2, 2 ft bgs, 140 mg/kg
- STC9-FALL02-3, 3 ft bgs, 130 mg/kg
- STC9-JW10, 0 ft bgs, 63 mg/kg
- STC9-JW18, 0 ft bgs, 58 J+ mg/kg
- STC9DP-JW01, 3 ft bgs, 55 mg/kg

Iron

Iron was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 100,000 mg/kg BCL, but all detections were higher than the 7.56 mg/kg $LBCL_{DAF1}$. Of these, 34 detections were higher than the 19,700 mg/kg maximum shallow Qal McCullough background level, as listed in Table 3-10.

TABLE 3-10: IRON $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL04-3	3	37000	STC9-JW06	0	27000
STC9-JW08	0	33000	STC9DP-JW07	2	26000
STC9-FALL02-3	3	32000	STC9-FALL02-2	2	26000
STC9-FALL03-3	3	32000	STC9-JW25	0	26000
STC9-JW09	0	31000	STC9-JW13	0	25000
STC9-JW10	0	31000	STC9-JW25	0	25000
STC9-JW22	0	30000	STC10-JD11	0	23000
STC9-JW23	0	30000	STC9-JW14	0	23000
STC9-JW05	0	29000 J	GES-JWT-3	0	22000
STC9DP-JW01	3	29000	STC6-JD02	0	22000
STC9-FALL04-2	2	29000	STC6-JD15	0	22000
STC9-JW03	0	29000	TMC1-JD02	0	21000 J
STC9DP-JW07	3	28000	STC1-JB12	0	20700
STC9-FALL03-2	2	28000	GES-JWT-2	0	20000
STC9-JW12	0	28000	STC6-JD05	0	20000
STC9-JW18	0	28000	STC8-JD12	10	20000
STC9DP-JW01	2	27000	STC1-AJ18	0	19800

Lithium

Lithium was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 2,270 mg/kg BCL; however, two of detections were higher than the 21.9 mg/kg $LBCL_{DAF1}$. Neither of these detections was above the 26.5 mg/kg maximum shallow Qal McCullough background level for this compound.

Magnesium

Magnesium was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 100,000 mg/kg BCL, but all detections were higher than the 973 mg/kg $LBCL_{DAF1}$. However, only one of the magnesium detections was higher than the 17,500 mg/kg maximum shallow Qal McCullough background level. This exceedance was associated with surface sample STC9-JW18 (18,000 mg/kg).

Manganese

Manganese was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). Of these detections, none were higher than the 24,900 mg/kg BCL; however, all detections were higher than the 1.3 mg/kg $LBCL_{DAF1}$. Of these, 25 detections were higher than the 863 mg/kg maximum shallow Qal McCullough background level. The 25 $LBCL_{DAF1}$ exceedances above background are listed in Table 3-11.

TABLE 3-11: MANGANESE $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW18	0	7000
STC9-FALL04-2	2	6800
STC9-FALL03-3	3	6300
STC9-FALL04-3	3	4600
STC9-FALL03-2	2	4400
STC9-JW10	0	4300
STC8-JD12	10	3600
STC9-FALL02-3	3	2900
STC9-JW06	0	2800
STC9-JW05	0	2300
STC9-FALL02-2	2	2100
STC9-JW05	0	1900
STC9-JW12	0	1700

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC8-Prov4	0	1300
STC10-JD11	0	1200
STC6-JD14	0	1200
STC9-JW09	0	1100
STC9-JW25	0	1100
STC7-JD13	10	1000
STC8-Prov4	0	990
STC9DP-JW01	2	990
STC9DP-JW01	3	960
STC9-JW08	0	910
STC1-AJ18	0	884
STC9DP-JW07	3	880

Mercury

Mercury was detected in 44 of the 75 soil samples in which it was analyzed for (40 surface and 35 subsurface samples; Table B-4). Of these detections, none were higher than the 341 mg/kg BCL; however, eight of the detections were higher than the 0.104 mg/kg $LBCL_{DAF1}$ and the 0.11 mg/kg maximum shallow Qal McCullough background level for this compound, and are listed below. The analytical reporting limits for non-detections were lower than the comparison levels.

- STC9-FALL03-2, 2 ft bgs, 0.54 mg/kg
- STC9-JW23, 0 ft bgs, 0.53 mg/kg
- STC10-JD11, 0 ft bgs, 0.47 mg/kg
- STC9-FALL03-3, 3 ft bgs, 0.41 J mg/kg
- STC9-JW22, 0 ft bgs, 0.16 mg/kg
- STC9-JW09, 0 ft bgs, 0.15 mg/kg
- STC9-JW18, 0 ft bgs, 0.14 mg/kg
- STC9-JD06, 0 ft bgs, 0.136 mg/kg

Molybdenum

Molybdenum was detected in 33 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of these detections were higher than the 5,680 mg/kg BCL. One of the detections was above the 3.69 mg/kg $LBCL_{DAF1}$, and the 2.0 mg/kg maximum shallow Qal McCullough background level for this compound. The one $LBCL_{DAF1}$ sample above background was associated with location STC9-FALL02-3 from 3 feet bgs (3.7 mg/kg). For all non-detect samples, the analytical reporting limits were lower than the BCL and $LBCL_{DAF1}$.

Nickel

Nickel was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). Of these detections, none were higher than the 21,800 mg/kg BCL; however, all detections were higher than the 7 mg/kg $LBCL_{DAF1}$. Of these, 14 detections were higher than the 30 mg/kg maximum shallow Qal McCullough background level. Table 3-12 presented below lists the 14 $LBCL_{DAF1}$ exceedances that were above the background concentration for nickel.

TABLE 3-12: NICKEL $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW05	0	77
STC9-FALL02-3	3	58
STC9-FALL04-2	2	52
STC9-JW05	0	51
STC9-FALL02-2	2	48
STC9-FALL04-3	3	47
STC9-FALL03-3	3	45

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-JD02	10	43
STC9-FALL03-2	2	39
STC9-JW18	0	38
STC9-JW10	0	35
STC9-JW06	0	34
STC8-JD12	10	33
STC9-JW09	0	31

Selenium

Selenium was detected in 48 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 5,680 mg/kg BCL. However, all detections were higher than the 0.3 mg/kg $LBCL_{DAF1}$ and the 0.6 mg/kg maximum shallow Qal McCullough background level, and are listed below in Table 3-13.

TABLE 3-13: SELENIUM $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9DP-JW01	2	5.1	STC9-JW05	0	2.7
STC8-JD12	10	4.8 J+	STC9-JW22	0	2.7
STC9-FALL02-3	3	4.8	STC8-Prov5	0	2.6 J+
STC9-FALL03-3	3	4.6	STC6-JD02	0	2.5 J
STC1-AJ18	0	3.9	STC9-JW12	0	2.5
STC9-JW18	0	3.9	STC6-JD14	0	2.4 J
STC1-JB12	0	3.8	STC9-JW05	0	2.4
STC9DP-JW01	3	3.8	STC6-JD05	0	2.3 J
STC9-FALL04-3	3	3.8	STC7-ES01	0	2.3 J
STC9-JW09	0	3.7	STC10-JD11	0	2.3
STC9DP-JW07	2	3.6	STC9-JW23	0	2.2 J
STC9-JW03	0	3.6	STC6-JD15	0	1.8 J
STC8-Prov4	0	3.5 J+	STC7-JD13	10	1.8 J
GES-JWT-1	0	3.5	STC9-JW10	0	1.7 J
GES-JWT-2	0	3.4	STC9-JW25	0	1.6 J
GES-JWT-3	0	3.2	STC1-AK20	0	1.5 J
STC9-JW06	0	3.2	STC1-AK20	6	1.5 J
STC9-JW13	0	3.1	STC9-FALL03-2	2	1.4 J
STC9DP-JW07	3	3	STC1-AK20	0	1.3 J
STC9-JW08	0	3	STC9-FALL02-2	2	1.3 J
STC8-Prov4	0	2.9 J+	STC9-JW25	0	1.3 J
STC1-JB12	10	2.9	STC1-AK20	16	1.1 J
STC9-JW14	0	2.9	STC9-FALL04-2	2	1 J
STC1-AJ18	12	2.8	STC7-JD08	0	0.86 J

The analytical reporting limits for the non-detections were generally lower than the comparison levels.

Silver

Silver was detected in 30 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were below the 5,680 mg/kg BCL; one of the detections was above the 0.85 mg/kg $LBCL_{DAF1}$ and the 0.2609 mg/kg maximum shallow Qal McCullough background level. The one $LBCL_{DAF1}$ exceedance was associated with surface sample STC10-JD11 (1.6 mg/kg). The reporting limits for the non-detect samples were generally lower than the $LBCL_{DAF1}$.

Thallium

Thallium was detected in 14 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were above the 74.9 mg/kg BCL; however, all of the detections were above the 0.4 mg/kg $LBCL_{DAF1}$. Of these, seven were higher than the 1.8 mg/kg maximum shallow Qal McCullough background level for thallium. The seven $LBCL_{DAF1}$ exceedances above background are listed below.

- STC9-FALL03-3, 3 ft bgs, 3.4 mg/kg
- STC9-FALL03-2, 2 ft bgs, 3.3 mg/kg
- STC9-FALL02-2, 3 ft bgs, 3.1 mg/kg
- STC9-FALL04-2, 2 ft bgs, 2.8 mg/kg
- STC8-JD12, 10 ft bgs, 2.4 J mg/kg
- STC9-FALL02-2, 2 ft bgs, 2.3 J mg/kg
- STC9-FALL04-3, 3 ft bgs, 1.9 J mg/kg

The reporting limits for non-detect samples were lower than the background level for thallium.

Other Inorganics

As seen in Table 3-4 (Tables section) and Tables B-3 and B-4 in Appendix B, several inorganic constituents in addition to those listed above were routinely detected in soil samples. None of these additional inorganic constituents were detected at concentrations in excess of either the BCL or the $LBCL_{DAF1}$, with the exception of the following:

- Chlorate detections exceeded the 1.13 mg/kg $LBCL_{DAF1}$ in eight samples;
- Nitrate detections exceeded the 7.0 mg/kg $LBCL_{DAF1}$ in 16 samples; and
- Perchlorate detections exceeded the 0.0185 mg/kg $LBCL_{DAF1}$ in all 42 of the samples in which it was detected.

The analytical reporting limits for these additional inorganic constituents were all lower than their established BCL and $LBCL_{DAF1}$ values.

Organochlorine Pesticides

Organochlorine pesticides were analyzed for in 89 soil samples (47 surface and 42 subsurface samples; Table B-5). The following constituents were detected in at least one sample:

- 2,4-DDD
- 2,4-DDE
- 4,4-DDD
- 4,4-DDE
- 4,4-DDT
- alpha-BHC
- alpha-Chlordane
- beta-BHC
- Chlordane
- Endrin aldehyde
- Endrin ketone
- gamma-Chlordane

The organochlorine pesticides beta-BHC, 4,4-DDT, and 4,4-DDE were detected the most frequently; detection frequencies for these compounds ranged from approximately 55 to 62 percent of the samples (49 to 55 samples). The nine other organochlorine pesticides that were detected at a frequency ranging from 1 to 23 detections, with four of the compounds detected in fewer than seven samples.

No organochlorine pesticides were detected above their established BCL. Beta-BHC, 4,4-DDT, and 4,4-DDE were the only organochlorine pesticides detected above their established $LBCL_{DAF1}$.

Beta-BHC was detected in 49 (~55 percent) of the 89 samples for which it was analyzed (47 surface and 42 subsurface samples; Table B-5). While none of the detections were above the 53.9 mg/kg BCL, the 15 samples listed in Table 3-14 had detections above the 0.00596 mg/kg $LBCL_{DAF1}$:

TABLE 3-14: BETA-BHC DETECTIONS GREATER THAN $LBCL_{DAF1}$

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW10	0	0.064	STC9-JW09	0	0.0089
STC9-JW23	0	0.028	STC1-JD14	0	0.0087 J
STC9-JW25	0	0.02	STC7-JD11	10	0.0078
STC9-JW25	0	0.019	STC1-JD08	0	0.0078 J
STC1-JD13	0	0.011	STC9-JW22	0	0.0075
STC1-AI15	0	0.028 J	STC1-JD06	0	0.0067
STC9-JW18	0	0.026 J+	STC7-JD10	10	0.0061
TMC1-JD01	0	0.01 J+			

4,4-DDT was detected in 54 (~61 percent) of the 89 samples for which it was analyzed (47 surface and 42 subsurface samples; Table B-5). None of the detections were above the 7.81 mg/kg BCL, but two of the detections did exceed the 2.0 mg/kg $LBCL_{DAF1}$. These two exceedances occurred at surface samples STC9-JW23 (5.1 mg/kg) and STC9-JW10 (3.3 mg/kg).

4,4-DDE was detected in 55 (~62 percent) of the 89 samples for which it was analyzed (47 surface and 42 subsurface samples; Table B-5). None of the detections were above the

7.81 mg/kg BCL, but two of the detections did exceed the 3.0 mg/kg $LBCL_{DAF1}$. These two exceedances occurred at surface samples STC9-JW10 (5.4 mg/kg) and STC9-JW23 (4.1 mg/kg).

With one exception, the standard analytical reporting limits for organochlorine pesticides were lower than the comparison levels. The reporting limits for dieldrin (0.00022 to 0.00045 mg/kg) were well below the 0.12 mg/kg BCL, but above the 0.0002 mg/kg $LBCL_{DAF1}$.

Volatile Organic Compounds

VOCs were analyzed for in 60 soil samples (32 surface and 28 subsurface samples; Table B-10). As seen in Table 3-4 and Table B-10, the following 12 VOCs were detected in at least one sample:

- 1,2,3-Trichlorobenzene
- 1,2,4-Trichlorobenzene
- 1,2,4-Trimethylbenzene
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Acetone
- Benzene
- Chlorobenzene
- Chloroform
- Dichloromethane
- Nonanal

Dichloromethane was detected the most frequently in 60 percent of the samples. None of the detections were above the BCLs. With the exception of dichloromethane and 1,4-dichlorobenzene, the VOC detections were also lower than the $LBCL_{DAF1}$. Dichloromethane was detected in 36 soil samples, as listed in Table 3-15 below, at concentrations in excess of the 0.001 $LBCL_{DAF1}$.

TABLE 3-15: DICHLOROMETHANE DETECTIONS GREATER THAN $LBCL_{DAF1}$

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-JD04	10	0.053	STC1-AK20	0	0.016
STC1-JD05	10	0.051	STC1-JD14	0	0.013
STC1-JD04	0	0.05	STC1-JD14	0	0.01
STC1-JD05	0	0.045	STC1-JD14	10	0.01
STC1-JD03	0	0.043	STC1-JD15	6	0.01
STC1-AI15	10	0.028	STC1-JD15	16	0.01
STC1-JD03	10	0.028	STC1-JD15	0	0.0097
STC1-AI15	0	0.027	TMC1-JD01	11	0.0094
STC1-JD02	0	0.027	TMC1-JD02	10	0.0092
STC1-JD02	10	0.027	STC1-JD13	10	0.009 J-
STC1-AI15	0	0.024	TMC1-JD02	0	0.0089

TABLE 3-15: DICHLOROMETHANE DETECTIONS GREATER THAN $LBCL_{DAF1}$

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-AJ18	12	0.022	TMC1-JD01	0	0.0082
STC1-AK20	0	0.017	TMC1-JD02	0	0.0082
STC1-AK20	6	0.017	STC1-AJ18	0	0.0076
STC1-AK20	16	0.017	STC1-JD13	0	0.0064 J-
STC1-JD11	10	0.017	STC1-JD07	14	0.0064
STC1-JD12	10	0.017	STC1-AI16	10	0.0062
STC1-AK15	0	0.016	STC1-JD10	0	0.0034 J

1,4-Dichlorobenzene had only one exceedance of its 0.1 mg/kg $LBCL_{DAF1}$, at surface sample STC1-AJ15 (0.56 J mg/kg).

It should be noted that the analytical reporting limits for dichloromethane and 1,1,2,2-tetrachloroethane were higher than their $LBCL_{DAF1}$. For the other VOCs, the standard reporting limits were lower than the BCLs and $LBCL_{DAF1}$.

Semi-Volatile Organic Compounds

SVOCs were analyzed for in 74 soil samples (46 surface and 28 subsurface samples; Table B-9). As seen in Table 3-4 and Table B-9, only three SVOCs; 2,2’-dichlorobenzil, fluoranthene, and hexachlorobenzene were detected. All SVOC detections were lower than the BCLs, but two of the three had exceedances of their applicable $LBCL_{DAF1.}$ All three of the 2,2’-dichlorobenzil detections exceeded the 0.0003 mg/kg $LBCL_{DAF1}$, and all six of the hexachlorobenzene detections exceeded the 0.1 mg/kg $LBCL_{DAF1}$. For SVOC non-detects, the standard reporting limits were lower than the BCLs, except for dichloromethyl ether, which routinely had analytical reporting limits higher than the BCL.

For the following SVOC non-detections, the analytical reporting limits are routinely higher than the $LBCL_{DAF1}$:

- 2,2’-Dichlorobenzil
- 2,4,6-Trichlorophenol
- 2,4-Dichlorophenol
- 2,4-Dinitrophenol
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- 3,3-Dichlorobenzidine
- Hexachlorobenzene
- Hexachloroethane
- Isophorone
- Nitrobenzene
- N-nitrosodi-n-propylamine
- p-Chloroaniline
- Pentachlorophenol

- bis(2-Chloroethyl) ether

Dioxins and Furans

For dioxins/furans, as discussed in Section 1.1, the USEPA TEQ procedure, developed to describe the cumulative toxicity of these compounds, is used. Dioxins and furans were analyzed for in 63 surface soil samples[19] (Table B-2). All of the individual dioxins and furans congeners analyzed were reported as detections in at least one sample. None of the samples analyzed had calculated TCDD TEQ concentrations in excess of the NDEP worker BCL of 1,000 ppt. $LBCL_{DAF1}$ values have not been established for dioxin/furans, thus the potential for impacts to groundwater quality due to their presence could not be assessed by comparisons to the $LBCL_{DAF1}$.

Polychlorinated Biphenyls

PCBs were analyzed for in 63 surface soil samples[20] (individual PCB congeners) (Table B-7). All of the PCB congeners were detected in at least one sample. BCL values have not been established for individual congeners. PCB congeners are included in the calculation of the TCDD TEQ, and are evaluated in this manner, not on an individual congener basis. $LBCL_{DAF1}$ values have not been established for individual PCB congeners.

Polynuclear Aromatic Hydrocarbons

PAHs were analyzed for in 73 soil samples (46 surface and 27 subsurface samples; Table B-6); Each PAH was detected in at least one soil sample. None of the PAH detections exceed either their established BCL, and, with one exception, there were no exceedances of the $LBCL_{DAF1}$. The one $LBCL_{DAF1}$ exceedance was for benzo(a)anthracene with a detection of 0.0843 mg/kg at surface sample STC10-JW11, compared to a $LBCL_{DAF1}$ of 0.08 mg/kg. The standard PAH analytical reporting limits were lower than the BCL and the $LBCL_{DAF1}$, thus concentrations in excess of these comparison levels, if present, would have been reported.

Aldehydes

Aldehydes were analyzed for in 81 soil samples (53 surface and 28 subsurface samples; Table B-9). Acetaldehyde was detected in 74 samples, and formaldehyde was detected in

[19] This tally includes field duplicates and confirmation samples.
[20] This tally includes field duplicates and confirmation samples.

48 samples. None of the detections exceeded the established BCLs for the two compounds. The analytical reporting limits were lower than the BCL, thus concentrations in excess of the BCL, if present, would have been reported. $LBCL_{DAF1}$ values have not been established for these compounds.

Radionuclides

Radionuclides were detected in all 69 of the soil samples analyzed (41 surface, 28 subsurface samples; Table B-8). Exceedances of comparison levels for radionuclides are shown in Table 3-4 for the eight radionuclides currently included in the project analyte list (radium-226, radium-228, thorium-228, thorium-230, thorium-232, uranium-233/234, uranium-235/236, and uranium-238). Of those activities greater than comparison levels, the majority are lower than the maximum shallow Qal McCullough background activity, as shown in Table 3-4. With the exception of thorium-230, uranium-233/234, and uranium-238, the other five radionuclides were reported at activities higher than at least one of their comparison levels and background in at least one sample.

Radium-226 activities in 63 of the 69 samples were higher than the 0.023 picoCurie per gram (pCi/g) BCL and the 0.016 pCi/g $LBCL_{DAF1}$. Of these, the following three detections were higher than the 2.36 pCi/g maximum soil background activity:

- STC6-JD10, 10 ft bgs, 2.62 pCi/g
- STC6-JD11, 10 ft bgs, 2.37 pCi/g
- STC6-ES01, 0 ft bgs, 2.39 pCi/g

Radium-228 activities in 49 of the 69 samples were higher than the 0.041 pCi/g BCL and higher than the 0.016 pCi/g $LBCL_{DAF1}$. Of these, four of the detections were higher than the 2.92 pCi/g maximum soil background activity, as listed below.

- STC1-JD02, 10 ft bgs, 3.97 pCI/g
- STC6-JD02, 0 ft bgs, 3.57 pCi/g
- STC9-JW25, 0 ft bgs, 3.6 pCi/g
- STC9-JW18, 0 ft bgs, 3.22 pCi/g

Thorium-228 activities in 66 of the 69 samples were higher than the 0.025 pCi/g BCL and the 0.0023 pCi/g $LBCL_{DAF1}$. Of these, the following three detections were higher than the 2.28 pCi/g maximum soil background activity:

- STC1-JD06, 0 ft bgs, 2.88 pCi/g
- STC1-JD12, 0 ft bgs, 2.35 pCi/g

- STC1-JD09, 10 ft bgs, 2.71 pCi/g

Thorium-230 activities in 68 of the 69 samples were higher than the 0.00084 pCi/g $LBCL_{DAF1}$. None of the samples were above the much higher 8.3 pCi/g BCL or the 3.01 pCi/g maximum soil background activity.

Thorium-232 activities in 68 of the 69 samples were higher than the 0.0029 pCi/g $LBCL_{DAF1}$. None of the samples were higher than the 7.4 pCi/g BCL. The following three detections exceeded the 2.23 pCi/g maximum soil background activity:

- TMC1-JD02, 0 ft bgs, 2.63 J pCi/g
- STC1-AK15, 0 ft bgs, 2.53 pCi/g
- STC1-AJ16, 0 ft bgs, 2.31 pCi/g

Uranium-238 activities for nine of the 69 samples for which it was analyzed were above the 1.4 pCi/g BCL. No $LBCL_{DAF1}$ has been established for this compound. None of the nine detections above the BCL were above the 2.37 pCI/g maximum soil background activity for this compound.

As presented in NDEP guidance (NDEP 2009a), as part of the process used to evaluate radionuclide data for the BMI Common Areas, BRC assessed whether radionuclides are in secular equilibrium. As discussed in Section 5.1, secular equilibrium is an indication of background conditions.

The data indicate that radionuclides are in secular equilibrium at the Site. Specifically, the mean radio activities for the thorium-232 decay chain (i.e., thorium-232, radium-228, and thorium-228) are comparable (1.5, 1.8, and 1.7 pCi/g, respectively). Similarly, the mean values for the uranium-238 decay chain (uranium-238, uranium-233/234, thorium-230, and radium-226) are also comparable, ranging from 1.0 to 1.2 pCi/g. All of the mean values are lower than their respective maximum background activity levels. A quantitative evaluation of secular equilibrium is presented in Section 5.1.

Summary of Soil Exceedances

As summarized above and in the associated data tables (Table 3-4 and Appendix B), some BCL and $LBCL_{DAF1}$ exceedances are currently observed in Site soils. The following constituents were reported at concentrations higher than the worker BCL and the maximum shallow Qal McCullough background level (where applicable):

- Arsenic (14 samples)
- Radium-228 (4 samples)
- Radium-226 (3 samples)
- Thorium-228 (3 samples)

The following constituents were reported at concentrations higher than the $LBCL_{DAF1}$ and the maximum shallow Qal McCullough background level (where applicable):

- Selenium (48 samples)
- Perchlorate (42 samples)
- Dichloromethane (36 samples)
- Iron (34 samples)
- Manganese (25 samples)
- Antimony (18 samples)
- Nitrate (16 samples)
- Beta-BHC (15 samples)
- Arsenic (14 samples)
- Nickel (14 samples)
- Cobalt (13 samples)
- Chromium (VI) (11 samples)
- Aluminum (9 samples)
- Mercury (8 samples)
- Chlorate (8 samples)
- Thallium (7 samples)
- Copper (6 samples)
- Hexachlorobenzene (6 samples)
- Radium-228 (4 samples)
- Barium (4 samples)
- Radium-226 (3 samples)
- Thorium-228 (3 samples)
- Thorium-232 (3 samples)
- 2,2’-dichlorobenzil (3 samples)
- Cadmium (2 samples)
- 4,4-DDE (2 samples)
- 4,4-DDT (2 samples)
- 1,4-dichlorobenzene (1 sample)
- Benzo(a)anthracene (1 sample)
- Magnesium (1 sample)
- Molybdenum (1 sample)
- Boron (1 sample)
- Silver (1 sample)

Elevated chemical concentrations (notably, arsenic, barium, boron, chromium, chromium [VI], cobalt, copper, lead, manganese, mercury, thallium, tungsten, vanadium, zinc, 4,4-DDE, and 4,4-DDT), have been detected in several samples clustered near the central portion of the Site where several rounds of remediation occurred, and/or along the Beta Ditch, which also had several rounds of remediation. However, all except arsenic are well below their respective worker BCLs. Therefore, because of this, and the absence of residential receptors at the Site, separate exposure areas were not evaluated in the HHRA; that is, the Site was evaluated as a single exposure area, consistent with the project *Statistical Methodology Report* (NewFields 2006), and as discussed further in Section 6.1.1.

The limited number of BCL and $LBCL_{DAF1}$ exceedances indicates that there is a low likelihood of adverse impacts to human health and the environment due to residual chemical concentrations in Site soils. Consistent with the methodology in the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), an HHRA was conducted to further evaluate this possibility, as discussed in subsequent sections of this report.

3.6 SURFACE FLUX SAMPLING

Concurrent with the confirmation soil sampling, BRC implemented surface flux sampling across the Site. This sampling conformed to the most recent NDEP-approved version of SOP-16 (BRC, ERM, and MWH 2009). The sampling procedure for the effort included the USEPA surface emission isolation flux chamber (flux chamber) sampling to support an air pathway analysis for the Site.

It should be noted that while radon samples were collected, they are not included in this HHRA for the following reason: BRC submitted a technical memorandum to the NDEP (BRC 2010c), in which the results of recent radon testing performed in groundwater and indoor air samples were presented. Based on the findings of this memorandum, the NDEP concluded that HHRAs for Eastside property sub-areas do not need to evaluate the pathway of radon migration from groundwater to indoor air for sub-areas with a separation distance of at least 15 feet between any current or future building structure base and the high water table (letter dated November 9, 2010, from Greg Lovato, NDEP, to Mark Paris, BRC). Based on this conclusion and given the depth to groundwater at the Site is at least 40 feet bgs, the intrusion of radon into indoor air is not evaluated in the HHRA.

The flux chamber sample collection rationale was based on the project goal of obtaining a representative dataset of air emissions per sub-area. Flux chamber samples were collected from eight locations with one duplicate sample collected at location STC1-AJ16 (Figure 11): one random sampling location and seven biased locations along the ditches. This density of sample collection is considered adequate for sub-area characterization given the biased nature of the sample locations, the size of the sub-area, and the number of sample locations suggested by the USEPA (1986) in the flux chamber User's Guide for assessing zones of homogeneous site properties.

The analyte list for surface flux samples is composed of the list provided in the most recent NDEP-approved version of SOP-16 (BRC, ERM, and MWH 2009). This analyte list is provided in Table 3-16, and consists of the USEPA Method TO-15 full scan, plus SIM analyses for a subset of the analytes. The analytical results are summarized in Table B-11 (Appendix B), and the principal investigator Report of Findings (which includes descriptions of sampling procedures) is provided in Appendix D (included on the report CD in Appendix B).[21] It should be noted that, in addition to VOC data for the Site, the flux chamber report also contains data for the remainder of the Staging sub-area outside the Site boundaries. Data collected from outside the Site boundaries are not included in this HHRA. A data summary for the flux chamber sample results is provided in Table 3-17.

As seen in Tables 3-17 and B-11, 20 of the 67 organic constituents included in the TO-15 scan were detected in at least one surface flux sample. The most commonly detected constituents were as follows:

- Methyl-ethyl ketone (2-butanone) was detected in eight of nine samples (89 percent);
- Chloroform was detected in eight of 10 samples (80 percent);
- Acetone was detected in seven of nine samples (78 percent); and
- Carbon tetrachloride was detected in seven of 10 samples (70 percent).

The highest reported concentrations were as follows:

- Acetone (1.56 micrograms per square meter per minute [$\mu g/m^2,min^{-1}$] at STC1-JD14A);
- Dichloromethane (0.983 $\mu g/m^2,min^{-1}$ at STC1-JD14A);
- Ethanol (0.967 $\mu g/m^2,min^{-1}$ at STC1-JD05); and
- Methyl ethyl ketone (0.535 $\mu g/m^2,min^{-1}$ at STC1-JD14A).

As discussed in Section 4, all data have been validated. The HHRA surface flux dataset for the Site is included on the report CD in Appendix B. Surface flux sample locations are shown on Figure 11.

[21] Note that this report was prepared prior to data validation; therefore, data qualifiers may differ from those in the remainder of this report.

3.7 LEACHATE DATA

No samples collected within the Site during the confirmation sampling events included synthetic precipitation leaching procedure (SPLP) analysis. Findings from SPLP samples within the adjacent Eastside Main and Southern RIBs sub-areas are applicable to the Site as well. The potential leaching impacts to groundwater will be addressed in the Eastside groundwater remedial alternatives study.

4.0 DATA EVALUATION

This section describes the procedures used to evaluate the acceptability of data for use in the risk assessment. Overall quality of sample results is a function of proper sample management. Management of samples began at the time of collection and continued throughout the analytical process. SOPs were followed to ensure that samples were collected and managed properly and consistently and to optimize the likelihood that the resultant data are valid and representative.

The primary objective of the data review and usability evaluation was to identify appropriate data for use in the HHRA. The analytical data were reviewed for applicability and usability following procedures in USEPA's *Guidance for Data Usability in Risk Assessment (Part A)* (1992a) and *Risk Assessment Guidance for Superfund: Volume I* (1989), and the NDEP's *Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas* (2008a). A quality assurance/quality control (QA/QC) review of the analytical results was conducted during the sampling events. According to the USEPA Data Usability Guidance, there are six principal evaluation criteria by which data are judged for usability in risk assessment. The six criteria are:

- Reports to risk assessor (availability of information associated with Site data);
- Documentation;
- Data sources;
- Analytical methods and detection limits;
- Data review; and
- Data quality indicators (DQIs), including precision, accuracy, representativeness, comparability, and completeness (PARCC).

A summary of these six criteria for determining data usability is provided below. In addition to the six principal evaluation criteria, the NDEP's Data Usability Guidance includes a step for data usability analysis, which is discussed after these six USEPA evaluation criteria. Data usability evaluation tables are provided electronically in Appendix E (included on the report CD in Appendix B).

4.1 CRITERION I – REPORTS TO RISK ASSESSOR (AVAILABILITY OF INFORMATION ASSOCIATED WITH SITE DATA)

The usability analysis of the site characterization data requires the availability of sufficient data for review. The required information is available from documentation associated with the Site data and data collection efforts. Data have been validated as described in the following DVSRs, which are provided electronically in Appendix F:

- *Data Validation Summary Report, Staging Sub-Area Soil Investigation – May-June 2010 (Dataset 66)* (BRC and ERM 2010a), approved by the NDEP on January 9, 2012;
- *Data Validation Summary Report, TIMET Ponds Sub-Area Soil Investigation – March, April and July 2010 (Dataset 65)* (BRC and ERM 2011a), which was re-submitted to the NDEP on January 14, 2011;
- *Data Validation Summary Report, Eastside North Surface Flux Investigations (Remaining Sub-Areas) – July through August 2010 (Dataset 71)* (BRC and ERM 2011b), approved by the NDEP on July 25, 2011;
- *Data Validation Summary Report, Eastside North Confirmation Soil Investigations – December 2008 through October 2010 – Part II (Dataset 72b)* (BRC and ERM 2011c), approved by the NDEP on May 9, 2011;
- *Eastside Confirmation/Supplemental Sampling Events – July 2012 Through February 2014 (Dataset 72f)* (BRC and ERM 2014a) approved by the NDEP on January 15, 2015; and
- *Eastside Confirmation/Supplemental Sampling Events – March 2014 Through August 2014 (Dataset 72g)* (BRC and ERM 2014b) [pending approval by the NDEP].

The information sources and the availability of such information for the data usability process are as follows:

- A Site description provided in this report and the NDEP-approved SAPs identify the location and features of the Site, the characteristics of the vicinity, and contaminant transport mechanisms.
- A Site map with sampling locations is provided on Figure 11.
- Sampling design and procedures were provided in the NDEP-approved SAPs.

- Analytical methods and sample quantitation limits (SQLs) are provided in the dataset file included on the report CD in Appendix B.
- A complete dataset is provided in the dataset file included on the report CD in Appendix B.
- A narrative of qualified data is provided with each analytical data package; the laboratory provided a narrative of QA/QC procedures and results. These narratives are included as part of the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b).
- QC results are provided by the laboratory, including blanks, replicates, and spikes. The laboratory QC results are included as part of the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b).
- Data flags used by the laboratory were defined adequately.
- Electronic files containing the raw data made available by the laboratory are included as part of the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b).

4.2 CRITERION II – DOCUMENTATION REVIEW

The objective of the documentation review is to confirm that the analytical results provided are associated with a specific sampling location and collection procedure, using available documentation. For the purposes of this data usability analysis, the chain-of-custody forms prepared in the field were reviewed and compared to the analytical data results provided by the laboratory to ensure completeness of the dataset as discussed in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b). Based on the documentation review, all samples analyzed by the laboratory were correlated to the correct geographic location at the Site, as shown on Figure 11. The samples were collected in accordance with the SAPs (BRC 2010a,b), and the SOPs developed for the BMI Common Areas as provided in the FSSOP (BRC, ERM, and MWH 2009). Field procedures included documentation of sample times, dates, and locations; other sample-specific information such as sample depth was also recorded. Information from field forms generated during sample collection activities was imported into the project database.

The analytical data were reported in a format that provides adequate information for evaluation, including appropriate QC measures and acceptance criteria. Each laboratory report describes the analytical method used, provides results on a sample-by-sample basis along with sample-specific SQLs, and provides the results of appropriate QC samples such as laboratory control spike samples, sample surrogates and internal standards, and matrix spike samples. All laboratory reports, except for asbestos, were prepared as provided by the documentation required by USEPA's Contract Laboratory Program (USEPA 2003a, 2004b,c) which includes chain-of-custody records, calibration data, QC results for blanks, duplicates, and spike samples from the field and laboratory, and all supporting raw data generated during sample analysis were also included. Reported analytical results were imported into the project database.

Measurement of asbestos was conducted consistent with the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a). The recommended method for providing asbestos data that are useful for risk assessment purposes was performed by EMSL Analytical, Inc., in Westmont, New Jersey. Although this laboratory is not currently certified in Nevada, it does have State of California and U.S. accreditation for asbestos analysis. Because many of the QC procedures associated with other analyses do not apply to asbestos analysis (e.g., laboratory blanks, duplicates and spikes), data validation of the asbestos laboratory reports involved a somewhat lesser level of effort than for other analyses (consistent with the NDEP's 2012 *Guidance on Data Validation for Asbestos Data in Soils*).

4.3 CRITERION III – DATA SOURCES

The review of data sources is performed to determine whether the analytical techniques used in the site characterization process (i.e., SAP sampling) are appropriate for risk assessment purposes. The data collection activities specified in the SAP were developed to characterize a broad spectrum of chemicals potentially present on the Site, including asbestos, aldehydes, general chemistry and ions, VOCs, SVOCs, metals, dioxins/furans, PAHs, organochlorine pesticides, radionuclides, and PCBs (SRCs and analyses performed under SAP implementation are listed in Table 3-2, and Table 3-16 for surface flux samples).[22] Because of the soil removals that have occurred on the Site, data collected prior to SAP implementation had significant gaps and inconsistencies in analytical methodology, and as discussed in Section 2, those historical data are not evaluated further in the data usability process, or the HHRA. Only post-remediation data collected under the SAPs (and subsequent confirmation sampling events) are being used in the HHRA, and these were subjected to the formal data usability evaluation described in this section. Figure 11 demonstrates that samples collected in accordance with the SAPs are situated across the entire Site; analyses associated with these samples are summarized in Tables 3-2 (soil) and 3-16 (surface flux).

[22] Although radon samples were collected and analyzed for the Site, radon has been evaluated through a separate process and is not considered further in the data usability process (see Section 3.6).

The State of Nevada is in the process of certifying the laboratories used to generate the analytical data. As such, standards of practice in these laboratories follow the quality program developed by the Nevada Revised Statutes and are within the guidelines of the analytical methodologies established by the USEPA. Based on the review of the available information, the data sources for chemical and physical parameter measurements are adequate for use in a risk assessment.

4.4 CRITERION IV – ANALYTICAL METHODS AND DETECTION LIMITS

In addition to the appropriateness of the analytical techniques evaluated as part of Criterion III, it is necessary to evaluate if the detection limits are low enough to allow adequate characterization of risks. At a minimum, this data usability criterion can be met through the determination that routine USEPA and U.S. Department of Energy (DOE) reference analytical methods were used in analyzing samples collected from the Site. The USEPA and DOE methods that were used in conducting the laboratory analysis of soil and surface flux samples are identified in the dataset file included on the report CD in Appendix B. Each of the identified methods is considered the most appropriate method for the respective constituent class and each was approved by the NDEP as part of the SAPs (BRC 2010a,b). As recommended by NDEP's guidance on *Detection Limits and Data Reporting* (NDEP 2008b), the laboratory reported SQL was used in evaluating detection limits.

Laboratory practical quantitation limits (PQLs) were based on those outlined in the reference method, the SAPs (BRC 2010a,b), and the project QAPP. In accordance with respective laboratory SOPs, the analytical processes included performing instrument calibration, laboratory method blanks, and other verification standards used to ensure QC during the analyses of collected samples.

The range of SQLs achieved in field samples was compared to NDEP BCLs (NDEP 2013). As seen in the summary of the Site dataset provided in Tables 3-4 (soil) and 3-18 (surface flux), of the standard analytes, only five constituents had SQLs that exceeded their respective worker soil BCLs. The SQLs exceedances of NDEP BCLs are discussed below.

- The radium-226 in six of 69 samples, radium-228 in 19 of 69 samples, and thorium-228 in three of 69 samples had minimum detectable activities (MDA) higher than the BCL; the uranium-235/236 MDA in most sample analyses were higher than the BCL.

- Arsenic SQLs exceeding the PQL were identified in all 16 non-detect results. All 16 non-detects were due to blank contamination where the non-detect value was raised to the PQL.

- The only organic analytes with a SQL higher than the BCL was dichloromethyl ether in all 74 samples analyzed and N-nitrosodi-n-propylamine with a SQL higher than the BCL in 72 of 74 samples analyzed. These compounds were not detected in any samples. The dichloromethyl ether SQL is greater than 100 times the BCL and a reduction in the SQL is not likely to be achieved by the laboratory. The N-nitrosodi-n-propylamine SQL is close to the BCL. These chemicals are further discussed in the Uncertainty Analysis section (Section 7.1).

As discussed in the *2008 Supplemental Shallow Soil Background Report* (BRC and ERM 2009b), there are differences in SQLs among datasets that may affect data comparability for datasets comprised primarily of non-detect values. For these datasets, left-censored data can result in difficulties in differentiating whether datasets are actually different or merely an artifact of detection limits.

4.5 CRITERION V – DATA REVIEW

The data review portion of the data usability process focuses primarily on the quality of the analytical data received from the laboratory. Soil and surface flux sample data were subject to data validation. DVSRs were prepared as separate deliverables (BRC and ERM 2010a, 2011a,b,c, 2014a,b; Appendix F). The analytical data were validated according to the internal procedures using the principles of USEPA National Functional Guidelines (USEPA 1999, 2004d, 2005a, 2008) and were designed to ensure completeness and adequacy of the dataset. Additionally, the DVSRs were issued utilizing the NDEP's two *Supplemental Guidance on Data Validation* documents (NDEP 2009b,c). Any analytical errors and/or limitations in the data have been addressed and an explanation for data qualification provided in the respective data tables. The results of ERM's data review for these issues are presented in the DVSRs and are summarized below.

A limited number of results for certain analytes/samples (28 data points, all non-detections) were rejected as unusable for the following reasons:

- The formaldehyde result for sample STC1-JD12-10 was rejected due a very low surrogate recovery.

- The antimony results for two samples, STC1-AJ18-0 and STC1-AJ18-12 (all associated with TestAmerica SDG#FOE250440) were rejected due to very low matrix spike/matrix spike duplicate (MS/MSD) recoveries.

- The mercury results for two samples STC7-ES01 and STC7-JD08 (all associated with TestAmerica SDG#160-1092-1) were rejected due to negative MS/MSD recoveries.

- The benzyl alcohol result for sample STC1-JD15-0 was rejected due to a zero MS recovery.

- The hydroxymethyl phthalimide result for sample STC10-JW02 was rejected due to a calibration violation.

- Heptachlor results in 21 samples were rejected due to calibration violations. The rejected samples are listed in Table 4-1.

TABLE 4-1: HEPTACHLOR SAMPLES REJECTED DUE TO CALIBRATION VIOLATIONS

Sample ID	Lab ID	Sample ID	Lab ID
STC1-AI16-0	F0F080484004	STC1-AI16-10	F0F080484005
STC1-AJ15-0	F0F080484008	STC1-AJ15-0-DUP	F0F080484009
STC1-AJ15-10	F0F080484010	STC1-AJ16-0	F0F080484006
STC1-AJ16-10	F0F080484007	STC1-JD07-0	F0F080484001
STC1-JD07-14	F0F080484003	STC1-JD07-4	F0F080484002
STC1-JD08-0	F0E210435007	STC1-JD08-0-DUP	F0E210435008
STC1-JD08-10	F0E210435009	STC1-JD09-0	F0E210435010
STC1-JD09-10	F0E210435011	STC1-JD14-0	F0F020455001
STC1-JD14-0-DUP	F0F020455002	STC1-JD14-10	F0F020455003
STC1-JD15-0	F0F020455004	STC1-JD15-16	F0F020455006
STC1-JD15-6	F0F020455005		

Data qualifications are discussed in the subsections that follow.

4.5.1 Holding Time Exceedances / Sample Condition Qualifications

Holding time refers to the period of time between sample collection and the preparation and/or analysis of the sample. The accuracy of analytical results may depend upon analysis within specified holding times and sample temperature. In general, a longer holding time is assumed to result in a less accurate measurement due to the potential for loss or degradation of the analyte over time. Sample temperature is of greatest concern for VOCs that may volatilize from the sample at higher temperatures. As described in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), sample results were reviewed for compliance with the method-prescribed preparation and analysis holding times.

USEPA guidance for validation allows professional judgment to be used in evaluating qualification due to holding time exceedances. Sample results that were generated after the required holding time, but less than two times after the holding time, were qualified as estimated

(J- or UJ flagged). If the samples were prepared after two times the holding time was exceeded, non-detect results were qualified as rejected (R) and detections were qualified as estimated (J-). Qualifications to 32 samples (datasets 66, 72b, and 72f) were made on the basis of exceeded holding times (see Table 2-2 of DVSRs 66, 72b, and 72f [BRC and ERM 2010a, 2011c, 2014a]; Appendix F; included on the report CD in Appendix B), as follows:

- Chromium (VI) results for 14 soil samples were qualified as estimated (J-/UJ) due to holding time exceedances. The lengths of time between sample preparation and analysis for these batches varied between 6 and 7 days (1 to 3 days beyond the method-prescribed 4-day period). For the data evaluated in DVSR 72f, samples exceeding the 30-day holding time from collection to preparation were used. Samples in these batches were prepared 44, 59 or 64 days from collection to preparation. The samples qualified are listed in Table 4-2.

TABLE 4-2: CHROMIUM (VI) SAMPLES QUALIFIED DUE TO HOLDING TIME EXCEEDANCES

Sample ID	Lab ID	Sample ID	Lab ID
STC1-AI16-10	F0F080484005	STC1-AJ15-10	F0F080484010
STC1-AJ16-0	F0F080484006	STC1-AJ16-10	F0F080484007
STC1-JB12-0	F0H310456001	STC1-JB12-10	F0H310456002
STC1-JD07-14	F0F080484003	STC1-JD07-4	F0F080484002
STC9-FALL02-2	160-4969-2	STC9-FALL02-3	160-5233-2
STC9-FALL03-2	160-4969-3	STC9-FALL03-3	160-5233-3
STC9-FALL04-2	160-4969-4	STC9-FALL04-3	160-5233-4

- Acetaldehyde results for 15 soil samples were qualified as estimated (J-) due to holding time exceedances. The length of time between sample preparation and analysis for these batches was 4 days (1 day beyond the method-prescribed 3-day period). The samples qualified are listed in Table 4-3.

TABLE 4-3: ACETALDEHYDE SAMPLES QUALIFIED DUE TO HOLDING TIME EXCEEDANCES

Sample ID	Lab ID	Sample ID	Lab ID
STC1-JD11-0	NTE2436-08RE2	STC1-JD11-10	NTE2436-09RE2
STC9-JW01	160-5052-15	STC9-JW02	160-5052-16
STC9-JW03	160-5052-17	STC9-JW04	160-5052-18
STC9-JW05	160-5052-19	STC9-JW05-DUP	160-5052-1
STC9-JW06	160-5052-2	STC9-JW07	160-5052-3
STC9-JW08	160-5052-4	STC9-JW09	160-5052-6
STC9-JW10	160-5052-7	STC9-JW11	160-5052-8
STC9-JW12	160-5052-9		

- Mercury results for three soil samples were qualified as estimated (J-) due to holding time exceedances. The length of time between sample collection and analysis for these batches was 59 days (31 days beyond the method-prescribed 28-day period). The samples qualified are STC9-FALL02-3, STC9-FALL03-3, and STC9-FALL04-3.

As noted in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), all samples were received at the laboratory within the required temperatures range of 4°± 2° Celsius. No sample results were qualified based on sample temperatures.

4.5.2 Blank Contamination

Blanks are artificial samples designed to evaluate the nature and extent of contamination of environmental samples that may be introduced by field or laboratory procedures. Field and laboratory blanks, consisting of contaminant-free water, were prepared and analyzed as part of standard QA/QC procedures to monitor for potential contamination of field equipment, laboratory process reagents, and sample containers. As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), 341 results were qualified as undetected (U) or estimated (J+) due to laboratory or field blank contamination, as discussed below. Of these, the majority, 283 results, were qualified as undetected (U). Detections of constituents qualified as non-detections due to comparable detections in laboratory or field blanks are known as "censored" data, and are presented in Tables 2-4 and 2-5 of DVSR 65, Tables 2-5 and 2-6 of DVSR 66, Tables 2-3 and 2-4 of DVSR 71, and Tables 2-6 and 2-7 of DVSR 72b (Appendix F). In these cases, non-detections are represented in the database as "< [*the PQL*]" in the case of inorganics detected below the PQL, or as "<[*result value*]" for all others. [23]

These censored data are summarized in Appendix E, Table E-14 (included on the report CD in Appendix B) by compound class. As seen in that table, analytes were initially reported as detections in samples, but were later qualified as non-detections based on the presence of comparable concentrations of that analyte in blank samples. As seen in Appendix E, compounds most often censored for soil results included the following:

- Ammonia (as N) (32 samples)
- Beryllium (18 samples)
- Orthophosphate (34 samples)
- Mercury (23 samples)

[23] Although NDEP has issued recent guidance regarding qualifying data due to blank contamination (NDEP 2011c); BRC has addressed this issue in the *Technical Memorandum – BRC Comments on NDEP Blank Contamination Guidance* (BRC 2011) and, consistent with this Technical Memorandum, no changes were made to the Site dataset.

- Silver (20 samples)
- 1,2,4-Trimethylbenzene (35 samples)

In addition, dibromochloropropane (seven of 10 results) was frequently censored for flux samples.

Table 4-4 presents the metals most likely to be affected by this issue.

TABLE 4-4: METALS MOST FREQUENTLY CENSORED DURING BLANK SAMPLE EVALUATION

Metal	Number of Detect	Number of Samples	Number of Censored Results	Max Non-Detect (mg/kg)	NDEP Worker BCL (mg/kg)
Arsenic	61	77	16	5.8	1.77
Beryllium	59	77	18	0.58	2230
Mercury	44	75	23	0.0389	341
Molybdenum	33	77	12	2.9	5680
Silver	30	77	20	1.1	5680

What this table demonstrates is that while the number of censored results is numerous for some metals compared to the number of detections, the censored values are still much lower than soil BCLs. The one exception is arsenic; however, while 20 percent of the results were censored, the maximum censored result is less than the maximum detected result (15 mg/kg) and did not affect the conclusions regarding arsenic.

4.5.3 Sample/Duplicate Differences Outside Permissible Range or Greater than Permissible Values

During the data validation process, sample/duplicate results are evaluated to determine whether differences in those results suggest potential issues with data quality. Specifically, the analyst evaluates the following:

- MS/MSD relative percent difference (RPDs), to determine if the RPDs are outside acceptance limits;
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPDs, to determine if the RPDs are outside acceptance limits;
- Sample/field duplicate results to determine if differences are greater than the permissible value; and
- Sample/laboratory duplicate results to determine if differences are greater than the permissible value.

4.5.3.1 Qualifications Due to Matrix Spike/Matrix Spike Duplicate Recoveries Outside Acceptance Criteria

As discussed in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), 491 inorganic sample results and one organic sample result were qualified as estimated (either UJ for non-detections or J for detections; "+" or " – " added to denote potential high or low bias, respectively) based on MS/MSD recoveries. Five results were rejected due to MS/MSD recoveries and were discussed in Section 4.5. The qualifications applied on the basis of MS/MSD recoveries were as follows:

- The benzyl alcohol result for one soil sample (STC1-AJ18-0) was qualified as estimated (UJ) due to a recovery lower than the acceptance criteria of 19 to 112 percent.
- The radium-228 results for two soil samples (STC1-AJ18-0 and STC1-AJ18-10) were qualified as estimated (UJ) due to a recovery below than the acceptance criteria of 75 to 125 percent.
- The Total Kjeldahl Nitrogen results for the seven soil samples (STC1-AJ18-0, STC1-AJ18-12, TMC1-JD01-0, TMC1-JD01-11, TMC1-JD02-0, TMC1-JD02-0-DUP, and TMC1-JD02-10) identified in Table 4-3 were qualified as estimated due to recoveries below than the acceptance criteria of 75 to 125 percent.
- Metals results for soil samples in various laboratory data packages were qualified due to recoveries outside the acceptance criteria of 75 to 125 percent, as summarized in Table 4-5.

TABLE 4-5: METALS SAMPLES QUALIFIED DUE TO RECOVERIES OUTSIDE ACCEPTANCE CRITERIA

Lab Data Package	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Tungsten	Uranium	Vanadium	Zinc
160-1092-1	+	-					+		+			-		-	+							-		-	
160-1457-1		-		+/-		-											+	+	-		+				
160-1661-1			+	+	+		+	+	+	+	+					+	+		-	+	+		+	+	+
160-336-1		-	+	+			+	+	+							+	+		-	+	+	-		+	+
160-340-1		-							+								+		-	+		-			+
160-4969-1		-		-															+	-	+/-				-
160-5052-1		-		+													+				+/-				
160-5054-1		-		+					+								+			+	+/-				-
160-5233-1		-		+													+			+	+	-			
160-5353-1		-					-										+					-			

TABLE 4-5: METALS SAMPLES QUALIFIED DUE TO RECOVERIES OUTSIDE ACCEPTANCE CRITERIA

Lab Data Package	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Tungsten	Uranium	Vanadium	Zinc
160-6633-1		-		-													+			+	+				
F0D060425		-		+													+					-			
F0E210435		-		+													+				+	-			
F0E250440				+													+			+	+	-			
F0E280497		-		+													+				+	-			
F0F020455		-																			+	-			
F0F040509		-		+		-							-				+				+	-		-	
F0F050477		-		+													+			+	+	-			
F0F080484		-		+													+				+	-			
F0H310456		-		-													-				+	-			

+ = Recovery greater than the acceptance limits
- = Recovery less than the acceptance limits
Blank entry signifies that the recovery was within the acceptance limits

Appendix E, Table E-11 (included on the report CD in Appendix B) lists the samples and associated analytes exhibiting MS/MSD percent recoveries below the laboratory control limits. In cases in which the recoveries were higher than the acceptance criteria, the results have the potential of being similarly biased high, and using these data in the HHRA could result in risks being calculated that are higher than would be associated with actual Site conditions. Of more concern for the HHRA is underestimation of risk, which could be associated with the use of data that are biased low.

As indicated in that table, reported detections and non-detects for soil data were flagged as estimated ("J-" or "UJ," respectively) due to low MS/MSD recoveries (*i.e.*, from 30 to 74 percent for metals).[24] Non-detects associated with "very low" MS/MSD recoveries (*i.e.*, less than 30 percent for metals), are generally rejected as unusable. Five results were rejected due to MS/MSD recoveries as discussed above in Section 4.5. The data flagged as estimated based on low MS/MSD recoveries were subjected to further review in terms of data usability for the Site, as discussed in Section 4.6.2.3.

[24] If additional validation criteria (aside from the MS/MSD recoveries) did not suggest a low bias for a given result, the sample result was flagged with "J" (no bias inferred).

4.5.3.2 Qualifications Due to Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries Outside Acceptance Criteria

Organic and inorganic constituent results for 18 soil samples were qualified as estimated (either UJ for non-detections or J for detections; "+" or " – " added to denote potential high or low bias, respectively) based on LCS/LCSD recoveries. No data were rejected due to LCS recoveries. The qualifications applied on the basis of LCS/LCSD recoveries to soil samples are presented in Table 4-6.

TABLE 4-6: RESULTS QUALIFIED DUE TO LCS/LCSD RECOVERIES OUTSIDE ACCEPTANCE CRITERIA

Laboratory Data Package	Total Kjeldahl Nitrogen[1]	Total Cyanide[2]	Benzyl Alcohol[3]
F0E220430	+	+	
253523			-
253899			-

[1] = Acceptance limits of 90%-110%.
[2] = Acceptance limits of 85%-115%.
[3] = Acceptance limits of 27%-108%.

As noted above, recoveries below the lower laboratory limits are of the most concern in terms of data usability. Appendix E, Table E-11 (included on the report CD in Appendix B) lists the samples and associated analytes exhibiting LCS/LCSD percent recoveries below the lower laboratory control limit. The data flagged as estimated based on low LCS/LCSD recoveries were subjected to further review in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.3.3 Qualifications Due to Sample/Field Duplicate Differences Outside Acceptance Criteria

The following 14 soil field duplicates were collected during the sampling activities

- STC1-AI15-0-DUP
- STC1-AJ15-0-DUP
- STC1-AK15-0-DUP
- STC1-AK20-0-DUP
- STC1-JD08-0-DUP
- STC1-JD12-0-DUP
- STC1-JD14-0-DUP
- STC6-ES01-DUP
- STC6-JD14-DUP
- STC8-Prov4-DUP
- STC9-JW05-DUP
- STC9-JW15-DUP
- STC9-JW25-DUP
- TMC1-JD02-0-DUP

In addition, the following surface flux field duplicate was also collected during the sampling activities: STC1-AJ16R.

If field duplicate results are less than five times the PQL, results are qualified if the absolute difference between the two results is greater than the PQL. If results are greater than five times the PQL, results are compared to a precision goal of $\leq$50 percent RPD. Field duplicate differences in excess of acceptance limits were noted in 13 of the 14 field duplicate pairs of soil samples. The differences are presented in Appendix E, Table E-12 (included on the report CD in Appendix B). All associated data were flagged as estimated (J/UJ). No data were rejected on the basis of sample/field duplicate differences.

4.5.3.4 Qualifications Due to Sample/Laboratory Duplicate Differences Outside Acceptance Criteria

Of the samples representing post-remediation conditions (i.e., not including those data points associated with samples from soil intervals subsequently removed from the Site), results for the 22 soil samples (22 data points) identified in Table 4-7 had sample/laboratory duplicate differences greater than permissible values (i.e., for radionuclides, absolute difference greater than 1 pCi/g; for inorganics, if the result for either the primary or duplicate are less than five times the PQL, results are qualified if the absolute difference between the two results is greater than the PQL, otherwise the precision goal is RPD $\leq$ 20 percent).

TABLE 4-7: RESULTS QUALIFIED DUE TO SAMPLE/LABORATORY DUPLICATE DIFFERENCES OUTSIDE ACCEPTANCE CRITERIA

Field Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD or Difference
STC1-AI16-0	F0F080484004	Total Kjeldahl Nitrogen [TKN]	81.4	mg/kg	RPD=30
STC1-AI16-10	F0F080484005	Total Kjeldahl Nitrogen [TKN]	48.2	mg/kg	RPD=30
STC1-AJ15-0	F0F080484008	Total Kjeldahl Nitrogen [TKN]	129	mg/kg	RPD=30
STC1-AJ15-0-DUP	F0F080484009	Total Kjeldahl Nitrogen [TKN]	113	mg/kg	RPD=30
STC1-AJ15-10	F0F080484010	Total Kjeldahl Nitrogen [TKN]	53.6	mg/kg	RPD=30
STC1-AJ16-0	F0F080484006	Total Kjeldahl Nitrogen [TKN]	84.3	mg/kg	RPD=30
STC1-AJ16-10	F0F080484007	Total Kjeldahl Nitrogen [TKN]	51.1	mg/kg	RPD=30
STC1-JD07-0	F0F080484001	Total Kjeldahl Nitrogen [TKN]	57.8	mg/kg	RPD=30
STC1-JD07-14	F0F080484003	Total Kjeldahl Nitrogen [TKN]	65	mg/kg	RPD=30
STC1-JD07-4	F0F080484002	Total Kjeldahl Nitrogen [TKN]	62.6	mg/kg	RPD=30
STC1-JD12-0	253459010	Thorium-232	1.86	pCi/g	Difference=1.647
STC1-JD12-0-DUP	253459011	Thorium-232	1.23	pCi/g	Difference=1.647
STC1-JD12-10	253459012	Thorium-232	1.33	pCi/g	Difference=1.647
STC1-AI15-0	254200007	Thorium-232	1.5	pCi/g	Difference=1.348
STC1-AI15-0-DUP	254200008	Thorium-232	1.96	pCi/g	Difference=1.348

TABLE 4-7: RESULTS QUALIFIED DUE TO SAMPLE/LABORATORY DUPLICATE DIFFERENCES OUTSIDE ACCEPTANCE CRITERIA

Field Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD or Difference
STC1-AI15-10	254200009	Thorium-232	1.99	pCi/g	Difference=1.348
STC1-JD02-10	254200013	Thorium-232	1.6	pCi/g	Difference=1.348
STC1-JD03-10	254200006	Thorium-232	1.4	pCi/g	Difference=1.348
STC1-JD04-0	254200003	Thorium-232	2.03	pCi/g	Difference=1.348
STC1-JD04-10	254200004	Thorium-232	1.76	pCi/g	Difference=1.348
STC1-JD05-0	254200001	Thorium-232	1.17	pCi/g	Difference=1.348
STC1-JD05-10	254200002	Thorium-232	1.63	pCi/g	Difference=1.348

The above data flagged as estimated based on sample/laboratory duplicate differences were subjected to further review in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.4 Internal Standards Outside Acceptance Criteria

Internal standards are prepared for certain organic gas chromatograph/mass spectrometry (GC/MS) and inductively coupled plasma/mass spectrometry analyses by adding compounds similar to target compounds of interest to sample aliquots. Internal standards are used in the quantitation of target compounds in the sample or sample extract. The evaluation of internal standards involved comparing the instrument response and retention time from the target compounds in the sample with the response and retention time of specific internal standards added to the sample extract prior to analysis. No data were rejected due to internal standard recoveries.

As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), the following results were qualified as estimated (J/UJ) due to internal standard exceedances:

- PCB results for two soil samples (GES-JWT-3 and STC9-JW05) were qualified as estimated (J/UJ) due to low internal standard recoveries if the percent recovery was below 25 percent or above 150 percent.

- VOC results for one flux sample (STC1-JD12) were qualified as estimated (J/UJ) due to high internal standard recoveries if the area of the internal standard of the sample was greater than 200 percent of the area of the same internal standard of the continuing calibration verification.

- VOC results for nine soil samples (STC1-JD08-0-DUP, STC1-JD08-10, STC1-JD09-0, STC1-JD10-0, STC1-JD10-10, STC1-JD11-0, STC1-JD12-0, STC1-JD12-0-DUP, and TMC1-JD02-0-DUP) were qualified as estimated (J/UJ) due to high internal standard recoveries if the area of the internal standard of the sample was greater than 200 percent of the area of the same internal standard of the continuing calibration verification.

- Dioxins/furans results for 17 soil samples were qualified as estimated (J/UJ) due to low or high internal standard recoveries if the percent recovery was below 40 percent or above 135 percent. Qualified samples are presented in Table 4-8.

TABLE 4-8: DIOXIN/FURAN SOIL SAMPLE RESULTS QUALIFIED DUE TO INTERNAL STANDARDS OUTSIDE ACCEPTANCE CRITERIA

Laboratory Data Package #	Sample ID	
160-1661-2	GES-JWT-3	
160-340-1	STC6-JD14	STC6-JD14-DUP
160-5052-2	STC9-JW05	
160-5054-2	STC9-JW15 STC9-JW24	STC9-JW15-DUP STC9-JW25
F0D060418	TMC1-JD01-0 TMC1-JD02-0-DUP	TMC1-JD02-0
F0E210419	STC1-JD09-0	
F0E220426	STC1-JD12-0	STC1-JD13-0
F0E280501	STC1-AK20-0	STC1-AK20-0-DUP
F0F020461	STC1-JD15-0	
F0F040505	STC1-AK15-0-DUP	
F0F050475	STC1-AI15-0 STC1-JD02-0	STC1-AI15-0-DUP

4.5.5 Surrogate Percent Recoveries Outside Laboratory Control Limit

As discussed in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), surrogate spikes were added to each of the samples submitted for organic analysis to monitor potential interferences from the matrix. Results associated with unacceptable surrogate recoveries were qualified as estimated (J+, J- or UJ). Generally, when surrogate recoveries are less than 10 percent, associated non-detect results are qualified as rejected (R) because false negatives are a possibility. No sample results were rejected due to surrogate recoveries. The soil samples listed in Table 4-9 were qualified due to surrogate recovery exceedances.

TABLE 4-9: RESULTS QUALIFIED DUE TO SURROGATE RECOVERIES OUTSIDE LABORATORY CONTROL LIMIT

Sample ID	Lab ID	Analysis	Recovery	Acceptable Range
STC1-AI15-0-DUP	F0F050477008	Organochlorine Pesticides	480%	36-150
STC1-AJ15-0	F0F080484008	VOCs	12%	76-130
STC1-AJ18-0	F0E250440002	Organochlorine Pesticides	46%	53-120
STC1-AK15-3	F0F040509008	Organochlorine Pesticides	42%	53-120
STC1-AK20-6	NTE2995-14	Aldehydes	17%	34-150
STC1-JD04-0	F0F050477003	Organochlorine Pesticides	190%	36-150
STC1-JD08-0	F0E210435007	Organochlorine pesticides	588%	36-150
STC1-JD08-0-DUP	F0E210435008	Organochlorine pesticides	518%	36-150
STC1-JD09-10	F0E210435011	Organochlorine Pesticides	174%	36-150
STC1-JD12-0	F0E220430010	Organochlorine Pesticides	144%	53-120
STC1-JD13-0	F0E220430013	VOCs	73%	76-130
STC1-JD13-10	F0E220430014	VOCs	70%	76-130
STC1-JD14-0	F0F020455001	Organochlorine Pesticides	290%	36-150
STC8-Prov4-DUP	160-1457-17	Organochlorine Pesticides	163%	46-150
STC9-JW09	160-5052-6	Organochlorine Pesticides	127%, 256%, 299%	41-125, 29-150, 29-150
STC9-JW10	160-5052-7	Organochlorine Pesticides	0%, 410%, 0%, 510%	41-125, 29-150, 41-125, 29-150
STC9-JW18	160-5054-7	Organochlorine Pesticides	165%, 614%, 129%, 647%	41-125, 29-150, 41-125, 29-150
STC9-JW23	160-5054-12	Organochlorine Pesticides	0%, 305%, 0%, 188%	41-125, 29-150, 41-125, 29-150
TMC1-JD01-0	F0D060425008	Organochlorine Pesticides	196%	36-150
TMC1-JD01-11	F0D060425009	Organochlorine Pesticides	50%	53-120
TMC1-JD02-0	F0D060425005	Organochlorine Pesticides	48%	53-120
TMC1-JD02-0-DUP	F0D060425006	Organochlorine Pesticides	49%	53-120
TMC1-JD02-10	F0D060425007	Organochlorine Pesticides	46%	53-120

Several surrogate recoveries outside the acceptance criteria were below the lower laboratory control limit. Further review of low surrogate recoveries is necessary in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.6 Calibrations Outside Laboratory Control Limits

Requirements for instrument calibration ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run. Continuing calibration checks document satisfactory maintenance and adjustment of the instrument on a day-to-day basis. As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), certain data were qualified due to initial or continuing calibration issues. Of specific concern, are analytes with a final qualifier indicating a low bias due to calibration. In the following tables, the percentage of analyte recovered is based on the percent difference of the actual amount and recovered amount reported from the continuing calibration. As the percentage decreases, the potential for false negatives increases.

Table 4-10 summarizes the metals results that were qualified during the evaluation of the continuing calibrations.

TABLE 4-10: SUMMARY OF METAL RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-Detect	Percentage of Analyte Recovered as Indicated by Outlier
Boron	1	0%	118%

Note: The control limits are 90-110%. Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Table 4-11 summarizes the SVOC results that were qualified during the evaluation of the continuing calibrations.

TABLE 4-11: SUMMARY OF SEMI-VOLATILE ORGANIC COMPOUND RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-Detect	Percentage of Analyte Recovered as Indicated by Outlier
2,4-Dimethylphenol	5	100%	70%
2,4-Dinitrophenol	12	100%	66-74%
3-Nitroaniline	18	100%	42-71%
4-Chlorothiophenol	1	100%	63%
4-Nitroaniline	12	100%	46-70%
4-Nitrophenol	12	100%	55-70%
Benzyl alcohol	16	100%	50-70%
Carbazole	19	100%	65-73%
Dichloromethyl ether	5	100%	74.8%
Hexachlorocyclopentadiene	18	100%	57-74%
Hydroxymethyl phthalimide	12	100%	48-61%
Octachlorostyrene	2	100%	74.5%
p-Chloroaniline	7	100%	71%
p-Chlorobenzenethiol	4	100%	64%
Phthalic Acid	48	100%	40-74%
Pyridine	7	100%	71-73%

Note: The control limits are 75-125% (%D $\leq$ 25%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ).

Table 4-12 summarizes the organochlorine pesticide results that were qualified due to continuing calibrations.

TABLE 4-12: SUMMARY OF ORGANOCHLORINE PESTICIDE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
4,4'-DDT	4	0%	120-140%
Gamma-BHC (Lindane)	5	100%	35%
Gamma-Chlordane	1	0%	121%
Heptachlor	27	100%	25-39%

Note: The control limits are 85-115% (%D ≤15%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Table 4-13 summarizes the aldehyde results that were qualified in soil samples due to continuing calibrations.

TABLE 4-13: SUMMARY OF ALDEHYDE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
Acetaldehyde	24	0%	123-124%
Formaldehyde	4	0%	144-145%

Note: The control limits are 80-120% (%D ≤ 20%). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Table 4-14 summarizes the dioxin/furan results that were qualified in soil samples due to continuing calibrations.

TABLE 4-14: SUMMARY OF DIOXIN/FURAN RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
1,2,3,4,7,8-Hexachlorodibenzofuran	2	0%	130.1%
1,2,3,6,7,8-Hexachlorodibenzofuran	2	0%	130.1%
1,2,3,7,8,9-Hexachlorodibenzofuran	2	0%	130.1%
2,3,4,6,7,8-Hexachlorodibenzofuran	4	0%	130.1%

Note: The control limits are 70-130% (%D ≤ 30%). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Low instrument response was noted for 2-nitropropane, acetonitrile and ethanol as indicated by the relative response factor.

Table 4-15 summarizes the VOC (TO-15) results that were qualified in surface flux samples due to continuing calibrations.

TABLE 4-15: SUMMARY OF VOLATILE ORGANIC COMPOUND (TO-15) SURFACE FLUX SAMPLE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
1,2,3-Trichloropropane	6	100%	67%
1,2,4-Trichlorobenzene	8	100%	42-53%
1,2-Dichlorobenzene	7	100%	60-69.5%
1,3-Dichlorobenzene	1	100%	60%
1,4-Dioxane	1	100%	65%
Acetonitrile	2	100%	64-67%
Ethanol	1	100%	56%
Naphthalene	8	88%	51-53%
n-Butylbenzene	6	100%	67%

Note: The control limits are 70-130% (%D $\leq$ 30%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ).

Table 4-16 summarizes the VOC (TO-15 SIM) results that were qualified in surface flux samples due to continuing calibrations.

TABLE 4-16: SUMMARY OF VOLATILE ORGANIC COMPOUND (TO-15 SIM) SURFACE FLUX SAMPLE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
1,1,2,2-Tetrachloroethane	9	100%	63-69.7%
1,2-Dichloroethane	1	100%	69.6%
Dibromochloropropane	9	0%	53-66%
Hexachlorobutadiene	2	100%	64%

Note: The control limits are 70-130% (%D $\leq$ 30%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

4.5.7 Tentatively Identified Compounds

For the GC/MS methods, a list and estimated concentrations for tentatively identified compounds (TICs) was provided by the laboratory if detected. Most of the reported TICs were identified as “unknown” or “unknown aldol condensate.” Others were as follows:

- (1R,2R,8S,8Ar)-8-hydroxy-1-(2-hydroxyeth
- (3,6-Dichloropyridazin-4-yl)(4-methoxyphenyl)amine
- .alpha.-Chlordene
- 1,1'-Biphenyl, 2,2',4,4',6-Pentach
- 1,1'-Biphenyl, 2,2',5-trichloro-
- 1,1'-Biphenyl, 2,3,3',4,4'-pentach
- 1,1'-Biphenyl, 2,3,3',4',6-pentach
- 1,1'-Biphenyl, 2,3',4,4',5-pentach
- 1,1'-Biphenyl, 2,4-dichloro-
- 1,1-Dichloro-2,2-bis(p-chlorophenyl
- 1,2,2-Trichloro-1-(4-chlorophenyl)
- 1,2-Benzenedicarboxylic acid, bis(
- 10-Heneicosene (c,t)
- 11H-Benzo(b)fluorene
- 1-Bromodocosane
- 1-Eicosene
- 2,2-Bis(4-chlorophenyl)acetic acid
- 2,4-DDD
- 2,4'-DDT
- 2,5-Pyrrolidinedione, 1-((4-chloro
- 2-Chlorobenzoic acid, 2-naphthyl ester
- 2-Pentanone
- 3-Butanone, 1,1-bis(4-chlorophenyl
- 4,4-DDE
- 4,4'-Dichlorobenzophenone
- 4-Chlorodibenzoyl
- 5-Eicosene, (E)-
- 9-Octadecenamide, (Z)-
- Acetic acid
- Anthracene, 9,10-dichloro-
- Benzamide, 4-chloro-N-(4-methylthiazol-2
- Benzene, 1,1'-(1,2-dichloro-1,2-et
- Benzene, 1,1'-(1,2-dichloro-1,2-ethenediyl)bis(2-c
- Benzene, 1,1'-(dichloroethenylidene)bis(
- Benzene, 1,2,3,4-tetrachloro-
- Benzene, 1,2,3-trichloro-
- Benzene, 1,2,4-trichloro-5-(chloromethyl)-
- Benzimidazole, 1-(4-chlorobenzoyl)
- Benzoic acid, 4-chloro-, 2-acetylp
- Benzonitrile, pentachloro-
- Bromoacetic acid, hexadecyl ester
- Chlorobenzilate
- Cyclohexadecane, 1,2-diethyl-
- Cyclopentene, 1,2,3,3,4-pentamethyl-
- Decane, 2-methyl-
- Dicofol
- Dodecane, 2,6,11-trimethyl-
- Eicosane, 2-methyl-
- Fluoranthene, 2-methyl-
- Heneicosane
- Hentriacontane
- Heptadecane
- (1R,2S,8R,8Ar)-8-acetoxy-1-(2-hydroxyeth
- (Z)-4-Nitro-alpha-(p-nitrophenyl)c
- 1,1'-Biphenyl, 2,2',3,5,5'-pentach
- 1,1'-Biphenyl, 2,2',4,4'-tetrachlo
- 1,1'-Biphenyl, 2,3,3',4,4',5-hexac
- 1,1'-Biphenyl, 2,3,3',4,5,6-hexach
- 1,1'-Biphenyl, 2,3',4,4',5,5'-hexa
- 1,1'-Biphenyl, 2,3,4',5,6-Pentachl
- 1,1'-Biphenyl, 4,4'-dichloro-
- 1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane
- 1,2,2-Trichloro-1-(4-chlorophenyl)ethane
- 1,3-Butadiyne, 1-(3-bromophenyl)-4-phenyl-
- 11H-Benzo(a)fluoren-11-one
- 19-Norpregna-1,3,5(10),17(20)-tetr
- 1-Docosene
- 2-(4-Chlorophenyl)-2-oxoethyl 2-ch
- 2,2'-Dichlorostilbene
- 2,4-DDE
- 2,4'-Dichlorobenzophenone
- 2-Chlorobenzoic acid, 2-methylphen
- 2-Chlorobenzoic acid, 3,4-dichlorophenyl
- 2-Phenanthrenol, 4b,5,6,7,8,8a,9,1
- 4,4-DDD
- 4,4-DDT
- 4-Chlorobenzoic acid, 3-methylphen
- 4H-1-Benzopyran-2-carboxylic acid, 6-bromo-4-oxo-,
- 9H-Fluorene, 9-(dichloromethylene)
- Acenaphthylene, octachloro-
- Anthracene, 1,8-dichloro-
- Benzamide, 2-chloro-N-(4-hydroxyphenyl)-
- Benzene, (trichloroethenyl)-
- Benzene, 1,1'-(1,2-dichloro-1,2-ethenedi
- Benzene, 1,1'-(dichloroethenyliden
- Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro-
- Benzene, 1,2,3,5-tetrachloro-
- Benzene, 1,2,4,5-tetrachloro-
- Benzene, 1,4-dichloro-2-(2-chloroe
- Benzo(e)pyrene
- Benzoic acid, 4-chloro-, 3-(4-methylphenyl)-3-oxo-
- Bis(p-chlorophenyl)acetylene
- Chlordane
- Cycloeicosane
- Cyclohexene, pentachloro-
- Decane, 2,6,8-trimethyl-
- Dibenzylidene 4,4'-biphenylenediam
- Docosane, 9-butyl-
- Eicosane
- Ethyl 3,7,11,15-tetramethyl-2-hexa
- Furan, 2,5-dimethyl-
- Heneicosane, 11-decyl-
- Heptacosane
- Heptadecane, 9-octyl-

- Heptane, 2,3-dimethyl-
- Hexadecane, 2,6,10,14-tetramethyl-
- Methane, oxybis(dichloro-
- Methanone, (3-chlorophenyl)(4-chlorophen
- N-(4-Bromo-phenyl)-2-chloro-benzam
- Naphthalene, octachloro-
- Nonacosane
- Nonadecane, 1-chloro-
- o,p'-DDE
- Octacosane
- Octadecane
- Octadecanoic acid
- Oxirane, hexadecyl-
- Pentacosane
- Perylene
- Propanenitrile, 3-(2-chlorobenzoyl
- Quebrachamine
- Tetracosane
- Tetradecane, 2,6,10-trimethyl-
- Thiophene, tetrachloro-
- trans-Chlordane
- Trichloromethane
- Tricosane, 2-methyl-
- Tridecane, 1-iodo-
- Vinyl o-chlorobenzoate
- Hexadecane
- m,p'-DDD
- Methanone, (3-chlorophenyl)(4-chlo
- Mitotane
- Naphthalene, 1,3,5,7-tetrachloro-
- n-Hexadecanoic acid
- Nonadecane
- Nonadecane, 9-methyl-
- o,p'-DDT
- Octadecanamide
- Octadecane, 2-methyl-
- Oxalic acid, cyclobutyl heptadecyl
- Oxirane, tetradecyl-
- Pentadecane, 8-heptyl-
- Phenanthrene, 2-methyl-
- Pyrene, 1-methyl-
- Sulfurous acid, butyl tetradecyl e
- Tetradecanamide
- Tetratriacontane
- Toluene
- trans-Nonachlor
- Tricosane
- Tridecane
- Tridecane, 6-methyl-

In addition to the above, an unknown aldol condensate was also reported by the laboratory as being present in 112 samples; as previously noted, the reported concentrations were flagged “U” due to blank contamination. With the exception of the alkylated biphenyls, DDD, DDE, DDT, alkylated benzenes, chlordane, dicofol, toluene, trichloromethane, and alkylated PAHs, the above named compounds are indicative of column breakdown and are not likely site related. The PCBs, pesticides, PAHs, and VOCs with available toxicity criteria have been characterized. Dicofol is an organochlorine pesticide that has not come up as a TIC previously. Toxicity criteria have not been established for any of the other TICs.

4.5.8 Data Review Summary

For 2,784 of the 19,758 analytical results in the final HHRA dataset, quality criteria were not met and various data qualifiers were added to indicate limitations and/or bias in the data. The definitions for the data qualifiers, or data validation flags, used during validation are those defined in SOP-40 (BRC, ERM and MWH 2009) and the project QAPP (BRC and ERM 2009a). Sample results are rejected based on findings of significant deficiencies in the ability to properly collect or analyze the sample and meet QC criteria. Only rejected data are considered unusable for decision-making purposes, and rejected analytical results are not used in the HHRA.

As noted above, 28 sample results were rejected in the Site dataset and excluded from the HHRA for the reasons previously noted. Other data points were excluded from the risk assessment not due to data quality issues, but for one of the following reasons: (1) the sample was reanalyzed by the laboratory, or (2) the sample location was removed during a remedial action.

4.6 CRITERION VI – DATA QUALITY INDICATORS

DQIs are used to verify that sampling and analytical systems used in support of project activities are in control and the quality of the data generated for this project is appropriate for making decisions affecting future activities. The DQIs address the field and analytical data quality aspects as they affect uncertainties in the data collected for site characterization and risk assessment. The DQIs include PARCC. The project QAPP provides the definitions and specific criteria for assessing DQIs using field and laboratory QC samples and is the basis for determining the overall quality of the dataset. Data validation activities included the evaluation of PARCC parameters, and all data not meeting the established PARCC criteria were qualified during the validation process using the guidelines presented in the National Functional Guidelines for Laboratory Data Review for Organics, Inorganics, and Dioxin/Furans (USEPA 1999, 2004d, 2005a, 2008).

4.6.1 Evaluation of Data Precision

Precision is a measure of the degree of agreement between replicate measurements of the same source or sample. Precision is expressed by RPD between replicate measurements. Replicate measurements can be made on the same sample or on two samples from the same source. Precision is generally assessed using a subset of the measurements made. The precision of the data was evaluated using several laboratory QA/QC procedures. Based on BRC's review of the results of these procedures, the overall level of precision for the Site data and the background data (BRC and ERM 2009b) does not limit the usability of a particular analyte, sample, method, or dataset as a whole.

4.6.2 Evaluation of Data Accuracy

Accuracy measures the level of bias that an analytical method or measurement exhibits. To measure accuracy, a standard or reference material containing a known concentration is analyzed or measured and the result is compared to the known value. Several QC parameters are used to evaluate the accuracy of reported analytical results, including:

- Holding times and sample temperatures;
- Calibration limits;
- LCS percent recovery;
- MS/MSD percent recovery;
- Spike sample recovery (inorganics);
- Surrogate spike recovery (organics); and
- Blank sample results.

Detailed discussions of specific exceedances to precision and accuracy (with tables) are provided in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b) and data qualified as a result of this evaluation are presented with qualifiers in the data usability tables in Appendix E (included on the report CD in Appendix B). As presented in Section 4.5, 28 sample results were rejected in the Site dataset and excluded from the HHRA. The remaining results were considered sufficiently accurate for risk assessment purposes, as discussed below.

4.6.2.1 Holding Time Exceedances/Sample Condition

There is a potential for analyte loss if the holding time for a sample is exceeded. As discussed in Section 4.5.1, holding times were exceeded in 14 soil samples for chromium (VI) analysis (18 percent of the samples analyzed for that constituent), in 15 acetaldehyde samples (19 percent of the acetaldehyde samples), and in three soil samples for mercury (less than 5 percent of mercury samples). All of the samples were qualified as estimated. Holding time violations affect more than one-half of the chromium (VI) samples. Reported results were also significantly less than their respective BCLs. Based on the limited holding time issues for perchlorate, there is not likely to be a significant potential for a low bias to the datasets for Site soils.

As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), all Site samples with temperature requirements were received at the laboratory within the required range of 4°± 2° Celsius. No sample results were qualified based on sample temperatures or due to lack of proper preservation.

4.6.2.2 Calibration Violations Indicating a Low Bias

The instrument calibration checks that resulted in a low bias are summarized in the tables presented in Section 4.5.6. Four SVOCs, 3-nitroaniline, 4-nitroaniline, hydroxymethyl phthalimide, and phthalic acid, had recoveries below 50 percent in some samples. All SVOCs were non-detect in all samples, and has never been detected at BRC Common Areas. Two organochlorine pesticides, gamma-BHC and heptachlor, had recoveries below 50 percent in some samples. There was one TO-15 surface flux analyte, 1,2,4-trichlorobenzene, that had recoveries below 50 percent in some samples. 1,2,4-Trichlorobenzene, 2-methyl-1-propanol, benzyl chloride, dibromochloropropane, and ethanol were qualified in all samples due to calibration violations. However, only heptachlor had recoveries below 50 percent in 30 percent of samples. None of the analytes were detected in any sample. All other named analytes had recoveries below 50 percent in 12 percent or fewer samples. For the other non-detect analytes with SQLs, the maximum SQLs were compared to the soil BCL. It is unlikely, even with a potential for a false negative, that the bias could affect the result to such a degree that the analyte is present at the Site in excess of the BCL. For the TO-15 analyte, the recoveries were below 50 percent in association with seven of nine TO-15 samples.

4.6.2.3 Matrix Spike/Matrix Spike Duplicate or Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries below Acceptance Criteria

During the data usability review, results associated with MS/MSD and/or LCS/LCSD recoveries that were only slightly lower than the lower acceptance limit (i.e., 50 to 75 percent recoveries for inorganics) were accepted as usable without further evaluation. Samples with lower percent recoveries (i.e., recoveries lower than 50 percent for inorganics and one-half the lower limit or 30 percent, whichever is greater, for organics) were reviewed more closely to assess if it was appropriate to use them in the HHRA. Inorganic results with MS/MSD recoveries less than 50 percent [25] were as follows:

- Total Kjeldahl Nitrogen results for seven soil samples in TestAmerica data packages F0E250440 and 280-2103 (all results were detects);
- Mercury results for one soil sample in TestAmerica data package 160-1092-1 (the result was a detect);

[25] Only samples associated with MS/MSD results in which both recoveries were below 50 percent are listed.

- Antimony results for four soil samples in TestAmerica data package F0E280497 (all results were non-detections);
- Radium-228 results for two soil samples in GEL data package 253523 (all results were non-detections);
- Tungsten results for three soil samples in TestAmerica data package 160-1092-1 (one result was detected, two results were non-detected); and
- Barium results for two soil samples in TestAmerica data package F0H310456 (all results were detected).

Given the limited number of samples for the inorganics involved, these data points are not likely to have a significant effect on risk assessment.

Organic results less than 30 percent were as follows:

- A benzyl alcohol result for one sample (STC-AJ18-0) in GEL data package 253523 (the result was non-detect).

Given the small number of samples involved, these data points are not likely to have a significant effect on the HHRA.

As noted in Section 4.5.3, LCS/LCSD recoveries lower than the lower laboratory control limit were observed for the following analytes:

- Benzyl alcohol in seven soil samples from GEL data packages 253523 and 253899 (all non-detected).

Benzyl alcohol was not detected in any of the 73 samples collected. Therefore, there is no concern regarding the usability of the remainder of the benzyl alcohol data.

4.6.2.4 Surrogate Percent Recoveries below Laboratory Control Limit

Surrogate recoveries were below the laboratory control limit in three of 60 VOC samples and seven of the 89 organochlorine samples were detected and all results were qualified as estimated (J-/UJ). Given that low surrogate recoveries affected less than 10 percent of the samples, it is unlikely to bias the dataset for VOCs or organochlorine pesticides.

4.6.2.5 Blank Contamination

As noted in Section 4.5.2, certain detections were flagged during the data review as being non-detections or estimated with a high bias due to laboratory or field blank contamination. If the associated constituent qualified as being a non-detection was, in fact, present in the samples related to the affected blank sample, revising its status to non-detect could result in risk underestimation. In the dataset for the Site, 283 results were censored due to blank contamination. Affected soil analytes are listed in Table 4-17.

TABLE 4-17: SUMMARY OF SOIL ANALYTES CENSORED DURING BLANK SAMPLE EVALUATION

Analyte	# of Censored Results	Analyte	# of Censored Results
Ammonia (as N)	32	Sulfate	1
Orthophosphate as P	34	Arsenic	16
Beryllium	18	Boron	3
Cadmium	8	Chromium (VI)	9
Copper	1	Mercury	23
Molybdenum	12	Selenium	2
Silver	20	Thallium	3
Tin	7	Tungsten	4
Uranium	2	Radium-226	6
1,2,4-Trichlorobenzene	3	1,2,4-Trimethylbenzene	35
Acetone	2	Dichloromethane	15
Nonanal	3	Toluene	3
Total Organic Carbon	5		

In addition, there were several TICs qualified due to blank contamination. See discussion of TICs in Section 4.5.7. Affected surface flux analytes are listed in Table 4-18.

TABLE 4-18: SUMMARY OF SURFACE FLUX ANALYTES CENSORED DURING BLANK SAMPLE EVALUATION

Analyte	# of Censored Results	Analyte	# of Censored Results
Acetone	2	Benzene	2
Chloromethane	2	Carbon tetrachloride	2
Dibromochloropropane	7	Hexachlorobutadiene	1

The constituents for which this potential concern has the most bearing in risk assessment are those in soil samples for which the detections are close to or exceed either (1) background conditions, or (2) relevant human health comparison levels (e.g., NDEP BCLs). As determined during that evaluation, qualification of detections as non-detections based on blank contamination are not likely to have an appreciable effect on the risk estimates, as discussed below.

Censored results that are less than the maximum background concentration and 1/10th the soil BCL have a negligible impact on risk assessment findings. If a portion of the result reflects an actual Site concentration, then the uncertainty related to the censored result is low. However, data censored at values at or above background or greater than 1/10th the soil BCLs, may pose a potential underestimation of human health risks. Therefore, censored results at values in excess of 1/10th the soil BCL (or the maximum background concentration, if higher) were evaluated further. None of the soil data censored due to blank contamination were in excess of 1/10th the soil BCL (and background).

Surface flux data are not comparable with BCLs. Dibromochloropropane is associated with seven censored data points; the remaining censored analytes were associated with two or fewer surface flux samples.

4.6.2.6 Data Usability Summary

As discussed above, because the qualifications with the potential for low bias were small in number, the data usability evaluation determined it was unlikely that they could lead to significant risk underestimation. Furthermore, the small amount of rejected data points does not represent a significant data gap in terms of risk assessment.

4.6.3 Evaluation of Data Representativeness

Representativeness is the degree to which data accurately and precisely represent a characteristic of the population at a sampling point or an environmental condition (USEPA 2002a). There is no standard method or formula for evaluating representativeness, which is a qualitative term. Representativeness is achieved through selection of sampling locations that are appropriate relative to the objective of the specific sampling task, and by collection of an adequate number of samples from the relevant types of locations. The sampling locations at the Site were based on both systematic sampling with random point placement within each grid cell, as well as focused samples collected from specific areas to further investigate potential areas of concern.

The samples were analyzed for a broad spectrum of chemical classes across the Site. Samples were delivered to the laboratory in coolers packed with ice to minimize the loss of analytes. In a few instances, such as samples being analyzed slightly beyond the holding time, the representativeness of the associated data is in question; however, there were few instances of this, as noted in Section 4.5.1. As previously noted, no sample results were qualified based on sample temperatures or preservation. Sample-specific results are discussed in the DVSRs. A discussion of representativeness for the background dataset is provided in each of the background investigation reports.

4.6.4 Evaluation of Data Completeness

Completeness is commonly expressed as a percentage of measurements that are valid and usable relative to the total number of measurements made. Analytical completeness is a measure of the number of overall accepted analytical results, including estimated values, compared to the total number of analytical results requested on samples submitted for analysis after review of the analytical data. Some of the data were eliminated due to data usability concerns. The percent completeness for the Site is 99.9 percent and includes the surface flux chamber data. The percent completeness for the soil only dataset is 99.9 percent. The percent completeness for the background dataset used in the HHRA is 98.8 percent.

4.6.5 Evaluation of Data Comparability

Comparability is a qualitative characteristic expressing the confidence with which one dataset can be compared with another. The desire for comparability is the basis for specifying the analytical methods; these methods are generally consistent with those used in previous investigations of the Site. The comparability goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. The ranges of detected sample results from the current investigation are generally comparable to recent results at the Eastside, as well as to the Site background datasets (Section 5).

One exception may be uranium-235/236, which has reported activities that are slightly elevated compared to background and other reported isotopes of uranium. The laboratory that performed the Site radionuclide analysis has indicated that the activities for uranium-235/236 hover around the noise level of the instrument and secular equilibrium is still achieved. Therefore, activities at the noise level of the instrument may vary between the instruments used.

There are differences in SQLs among datasets that may affect data comparability for datasets comprised primarily of non-detect values. Examples of the differences in SQLs at the Site and in background soil for several analytes with low detection frequency are provided in Table 4-19.

TABLE 4-19: LOW DETECTION ANALYTES EXHIBITING SQL DIFFERENCES BETWEEN BACKGROUND AND SITE SAMPLES

Analyte	Background Min SQL	Background Max SQL	Site Min SQL	Site Max SQL[26]
Antimony	0.3298	0.3298	0.3	0.94
Boron	3.2	3.2	15	58.4
Thallium	0.5428	0.5428	0.29	1.2
Tungsten	0.0175	0.0175	0.4105	2.8

All results in units of mg/kg.

Cumulative probability plots and side-by-side boxplots for the background and Site datasets are included in Appendix G. For these datasets, left-censored data can result in difficulties in differentiating whether datasets are actually different or merely an artifact of detection limits. Note that for constituents with SQLs that meet project limit requirements, comparisons between Site and background may be less important as these left-censored data are likely to indicate conditions that pose an "acceptable" risk and further evaluation is not necessary.

4.7 DATA ANALYSIS

Data validation and usability evaluations tend to look at the data on a result by result basis. The data analysis step is intended to take a step back and look at the dataset as a whole. The intent of this is to identify any anomalies or unusual data trends that may indicate any potential laboratory issues. This is performed by reviewing summary statistics, cumulative probability plots and side-by-side boxplots, or other visual aids. The soil dataset used for the HHRA is summarized in tabular format in Table 3-4. While it is not feasible to present all the detected analytes in a graphical format, cumulative probability plots and side-by-side boxplots are provided in Appendix G for the analytes included in the background comparisons (that is, metals and radionuclides). No anomalies in the dataset were identified.

As discussed in Section 4.5, the data validation process resulted in numerous sample results being qualified as estimated, with only the above-listed results being rejected. Sample results qualified as estimated are likely to be quantitatively biased to some degree; estimated analytical results are used in the HHRA. Data qualified as anomalous, as defined in the DVSRs, refers to data that were qualified ("U") due to blank contamination, and are used in the HHRA. These data

[26] The SQLs reported here may differ from the detection limits reported elsewhere (e.g., background comparisons). Detection limits may be raised due to blank contamination.

usability decisions follow the guidelines provided in the *Guidance for Data Usability in Risk Assessment (Part A)* (USEPA 1992a).

For the HHRA, all soil data associated with post-remediation conditions that were not rejected during data validation, replaced by reanalysis results, or removed during a soil remedial action were included. Some data were qualified as estimated due to recoveries being outside the acceptance criteria. In cases where the recoveries were higher than the acceptance criteria, the results have the potential of being similarly biased high, and using these data in the risk assessment could result in risks being calculated that are higher than would be associated with actual Site conditions. Of more concern for the HHRA is underestimation of risk, which could be associated with the use of data that are biased low. Results associated with the following QA/QC issues could lead to results that are biased low, and were subjected to further scrutiny during the data usability evaluation:

- Results associated with holding time exceedances;
- Detections qualified during the data review as being non-detections due to laboratory or field blank contamination;
- Results associated with calibration violations indicating a low bias;
- Results associated with MS/MSD or LCS/LCSD recoveries below acceptance criteria; and/or
- Results associated with surrogate percent recoveries below laboratory control limits.

Such data, which are listed above in Section 4.5, were evaluated during the data usability process to determine whether it was appropriate to use them in the risk assessment. The data usability evaluation determined that the estimated results listed in Section 4.5 were appropriate for use in the risk assessment and that the rejected data did not constitute significant data gaps and/or were not otherwise likely to lead to an underestimation of risk, as discussed in Section 4.6.2.

5.0 SELECTION OF CHEMICALS OF POTENTIAL CONCERN

The broad suite of analytes sampled for was the initial list of potential COPCs at the Site. However, to ensure that a risk assessment focuses on those substances that contribute the greatest to the overall risk (USEPA 1989), the following procedures were used to eliminate analytes as COPCs for quantitative evaluation in the risk assessment:[27]

- Identification of chemicals with detected levels similar to background concentrations (where applicable) (Section 5.1);
- Chemicals that are considered essential nutrients (Section 5.2); and
- Chemicals with maximum concentrations below risk-based comparison levels (i.e., below one-tenth of the worker soil BCLs) (Section 5.3).

Following USEPA guidance (1989), compounds reliably associated with Site activities based on historical information were not eliminated from the risk assessment, even if the results of the procedures given in this section indicate that such elimination is possible. The procedures for evaluating COPCs relative to background conditions and further selection of COPCs based on the other procedures are presented below.

5.1 EVALUATION OF CONCENTRATIONS/ACTIVITIES RELATIVE TO BACKGROUND CONDITIONS

Some chemicals at the Site, particularly metals and radionuclides, are known to be naturally occurring constituents of soils and groundwater. A risk assessment should consider the contribution of background concentrations to overall Site risks, as differentiated from those concentrations associated with historical Site operations or regional anthropogenic conditions. Therefore, it is necessary to establish Site-specific background conditions to support the risk assessment.

[27] Note that these procedures for selection of COPCs deviate somewhat from those presented in the *BRC Closure Plan*, but are consistent with discussions between BRC and NDEP and their consultants in a December 9, 2010, meeting. BRC will use these procedures for all subsequent risk assessments. BRC intends to revise the *BRC Closure Plan* accordingly to make it consistent with these procedures.

As indicated in the *Background Soil Compilation Report* (BRC and ERM 2010b), the Site is in an area of McCullough lithology (see Figure 12, Qh_1 label).[28] Therefore, comparison of Site-related soil concentrations to background levels was conducted using the shallow Qal McCullough background dataset presented in the *Background Soil Compilation Report* (BRC and ERM 2010b). The background dataset used is included in the dataset file on the enclosed report CD in Appendix B.

Background comparisons were performed using the Quantile test, Slippage test, the *t*-test, and the Wilcoxon Rank Sum (WRS) test with Gehan modification. The Guided Interactive Statistical Decision Tools (GiSdT®) library (Neptune and Company 2009) run from within the R statistical computer software program was used to perform all background comparison statistics. A weight-of-evidence approach is utilized to interpret the results of these analyses. If the detection frequency in both Site and background datasets is greater than 40 percent, then the following rationale is used for evaluation: (1) where one or two results fail one or more of the statistical tests, the remaining testing and statistical information (boxplots, summary statistics) are reviewed to support decision-making regarding whether or not the chemical should be considered consistent with background (as described by the rationale in the table below); and (2) where three or more statistical tests fail, the constituent is considered inconsistent with background. If the detection frequency is less than 40 percent in either the background or Site datasets, then the constituent is evaluated based on boxplots and summary statistics.

For samples with primary and field duplicate results, the Site sample and field duplicate[29] are treated as independent samples and both are included in all subsequent data analyses, regardless of whether one or both are non-detect. This is considered appropriate because field duplicate samples represent a discrete and unique measurement of soil chemical conditions proximal to the primary sample (unlike split samples). The field duplicates were compared to the primary sample during the course of data validation. The variances were not out of the line with the variance in results across the Site. Therefore, as distinct soil chemical measurements, they are treated as unique samples in the analyses.

[28] As noted in a letter dated September 17, 2012, from Greg Lovato, NDEP, to Mark Paris, BRC, the 2003 soil background dataset collected by Environ for the City of Henderson is not used for background soil comparison purposes.
[29] Field duplicates are shown in Appendix B and indicated with the "FD" qualifier under the column entitled "Sample Type."

The shallow Qal McCullough background dataset was compared to the Site HHRA dataset as a whole. The results of the background comparison evaluation are presented in Table 5-1 (Tables section), summarized in Table 5-2 below.

TABLE 5-2: SUMMARY OF STATISTICAL BACKGROUND COMPARISON EVALUATION

Chemical	Greater than Background?	Basis
Aluminum	**YES**	Multiple tests
Antimony	**YES**	Multiple tests
Arsenic	**YES**	Multiple tests
Barium	**YES**	Multiple tests
Beryllium	**YES**	Multiple tests
Boron	**YES**	Multiple tests
Cadmium	**YES**	Multiple tests
Calcium	NO	Multiple tests
Chromium	**YES**	Multiple tests
Chromium (VI)	**YES**	Multiple tests
Cobalt	**YES**	Multiple tests
Copper	**YES**	Multiple tests
Iron	**YES**	Multiple tests
Lead	**YES**	Multiple tests
Lithium	NO	Multiple tests
Magnesium	**YES**	Multiple tests
Manganese	**YES**	Multiple tests
Mercury	**YES**	Multiple tests
Molybdenum	**YES**	Multiple tests
Nickel	**YES**	Multiple tests
Potassium	**YES**	Multiple tests
Selenium	**YES**	Multiple tests
Silver	**YES**	Multiple tests
Sodium	**YES**	Multiple tests

TABLE 5-2: SUMMARY OF STATISTICAL BACKGROUND COMPARISON EVALUATION

Chemical	Greater than Background?	Basis
Strontium	**YES**	Multiple tests
Thallium	**YES**	Slippage test
Tin	**YES**	Multiple tests
Titanium	**YES**	Multiple tests
Tungsten	**YES**	Multiple tests
Uranium	**YES**	Quantile test
Vanadium	**YES**	Multiple tests
Zinc	**YES**	Multiple tests
Radium-226	NO	Multiple tests
Radium-228	NO	Multiple tests
Thorium-228	NO	Multiple tests
Thorium-230	NO	Multiple tests
Thorium-232	NO	Multiple tests
Uranium-233/234	NO	Multiple tests
Uranium-235/236	NO	All other radionuclides not greater than background; all results near noise level of instrument
Uranium-238	NO	Multiple tests

Cumulative probability plots and side-by-side boxplots[30] were also prepared and are included in Appendix G. These plots give a visual indication of the similarities and differences between the Site and background datasets. The results of this comparison indicate that a number of metals are statistically significant (greater than) with respect to background levels. Due to the large number of sample data in both the Site and background datasets, even small differences between the two are identified as statistically significant. For example, although there were small differences in median concentrations, cobalt, magnesium, and uranium were found to be statistically greater than background, as shown in Table 5-3.

[30] Site and background boxplots were segregated by depth (and all data). This is different than how the data were segregated in the development of exposure point concentrations as presented in Section 6.1.

TABLE 5-3: EXAMPLE DIFFERENCES IN SITE AND BACKGROUND MEDIAN CONCENTRATIONS FOR CHEMICALS STATISTICALLY GREATER THAN BACKGROUND

Metal	Site Median	Background Median	Difference[1]
Cobalt	11	9.0	2.0 mg/kg
Magnesium	11000	10000	1000 mg/kg
Uranium	1.1	0.97	0.13 mg/kg

1 These differences in median concentrations were small relative to both background median concentrations and worker soil BCLs.

It should be noted that statistically significant differences may not represent scientifically and technically relevant differences.

Secular Equilibrium for Radionuclides. For radionuclides, secular equilibrium exists when the quantity of a radioactive isotope remains constant because its production rate (due to the decay of a parent isotope) is equal to its decay rate. In theory, if secular equilibrium exists, the parent isotope activity should be equivalent to the activity of all daughter radionuclides. Pure secular equilibrium is not expected in environmental samples because of the effect of natural chemical and physical processes. However, approximate secular equilibrium is expected under background conditions (NDEP 2009d). Both the thorium-232 and uranium-238 chains were determined to be in approximate secular equilibrium following equivalence testing outlined in the NDEP's *Guidance for Evaluating Secular Equilibrium at the BMI Complex and Common Areas February* (NDEP 2009d). The results of the equivalence testing for secular equilibrium are provided in Table 5-4.

TABLE 5-4: EQUIVALENCE TEST FOR SECULAR EQUILIBRIUM

Chain	Equivalence Test		Secular Equilibrium?	Mean Proportion			
	Delta	*p*-value		Ra-226	Th-230	U-233/234	U-238
U-238	0.1	<0.0001	Yes	0.2302	0.2882	0.2458	0.2359
				Ra-228	Th-228	Th-232	
Th-232	0.1	<0.0001	Yes	0.3649	0.3347	0.3004	

Therefore, since no radionuclides failed any background tests and all are in secular equilibrium, all radionuclides are considered to be similar to background. Radionuclides are therefore not evaluated further in the HHRA.

5.2 ESSENTIAL NUTRIENTS

An essential nutrient is a chemical required for normal body functioning that either cannot be synthesized by the body at all, or cannot be synthesized in amounts adequate for good health, and thus must be obtained from a dietary source. USEPA (1989) states that "Chemicals that are (1) essential human nutrients, (2) present at low concentrations (i.e., only slightly elevated above naturally occurring levels), and (3) toxic only at very high doses (i.e., much higher than those that could be associated with contact at the Site) need not be considered further in the quantitative risk assessment. Examples of such chemicals are calcium, iron, magnesium, potassium, and sodium." As discussed with and approved by the NDEP[31] and consistent with guidance and standard practices, no further quantitative evaluations are required for these essential nutrients.

5.3 COMPARISON TO WORKER SOILS BCLs

Soil BCLs for workers are chemical-specific, risk-based concentrations in soils that are protective of a commercial land use scenario (NDEP 2013). As discussed with and approved by the NDEP (see footnote 27), if the maximum detected concentration for a constituent is less than one-tenth of the worker soil BCL, then no further quantitative evaluation is required for that constituent. For those constituents with 100 percent non-detect values, if the maximum non-detect concentration[32] for a constituent is less than one-tenth of the worker soil BCL, no further evaluation will be conducted. If the maximum non-detect concentration is greater than one-tenth of the worker soil BCL, no further quantitative evaluation will be conducted; however, a discussion is provided in the Uncertainty Analysis (Section 7) for these constituents.

Consistent with the Closure Plan, if the TCDD TEQ concentrations do not exceed the NDEP worker BCL of 1,000 ppt for any sample within the Site,[33] dioxins/furans and PCB congeners are not retained as COPCs. Therefore, because this criterion is met for the Site, dioxins/furans and PCB congeners are not considered COPCs, and are not evaluated further in the HHRA. Lead was also not evaluated further in the HHRA since all concentrations were below its target goal of 400 mg/kg for residential land use.

31 Meeting with NDEP on December 9, 2010.
32 The non-detect value is equal to the SQL.
33 See Section 2.5 for a discussion on future land use for the Triangle Commercial Sub-Area.

The results of comparisons to one-tenth of the worker soil BCL are presented in Table 5-5 (Tables section). Five organic compounds and four metals were found to exceed their respective one-tenth of the worker soil BCL (asbestos does not have a BCL, but does have relevant and available toxicity criteria).

5.4 SUMMARY OF SELECTION OF COPCS

The procedures for COPC selection were discussed above. Results of the selection of COPCs, including the rationale for excluding chemicals as COPCs are presented in Table 5-6 (Tables section). The resulting COPCs for soil are summarized below.

- Asbestos
- Aluminum
- Arsenic
- Cobalt
- Manganese
- Acetaldehyde
- 4,4-DDE
- 4,4-DDT
- Carcinogenic PAHs
- Hexachlorobenzene

These procedures apply to soil results. Ambient air exposures for VOCs are evaluated on a sample-by-sample basis, per NDEP requirements, using the surface flux data measurements. Because of this, elimination of COPCs from the surface flux data is not done. Instead, every chemical detected in an individual surface flux location is included in the evaluation for that location. Therefore, the maximum surface flux risk estimates are summed with the soil risk estimates to provide an upper-bound risk for each receptor.

6.0 HUMAN HEALTH RISK ASSESSMENT

This section presents the HHRA of all COPCs identified in Section 5 for all receptors of concern via all complete pathways. The methods used in the risk assessment follow standard USEPA guidance. Specifically, the methods used in the risk assessment followed basic procedures outlined in the USEPA's *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual* (USEPA 1989). Other guidance documents consulted include:

- *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual. Supplemental Guidance: Standard Default Exposure Factors* (USEPA 1991b).
- *Guidelines for Exposure Assessment* (USEPA 1992b).
- *Soil Screening Guidance: Technical Background Document* (USEPA 1996).
- *Exposure Factors Handbook, Volumes I-III* (USEPA 1997).
- *Soil Screening Guidance for Radionuclides* (USEPA 2000).
- *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA 2002b).
- *Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Final Draft* (USEPA 2003b).
- *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)* (USEPA 2004e).
- *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)* (USEPA 2009).

Various NDEP guidance documents are also relied on for the HHRA. These include:

- *Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas in Henderson, Nevada* (NDEP 2008a).
- *Guidance for Evaluating Radionuclide Data for the BMI Plant Sites and Common Areas Projects* (NDEP 2009a).

- *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas* (NDEP 2011a) and *Workbook for the Calculation of Asbestos-Related Risk in Soils* (NDEP 2011b).

- *Supplemental Guidance on Data Validation* (NDEP 2009b,c).

- *Guidance for Evaluating Secular Equilibrium at the BMI Complex and Common Areas* (NDEP 2009d).

The risk assessment is a deterministic risk assessment, meaning that single values based on conservative assumptions are used for all modeling, exposure parameters, and toxicity criteria. These conservative estimates compound each other so that the calculated risks likely exceed the true risks at the Site.

The method used in the risk assessment consists of several steps. The first step is the calculation of exposure point concentrations representative of the particular area, for each medium of concern. This step includes fate and transport modeling to predict concentrations that may be present when direct measurements are not available. The second step is the exposure assessment for the various receptors present in the particular areas. The next step is to define the toxicity values for each COPC. The final step is risk characterization where theoretical upper-bound cancer risks and non-cancer HIs are calculated.

6.1 DETERMINATION OF EXPOSURE POINT CONCENTRATIONS

A representative exposure concentration is a COPC-specific and media-specific concentration value. In risk assessment, these exposure concentrations are values incorporated into the exposure assessment equations from which potential baseline human exposures are calculated. As described below, the methods, rationale, and assumptions employed in deriving these concentration values follow USEPA guidance and reflect Site-specific conditions.

Chemical, physical, and biological processes may affect the fate and transport of chemicals in water, soil, and air. Chemical processes include solubilization, hydrolysis, oxidation-reduction, and photolysis. Physical processes include advection and hydrodynamic dispersion; volatilization; dispersion; and sorption/desorption to soil, sediment, and other solid surfaces. Biological processes include biodegradation, bioaccumulation, and bioconcentration. All of these processes are dependent upon the physical and chemical properties of the chemicals; the physical and chemical properties of the soil and water; and other environmental factors such as temperature, humidity, and the conditions of water recharge and movement. The net effect of these environmental factors is a time-dependent reduction of chemical concentrations in water, soil, and air. The determination of exposure point concentrations for media other than soil take into account chemical-specific physical parameters and inter-media transfers as discussed below. All modeling input parameters, calculations, and results are presented in Appendix H (included on the report CD in Appendix B).

6.1.1 Soil

Due to the uncertainty associated with determining the true average concentration at a site, where direct measurements of the site average are infeasible and unavailable, the USEPA recommends using the lower of the maximum detected concentration or the 95 percent UCL as the concentration of a chemical to which an individual could be exposed over time (USEPA 1992b). For the 95 percent UCL concentration approach, the 95 percent UCL was computed to represent the area-wide exposure point concentrations. The 95 percent UCL is a statistic that quantifies the uncertainty associated with the sample mean. If randomly drawn subsets of Site data are collected and the UCL is computed for each subset, the UCL equals or exceeds the true mean roughly 95 percent of the time. The purpose for using the 95 percent UCL is to derive a conservative, upper-bound estimate of the mean concentration, which takes into account the different concentrations to which a person may be exposed at the Site. That is, an individual will be exposed to a range of concentrations that exist at an exposure area, from non-detect to the maximum concentration, over an entire exposure period.

A 95 percent UCL was calculated using the summary.stats() function in the GiSdT® package (Neptune and Company 2009) in R (R Core Team 2012). Section 5.1 outlines the treatment of sample locations with field duplicates prior to the 95 percent UCL statistical calculations described in this section. For these calculations, chemical non-detect results are assigned a value of one-half the SQL. The formulas for calculating the 95 percent UCL COPC concentration (as the representative exposure concentration) are presented in USEPA (1992c, 2002c) and GiSdT® (Neptune and Company 2009). Three UCL methods are employed in the GiSdT® library. They include the Student's t UCL, the bootstrap percentile UCL, and the bootstrap BCa UCL. The maximum UCL of these three methods was used as the exposure point concentration, unless the maximum UCL of the three methods was greater than the maximum detected concentration. In these cases, the maximum detected concentration was selected as the exposure point concentration.

The representativeness of the 95 percent UCLs for the exposure area, that is, a Site-wide mean concentration is valid for all receptors at the Site, is further supported by the intensity plot figures included in Appendix I. Figures for each of the COPCs are included in Appendix I (in addition to figures developed for all metals). A figure is also presented for TCDD TEQ. Although not a COPC for the Site, TCDD TEQ is a primary chemical of interest for the project. Based on the results of the background comparison tests, a review of the probability plots, boxplots, and distribution and intensity plot figures, data across the Site are assumed to be uncorrelated, that is, there is no discernable spatial correlation.[34] Thus, the assumption is made for statistical testing purposes that the data are not spatially correlated.[35] This results in lower p-values and hence a greater number of statistical differences than would be the case if spatial correlation were accounted for. Ignoring correlation therefore causes conservatism, and the need to further evaluate spatial correlation is not warranted. Therefore consistent with the project *Statistical Methodology Report* (NewFields 2006), each measurement is assumed to be equally representative for that chemical at any point in the Site and calculation of the 95 percent UCL is appropriate. The data were also reviewed for the presence of hot spots, and as discussed in Section 3.5, no potential hot spots were identified at the Site; therefore, separate exposure areas were not evaluated in the HHRA.

Representative exposure concentrations for soil are based on the potential exposure depth for each of the receptors. For all receptors, five different exposure depths are considered, based on the sample depth rules schematic presented in Section 3: all data (surface, subsurface, and fill), data classified as fill material only, data classified as fill material and/or surface soil, data classified as surface soil, and all data excluding data classified as fill material. These different soil exposure classifications are considered to represent all possible exposure potential for all receptors, based on the future grade and use of Site soils. Ninety-five percent UCLs are calculated for each exposure depth scenarios. To be conservative, the higher of these values was used in the risk estimates for each COPC. The 95 percent UCL for each COPC is presented in Table 6-1 (Tables section). For indirect exposures, this concentration was used in fate and transport modeling.

[34] Although the *Statistical Methodology Report* states that confirmation measurements of each chemical in a given soil layer will be used to compute variograms, as noted in the text above, this was not conducted for the Site, which is a deviation from the *BRC Closure Plan* methodology.

[35] Some variability of the data is expected; if there was perfect homogeneity then only one sample would be needed to represent the Site. This natural variability is demonstrated by the background datasets for the project. As shown on the probability and boxplots in Appendix G, the data generally follow a normal distribution, and their variability are similar to the background data.

The exposure point concentrations for asbestos (USEPA 2003b, NDEP 2011a) were based on the pooled analytical sensitivity of the dataset. The asbestos data and analytical sensitivities are presented in Table 6-2 (Tables section). Therefore, asbestos exposure point concentrations are determined differently than those for the other COPCs. The pooled analytical sensitivity is calculated as follows:

$$\textit{Pooled Analytical Sensitivity} = 1/\left[\sum_i (1/\textit{analytical sensitivity for trial } i)\right]$$

Two estimates of the asbestos concentration were evaluated, best estimate and upper bound, as defined in the draft methodology (USEPA 2003b). The best estimate concentration is similar to a central tendency estimate, while the upper bound concentration is comparable to a reasonable maximum exposure estimate. The pooled analytical sensitivity is multiplied by the number of chrysotile or amphibole structures to estimate concentration:

$$\text{Estimated Bulk Concentration } (10^6 \text{ s/gPM10}) = \text{Long fiber count} \times \text{Pooled analytical sensitivity}$$

For the best estimate, the number of fibers measured across all samples is incorporated into the calculation above. The upper bound of the asbestos concentration was also evaluated. It is calculated as the 95 percent UCL of the Poisson distribution mean, where the Poisson mean was estimated as the total number of structures detected across all samples. In Microsoft Excel, the following equation may be employed to calculate this value:

95 percent UCL of Poisson Distribution Mean = CHIINV(1-upper confidence percentile, 2 × (Long fiber count + 1))/2

This value is then multiplied by the pooled analytical sensitivity to estimate the upper bound concentration. The intent of the risk assessment methodology is to predict the risk associated with airborne asbestos. In order to quantify the airborne asbestos concentration, the estimated dust levels or particulate emission factors (PEFs) were used:

$$\text{Estimated Airborne Concentration (s/cm}^3) = \text{Estimated bulk concentration } (10^6 \text{ s/gPM10}) \times \text{Estimated dust level (ug/cm}^3)$$

Further explanation of the asbestos risk calculations and estimates are provided in the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a) and *Workbook for the Calculation of Asbestos-Related Risk in Soils* (2011b).

6.1.2 Indoor Air

USEPA's 2002 Vapor Intrusion Guidance

BRC has reviewed USEPA's 2002 Vapor Intrusion Guidance (2002d), and believes that the approach used for the Site conforms to this guidance. The guidance recommends, and BRC has followed, a tiered approach to address vapor intrusion for each of the Eastside sub-areas, including the Triangle Commercial Sub-Area. First, in each of the sub-area SAPs, including that for the Site, BRC has identified each of the chemicals (VOCs and volatile SVOCs) to be evaluated further in each sub-area (that is, a Tier 1 assessment).

Second, BRC explicitly compared the existing groundwater data for wells that are located within (or adjacent to) that sub-area with the USEPA 2002 Tier 2 comparison values (provided in lookup tables in the guidance document). Thus, this Tier 2 assessment was done in the NDEP-approved SAPs for each of the sub-areas. The Tier 2 comparison table for the Site is provided in Appendix J (Table J-1; note that groundwater concentrations have been updated with the most recent groundwater monitoring event for VOCs in August 2012). As shown in this table, with the exception of chloroform (see discussion below), carbon tetrachloride, and tetrachloroethene, all VOCs and volatile SVOCs pass a Tier 2 assessment.

Third, BRC has conducted a site-specific human health risk assessment for vapor intrusion using surface flux data on a sample-by-sample basis, per NDEP recommendations (that is, a Tier 3 assessment; see below). As noted in USEPA's 2002 guidance for a Tier 3 site-specific assessment: "If buildings are not available or not appropriate for sampling, for example in cases where future potential impacts need to be evaluated, other more direct measures of potential impacts, such as emission flux chambers or soil gas surveys, may need to be conducted in areas underlain by subsurface contamination." Thus flux measurements are allowed under USEPA's guidance.

Fourth, BRC has also evaluated the various factors pertaining to vapor intrusion, including depth to groundwater, the nature of the soil column from ground surface to groundwater (see Table 6-3 below), and, water quality (*i.e.*, the constituents likely to be present in groundwater and which might pose any vapor intrusion concerns). BRC has performed a more detailed site-specific evaluation of vapor intrusion potential at a comparison study area within the Eastside property. Based on site-specific conditions, including depth to groundwater, VOC concentrations in groundwater (which are generally less near the Site - for example, chloroform concentration in groundwater of 2.9 to 440 micrograms per liter (µg/L) in the vicinity of the Site versus 180 to 1,200 µg/L at the comparison study area),[36] and expected similar soil physical property, the comparison study area presents a similar potential for vapor intrusion than the Site (and as shown below, in all cases ILCRs and non-cancer HIs are at or below acceptable levels). See the table below for various parameters.

TABLE 6-3: SOIL PROPERTIES RESULTS FOR SITE AND COMPARISON STUDY AREA

Parameter	Comparison Study Area	Triangle Commercial Sub-Area	Units
Particle Density[1]	2.7	2.7	g/cm^3
Gravimetric Soil Moisture[1]	4.46	7.6	percent
Porosity[1]	33.8	35.8	percent
Permeability[1]	0.0019	0.0060	cm/sec
Bulk Density[1]	1.8	1.8	g/cm^3
Organic Carbon Content[1]	1.1	2.8	percent
USCS Soil Types	SM/GM/GW/ML	SM/GM/GW/ML	--
Depth to Groundwater	49 to 60	40 to 47	ft bgs
Chloroform in Groundwater	180 to 1,200	2.9 to 440	µg/L

[1]Values presented are averages for each area. For example, the range of permeabilities in the vicinity of the Site are 0.00066 to 0.0096 centimeters per second (cm/sec), while those for the comparison study area are 0.00029 to 0.0065 cm/sec.
g/cm^3 = grams per cubic centimeter
USCS = Unified Soil Classification System

BRC has performed a detailed evaluation of vapor intrusion risk assessments for chloroform at the comparison study area location, showing that risks were acceptable (residential indoor ILCRs ranged from 1×10^{-8} to 9×10^{-7}, and non-cancer HIs were well below 1.0).[37] The comparison study area risk estimate calculations are provided electronically in Appendix J (included on the report CD in Appendix B). Input parameters and results for the indoor air calculations for the comparison study area location are also provided in Appendix J (Tables J-2 through J-6).

[36] Note that the comparison study area is in the northernmost portion of the Site; therefore, wells identified for the comparison study area lie within the Phase 1 Development sub-area. These are distinguished from other wells within the Site.
[37] For comparison, chloroform residential indoor ILCRs for the Site were 1×10^{-8} to 3×10^{-6} and non-cancer HIs were well below 1.0; and vapor intrusion ILCRs for the Mohawk sub-area were 4×10^{-8} to 9×10^{-7} and non-cancer HIs were well below 1.0.

Finally, BRC is aware of USEPA's recent *Review of the Draft 2002 Subsurface Vapor Intrusion Guidance*. Issues and recommendations identified in this document, as well as the USEPA Office of Inspector General's *Evaluation Report—Lack of Final Guidance on Vapor Intrusion Impedes Efforts to Address Indoor Air Risks* (December 14, 2009), focus primarily on Tier 1 and Tier 2 assessments, and ultimately will not affect how indoor air exposures have been evaluated for the Site.

Site-Specific Tier 3 Assessment

Concentrations of volatile constituents (VOCs and certain SVOCs) in soil and groundwater that may infiltrate buildings to be constructed at the Site through cracks in the foundations are estimated using USEPA surface emission isolation flux chamber (flux chamber) measurements collected at the Site in accordance with USEPA (1986) guidance and the Flux Chamber SOP-16 (BRC, ERM, and MWH 2009). The flux chamber is used to measure the emission rates from surfaces emitting gas species. Use of the flux chamber reduces the need for modeling surface flux rates, which potentially reduces the uncertainty in the air representative exposure concentrations and the risk characterization. Because the flux chamber measurements were conducted outdoors on open soil, an "infiltration factor" is applied to the outdoor surface flux data to generate data supporting the inhalation of indoor air exposure pathway. The infiltration factor is based on the factors found in the American Society for Testing and Materials (ASTM) *Standard Guide for Risk-Based Corrective Action* (2000). The indoor air concentrations are determined from the surface flux measurements using the following mixing equation:

$$C_a = \frac{J \times \eta}{L \times ER}$$

where:

C_a	=	indoor air concentration (milligram per cubic meter [mg/m^3])
J	=	measured flux of chemical (milligram per square meter per minute [mg/m^2-min])
η	=	foundation crack fraction (unitless)
L	=	enclosed space volume/infiltration area ratio (meter [m])
ER	=	enclosed space air exchange rate (1/min)

Default parameter values from ASTM (2000) for commercial buildings were used (as presented in Section 9 of the NDEP-approved *BRC Closure Plan* [BRC, ERM, and DBS&A 2007; Section 9 revised March 2010]). These default parameters are presented in the electronic indoor air calculation files in Appendix J (included on the report CD in Appendix B). As noted in Section 5.4, indoor air exposures are evaluated on a sample by sample basis, per NDEP requirements, using the surface flux data measurements.

Those VOCs and volatile SVOCs that did not pass the Tier 2 assessment (see above) are evaluated at each individual surface flux location. However, to be consistent with the selection of COPCs for soil; one-tenth of the groundwater Tier 2 comparison values were used. Based on this, 1,1-dichloroethane, 1,2-dichloropropane, bromodichloromethane, carbon tetrachloride, chloroform, dichloromethane, tetrachloroethene, and trichloroethene were evaluated further in the vapor intrusion Tier 3 assessment.

Indoor air concentrations based on the surface flux data measurements are shown in the electronic indoor air calculation files in Appendix H (included on the report CD in Appendix B) and are summarized in Table 6-4 (Tables section). In all cases the maximum of the two flux chamber measurements (TO-15 full scan and TO-15 SIM) is used.

6.1.3 Outdoor Air

Long–term exposure to COPCs bound to dust particles is evaluated using the USEPA's PEF approach (USEPA 2002b). The PEF relates concentrations of a chemical in soil to the concentration of dust particles in the air. The Q/C (Site-Specific Dispersion Factor) values in this equation are for Las Vegas, Nevada (Appendix D of USEPA 2002b). The equation used is:

$$PEF = Q/C_{wind} \ \text{x} \ \frac{3{,}600 \text{ sec/hr}}{0.036 \text{ x } (1 - V) \text{ x } (U_m / U_t)^3 \text{ x } F(x)}$$

where:

PEF	=	Particulate emission factor (cubic meter per kilogram [m^3/kg])
Q/C_{wind}	=	Inverse of the ratio of the geometric mean air concentration to the emission flux at the center of a square source (g/m^2 -s per kg/m^3)
V	=	Fraction of vegetative cover (unitless)
U_m	=	Mean annual windspeed (m/s)
U_t	=	Equivalent threshold value of windspeed at 7m (m/s)
F(x)	=	Function dependent on U_m/U_t derived using USEPA (1985) (unitless)

and

$$Q/C_{wind} = A \times \exp\frac{(\ln A_{site} - B)^2}{C}$$

where

A_{site}	=	Source Area (acre)
A, B, C	=	Air Dispersion Constants for LV (unitless)

The dust model and parameters utilized to generate the PEF are presented in Table 6-5 (Tables section).

The USEPA guidance for dust generated by construction activities (USEPA 2002b) was used for assessing short-term construction worker exposures:

$$PEF = \frac{1}{\left(\left(\frac{1}{PEF_{sc}}\right)+\left(\frac{1}{PEF_{sc\_road}}\right)\right)}$$

where:

PEF_{sc}	=	Subchronic particulate emission factor for construction activities (m^3/kg)
PEF_{sc_road}	=	Subchronic particulate emission factor for unpaved road traffic (m^3/kg)

Input soil concentrations for the model are the exposure point concentrations as described above. The construction dust model and all relevant equations and parameters utilized to generate the construction worker PEF from this guidance are provided in Table 6-6 (Tables section). Site-specific surface soil moisture data were collected in December-January and May-July. The average of the surface soil data is 7.6 percent. This is considered an adequate representation of the annual average; therefore, this value is used for the percent moisture in dry road surface parameter instead of the NDEP model default value.

In addition, for receptors with indoor exposures (i.e., indoor commercial workers), a dilution factor is applied to obtain an indoor air concentration of dust particles, based on USEPA (2000).

The flux chamber measurements as described in Section 6.1.2 above are used for exposures to VOCs and volatile SVOCs in outdoor air if the chemical was present in the TO-15 analyte list. If the VOC or volatile SVOC was measured in soil, but not on the TO-15 analyte list, then the exposure point concentration was estimated using USEPA's volatilization factor. Outdoor surface flux data are divided by the dispersion factor for volatiles (Q/C_{vol} for Las Vegas; from USEPA 2002b) for use in the outdoor air exposure pathway. The same dispersion factor is used for all scenarios. The dispersion factor for the construction worker is not adjusted to account for soil intrusion activities. Outdoor air concentrations based on soil data for all receptors are shown in Table 6-7 (Tables section). Outdoor air concentrations based on the surface flux data measurements are shown in the electronic indoor air calculation files in Appendix H (included on the report CD in Appendix B) and are summarized in Table 6-4.

6.2 EXPOSURE ASSESSMENT

In a risk assessment, the possible exposures of populations are examined to determine if the chemicals at a site could pose a threat to the health of identified receptors. The risks associated with exposure to chemicals depend not only on the concentration of the chemicals in the media, but also on the duration and frequency of exposure to those media. For example, the risks associated with exposure to chemicals for 1 hour a day are less than those associated with exposure to the same chemicals at the same concentrations for 2 hours a day. Potential health impacts from chemicals in a medium can occur via one or more exposure pathways. The exposure assessment step of a risk assessment combines information regarding impacted media at a site with assumptions about the people who could come into contact with these media. The result is an estimation of a person's potential rate of contact with impacted media from the Site. The intake rates are evaluated in the risk characterization step to estimate the risks they could pose.

In this section, assumptions regarding people's activities, such as the frequency with which a person could come into contact with impacted media, are discussed. Finally, the daily doses at the points of potential human contact were estimated using these assumptions, the models described in Section 6.1, and the chemical concentrations reported for soil and surface flux samples collected from the Site.

6.2.1 Exposure Parameters

In this section, the assumptions regarding the extent of exposure are presented for each of the exposure pathways for each medium of concern at the Site. Table 6-8 (Tables section) presents each of the exposure parameters used in the risk assessment for each receptor and each pathway. Many of the assumptions regarding the extent of exposure are default factors developed by USEPA's Superfund program. Default values were modified to reflect Site-specific conditions, where possible. The exposure parameters used in the risk assessment were those defined in Tables 9-2 through 9-5 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

6.2.2 Quantification of Exposure

In this section, the concentrations of COPCs at the points of potential human exposure are combined with assumptions about the behavior of the populations potentially at risk to estimate the dose of COPCs that may be taken in by the exposed individuals. Later, in the risk characterization step of the assessment, the doses are combined with toxicity parameters for COPCs to estimate whether the calculated intake levels pose a threat to human health.

The method used to estimate the average daily dose (ADD) for non-carcinogens COPCs via each of the complete exposure pathways is based on USEPA (1989, 1992b) guidance. For carcinogens, lifetime ADD (LADD) estimates are based on chronic lifetime exposure, extrapolated over the estimated average lifetime (assumed to be 70 years). This establishes consistency with cancer slope factors (CSFs), which are based on chronic lifetime exposures. For non-carcinogens, ADD estimates are averaged over the estimated exposure period. ADDs and LADDs were calculated for each exposure scenario using the following generic equation:

$$Dose = \frac{C \times IR \times ED \times EF}{BW \times AT \times 365\ d/yr}$$

where:

Dose	=	ADD for non-carcinogens and LADD for carcinogens (in mg/kg-day)
C	=	chemical concentration in the contact medium (e.g., mg/kg soil)
IR	=	intake rate (e.g., mg/day soil ingestion and dermal contact [requires a conversion factor of 10^{-6} kilograms per milligram [kg/mg]);
ED	=	exposure duration (years of exposure)
EF	=	exposure frequency (number of days per year)
BW	=	average body weight over the exposure period (kilograms)
BIO	=	relative bioavailability (unitless)
AF	=	absorption fraction (percent)
AT	=	averaging time; same as the ED for non-carcinogens and 70 years (average lifetime) for carcinogens

Risk estimates for inhalation exposures follow USEPA's *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)* (USEPA 2009). That is, the concentration of a chemical in air is used as the exposure metric (e.g., mg/m^3), rather than inhalation intake of a chemical in air based on inhalation rate and body weight (e.g., mg/kg-day). The generic equation for calculating inhalation exposures is:

$$EC = \frac{C_{air} \times ET \times ED \times EF}{AT}$$

where:

EC	=	exposure concentration (in mg/m^3)
C_{air}	=	chemical concentration in air (in mg/m^3)
ET	=	exposure time (hours per day)
ED	=	exposure duration (years of exposure)
EF	=	exposure frequency (number of days per year)
AT	=	averaging time; same as the ED for non-carcinogens and 613,200 hours (i.e., 70 years; average lifetime) for carcinogens

Pathway-specific equations for calculating ADDs and LADDs are provided in Table 9-6 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010). For conservatism, the relative oral bioavailability (BIO) of all COPCs was assumed to be 100 percent, except for arsenic. Consistent with the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), an arsenic oral bioavailability of 30 percent is used.

Chemical-specific dermal absorption values from USEPA guidance (USEPA 2004e [Part E RAGS]) were used in the risk assessment. USEPA does not recommend absorption factors for VOCs based on the rationale that VOCs from the soil are volatilized on skin and exposure is accounted for via inhalation routes. In addition, RAGS Part E (USEPA 2004e) states “For inorganics, the speciation of the compound is critical to the dermal absorption and there are too little data to extrapolate a reasonable default value.” Therefore, dermal absorption factors are also not used for inorganics. The NDEP and its consultants have concurred with this decision.

Exposure levels of potentially carcinogenic and non-carcinogenic chemicals are calculated separately because different exposure assumptions apply (i.e., ADD for non-carcinogens and LADD for carcinogens). Exposure levels are estimated for each relevant exposure pathway (i.e., soil, air, and water), and for each exposure route (i.e., oral, inhalation, and dermal). Daily doses for the same route of exposure are summed. The total dose of each chemical is the sum of doses across all applicable exposure routes.

6.2.3 Asbestos

Although final USEPA guidance is unavailable at this time, USEPA recommends that site-specific risk assessments be performed for asbestos (USEPA 2004f). Risks associated with asbestos in soil are evaluated using the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a) and *Workbook for the Calculation of Asbestos-Related Risk in Soils* (2011b), and the draft methodology proposed by USEPA (2003b). This methodology is an update of the method described in *Methodology for Conducting Risk Assessments at Asbestos Superfund Sites-Part 1: Protocol* and *Part 2: Technical Background Document* (Berman and Crump 1999a,b). Because the risk assessment methodology for asbestos is unlike that for other COPCs, asbestos risks are evaluated separately from other chemical risks.

The intent of the risk assessment methodology is to predict the amount of airborne asbestos, which causes an unacceptable risk to a human receptor. Asbestos concentrations are measured in soil, and are then used to predict airborne asbestos concentrations using a dust emissions model. Asbestos data are collected from the top 2 inches of soil. While asbestos might exist below the top 2 inches of soil due to soil turnover, the concentrations in the surface soil are likely to be greater than concentrations beneath the surface, and exposure to the top 2 inches of soil is the most likely point of contact for asbestos . Therefore, the "shallow" surface soils asbestos concentration estimate is used to represent the potential exposure to asbestos.

To interpret measurements of asbestos in soils, it is necessary to establish the relationship between the asbestos concentrations observed in soils and concentrations that will occur in air when such soil is disturbed by natural or anthropogenic forces. This is because asbestos is a hazard when inhaled (see, for example, Berman and Crump 2001; USEPA 2003b). Indeed, the Modified Elutriator Method (Berman and Kolk 2000), which was the method employed to perform the analyses presented in this report, was designed specifically to facilitate prediction of airborne asbestos exposures based on bulk measurements (see, for example, Berman and Chatfield 1990).

Briefly, the Modified Elutriator Method incorporates a procedure for isolating and concentrating asbestos structures as part of the respirable dust fraction of a sample, and analytical measurements are reported as the number of asbestos structures per mass of respirable dust in the sample. This turns out to be precisely the dimensions required to combine such measurements with published dust emission and dispersion models to convert them to asbestos emission and dispersion models. These models can be combined with measurements from the Modified Elutriator Method to predict airborne exposures and assess the attendant risks.

6.3 TOXICITY ASSESSMENT

This section describes the toxicity of the COPCs at the Site. Numerical toxicity values were developed for use in the calculation of the hazard quotients (HQs; for non-carcinogens) and risks (for carcinogens).

6.3.1 Toxicity Values

Toxicity values, when available, are published by the USEPA in the on-line Integrated Risk Information System [IRIS]; USEPA 2013). CSFs (in units of milligrams per kilogram per day $[mg/kg\text{-}d]^{-1}$) are chemical-specific and experimentally derived potency values that are used to calculate the risk of cancer resulting from exposure to potentially carcinogenic chemicals. Inhalation unit risks (IURs) represent the upper-bound excess lifetime cancer risk from continuous exposure to a chemical at a concentration of 1 microgram per cubic meter ($\mu g/m^3$). A higher value implies a more potent carcinogenic potential. Reference dosages (RfDs) are experimentally derived "no-effect" levels used to quantify the extent of toxic effects other than cancer due to exposure to chemicals (in units of mg/kg-d). Similarly, a reference concentration (RfC) is the derived "no-effect" concentration for a lifetime of continuous inhalation exposure (in units of mg/m^3). With RfDs or RfCs, a lower value implies a more potent toxicant. These criteria are generally developed by USEPA risk assessment work groups and listed in the USEPA risk assessment guidance documents and databases. Available toxicity values for all Site COPCs used in the risk assessment were obtained using the following hierarchy for selecting toxicity criteria (based on USEPA 2003c):

1. IRIS;
2. USEPA's Provisional Peer Reviewed Toxicity Values (PPRTVs);
3. National Center for Environmental Assessment (or other current USEPA sources);
4. Health Effects Assessment Summary Tables (HEAST);
5. USEPA Criteria Documents (e.g., drinking water criteria documents, drinking water Health Advisory summaries, ambient water quality criteria documents, and air quality criteria documents);

6. ATSDR toxicological profiles;

7. USEPA's Environmental Criteria and Assessment Office; and

8. Peer-reviewed scientific literature.

In addition, toxicity criteria and toxicological surrogates recommended by the NDEP are used in the risk assessment. Toxicity criteria are consistent with those used in the development of the NDEP's BCLs (NDEP 2013), unless newer values are available from USEPA. Toxicity criteria have not been developed by BRC for elements or compounds that do not have criteria published in the above sources.

Although USEPA has developed toxicity criteria for the oral and inhalation routes of exposure, it has not developed toxicity criteria for the dermal route of exposure. USEPA has proposed a method for extrapolating oral toxicity criteria to the dermal route in the *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)* (USEPA 2004e). USEPA states that the adjustment of the oral toxicity factor for dermal exposures is necessary only when the oral-gastrointestinal absorption efficiency of the chemical of interest is less than 50 percent (due to the variability inherent in absorption studies). For COPCs to which dermal exposure might occur at the Site, the oral-gastrointestinal absorption efficiencies are greater than 50 percent, except for manganese. Therefore, the USEPA-indicated adjustment of the oral toxicity criteria to generate dermal criteria was performed for this COPC.

6.3.2 Non-Carcinogenic Health Effects

For non-carcinogenic health effects, USEPA assumes that a dose threshold exists, below which adverse effects are not expected to occur. A chronic RfD or RfC of a chemical is an estimate of a lifetime daily dose to humans that is likely to be without appreciable deleterious non-carcinogenic health effects. To derive an RfD or RfC, a series of professional judgments is made to assess the quality and relevance of the human or animal data and to identify the critical study and the most critical toxic effect. Data typically used in developing the RfD or RfC are the highest no-observable-adverse-effect-levels (NOAELs) for the critical studies and effects of the non-carcinogen. For each factor representing a specific area of uncertainty inherent in the extrapolation from the available data, an uncertainty factor is applied. Uncertainty factors generally consist of multiples of 10, although values less than 10 are sometimes used.

Four major types of uncertainty factors are typically applied to NOAELs in the derivation of RfDs or RfCs. Uncertainty factors of 10 are used to (1) account for the variability between humans, (2) extrapolate from animals to humans, (3) account for a NOAEL based on a subchronic study instead of a chronic study, and (4) extrapolate from a lowest-observed-adverse-effect-level (LOAEL) to a NOAEL, if necessary. In addition, a modifying factor can be used to account for adequacy of the database. Typically, the modifying factor is set equal to one.

To obtain the RfD or RfC, all uncertainty factors associated with the NOAEL are multiplied together, and the NOAEL is divided by the total uncertainty factor. Therefore, each uncertainty factor adds a degree of conservatism (usually one order of magnitude) to the RfD or RfC. An understanding of the uncertainties associated with RfDs or RfCs is important in evaluating the significance of the HIs calculated in the risk characterization portion of the risk assessment. When available, sub-chronic RfDs or RfCs were used to evaluate construction worker exposures. The COPCs in this assessment with USEPA-established oral/dermal and inhalation RfDs or RfCs are presented in Tables 6-9 and 6-10 (Tables section), for surface flux and soil COPCs, respectively.

6.3.3 Carcinogenic Health Effects

USEPA develops CSFs and IURs from chronic animal studies or, where possible, epidemiological data. Because animal studies use much higher doses over shorter periods of time than the exposures generally expected for humans, the data from these studies are adjusted, typically using a linearized multi-stage (LMS) mathematical model. To ensure protectiveness, CSFs/IURs are typically derived from the 95th percentile UCL of the slope, and thus the actual risks are unlikely to be higher than those predicted using the CSF/IUR, and may be considerably lower. The COPCs in this assessment with USEPA-established oral/dermal and inhalation CSFs/IURs are presented in Tables 6-9 and 6-11 (Tables section), for surface flux and soil COPCs, respectively.

6.3.4 Asbestos

Asbestos toxicity criteria were obtained from Table 8-1 of Berman and Crump’s (2001) document and Tables 8-2 and 8-3 in the USEPA (2003b) guidance. The toxicity criteria vary based on fiber type, endpoint (lung cancer, mesothelioma, or combined) and percent of fibers longer than 10 micrometers (µm) and less than 0.4 µm in width. For this risk assessment the toxicity criteria were based on a combined endpoint of lung cancer and mesothelioma averaged over the smokers and non-smokers of the population, with the assumption that 50 percent of fibers are greater than 10 µm in length (Berman and Crump 2001). The resulting unit risk factors (structures/cubic centimeter) are presented in Appendix H (included on the report CD in Appendix B). A complete discussion on issues associated with risk estimates for asbestos is presented in the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a).

6.4 RISK CHARACTERIZATION

In the last step of a risk assessment, the estimated rate at which a receptor intakes a chemical is compared with information about the toxicity of that COPC to estimate the potential risks posed by exposure to the COPC. This step is known as risk characterization. The methods used for assessing cancer risks and non-cancer adverse health effects are discussed below.

6.4.1 Methods for Assessing Cancer Risks

In the risk characterization, carcinogenic risk is estimated separately as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to chemicals and asbestos. Carcinogenic risks for chemicals were evaluated by multiplying the estimated average exposure rate (i.e., LADD calculated in the exposure assessment) by the chemical's CSF or IUR. The CSF converts estimated daily doses averaged over a lifetime to incremental risk of an individual developing cancer. Because cancer risks are averaged over a person's lifetime, longer-term exposure to a carcinogen results in higher risks than shorter-term exposure to the same carcinogen, if all other exposure assumptions are constant. Theoretical risks associated with low levels of exposure in humans are assumed to be directly related to an observed cancer incidence in animals associated with high levels of exposure while the IUR converts estimated exposure concentrations averaged over a lifetime to incremental risk of an individual developing cancer. According to USEPA (1989), this approach is appropriate for theoretical upper-bound ILCRs of less than 1×10^{-2}. The following equations were used to calculate COPC-specific risks and total risks:

$$Risk = EC \times IUR \quad or \quad LADD \times CSF$$

where:

LADD	=	lifetime average daily dose (mg/kg-d)
EC	=	exposure concentration (mg/m^3)
IUR	=	inhalation unit risk $(mg/m^3)^{-1}$
CSF	=	cancer slope factor $(mg/kg\text{-}d)^{-1}$

and:

$$\textit{Total Carcinogenic Risk} = \Sigma\, \textit{Individual Risk}$$

It is assumed that cancer risks for different chemicals and from multiple exposure routes are additive, which introduces a protective bias in the result of the cancer risk assessment.

Carcinogenic risk estimates were compared to the USEPA acceptable, incremental risk range of 1 in 10,000 (10^{-4}) and 1 in 1 million (10^{-6}) and the NDEP's acceptable, incremental level of 10^{-6}. If the estimated incremental risk falls within or below this risk range, the chemical is considered unlikely to pose an unacceptable carcinogenic risk to individuals under the given exposure conditions. A risk level of 1×10^{-5} (1 E-5) represents an incremental probability of one in 100,000 that an individual could develop cancer from exposure to the potential carcinogen under a defined set of exposure assumptions.

6.4.2 Methods for Assessing Non-Cancer Health Effects

Non-cancer adverse health effects are estimated by comparing the estimated average exposure rate (i.e., ADDs estimated in the exposure assessment) with an exposure level at which no adverse health effects are expected to occur for a long period of exposure (e.g., the RfDs or RfCs). ADDs (or exposure concentrations [ECs]) and RfDs (or RfCs) are compared by dividing the ADD by the RfD (or EC by the RfC) to obtain the ADD:RfD (EC:RfC) ratio, as follows:

$$HQ = \frac{EC}{RfC} \text{ or } \frac{ADD}{RfD}$$

where:

HQ	=	hazard quotient
ADD	=	average daily dose (mg/kg-d)
EC	=	exposure concentration (mg/m^3)
RfD	=	reference dose (mg/kg-d)
RfC	=	reference concentration (mg/m^3)

The ADD-to-RfD (EC-to-RfC) ratio is known as an HQ. If a person's average exposure is less than the RfD or RfC (i.e., if the HQ is less than 1), the chemical is considered unlikely to pose a significant non-carcinogenic health hazard to individuals under the given exposure conditions. Unlike carcinogenic risk estimates, an HQ is not expressed as a probability. Therefore, while both cancer and non-cancer risk characterizations indicate a relative potential for adverse effects to occur from exposure to a chemical, a non-cancer adverse health effect estimate is not directly comparable with a cancer risk estimate.

If more than one pathway is evaluated, the HQs for each pathway are summed to determine whether exposure to a combination of pathways poses a health concern. This sum of the HQs is known as an HI.

$$\textit{Hazard Index} = \Sigma\, \textit{Hazard Quotients}$$

Any HI less than or equal to 1.0 indicates the exposure is unlikely to be associated with a potential health concern. If the HI is greater than 1.0, then the HQs are summed by the specific target organs affected by a particular chemical or chemicals. This is also summed across pathways and chemicals. Target organs are identified primarily by the source of the toxicity criteria (e.g., IRIS). Since a chemical may affect more than one organ, in addition to the source of the toxicity criteria Oak Ridge National Laboratory's (ORNL) Risk Assessment Information System's toxicity profiles were also searched for target organ information (ORNL 2013).

6.4.3 Methods for Assessing Asbestos Risks

For assessing asbestos risks, Table 8-2 (Based on Optimum Risk Coefficients) of USEPA (2003b) was used. Table 8-2 presents best estimate risks optimized based upon separation of fiber type, size and endpoint (mesothelioma/lung cancer), thereby reducing apparent variation between the studies utilized. The values in Table 8-2 are used because they are the authors' "best" estimates of potency based upon all the available data (whereas the "conservative values" presented in Table 8-3 present only the most conservative, and best "behaved" data). As described in USEPA (2003b), because the asbestos risks to male and female smokers/non-smokers are different, population averaged risks are evaluated based on Eqn. 8-1 of USEPA (2003b):

$$URF = 0.5 \times ((0.786 \times (NSM + NSF)) + ((0.214 \times (SM + SF)) \times CF$$

where:

URF	=	Population Averaged Unit Risk Factor (risk per fibers/cubic centimeter [cm^3])
NSM	=	risk for male non-smokers
NSF	=	risk for male non-smokers
SM	=	risk for male smokers

SF = risk for female smokers
CF = factor to convert risk from risk per 100,000 to risk per 1,000,000

This equation considers male smokers, male non-smokers, female smokers, and female non-smokers. In addition, because both chrysotile and amphibole have been detected at the BMI Common Areas, both amphibole and chrysotile fibers are evaluated in the risk assessments, regardless of if either was detected within an exposure area (as calculated using the 95 percent UCL of the mean of the assumed underlying Poisson distribution).

The basic equation for assessing inhalation cancer risk for asbestos is analogous to that recommended by USEPA for other inhalation carcinogens. As shown in Equation 11 of *Risk Assessment Guidance for Superfund, Part F* (USEPA, 2009) inhalation cancer risk is the product of an IUR factor and an exposure concentration. The exposure concentration is a function of the asbestos air concentration, the length of time an individual is exposed, and the averaging time for which carcinogenic effects are evaluated for the unit risk factor. This calculation of asbestos related risk (ARR) is also consistent with application of Berman and Crump (2003) to risk calculations described in Berman (2003a,b; 2005). The risk equation used in performing an asbestos inhalation risk assessment is:

$$ARR = \frac{C_{air} \times URF \times ET \times EF \times ED}{AT}$$

where:

C_{air} = air concentration of asbestos (fibers per centimeter cubed)
ET = exposure time (hours/day)
EF = exposure frequency (days/year)
ED = exposure duration (years)
AT = averaging time (hours)
URF = unit risk factor (fibers per centimeter cubed)

Asbestos risk estimates are compared to the USEPA acceptable, incremental risk range for carcinogens of 1 in 10,000 (10^{-4}) and 1 in 1 million (10^{-6}) and the NDEP's acceptable, incremental level of 10^{-6}, although the risk estimates represent the probability of death from mesothelioma or lung cancer rather than the probability of contracting cancer. If the estimated asbestos risk falls within or below this risk range, asbestos is considered unlikely to pose an unacceptable risk to individuals under the given exposure conditions. A risk level of 1×10^{-5} (1 E-5) represents a probability of one in 100,000 that an individual could die from contracting mesothelioma or lung cancer from exposure to asbestos under a defined set of exposure assumptions.

6.4.4 Risk Assessment Results

The calculation of theoretical upper-bound ILCRs and non-cancer health effects are presented by receptor in Tables 6-12 through 6-14 (Tables section) and are discussed in Section 8. These tables present the theoretical upper-bound ILCRs and non-cancer health effects calculations for construction worker, commercial (indoor) worker, and maintenance (outdoor) worker receptors. The risk of death from lung cancer or mesothelioma as a consequence of exposure to asbestos on a Site-wide basis is presented in Table 6-15 (Tables section). All calculation spreadsheets are provided in Appendix H (included on the report CD in Appendix B).

7.0 UNCERTAINTY ANALYSIS

Risk estimates are values that have uncertainties associated with them. These uncertainties, which arise at every step of a risk assessment, are evaluated to provide an indication of the uncertainty associated with a risk estimate. Risk assessments are not intended to estimate the true risk to a receptor associated with exposure to chemicals in the environment. In fact, estimating the true risk is impossible because of the variability in the exposed or potentially exposed populations. There are always gaps in knowledge because a true exposure for every individual human being cannot be measured. Therefore, risk assessment is a means of estimating the probability that an adverse health effect (e.g., cancer, impaired reproduction) will occur in a receptor to assist in decision-making regarding the protection of human health. The use of conservative values for a majority of the assumptions in risk assessments helps guard against the underestimation of risks.

Risk estimates are calculated by combining Site data, assumptions about individual receptor's exposures to impacted media, and toxicity data. The uncertainties in this HHRA can be grouped into four main categories that correspond to these steps:

- Uncertainties in environmental sampling and analysis;
- Uncertainties in fate and transport modeling (discussed in Section 9);
- Uncertainties in assumptions concerning exposure scenarios; and
- Uncertainties in toxicity data and dose-response extrapolations.

General uncertainties associated with the HHRA for the Site are summarized in Table 7-1. In this table, "Low," "Moderate," and "High" are qualitative indicators as to whether the source of uncertainty will likely have a small, medium, or large effect on the risk calculations, respectively. In general, the scenarios and parameters evaluated and used in this HHRA are considered conservative based on how the Site will be developed. This is a large source of potential conservative bias in this HHRA. Additional discussion on the uncertainties associated with the HHRA is provided below.

7.1 ENVIRONMENTAL SAMPLING

The HHRA for the Site was based on the sampling results obtained from investigations conducted in 2010 through 2014. Errors in sampling results can arise from the field sampling, laboratory analyses, and data analyses.

The environmental sampling at the Site is one source of uncertainty in the evaluation. However, the number of sampling locations and events is large, widespread and spatially distributed, with consistent analytical results (i.e., no hot spots), and sampling was performed using approved procedures; therefore, the sampling and analytical data are sufficient to characterize the impacts and the associated potential risks.

Because of the surface soil removal undertaken for certain chemicals, the new surface layer of the Site could have different chemical concentrations than those measured prior to soil removal. Because only the trigger constituents were reanalyzed for in the post-scrape samples, the original measured surface soil data at the Site for all other chemicals was retained for further evaluation. However, it is reasonable to assume that the concentrations are now lower for some chemicals (e.g., metals, if due to contamination), because of the removal of some soil.

The laboratory data are another potential source of uncertainty. Maximum SQLs for dichloromethyl ether and n-nitrosodi-n-propylamine exceeded one-tenth their worker soil BCLs. These chemicals were not evaluated quantitatively in the HHRA as they were not detected in any Site samples. This may result in an underestimation of risk.

The types of analyses were chosen based on historical knowledge of the Site and BMI Common Areas. The data validation and data usability evaluations provided documentation that the HHRA database is adequate to support HHRA conclusions (Section 4 and Appendix E). Based on the data validation and data usability, the risk estimates are likely to be overestimated rather than underestimated.

NDEP has issued recent guidance regarding qualifying data due to blank contamination (NDEP 2011c). As noted in the guidance, NDEP requires that data validated before June 2011 and impacted by blank contamination be discussed in any report that uses such data. In so doing, a semi-quantitative comparison of the potential differences between approaches taken previously and the requirements specified in the guidance will be described and explained. The discussion below provides this semi-quantitative comparison for data impacted by blank contamination for the Site.

The initial data for the Site were collected and validated prior to June 2011; therefore, data were qualified using existing USEPA and NDEP guidance. The issue of blank contamination is not one that affects the typical primary risk drivers for the project, including those for the Site. The primary risk drivers for the Site are aluminum, arsenic, cobalt, and manganese; only one of which, arsenic, had blank contamination issues. There were only 16 arsenic results, out of 77 for the Site, affected by blank contamination, with initial reported values slightly less than the qualified values used in the HHRA. Therefore, the impact of these samples on the background comparison statistics for arsenic is unlikely to be significant. The following other metals had samples qualified non-detect due to blank contamination: beryllium (18 samples), boron (three samples), cadmium (eight samples), chromium (VI) (nine samples), copper (one sample), mercury (23 samples), molybdenum (12 samples), selenium (two samples), silver (18 samples), thallium (three samples), tin (seven samples), tungsten (four samples), and uranium (two samples). Given the number of samples qualified due to blank contamination for several of these, this may have an impact on the background comparison statistics. However, in all cases, the maximum detected concentrations for these metals are less than one-tenth their respective BCLs (and their maximum non-detect concentrations are also less than one-tenth their BCLs). Therefore, this issue has no material effect on the selection of COPCs and the results of the HHRA for the Site.

Uncertainties are also introduced into the risk assessment by assumptions that are made regarding the grading plan. As described in Section 3.1, the grading plan affects the interpretation of the data in terms of assigning samples to the surface or the subsurface. This was done to avoid the situation in which current surface samples might not be included in the evaluation of exposures to future surface soils. The data were subdivided by depth intervals as described in Section 3.1, and the maximum of the UCLs for the two subsets of data was used as the exposure point concentration. There is some uncertainty in the choice of subsetting on the concentrations of interest, and there is a potential small overestimation of risk by choosing the maximum of the two UCLs as the exposure point concentration. The effects are likely to be small given the data, since there is not much variation in the different UCLs.

7.2 ESTIMATES OF EXPOSURE

The selection of exposure pathways is a process, often based on best professional judgment, which attempts to identify the most probable potentially harmful exposure scenarios. In a risk assessment, it is possible that risks are not calculated for all of the exposure pathways that may occur, possibly causing some underestimation of risk.

7.2.1 Aggregation of Exposure Areas

Although land use is not residential, default residential exposure areas are one-eighth-acre in size. However, sampling has not been performed at the frequency of guaranteeing at least one sample per every one-eighth-acre exposure area. Instead, sampling has been performed at the scale of approximately once every 3 acres. This is considered sufficient if the concentration distribution for COPCs appears similar across the Site. To the extent that this assumption is not valid the risk assessment might underestimate risks. However, considering the sampling protocols employed and the physical remediation activities performed, the risk estimates are considered both reasonable from this perspective and unlikely to have resulted in an underestimation of risk at the Site.

7.2.2 Types of Exposures Examined

In an evaluation, risks are sometimes not calculated for all of the exposure pathways that may occur, possibly causing some underestimation of risk. However, in this case, all principal potential exposure pathways were evaluated. In this assessment, risks were estimated for future worker receptors. Risks for the most likely routes of exposure to these receptors were estimated. For example, risks to workers were estimated for soil ingestion, skin contact with soil, and inhalation of outdoor air (including dust generation). Although it is possible that other exposure routes could exist (e.g., downwind off-site residents), these exposures are expected to be lower than the risks associated with the pathways considered.

7.2.3 Intake Assumptions Used

The risks calculated depend largely on the assumptions used to calculate the rate of COPC intake. For this assessment, standard default values developed by USEPA are used for reasonable maximum exposures frequency and exposure duration for all receptors. These estimates are conservative values, and the possibility that they underestimate the risk is low. The uncertainties associated with particular parameters used in this risk assessment are described below.

The amount of COPCs the human body absorbs may be different from the amount of a COPC contacted, and the percentage absorbed may vary from one person to another. In this HHRA, with the exception of arsenic, absorption of ingested and inhaled COPCs is conservatively assumed to be 100 percent.

Current USEPA guidance (USEPA 2004e) states that "There are no default dermal absorption values presented for volatile organic compounds nor inorganic classes of compounds. The rationale for this is that in the considered soil exposure scenarios, volatile organic compounds would tend to be volatilized from the soil on skin and should be accounted for via inhalation routes in the combined exposure pathway analysis. For inorganics, the speciation of the compound is critical to the dermal absorption and there are too little data to extrapolate a reasonable default value." While USEPA guidance does not specifically state that this pathway should be dismissed, consistent with the approach utilized in current USEPA guidance, the risk estimates in this HHRA do not include a dermal absorption value for VOCs or inorganics (unless a specific value has been identified). Thus, the risks presented in this assessment could be underestimated as a result.

The construction activity dust emissions did not take into account dust control measures that would reduce the amount of dust generated to below those levels used in the HHRA. The Clark County Department of Air Quality and Environmental Management has dust control permitting requirements, and an inhalable particulate matter action level of 50 $\mu g/m^3$. The construction activity dust emissions predicted and used in the HHRA exceeded this level. Therefore, dust suppression activities would need to be implemented, thus reducing dust levels and exposures.

The dispersion factor for the construction worker is not adjusted to account for soil intrusion activities. Because these activities may cause increased air concentrations than that evaluated, risks to VOCs in soil may be underestimated for this receptor. However, because VOCs are primarily associated with groundwater, this potential underestimation is considered low.

Using a process similar to the selection of COPCs for soil, only those VOCs and volatile SVOCs that did not pass the Tier 2 assessment in Section 6.1.2 were evaluated at each individual surface flux location. Based on this, only eight of the 67 chemicals analyzed for in surface flux samples were included in the cumulative risks associated with the inhalation of VOCs (note that only four of these eight chemicals were detected in surface flux data). Therefore, the cumulative risks associated with the inhalation of VOCs for all exposure scenarios are underestimated in the HHRA; however, this underestimation is considered low.

7.3 TOXICITY ASSESSMENT

The availability and quality of toxicological data is another source of uncertainty in the risk assessment. Uncertainties associated with animal and human studies may have influenced the toxicity criteria. Carcinogenic criteria are classified according to the amount of evidence available that suggests human carcinogenicity. In the establishment of the non-carcinogenic criteria, conservative safety factors, known as uncertainty and modifying factors, are used.

7.3.1 Chemicals of Potential Concern Lacking Toxicological Data

Toxicity criteria have not been established for some of the chemicals detected at the Site. These chemicals were not quantitatively evaluated in the HHRA. For example, potassium is an analyte for which no USEPA toxicity criteria have been established. The health effects and levels of concern for potassium in soil are not known. While not including potassium may have resulted in a low degree of underestimation of quantitative Site risk estimates, the available toxicological information suggests that this underestimation will not likely affect the decisions made relative to Site risks.

Because of the inconclusive nature of TICs as potentially SRCs, non-cancer surrogate toxicity criteria were not applied. Non-cancer surrogate toxicity criteria were not applied to the inorganic chemicals because of the complexity of ion and metal toxicity. A quantitative estimation of risk was not conducted for these COPCs. Thus, the risks presented in this assessment could be underestimated as a result.

7.3.2 Uncertainties in Animal and Human Studies

Extrapolation of toxicological data from animal tests is one of the largest sources of uncertainty in a risk assessment. There may be important, but unidentified, differences in uptake, metabolism, and distribution of chemicals in the body between the test species and humans. For the most part, these uncertainties are addressed through use of conservative assumptions in establishing values for RfDs, RfCs, CSFs, and IURs, which results in the likelihood that the risk is overstated.

Typically, test animals are administered high doses (e.g., maximum tolerated dose) of a chemical in a standard diet or in air. Humans are generally exposed to much lower doses in the environment, which may affect the toxicity of the chemical. In these studies, test animals, often laboratory rodents, are exposed daily to the chemical agent for various periods of time up to their 2-year lifetimes. Humans have an average 70-year lifetime and may be exposed either intermittently or regularly for an exposure period ranging from weeks to a full lifetime. Because of these differences, it is not surprising that extrapolation error is a large source of uncertainty in a risk assessment.

7.3.3 Non-Carcinogenic Toxicity Criteria

In the establishment of the non-carcinogenic criteria, conservative safety factors, known as uncertainty factors, are used. Most of the chronic non-carcinogenic toxicity criteria that were located in the IRIS database have uncertainty factors of 1,000. This means that the dose corresponding to a toxicological effect level (e.g., LOAEL) is divided by 1,000 to deem a safe, or "reference," dose. The purpose of the uncertainty factor is to account for the extrapolation of toxicity data from animals to humans and to ensure the protection of sensitive individuals.

7.3.4 Sub-Chronic Non-Carcinogenic Toxicity Criteria

Construction worker exposures are evaluated for an exposure duration of 1 year, which is more representative of a sub-chronic exposure rather than a chronic exposure. As such, where available, sub-chronic RfDs were used to characterize non-cancer effects for the construction worker. However, for many COPCs, a sub-chronic RfD was not available and the chronic RfD was used. This likely presented an overestimation of non-cancer health risks to the construction worker.

7.3.5 Carcinogenic Toxicity Criteria

Uncertainty due to extrapolation of toxicological data for potential carcinogens tested in animals to human response is commonly the case for potentially carcinogenic chemicals. USEPA frequently uses the LMS model, or other non-threshold low-dose extrapolation models, to extrapolate the toxicological data to estimate human response. These low-dose extrapolation models assume that there is no threshold for carcinogenic substances; that is, exposure to even one molecule, fiber, or picocurie of a carcinogen is sufficient to cause cancer. This is a highly conservative assumption, because the body has several mechanisms to protect against cancer.

The use of the LMS model to extrapolate is a well-recognized source of significant uncertainty in the development of carcinogenic toxicity criteria and, subsequently, theoretical carcinogenic risk estimates. At high levels of exposure, there may indeed be a risk of cancer regardless of whether or not the effect occurs via a threshold mechanism. An animal bioassay cannot determine what happens at low levels of exposure, however, which are generally typical of human exposure levels.

At low levels of exposure, the probability of cancer cannot be measured, but must be extrapolated from higher dosages. To do this, test animals are typically exposed to carcinogens at levels that are orders of magnitude greater than those likely to be encountered by humans in the environment. It would be difficult, if not impossible, to perform animal experiments with a large enough number of animals to directly estimate the level of risk at the low exposure levels typically encountered by humans. Thus, to estimate the risk to humans exposed at low levels, dose-response data derived from animals given high dosages are extrapolated downward using mathematical models such as the LMS model, which assumes that there is no threshold of response. The dose-response curve generated by the model is known as the maximum likelihood estimate. The slope of the 95 percent lower confidence interval (i.e., upper-bound limit) curve, which is a function of the variability in the input animal data, is taken as the CSF. CSFs are then used directly in cancer risk assessment.

The U.S. federal government, including USEPA itself, has acknowledged the limitations of the high-to-low dose extrapolation models, particularly the LMS model (USEPA 1991c). In fact, this aspect of cancer risk assessment has been criticized by many scientists (including regulatory scientists) in recent years. USEPA has recently released revised cancer risk assessment guidelines (USEPA 2005b).

Even for genotoxic (i.e., non-threshold) substances, there are two major sources of bias embedded in the LMS model: (1) its inherent conservatism at low doses and (2) the routine use of the linearized form in which the 95 percent upper confidence interval is used instead of the unbiased maximum likelihood estimate. The inherent conservatism at low doses is due in part to the fact that the LMS model ignores all of the numerous biological factors that argue against a linear dose-response relationship for genotoxic effects (e.g., DNA repair, immunosurveillance, toxicokinetic factors).

Several other factors inherent in the LMS model result in overestimated carcinogenic potency: (1) any exaggerations in the extrapolation that can be produced by some high dose responses (if they occur) are generally neglected; (2) UCLs on the actual response observed in the animal study are used rather than the actual response, resulting in upper-bound low dose extrapolations, which can greatly overestimate risk; and (3) non-genotoxic chemicals (i.e., threshold carcinogens) are modeled in the same manner as highly genotoxic chemicals.

7.3.6 Uncertainties with the Asbestos Risk Assessment

For the risk assessment, asbestos concentrations were presented two ways, as a best estimate and upper bound based upon the UCL of the mean of the Poisson distribution. Asbestos risk estimates are highly dependent on the number of samples to increase or decrease the pooled analytical sensitivity. That is, a larger number of non-detect samples with similar individual analytical sensitivity results in a lower pooled analytical sensitivity and subsequently a lower estimated ARR, whereas a smaller number of non-detect samples results in a higher ARR. Uncertainty is, thus, reduced as more samples are collected.

7.4 CUMULATIVE EFFECT OF UNCERTAINTIES

Uncertainties from different sources are compounded in the HHRA. For example, if a person's daily intake rate for a chemical is compared to an RfD to determine potential health risks, the uncertainties in the concentration measurements, exposure assumptions, and toxicities are all expressed in the result. Because the exposure assumptions and toxicity criteria are considered conservative, the risk estimates calculated in this HHRA are likely to overestimate rather than underestimate potential risks.

8.0 SUMMARY OF RESULTS

This HHRA has evaluated potential risks to human health associated with chemicals and asbestos detected in soil at the Triangle Commercial Sub-Area located within the BMI Common Areas in Clark County, Nevada. All calculation spreadsheets for this HHRA are presented in Appendix H (on the report CD in Appendix B), including calculations of chemical theoretical upper-bound ILCRs and non-cancer health effects and asbestos risk calculations.

The risk estimates are based on reasonable maximum exposure scenarios, which results in estimates of the potential reasonable maximum, or high-end, risks associated with the Site. The calculated chemical theoretical upper-bound ILCRs and HIs are presented in Tables 6-12 through 6-14 for construction worker, commercial (indoor) worker, and maintenance (outdoor) worker receptors, respectively. Asbestos estimated risk of death from lung cancer or mesothelioma on a Site-wide basis is presented in Table 6-15.

8.1 CONSTRUCTION WORKERS

For chemical exposures, the total cumulative non-cancer HI for construction worker receptors at the Site is 1 (including the surface flux air risk estimates) (Table 6-12), with metals soil exposures via the oral ingestion pathway being the primary contributors. The HI does not exceed the target HI of 1.0. As a result, BRC did not evaluate target organ or background non-cancer HI values.

The maximum theoretical upper-bound ILCR for construction worker receptors at the Site is 2×10^{-7} (including the surface flux air risk estimates see Table 6-12) with arsenic soil exposures via the oral ingestion pathway the primary contributor. The theoretical upper-bound ILCRs are all below the low end of the risk goal of 1×10^{-6}.

The estimated risks for death from lung cancer or mesothelioma for asbestos exposures to construction workers were below 1×10^{-6}. For construction workers receptors, the best estimate and upper bound concentrations for chrysotile fibers are 4×10^{-8} and 6×10^{-8}; and 0 and 6×10^{-7} for amphibole fibers (Table 6-15). These estimated risks are below the low end of the risk goal of 1×10^{-6}.

8.2 COMMERCIAL (INDOOR) WORKERS

For chemical exposures, the total cumulative non-cancer HI for commercial (indoor) worker receptors at the Site is 0.05 (including the surface flux air risk estimates) (Table 6-13), with metals soil exposures via the oral ingestion pathway being the primary contributors. The HI does not exceed the target HI of 1.0. As a result, BRC did not evaluate background non-cancer HI values.

The maximum theoretical upper-bound ILCR for commercial (indoor) worker receptors at the Site is 6×10^{-7} (including the surface flux air risk estimates see Table 6-13) with the soil theoretical upper-bound ILCRs for arsenic via the oral ingestion and dermal contact pathways the primary contributor. The theoretical upper-bound ILCRs are all below the low end of the risk goal of 1×10^{-6}.

The estimated risks for death from lung cancer or mesothelioma for asbestos exposures to commercial (indoor) workers were below 1×10^{-6}. For commercial (indoor) worker receptors, the best estimate and upper bound concentrations for chrysotile fibers are 6×10^{-9} and 8×10^{-9}; and 0 and 7×10^{-8} for amphibole fibers (Table 6-15). These estimated risks are below the low end of the risk goal of 1×10^{-6}.

8.3 MAINTENANCE (OUTDOOR) WORKERS

For chemical exposures, the total cumulative non-cancer HI for maintenance (outdoor) worker receptors at the Site is 0.1 (including the surface flux air risk estimates) (Table 6-14), with metals soil exposures via the oral ingestion pathway being the primary contributors. The HI does not exceed the target HI of 1.0. As a result, BRC did not evaluate background non-cancer HI values.

The maximum theoretical upper-bound ILCR for maintenance (outdoor) worker receptors at the Site is 1×10^{-6} (including the surface flux air risk estimates see Table 6-14) with the soil theoretical upper-bound ILCRs for arsenic via the oral ingestion and dermal contact pathways the primary contributor. The theoretical upper-bound ILCRs are at the low end of the risk goal of 1×10^{-6}.

The estimated risks for death from lung cancer or mesothelioma for asbestos exposures to maintenance (outdoor) workers were below 1×10^{-6}. For maintenance (outdoor) worker receptors, the best estimate and upper bound concentrations for chrysotile fibers are 1×10^{-8} and 2×10^{-8}; and 0 and 2×10^{-7} for amphibole fibers (Table 6-15). These estimated risks are below the low end of the risk goal of 1×10^{-6}.

9.0 DATA QUALITY ASSESSMENT

Sample size calculations were conducted for the nine selected COPCs for the Site,[38] as well as TCDD TEQ. TCDD TEQ was included because it is a COPC for the overall project.

The formula used here for calculation of sample size is based on a non-parametric test (the Wilcoxon signed rank test), and on simulation studies performed by Pacific Northwest National Laboratories (PNNL 2009) that formed the basis for an approximate formula that is based on the normal distribution. Essentially, the formula is the one that would be used if a normal-based test were being performed, but an adjustment is made (multiply by 1.16) to account for the intent to perform a non-parametric test. The formula is as follows:

$$n = 1.16\left[\frac{s^2}{\Delta^2}(z_{1-\alpha} + z_{1-\beta(\mu)})^2 + 0.5z_{1-\alpha}^2\right]$$

where:

n	=	number of samples
s	=	estimated standard deviation of concentrations/fibers
Δ	=	width of the gray region (the difference between the threshold value stated in the null hypothesis and the point at which β is specified)
α	=	significance level or Type I error tolerance
β (μ)	=	Type II error tolerance; and
z	=	quantile from the standard normal distribution

For each chemical, inputs for the calculations include an estimate of the variance from the measured data, a desired significance level, and desired power of the test that must be specified at a concentration of interest (which determines the tolerable difference from the threshold value). For arsenic, the Site mean concentration exceeds its BCL based on the target cancer risk level of 10^{-6}. It is not appropriate to apply this calculation where the threshold value is less than the mean concentration. Therefore, an adjustment of the threshold value was used based on a 10^{-5} target cancer risk level. The calculations provided here cover a range of Type I and Type II error tolerances, and the point at which the Type II error is specified. Results are presented in

[38] Note that benzo(a)pyrene was selected as a COPC based on exceeding the one-tenth BCL criteria. Other carcinogenic PAHs were also selected as COPCs because of benzo(a)pyrene. Therefore, sample size calculations were only performed for benzo(a)pyrene, as representative of PAHs.

Table 9-1. In this table, various combinations of input values are used, including values of α of 5, 10, and 15 percent; values of β of 15, 20, and 25 percent; and a gray region of width 10, 20, and 30 percent of the threshold level. It is clear from Table 9-1 that the number of samples collected is adequate for the Site. That is, calculated adequate sample numbers are generally less than those actually collected at the Site for use in the HHRA.

Note also that there are 31 samples collected for asbestos analysis. Amphibole was not detected in any of these samples; however, because of the number of samples collected, the ARRs are all less than 1×10^{-6}. Consequently, sufficient samples have been collected to address ARRs.

10.0 SUMMARY

BRC has prepared this HHRA and Closure Report for the Site. The purpose of this report is to request an NFAD by the NDEP. The NDEP acknowledges that discrete portions of the Eastside may be issued an NFAD as remedial actions are completed for selected environmental media (NDEP 2006). The portion of the Eastside for which the NFAD is being requested based on this HHRA and Closure Report is shown in red on Figure 1. The legal description of the Site is provided in Appendix K.

The HHRA evaluated the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and air following remediation, and assessed whether any additional remedial actions are necessary in order to obtain an NFAD from the NDEP to allow redevelopment of the Site to proceed. The results of the risk assessment provide risk managers with an understanding of the potential human health risks associated with background conditions and additional risks associated with past Site activities.

For human health protection, and given the proposed land use for the Site, BRC's goal is to remediate the Site soils such that they are suitable for retail/commercial land use. Human health risks are represented by estimated theoretical upper-bound cancer risks and non-cancer hazards derived in accordance with standard USEPA and NDEP methods. If the carcinogenic risks or non-cancer hazards exceed USEPA-acceptable levels or NDEP risk goals, then remedial action alternatives must be considered. Findings of the HHRA are intended to support the Site closure process. The major findings of this report are the following:

- Data collected for use in the HHRA are adequate and usable for their intended purpose;
- All relevant and reasonable exposure scenarios and pathway have been evaluated; and
- Construction worker, commercial (indoor) worker, and maintenance (outdoor) worker cancer and non-cancer risk estimates are within or below the risk goals for the project.

Therefore, based on the results of the HHRA, and the conclusions in this report, exposures to residual levels of chemicals in soil at the Triangle Commercial Sub-Area do not result in adverse health effects to all future receptors. Therefore, BRC concludes that an NFAD for the Triangle Commercial Sub-Area is warranted and requests that the NDEP issue the NFAD (see Appendix K for the legal description of the Site).

11.0 REFERENCES

Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Update to the ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil. U.S. Department of Health and Human Services, Public Health Service. November.

American Society for Testing and Materials (ASTM). 2000. Standard Guide for Risk-Based Corrective Action. E2081-00.

Basic Remediation Company (BRC). 2007. Remedial Action Plan, BMI Common Areas (Eastside), Clark County, Nevada.

BRC. 2010a. Sampling and Analysis Plan for the TIMET Ponds Sub-Area, BMI Common Areas (Eastside), Clark County, Nevada. January.

BRC. 2010b. Sampling and Analysis Plan for the Staging Sub-Area, BMI Common Areas (Eastside), Clark County, Nevada. April.

BRC. 2010c.Technical Memorandum – Correlation of Radon Activities in Indoor Air and Shallow Zone Groundwater, BMI Common Areas (Eastside) Site, Clark County, Nevada.August 30.

BRC. 2011. BRC Comments on NDEP Blank Contamination Guidance. Technical Memorandum. Draft. August 15.

BRC and Environmental Resources Management (ERM). 2009a. BRC Quality Assurance Project Plan. BMI Common Areas, Clark County, Nevada. May.

BRC and ERM. 2009b. 2008 Supplemental Shallow Soil Background Report. BMI Common Areas (Eastside), Clark County, Nevada. September.

BRC and ERM. 2010a. Data Validation Summary Report, Staging Sub-Area Soil Investigation – May-June 2010 (Dataset 66). BMI Common Areas (Eastside), Clark County, Nevada. October.

BRC and ERM. 2010b. Background Soil Compilation Report. BMI Complex and Common Areas, Clark County, Nevada. April.

BRC and ERM. 2011a. Data Validation Summary Report, TIMET Ponds Sub-Area Soil Investigation – March, April and July 2010 (Dataset 65). BMI Common Areas (Eastside), Clark County, Nevada. December.

BRC and ERM. 2011b. Data Validation Summary Report, Eastside North Surface Flux Investigations (Remaining Sub-Areas) – July through August 2010 (Dataset 71). BMI Common Areas (Eastside), Clark County, Nevada. July.

BRC and ERM. 2011c. Data Validation Summary Report, Eastside North Confirmation Soil Investigations – December 2008 through October 2010 – Part II (Dataset 72b). BMI Common Areas (Eastside), Clark County, Nevada. May.

BRC and ERM. 2014a. Eastside Confirmation/Supplemental Sampling Events – July 2012 Through February 2014 (Dataset 72f). BMI Common Areas (Eastside), Clark County, Nevada. June.

BRC and ERM. 2014b. Eastside Confirmation/Supplemental Sampling Events – March 2014 Through August 2014 (Dataset 72g). BMI Common Areas (Eastside), Clark County, Nevada. December. [pending approval by the NDEP]

BRC, ERM, and Daniel B. Stephens & Associates, Inc. (DBS&A). 2007. BRC Closure Plan, BMI Common Areas, Clark County, Nevada. May. [Section 9 revised March 2010]

BRC, ERM, and MWH. 2009. BRC Field Sampling and Standard Operating Procedures, BMI Common Areas, Clark County, Nevada. December.

Berman D.W. 2003a. Analysis and Interpretation of Measurements for the Determination of Asbestos in Core Samples Collected at the Southdown Quarry in Sparta, New Jersey, November 12.

Berman D.W. 2003b. Evaluation of Asbestos Measurements and Assessment of Risks Attendant to Excavation and Use of Soils Within the Proposed Borrow Area of the BRC Corrective Action Management Unit, Henderson, NV, November 25.

Berman D.W. 2005. Draft Preliminary Evaluation of the Implications of Airborne Asbestos Exposure Concentrations Observed During Simulation of a Selected Set of Common, Outdoor Residential Activities Conducted at the North Ridge Estates Site, Klamath Falls, Oregon, February 18.

Berman, D.W., and E.J. Chatfield. 1990. Interim Superfund Method for the Determination of Asbestos in Ambient Air. Part 2: Technical Background Document, Office of Solid Waste and Remedial Response, U.S. EPA, Washington, D.C., EPA/540/2-90/005b, May.

Berman, D.W., and K. Crump. 1999a. Methodology for Conducting Risk Assessments at Asbestos Superfund Sites—Part 1: Protocol. Interim Version. Prepared for USEPA Region 9, February 15.

Berman, D.W., and K. Crump. 1999b. Methodology for Conducting Risk Assessments at Asbestos Superfund Sites—Part 2: Technical Background Document. Interim Version. Prepared for USEPA Region 9, February 15.

Berman, D.W., and K.S. Crump. 2001. Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Prepared for Mark Raney, Volpe Center, U.S. Department of Transportation, 55 Broadway, Kendall Square, Cambridge, MA 02142. Under EPA Review.

Berman D.W., and K.S. Crump. 2003. Final draft: Technical support document for a protocol to assess asbestos-related risk. Prepared for Mark Follensbee, Syracuse Research Corporation, Syracuse, NY, and the Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, DC. USEPA #9345.4-06. Limited revision draft.

Berman, D.W., and A. Kolk. 2000. Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material. May (Revision 1).

Carlsen, C.L., R.C. Lunnis, and D.E. Prudie. 1991. Changes in water levels and water quality in shallow groundwater, Pittman-Henderson Area, Clark County, Nevada, Resulting from diversion of industrial cooling water from ditch to pipeline in 1985. U.S. Geological Survey Water-Resources Investigation Report 89-4093. Carson City, Nevada.

Clark County GIS Management Office. 2003. 5 Foot Contours for the Las Vegas Valley, Mesquite and Laughlin. Fall 2003 Flight of Clark County.

Daniel B. Stephens & Associates, Inc. (DBS&A). 2009. Revised Technical Memorandum: Sources/Sinks and Input Parameters for Groundwater Flow Model, BMI Common Areas, Eastside Area.

Environmental Resources Management (ERM). 1996a. Environmental Conditions Investigation Work Plan, BMI Common Areas, Henderson, Nevada. February.

ERM. 1996b. Draft Environmental Conditions Investigation Report, BMI Common Areas, Henderson, Nevada. August.

ERM. 1998. Warm Springs/Pabco Road Right-of-Way Characterization Activities Report. May.

ERM. 2000. Remedial Alternatives Study for Soils and Sediments in the Upper and Lower Ponds at the BMI Complex. Henderson, Nevada. March 1.

ERM. 2006a. Data Validation Summary Report Common Areas Sampling Event #1a - 1996 Environmental Conditions Investigation. August.

ERM. 2006b. Data Validation Summary Report Common Areas Sampling Event #2 - 1998 Warm Springs Road Investigation. October.

Las Vegas Wash Coordination Committee. 2000. The Las Vegas Wash Comprehensive Adaptive Management Plan. http://www.lvwash.org/resources/docs/lvwcamp.html.

Law Engineering Inc. 1993. Final Report of Phase I Environmental Condition Assessment, Titanium Metals Corporation (TIMET) - Henderson, Nevada.

MWH. 2006a. Data Validation Summary Report, 2000 "College Site" Investigation (Dataset 14), BMI Common Areas (Eastside), Clark County, Nevada. October.

MWH. 2006b. Data Validation Summary Report – 2006 Waste Characterization Investigation (Dataset 39), BMI Common Areas (Eastside), Clark County, Nevada. October.

Neptune and Company. 2009. Guided Interactive Statistical Decision Tools (GiSdT). www.gisdt.org.

Nevada Division of Environmental Protection (NDEP). 2001. Record of Decision, Remediation of Soils and Sediments in the Upper and Lower Ponds at the BMI Complex. Henderson, Nevada. November 2.

NDEP. 2006. Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3 (AOC3).

NDEP. 2008a. Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas in Henderson, Nevada. Bureau of Corrective Actions, Special Projects Branch. October 22.

NDEP. 2008b. Detection Limits and Data Reporting. Bureau of Corrective Actions, Special Projects Branch. December 3.

NDEP. 2009a. Guidance for Evaluating Radionuclide Data for the BMI Plant Sites and Common Areas Projects. February 6.

NDEP. 2009b. Supplemental Guidance on Data Validation. March 19.

NDEP. 2009c. Supplemental Guidance on Data Validation. April 13.

NDEP. 2009d. Guidance for Evaluating Secular Equilibrium at the BMI Complex and Common Areas. BMI Plant Sites and Common Areas Projects, Henderson, Nevada. February 6.

NDEP. 2011a. Technical Guidance for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas. February.

NDEP. 2011b. Workbook for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas.

NDEP. 2011c. July 2011 Guidance on Qualifying Data due to Blank Contamination. BMI Plant Sites and Common Areas Projects, Henderson, Nevada.

NDEP. 2012. Guidance on Data Validation for Asbestos Data in Soils. BMI Plant Sites and Common Areas Projects, Henderson, Nevada. July.

NDEP. 2013. User's Guide and Background Technical Document for Nevada Division of Environmental Protection (NDEP) Basic Comparison Levels (BCLs) for Human Health for the BMI Complex and Common Areas. August.

NewFields Companies, LLC (NewFields). 2006. Statistical Methodology Report, BMI Common Areas (Eastside), Henderson, Nevada. August.

Oak Ridge National Laboratory (ORNL). 2013. Risk Assessment Information System (RAIS) Toxicity Profiles. http://rais.ornl.gov/tools/tox_profiles.html

Pacific Northwest National Laboratory (PNNL). 2009. Visual Sample Plan. http://vsp.pnl.gov.

Scanlon, B.R., K.E. Keese, A.L. Flint, L.E. Flint, C.B. Gaye, W.M. Edmunds, and I. Simmers. 2006. Global synthesis of groundwater recharge in semiarid and arid regions. Hydrological Processes Hydrol. Process. 20(15):3335–3370.

Southern Nevada Water Authority. 1996. Extent and Potential Use of the Shallow Aquifer and Wash Flow in Las Vegas Valley, Nevada.

Umhoefer, P.J., L.S. Beard, and M.A. Lamb. eds. 2010. Miocene Tectonics of the Lake Mead Region, Central Basin and Range. Geological Society of America. Special Paper 463.

U.S. Environmental Protection Agency (USEPA). 1985. Rapid Assessment of Exposure to Particulate Emissions From Surface Contamination Sites. EPA/600/8-85/002. Office of Health and Environmental Assessment. Washington, DC.

USEPA. 1986. Measurement of Gaseous Emission Rates From Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, EPA Contract No. 68-02-3889, Radian Corporation, February.

USEPA. 1989. Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual (Part A). Interim Final. Office of Emergency and Remedial Response, Washington, DC. USEPA/540/1-89/002. December.

USEPA. 1991a. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions. Memorandum from D.R. Clay, Assistant Administrator, USEPA. OSWER Directive 9355.0-30, April.

USEPA. 1991b. Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual. Supplemental Guidance ‘Standard Default Exposure Factors’. Office of Emergency and Remedial Response, Washington, DC. OSWER Directive 9285.3-03. March.

USEPA. 1991c. Current Regulatory Issues in Risk Assessment and Risk Management. Executive Office of the President. Government Printing Office, Washington, DC. S/N 041 001 00354 1.

USEPA. 1992a. Guidance for Data Usability in Risk Assessment. Part A. Office of Emergency and Remedial Response, Washington DC. Publication 9285.7-09A. PB92-963356. April.

USEPA. 1992b. Guidelines for Exposure Assessment. Federal Register, 57(104):22888-22938. May 29.

USEPA. 1992c. Supplemental Guidance to RAGS: Calculating the Concentration Term. Office of Emergency and Remedial Response, Washington, DC. Publication 9285.7-08I. May.

USEPA. 1996. Soil Screening Guidance: Technical Background Document. Office of Emergency and Remedial Response, Washington, DC. USEPA/540/R-96/018. April.

USEPA. 1997. Exposure Factors Handbook. Office of Research and Development, Washington DC. USEPA/600/P-95/002Fa-c. August.

USEPA. 1999. National Functional Guidelines for Organic Data Review. EPA 540/R-99-008. OSWER 9240.1-05A-P. October.

USEPA. 2000. Soil Screening Guidance for Radionuclides. Office of Radiation and Indoor Air, Washington, DC. USEPA/540-R-00-007 and USEPA/540-R-00-006.

USEPA. 2002a. Guidance for Quality Assurance Project Plans. EPA QA/G-5. Office of Environmental Information, Washington, DC. December.

USEPA. 2002b. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response, Washington, DC. OSWER 9355.4-24. December.

USEPA. 2002c. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. Office of Emergency and Remedial Response, Washington, DC. OSWER 9285.6-10. December.

USEPA. 2002d. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) EPA 530-f-02-052. November.

USEPA. 2003a. Contract Laboratory Program Statement of Work for Organic Analysis: Multi-media, Multi-concentration. OLM04.3. Office of Emergency and Remedial Response. March.

USEPA. 2003b. Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Final Draft. Office of Solid Waste and Emergency Response, Washington, DC.

USEPA. 2003c. Memorandum on Human Health Toxicity Values in Superfund Risk Assessments, from Michael B. Cook, Director, Office of Superfund Remediation and

Technology Innovation to Superfund Remediation Policy Managers, Regions 1 - 10, dated December 5. OSWER Directive 9285.7-53.

USEPA. 2004a. Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK). Office of Solid Waste and Emergency Response.

USEPA. 2004b. Contract Laboratory Program Statement of Work for Organic Analysis: Multi-media, Multi-concentration. SOM01.0. Office of Emergency and Remedial Response. October.

USEPA. 2004c. Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-media, Multi-concentration. ILM05.3. Office of Emergency and Remedial Response. March.

USEPA. 2004d. National Functional Guidelines for Inorganic Data Review. EPA 540-R-04-004. OSWER 9240.1-45. October.

USEPA. 2004e. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Office of Emergency and Remedial Response, Washington, DC. EPA/540/R/99/005. July.

USEPA. 2004f. Memorandum on Clarifying Cleanup Goals and Identification of New Assessment Tools for Evaluating Asbestos at Superfund Cleanups, from Michael B. Cook, Director, Office of Superfund Remediation and Technology Innovation to Superfund Remediation Policy Managers, Regions 1-10, August. OSWER Directive 9345.4-05.

USEPA. 2005a. National Functional Guidelines for Chlorinated Dioxin/Furan Data Review. EPA 540-R-05-001. OSWER 9240.1-51. September.

USEPA. 2005b. Guidelines for Carcinogen Risk Assessment. Risk Assessment Forum, Washington, DC. March.

USEPA. 2008. National Functional Guidelines for Superfund Organic Methods Data Review. EPA 540-R-08-01. OSWER 9240.1-48. June.

USEPA. 2009. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment). EPA-540-R-070-002. http://www.epa.gov/oswer/ riskassessment/ ragsf/.

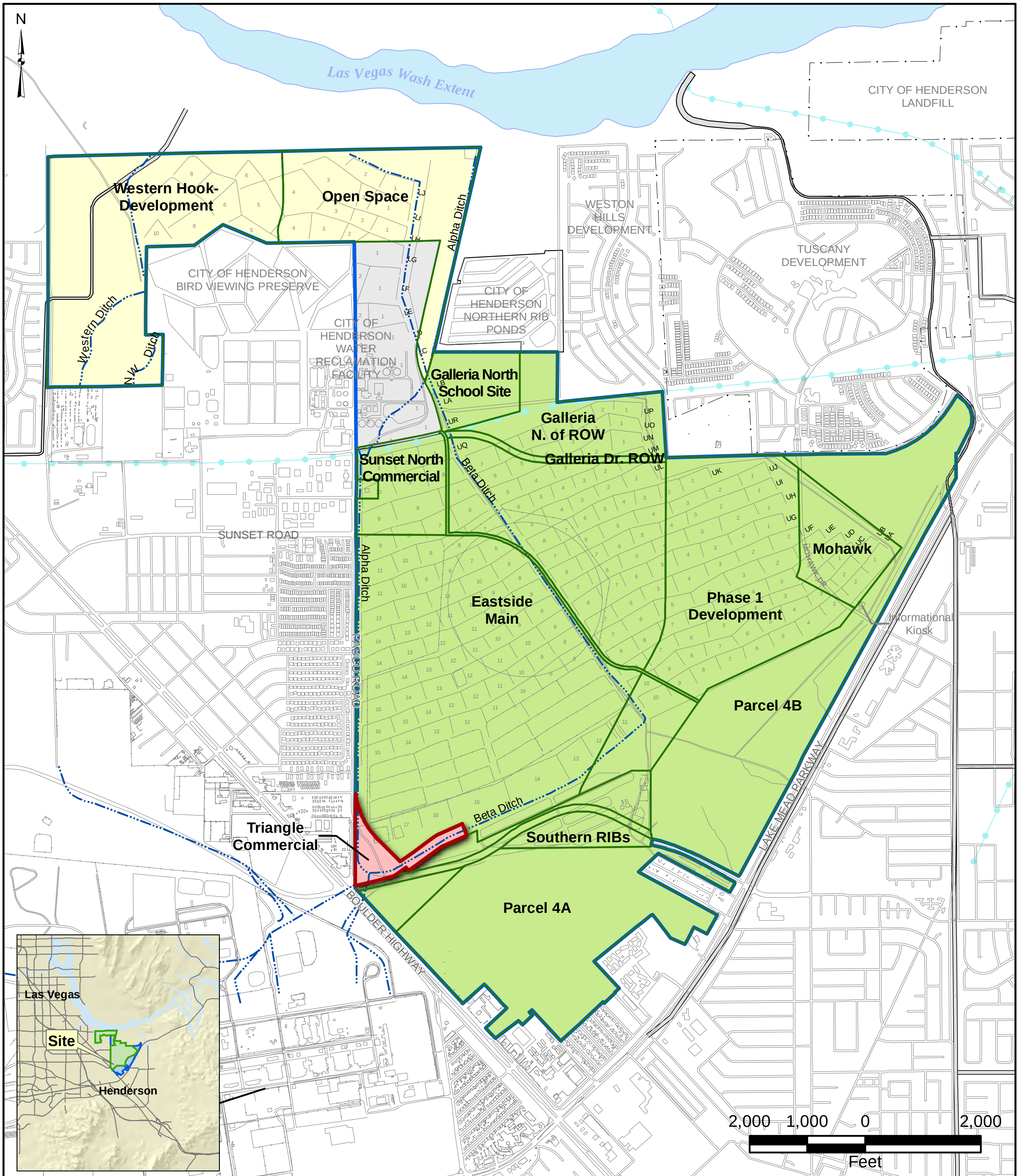
USEPA. 2010. Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds. Risk Assessment Forum, Washington, DC. EPA/600/R-10/005.

USEPA. 2013. Integrated Risk Information System. USEPA on-line database: http://www.epa.gov/iris/index.html.

Western Regional Climate Center. 2008. Monthly average precipitation for Las Vegas. Desert Research Institute. <http://www.wrcc.dri.edu/summary/Climsmnv.html>.

Weston. 1993. Site Conceptual Model, Stauffer/Pioneer/Montrose Site, Henderson, Nevada, September.

FIGURES



Site AOC3 Boundary	Triangle Commercial Sub-Area
Ditches	Eastside Sub-Areas
Flood Conveyance Channels	NFA Areas
Laterals	CoH WRF*

*Not part of the Closure Plan for soils.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 1

TRIANGLE COMMERCIAL SUB-AREA LOCATION

Basic Remediation COMPANY

Prepared by MKJ (ERM)

ERM

Date 01/08/15

JOB No. 0064276
FILE: GIS/BRC/TRIANGLE_COMM/FIGURE_1.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas

Development Cut/Fill Areas

- > 10 Ft Fill
- 5 to 10 Ft Fill
- 0 to 5 Ft Fill
- No Change
- 0 to 5 Ft Cut
- 5 to 10 Ft Cut
- > 10 Ft Cut

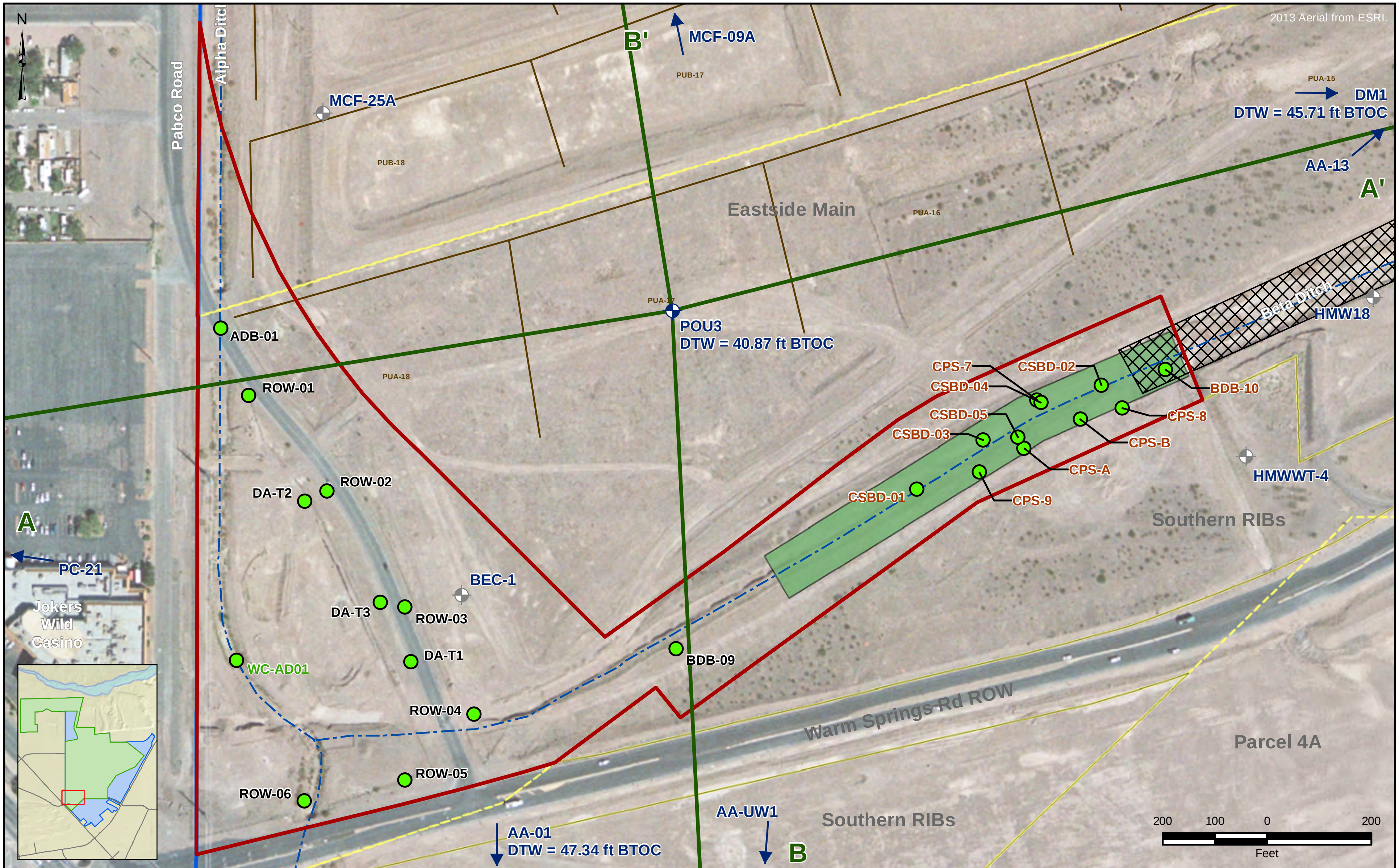
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 2

REDEVELOPMENT GRADING PLAN

Basic Remediation COMPANY

Prepared by MKJ (ERM) | Date 01/23/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURES2,6,12.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Original Eastside Sub-Area Boundaries
Interim Remedial Measures (IRMs)
Excavated Material Temporary Storage Area

Historical Soil Sample Locations
Cross-Section Location
Historic BMI Ponds (Berms)

Monitoring Wells

Other Monitoring Wells
Alluvial Wells with Groundwater Data

ADB-01 - Discrete Sample
WC-AD01 - Composite Sample
CSBD-02 - Excavated Sample

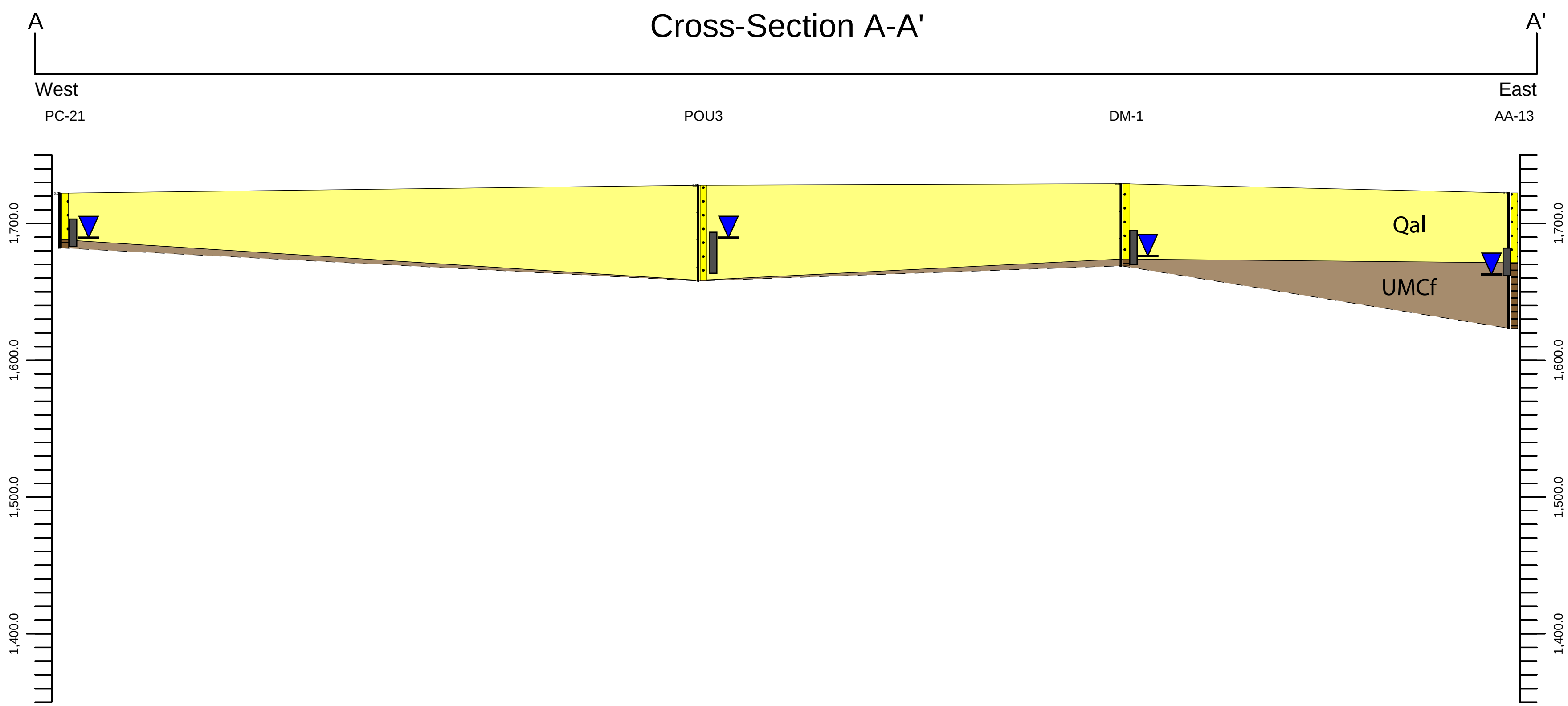
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 3

SITE PLAN WITH HISTORIC SOIL SAMPLE LOCATIONS AND MONITORING WELLS

Basic Remediation COMPANY

Prepared by MKJ (ERM) | Date 01/23/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURE3.MXD



= Screen Interval

= Shallow Zone Water Level (August 2009)

= Qal = Quaternary alluvium

= UMCf = Upper Muddy Creek formation

Vertical Scale = 5x Horizonal Scale

For soil lithology details, please see the individual boring logs.

See Figure 3 for cross-section location.

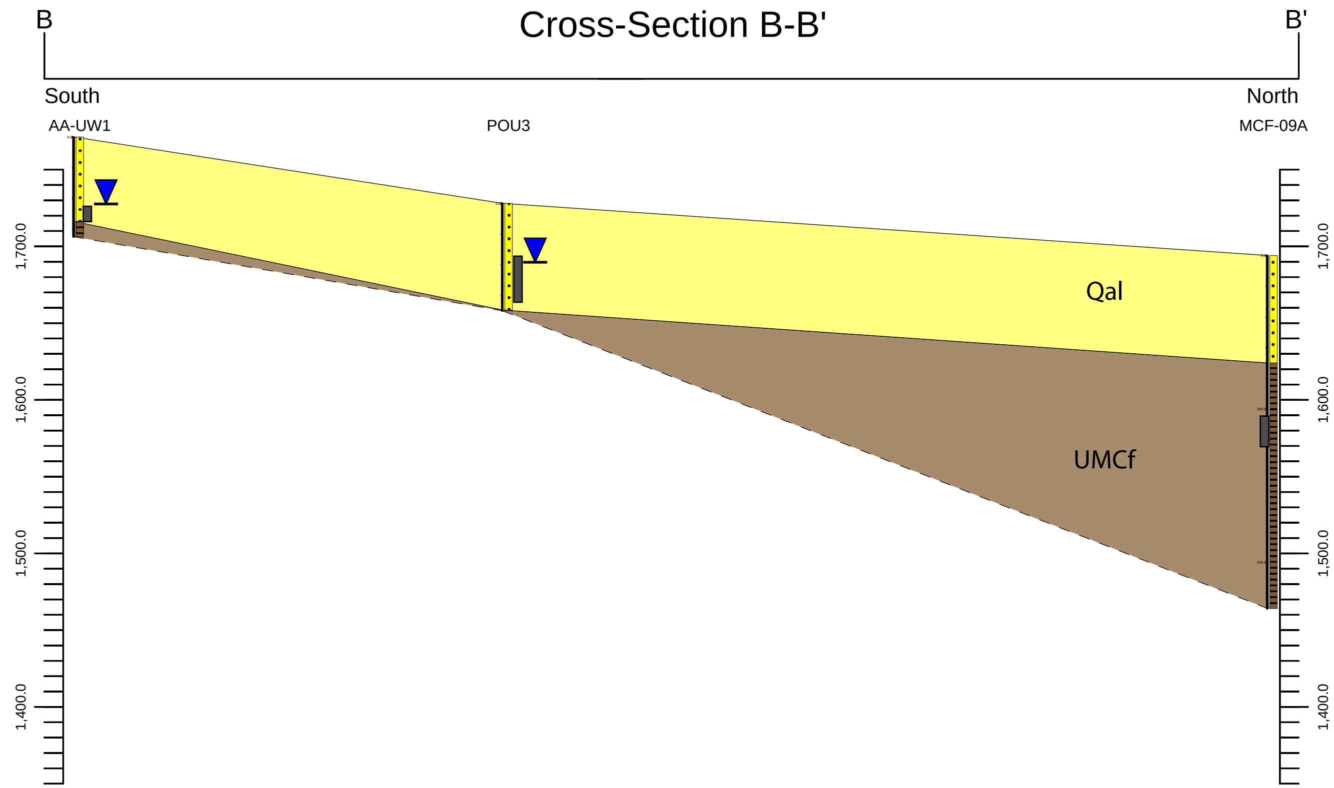
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 4

TRIANGLE COMMERCIAL SUB-AREA CROSS-SECTION A-A'

Basic Remediation COMPANY

Prepared by MKJ (ERM)	Date 01/14/15	JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURE4.AI



= Screen Interval

= Shallow Zone Water Level (August 2009)

= Qal = Quaternary alluvium

= UMCf = Upper Muddy Creek formation

Vertical Scale = 5x Horizonal Scale

For soil lithology details, please see the individual boring logs.

See Figure 3 for cross-section location.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 5

TRIANGLE COMMERCIAL SUB-AREA CROSS-SECTION B-B'

Basic Remediation COMPANY

Prepared by MKJ (ERM)	ERM	Date 01/14/15	JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURE5.AI

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas

Current Development Plan

Medium Density Residential
Low Density Residential
Urban Core*
Retail/Commercial
Landscaping
Roads/Parking

*Urban Core is defined as retail and office space, and a casino/resort.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 6

CURRENT DEVELOPMENT PLAN

Basic Remediation Company

Prepared by MKJ (ERM)
Date 01/23/15
JOB No. 0064276
FILE: GIS/BRC/TRIANGLE_COMM/FIGURES2,6,12.MXD

Source	Primary Inter-media Transfer	Initial Medium of Concern	Secondary Inter-media Transfer	Contact Medium	Exposure Route	Adult and Child Resident	Construction Worker	Indoor Commercial Worker	Outdoor Maintenance Worker	Trespasser/ Recreational User
						Potential Future Human Receptors				
Industrial Processes	Transfer to Ponds via Ditches	Soil	On-site Fugitive Dust Generation	Air	Inhalation*‡	□	■	■	■	□
			Uptake into Plants	Plants	Ingestion*	□	□	□	□	□
				Soil	Ingestion*	□	■	■	■	□
					Dermal Contact	□	■	□	■	□
					External†	□	■	■	■	□
			Volatilization into Indoor/Outdoor Air	Air	Inhalation*	□	■	■	■	□
			Migration to Groundwater	Ground-water	Ingestion*	□	□	□	□	□
					Dermal Contact	□	□	□	□	□
			Volatilization into Indoor/Outdoor Air	Air	Inhalation*	□	■	■	■	□
			Migration to Surface Water	Surface Water	Ingestion	□[1]	□	□	□	□[1]
					Dermal Contact	□[1]	□	□	□	□[1]

□ - Incomplete or insignificant exposure pathway.

■ - Complete or potentially complete exposure pathway.

Note: All potential exposure pathways are shown; however, a particular pathway shown as complete may be incomplete depending on the COPCs evaluated in the human health risk assessment.

[1]Potentially complete exposure pathway following discharge to Las Vegas Wash and Lake Mead.

*Includes radionuclide exposures.

†Only radionuclide exposures.

‡Includes asbestos exposures.

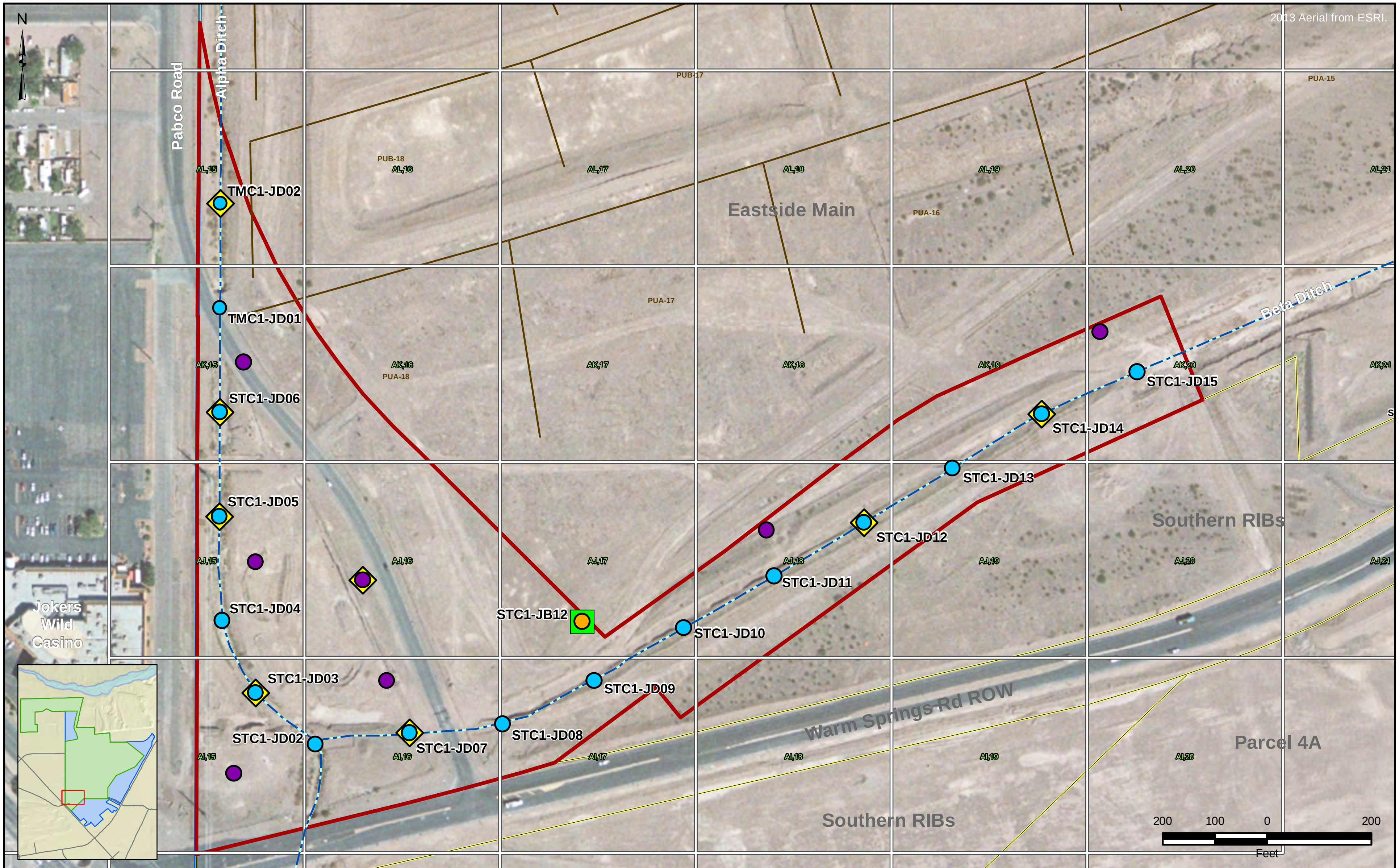
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 7

CONCEPTUAL SITE MODEL DIAGRAM FOR POTENTIAL HUMAN EXPOSURES

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/14/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/FIGURE7.AI



Eastside 3-Acre Random Sampling Grid (Grid ID = "XX,##")

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Random Sample Location

Ditch Sample Location

Other Biased Sample Locations

Surface Flux Sample Location

Deep Sample Location (to GW).

Note: Sample ID's are shown for ditch, berm, and pond sample locations. Sample ID's for random samples correspond to the grid cell ID.

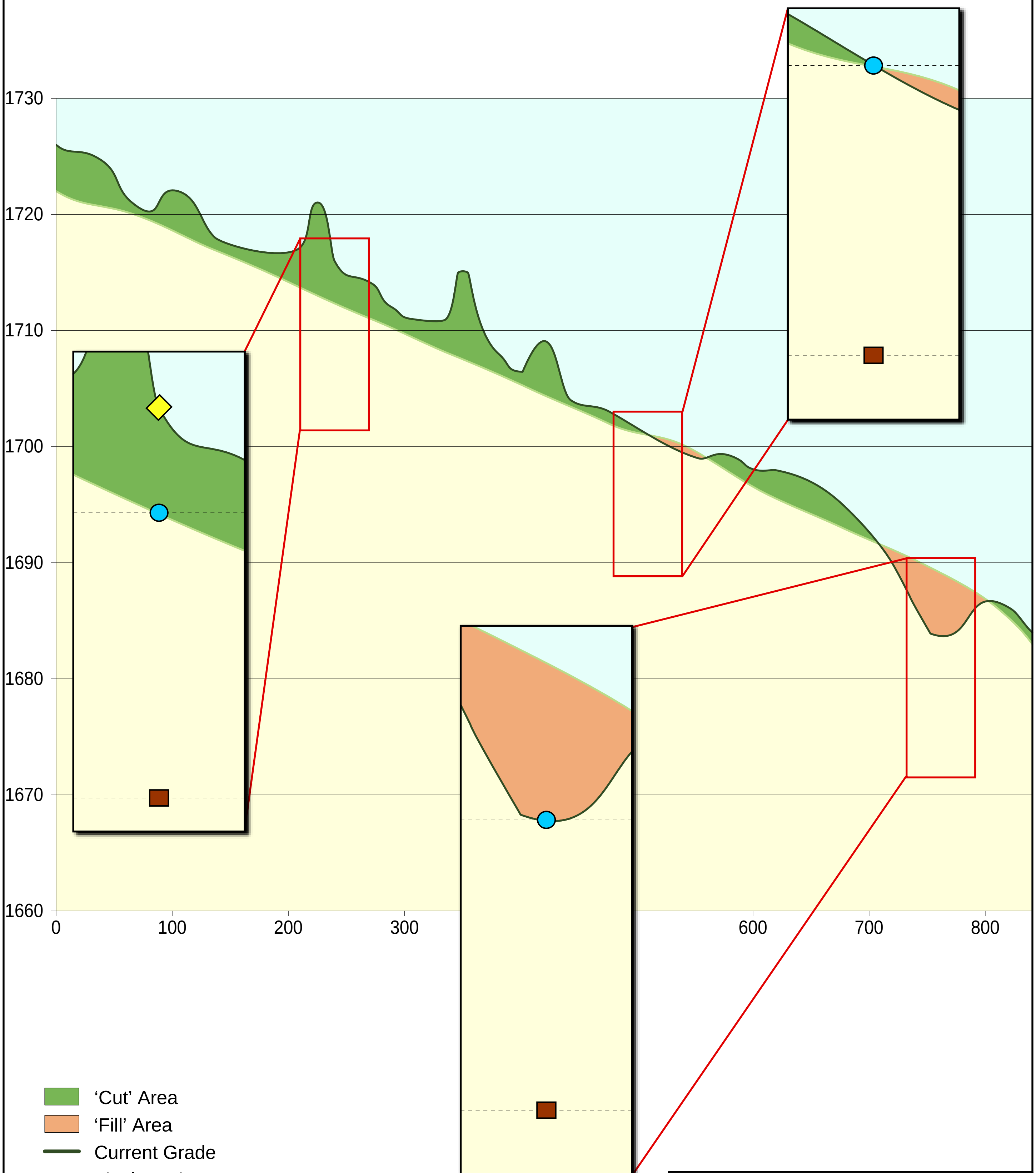
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 8

INITIAL SOIL AND SURFACE FLUX SAMPLING LOCATIONS

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/23/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURE8.MXD



'Cut' Area
'Fill' Area
Current Grade
Final Grade
Surface (0-2' depth) sample
Subsurface (2'-10' depth) sample
Fill material sample
Vertical scale exaggerated 5x.

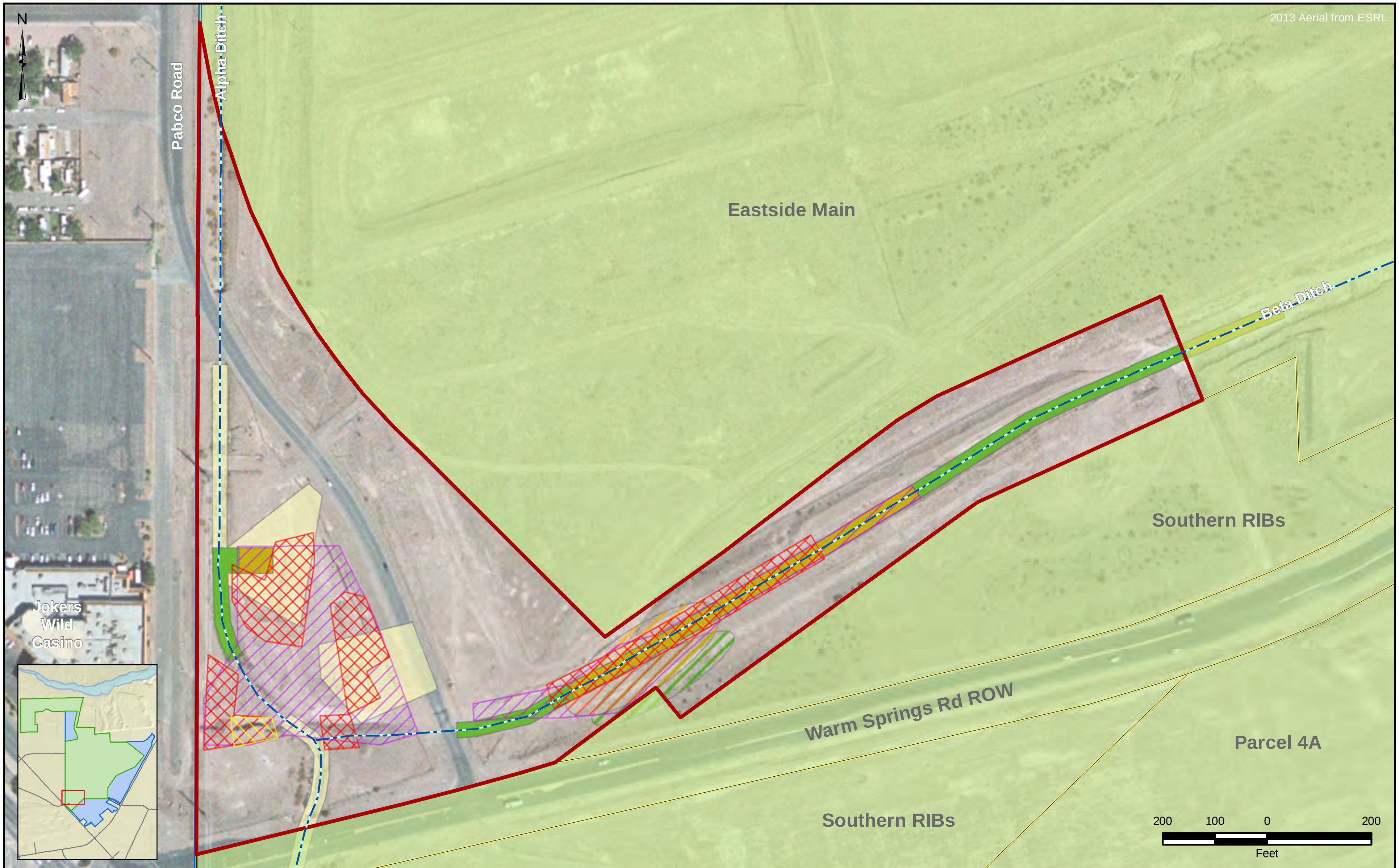
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 9

SAMPLE DEPTH
RULES SCHEMATIC

Basic Remediation
COMPANY

Prepared by MKJ (ERM)	ERM	Date 01/14/15	JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURE9.AI



- Triangle Commercial Sub-Area
- Site AOC3 Boundary
- Eastside Soil Sub-Areas
- NFA Areas
- First Round Remediation
- Second Round Remediation
- Second Round Remediation (Visual)
- Third Round Remediation
- Third Round Remediation (Visual)
- Fourth Round Remediation
- Fifth Round Remediation
- Sixth Round Remediation

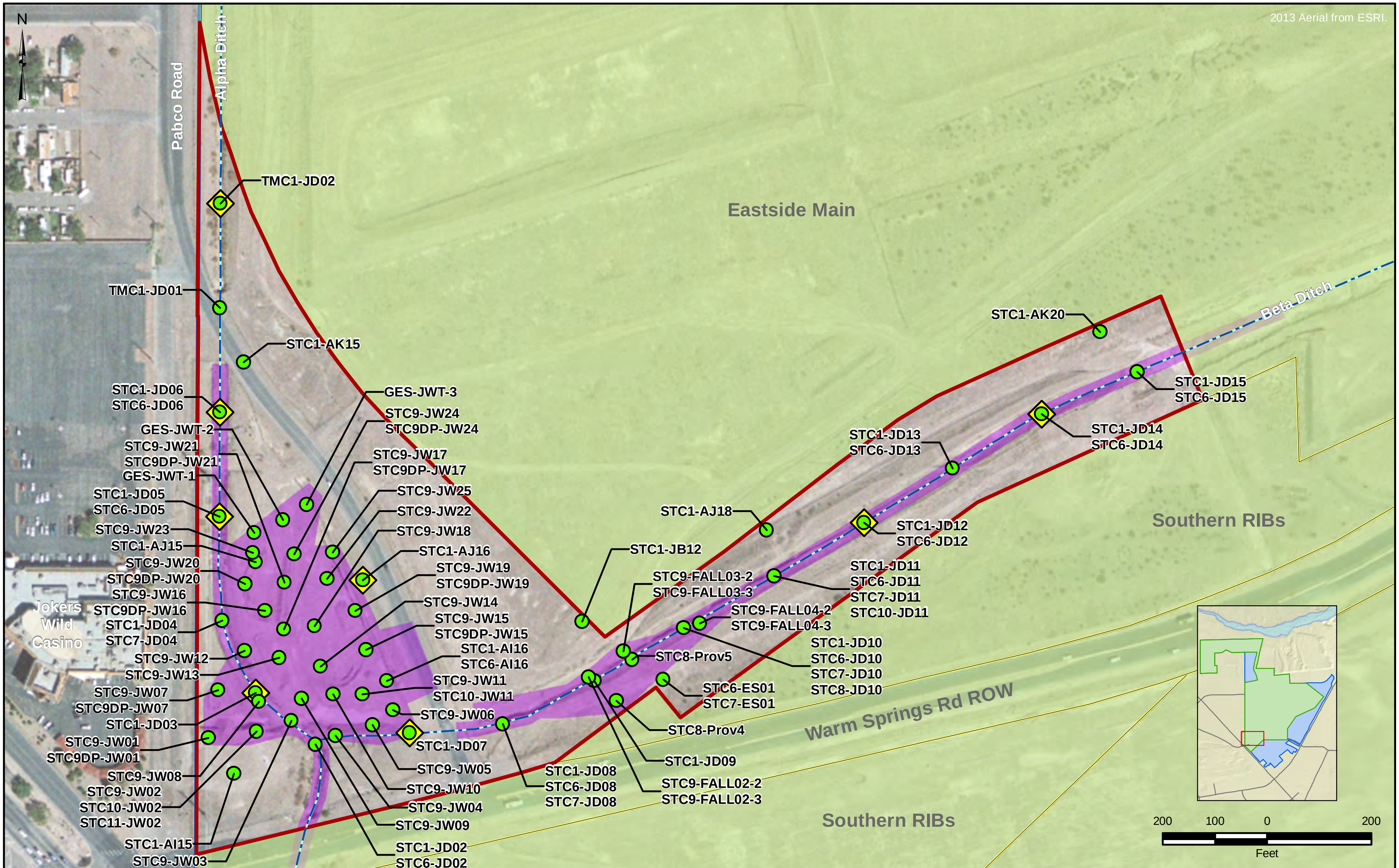
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 10

TRIANGLE COMMERCIAL SUB-AREA SOIL REMEDIATION AREAS

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/23/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURE10.MXD



Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

NFA Areas

Remediation Areas

Soil Sample Location(1)

Surface Flux Sample Location

(1) Although soil removal would affect the concentrations of all analytes, confirmatory sampling only analyzed for the constituent suites that triggered the soil removal. Therefore, in the absence of post-scrape data, the pre-scrape data are used for all other analytes in the human health risk assessment (see text).

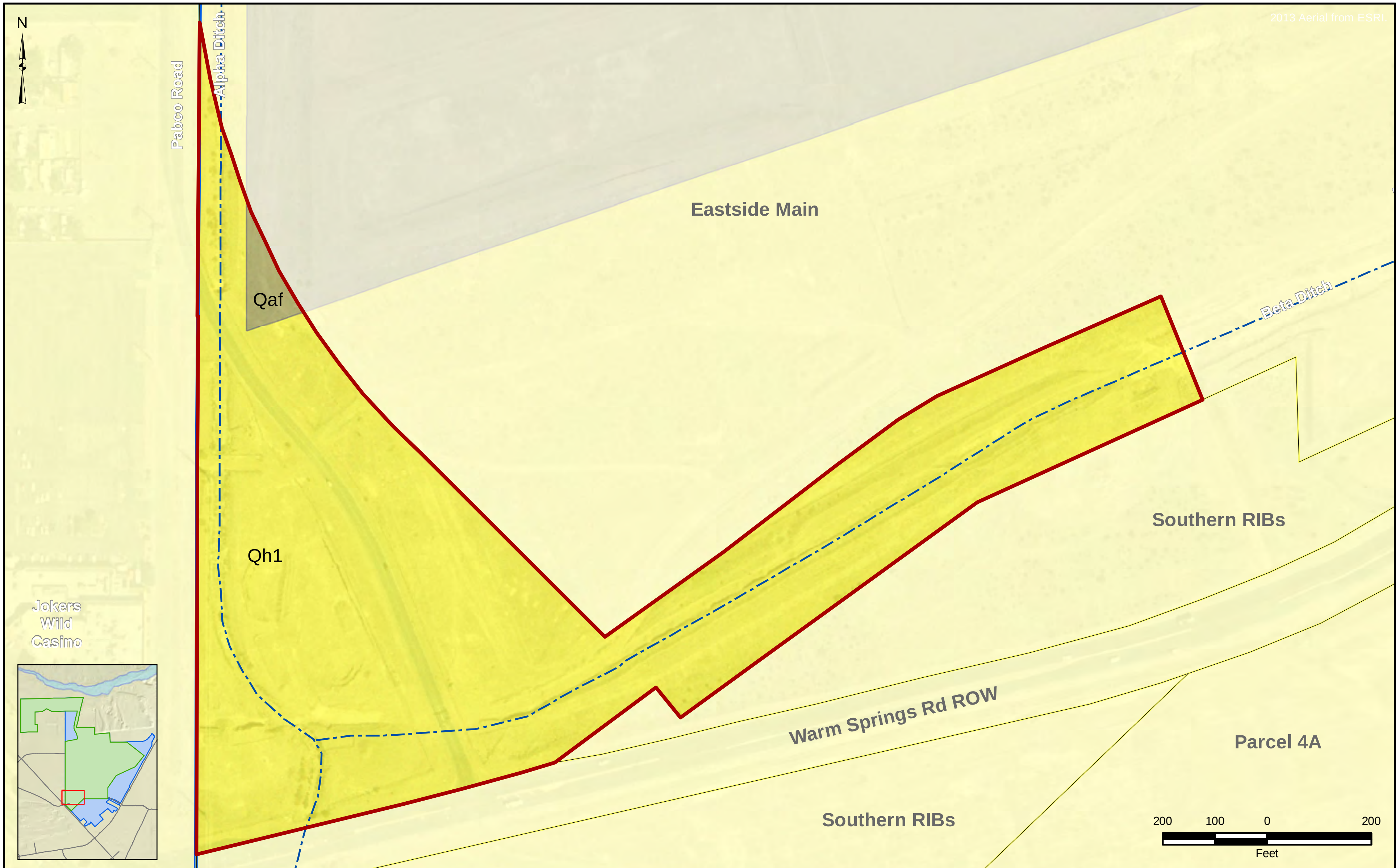
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 11

FINAL SOIL AND SURFACE FLUX SAMPLING LOCATIONS

Basic Remediation Company

Prepared by		Date	JOB No. 0064276
MKJ (ERM)	ERM	01/23/15	FILE: GIS/BRC/TRIANGLE_COMM/FIGURE11.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas

Lithology
Qh1-McCullough
Qaf-Disturbed

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE 12

TRIANGLE COMMERCIAL SUB-AREA LITHOLOGIES

Basic Remediation COMPANY

Prepared by MKJ (ERM) | Date 01/23/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/FIGURES2,6,12.MXD

TABLES

TABLE 3-1
SAMPLE-SPECIFIC COLLECTION DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Type	Grading Plan		Sample Depth 1	Sample Depth 2	Sample Depth 3
Initial Sampling Events						
STC1-AI15	Random	--	0	0 (Surface)	10 (Subsurface)	--
STC1-AI16	Random	Fill	+4	0 (Surface)	10 (Subsurface)	--
STC1-AJ15	Random	Fill	+2	0 (Surface)	10 (Subsurface)	--
STC1-AJ16	Random with Flux	Fill	+1	0 (Surface)	10 (Subsurface)	--
STC1-AJ18	Random	Cut	-2	0 (Fill/Surface)	12 (Subsurface)	--
STC1-AK15	Random	Cut	-3	0 (Fill/Surface)	3 (Surface)	13 (Subsurface)
STC1-AK20	Random	Cut	-6	0 (Fill/Surface)	6 (Surface)	16 (Subsurface)
STC1-JB12	Biased	Fill	+5	0 (Surface)	10 (Subsurface)	--
STC1-JD02	Ditch	Fill	+1	0 (Surface)	10 (Subsurface)	--
STC1-JD03	Ditch with Flux	Fill	+3	0 (Surface)	10 (Subsurface)	--
STC1-JD04	Ditch	Fill	+2	0 (Surface)	10 (Subsurface)	--
STC1-JD05	Ditch with Flux	Fill	+1	0 (Surface)	10 (Subsurface)	--
STC1-JD06	Ditch with Flux	Fill	+3	0 (Surface)	10 (Subsurface)	--
STC1-JD07	Ditch with Flux	Cut	-4	0 (Fill/Surface)	4 (Surface)	14 (Subsurface)
STC1-JD08	Ditch	Fill	+1	0 (Surface)	10 (Subsurface)	--
STC1-JD09	Ditch	Fill	+2	0 (Surface)	10 (Subsurface)	--
STC1-JD10	Ditch	Fill	+3	0 (Surface)	10 (Subsurface)	--
STC1-JD11	Ditch	--	0	0 (Surface)	10 (Subsurface)	--
STC1-JD12	Ditch with Flux	Fill	+6	0 (Surface)	10 (Subsurface)	--
STC1-JD13	Ditch	Fill	+4	0 (Surface)	10 (Subsurface)	--
STC1-JD14	Ditch with Flux	Fill	+3	0 (Surface)	10 (Subsurface)	--
STC1-JD15	Ditch	Cut	-6	0 (Fill/Surface)	6 (Surface)	16 (Subsurface)
TMC1-JD01	Ditch	Cut	-1	0 (Fill/Surface)	11 (Subsurface)	--
TMC1-JD02	Ditch with Flux	--	0	0 (Surface)	10 (Subsurface)	--
Confirmation/Supplemental Sampling Events						
BDE-Floor	Supplemental	--		(< 10 ft Post-Grade)	--	--
BDW-F High	Supplemental	--		(< 10 ft Post-Grade)	--	--
BDW-F Low	Supplemental	--		(< 10 ft Post-Grade)	--	--
BDW-S S Wall	Supplemental	--		0 (Surface)	--	--

TABLE 3-1
SAMPLE-SPECIFIC COLLECTION DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Type	Grading Plan	Sample Depth 1	Sample Depth 2	Sample Depth 3
GES Prov-3	Supplemental	--	(< 10 ft Post-Grade)	--	--
GES Prov-4	Supplemental	--	0 (Surface)	--	--
GES Prov-5	Supplemental	--	0 (Subsurface)	--	--
GES Prov-6	Supplemental	--	0 (Subsurface)	--	--
GES Prov-7	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-1	Supplemental	--	0 (Surface)	--	--
GES-JWT-10	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-11	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-12	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-13	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-14	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-15	Supplemental	--	(< 10 ft Post-Grade)	--	--
GES-JWT-16	Supplemental	--	(< 10 ft Post-Grade)	--	--
GES-JWT-17	Supplemental	--	(< 10 ft Post-Grade)	--	--
GES-JWT-18	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-19	Supplemental	--	0 (Surface)	--	--
GES-JWT-2	Supplemental	--	0 (Surface)	--	--
GES-JWT-3	Supplemental	--	0 (Surface)	--	--
GES-JWT-4	Supplemental	--	0 (Surface)	--	--
GES-JWT-5	Supplemental	--	0 (Surface)	--	--
GES-JWT-6	Supplemental	--	0 (Surface)	--	--
GES-JWT-7	Supplemental	--	0 (Subsurface)	--	--
GES-JWT-8	Supplemental	--	(< 10 ft Post-Grade)	--	--
GES-JWT-9	Supplemental	--	0 (Subsurface)	--	--
STC6-AJ15	Confirmation	--	0 (Subsurface)	--	--
STC6-ES01	Supplemental	--	0 (Surface)	--	--
STC6-JD02	Confirmation	--	0 (Subsurface)	--	--
STC6-JD04	Confirmation	--	0 (Subsurface)	--	--
STC6-JD05	Confirmation	--	0 (Subsurface)	--	--
STC6-JD06	Confirmation	--	0 (Surface)	--	--

TABLE 3-1
SAMPLE-SPECIFIC COLLECTION DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Type	Grading Plan	Sample Depth 1	Sample Depth 2	Sample Depth 3
STC6-JD08	Confirmation	--	0 (Subsurface)	--	--
STC6-JD09	Confirmation	--	0 (Subsurface)	--	--
STC6-JD10	Confirmation	--	0 (Subsurface)	--	--
STC6-JD11	Confirmation	--	0 (Subsurface)	--	--
STC6-JD12	Confirmation	--	0 (Subsurface)	--	--
STC6-JD13	Confirmation	--	0 (Subsurface)	--	--
STC6-JD14	Confirmation	--	0 (Surface)	--	--
STC6-JD15	Confirmation	--	0 (Subsurface)	--	--
STC7-AJ15	Confirmation	--	0 (Subsurface)	--	--
STC7-ES01	Confirmation	--	0 (Surface)	--	--
STC7-JD04	Confirmation	--	0 (Subsurface)	--	--
STC7-JD08	Confirmation	--	0 (Subsurface)	--	--
STC7-JD09	Confirmation	--	0 (Subsurface)	--	--
STC7-JD10	Confirmation	--	0 (Subsurface)	--	--
STC7-JD11	Confirmation	--	0 (Subsurface)	--	--
STC7-JD12	Confirmation	--	0 (Subsurface)	--	--
STC7-JD13	Confirmation	--	0 (Subsurface)	--	--
STC8-AJ15	Confirmation	--	0 (Subsurface)	--	--
STC8-JD09	Confirmation	--	0 (Subsurface)	--	--
STC8-JD10	Confirmation	--	0 (Subsurface)	--	--
STC8-JD11	Confirmation	--	0 (Subsurface)	--	--
STC8-JD12	Confirmation	--	0 (Subsurface)	--	--
STC8-Prov3	Confirmation	--	(< 10 ft Post-Grade)	--	--
STC8-Prov4	Confirmation	--	0 (Surface)	--	--
STC8-Prov5	Confirmation	--	0 (Subsurface)	--	--
STC8-Prov6	Confirmation	--	0 (Subsurface)	--	--
STC8-Prov7	Confirmation	--	0 (Subsurface)	--	--
STC9DP-JW01	Supplemental	--	1 (Surface)	2 (Surface)	3 (Surface)
STC9DP-JW04	Supplemental	--	1 (Surface)	2 (Surface)	3 (Surface)
STC9DP-JW07	Supplemental	--	1 (Surface)	2 (Surface)	3 (Surface)

TABLE 3-1
SAMPLE-SPECIFIC COLLECTION DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Type	Grading Plan	Sample Depth 1	Sample Depth 2	Sample Depth 3
STC9DP-JW15	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9DP-JW16	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9DP-JW17	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9DP-JW19	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9DP-JW20	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9DP-JW21	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9DP-JW24	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9-FALL01	Supplemental	--	(< 10 ft Post-Grade)	(< 10 ft Post-Grade)	(< 10 ft Post-Grade)
STC9-FALL02	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9-FALL03	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9-FALL04	Supplemental	--	1 (Subsurface)	2 (Subsurface)	3 (Subsurface)
STC9-JW01	Confirmation	--	0 (Surface)	--	--
STC9-JW02	Confirmation	--	0 (Surface)	--	--
STC9-JW03	Confirmation	--	0 (Subsurface)	--	--
STC9-JW04	Confirmation	--	0 (Surface)	--	--
STC9-JW05	Confirmation	--	0 (Subsurface)	--	--
STC9-JW06	Confirmation	--	0 (Subsurface)	--	--
STC9-JW07	Confirmation	--	0 (Surface)	--	--
STC9-JW08	Confirmation	--	0 (Subsurface)	--	--
STC9-JW09	Confirmation	--	0 (Subsurface)	--	--
STC9-JW10	Confirmation	--	0 (Subsurface)	--	--
STC9-JW11	Confirmation	--	0 (Subsurface)	--	--
STC9-JW12	Confirmation	--	0 (Surface)	--	--
STC9-JW13	Confirmation	--	0 (Surface)	--	--
STC9-JW14	Confirmation	--	0 (Subsurface)	--	--
STC9-JW15	Confirmation	--	0 (Subsurface)	--	--
STC9-JW16	Confirmation	--	0 (Subsurface)	--	--
STC9-JW17	Confirmation	--	0 (Subsurface)	--	--
STC9-JW18	Confirmation	--	0 (Subsurface)	--	--
STC9-JW19	Confirmation	--	0 (Subsurface)	--	--

TABLE 3-1
SAMPLE-SPECIFIC COLLECTION DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Type	Grading Plan	Sample Depth 1	Sample Depth 2	Sample Depth 3
STC9-JW20	Confirmation	--	0 (Surface)	--	--
STC9-JW21	Confirmation	--	0 (Subsurface)	--	--
STC9-JW22	Confirmation	--	0 (Surface)	--	--
STC9-JW23	Confirmation	--	0 (Subsurface)	--	--
STC9-JW24	Confirmation	--	0 (Subsurface)	--	--
STC9-JW25	Confirmation	--	0 (Surface)	--	--
STC10-JD11	Confirmation	--	0 (Subsurface)	--	--
STC10-JW02	Confirmation	--	0 (Surface)	--	--
STC10-JW11	Confirmation	--	0 (Subsurface)	--	--
STC11-JW02	Confirmation	--	0 (Surface)	--	--

Note: Because sample collection was over a two to three foot depth interval, sample locations with an anticipated cut depth less than three feet only sampled at the surface and one post-grade subsurface depth.
Yellow shaded location (STC1-JB12) indicates deep soil sample collected for physical parameter analyses.
Depths are in feet bgs (current grade).

TABLE 3-2
SITE-RELATED CHEMICALS AND INITIAL SAMPLE ANALYSES AND DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 11)

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Ions	**EPA 300.0**	**EPA 300.0**	Bromide	24959-67-9	✓	✓	(d)
			Chlorate	14866-68-3	✓	✓	(d)
			Chloride	16887-00-6	✓	✓	(d)
			Fluoride	16984-48-8	✓	✓	(d)
			Nitrate (as N)	14797-55-8	✓	✓	(d)
			Nitrite (as N)	14797-65-0	✓	✓	(d)
			Orthophosphate	14265-44-2	✓	✓	(d)
			Sulfate	14808-79-8	✓	✓	(d)
	EPA 314.0	**EPA 314.0**	Perchlorate	14797-73-0	✓	✓	(d)
Chlorinated Compounds	**EPA 551.1**	**EPA 551.1**	Chloral	75-87-6	(e)	(e)	(d)
			Dichloroacetaldehyde	79-02-7	(e)	(e)	(d)
Polychlorinated Dibenzodioxins/ Dibenzofurans	**EPA 8290**	**EPA 8290**	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	✓	(b)	(b)
			1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	✓	(b)	(b)
			1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	✓	(b)	(b)
			1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	✓	(b)	(b)
			1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	✓	(b)	(b)
			1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	✓	(b)	(b)
			1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	✓	(b)	(b)
			1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	✓	(b)	(b)
			1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	✓	(b)	(b)
			1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	✓	(b)	(b)
			1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	✓	(b)	(b)
			1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	✓	(b)	(b)
			1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	✓	(b)	(b)
			2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	✓	(b)	(b)
			2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	✓	(b)	(b)
			2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	✓	(b)	(b)
			2,3,7,8-Tetrachlororodibenzo-p-dioxin	1746-01-6	✓	(b)	(b)
Asbestos	**Elutrator**	**Elutriator/TEM**	Asbestos	1332-21-4	✓	(c)	(c)
General Chemistry Parameters	**EPA 350.1**	**EPA 350.2**	Ammonia (as N)	7664-41-7	✓	✓	(d)
	EPA 9012A	**EPA 9010/9014**	Cyanide (Total)	57-12-5	✓	✓	(d)
	NA	**EPA 9045C**	pH in soil	pH	✓	✓	✓
	EPA 376.1/376.2	**EPA 376.1/376.2**	Sulfide	18496-25-8	✓	✓	(d)
	Mod. EPA 415.1	**Mod. EPA 415.1**	Total inorganic carbon	7440-44-0	✓	✓	(d)
	EPA 351.2	**EPA 351.2**	Total Kjeldahl nitrogen (TKN)	TKN	✓	✓	(d)
	EPA 9060	**EPA 415.1**	Total organic carbon (TOC)	7440-44-0	✓	✓	✓

TABLE 3-2
SITE-RELATED CHEMICALS AND INITIAL SAMPLE ANALYSES AND DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Metals	**EPA 3050M**	**EPA 6020/6010B**	Aluminum	7429-90-5	✓	✓	(d)
			Antimony	7440-36-0	✓	✓	(d)
			Arsenic	7440-38-2	✓	✓	(d)
			Barium	7440-39-3	✓	✓	(d)
			Beryllium	7440-41-7	✓	✓	(d)
			Boron	7440-42-8	✓	✓	(d)
			Cadmium	7440-43-9	✓	✓	(d)
			Calcium	7440-70-2	✓	✓	(d)
			Chromium	7440-47-3	✓	✓	(d)
			Cobalt	7440-48-4	✓	✓	(d)
			Copper	7440-50-8	✓	✓	(d)
			Iron	7439-89-6	✓	✓	(d)
			Lead	7439-92-1	✓	✓	(d)
			Lithium	1313-13-9	✓	✓	(d)
			Magnesium	7439-95-4	✓	✓	(d)
			Manganese	7439-96-5	✓	✓	(d)
			Molybdenum	7439-98-7	✓	✓	(d)
			Nickel	7440-02-0	✓	✓	(d)
			Niobium	7440-03-1	(e)	(e)	(d)
			Palladium	7440-05-3	(e)	(e)	(d)
			Phosphorus	7723-14-0	(e)	(e)	(d)
			Platinum	7440-06-4	(e)	(e)	(d)
			Potassium	7440-09-7	✓	✓	(d)
			Selenium	7782-49-2	✓	✓	(d)
			Silicon	7440-21-3	(e)	(e)	(d)
			Silver	7440-22-4	✓	✓	(d)
			Sodium	7440-23-5	✓	✓	(d)
			Strontium	7440-24-6	✓	✓	(d)
			Sulfur	7704-34-9	(e)	(e)	(d)
			Thallium	7440-28-0	✓	✓	(d)
			Tin	7440-31-5	✓	✓	(d)
			Titanium	7440-32-6	✓	✓	(d)
			Tungsten	7440-33-7	✓	✓	(d)
			Uranium	7440-61-1	✓	✓	(d)
			Vanadium	7440-62-2	✓	✓	(d)
			Zinc	7440-66-6	✓	✓	(d)

TABLE 3-2
SITE-RELATED CHEMICALS AND INITIAL SAMPLE ANALYSES AND DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Metals (continued)	EPA 3050M	EPA 6020/6010B	Zirconium	7440-67-7	(e)	(e)	(d)
	EPA 3060A	EPA 7196A	Chromium (VI)	18540-29-9	✓	✓	(d)
	EPA 7471A	EPA 7470/7471A	Mercury	7439-97-6	✓	✓	(d)
Organophosphorous Pesticides	EPA 8141A	EPA 8141A	Azinphos-ethyl	264-27-19	(a)	(a)	(a)
			Azinphos-methyl	86-50-0	(a)	(a)	(a)
			Carbophenothion	786-19-6	(a)	(a)	(a)
			Chlorpyrifos	2921-88-2	(a)	(a)	(a)
			Coumaphos	56-72-4	(a)	(a)	(a)
			Demeton-O	298-03-3	(a)	(a)	(a)
			Demeton-S	126-75-0	(a)	(a)	(a)
			Diazinon	333-41-5	(a)	(a)	(a)
			Dichlorvos	62-73-7	(a)	(a)	(a)
			Dimethoate	60-51-5	(a)	(a)	(a)
			Disulfoton	298-04-4	(a)	(a)	(a)
			EPN	2104-64-5	(a)	(a)	(a)
			Ethoprop	13194-48-4	(a)	(a)	(a)
			Ethyl parathion	56-38-2	(a)	(a)	(a)
			Fampphur	52-85-7	(a)	(a)	(a)
			Fenthion	55-38-9	(a)	(a)	(a)
			Malathion	121-75-5	(a)	(a)	(a)
			Methyl carbophenothion	953-17-3	(a)	(a)	(a)
			Methyl parathion	298-00-0	(a)	(a)	(a)
			Mevinphos	7786-34-7	(a)	(a)	(a)
			Naled	300-76-5	(a)	(a)	(a)
			O,O,O-Triethyl phosphorothioate (TEPP)	297-97-2	(a)	(a)	(a)
			Phorate	298-02-2	(a)	(a)	(a)
			Phosmet	732-11-6	(a)	(a)	(a)
			Ronnel	299-84-3	(a)	(a)	(a)
			Stirophos (Tetrachlorovinphos)	22248-79-9	(a)	(a)	(a)
			Sulfotep	3689-24-5	(a)	(a)	(a)
Chlorinated Herbicides	EPA 8151A	EPA 8151A	2,4,5-T	93-76-5	(a)	(a)	(a)
			2,4,5-TP (Silvex)	93-72-1	(a)	(a)	(a)
			2,4-D	94-75-7	(a)	(a)	(a)
			2,4-DB	94-82-6	(a)	(a)	(a)
			Dalapon	75-99-0	(a)	(a)	(a)
			Dicamba	1918-00-9	(a)	(a)	(a)

TABLE 3-2
SITE-RELATED CHEMICALS AND INITIAL SAMPLE ANALYSES AND DEPTHS
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BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Chlorinated Herbicides (continued)	**EPA 8151A**	**EPA 8151A**	Dichloroprop	120-36-5	(a)	(a)	(a)
			Dinoseb	88-85-7	(a)	(a)	(a)
			MCPA	94-74-6	(a)	(a)	(a)
			MCPP	93-65-2	(a)	(a)	(a)
Organic Acids	**HPLC**	**HPLC**	4-Chlorobenzene sulfonic acid	98-66-8	(a)	(a)	(a)
			Benzenesulfonic acid	98-11-3	(a)	(a)	(a)
			O,O-Diethylphosphorodithioic acid	298-06-6	(a)	(a)	(a)
			O,O-Dimethylphosphorodithioic acid	756-80-9	(a)	(a)	(a)
Nonhalogenated Organics	**EPA 8015B**	**EPA 8015B**	Ethylene glycol	107-21-1	(a)	(a)	(a)
			Ethylene glycol monobutyl ether	111-76-2	(a)	(a)	(a)
			Methanol	67-56-1	(a)	(a)	(a)
			Propylene glycol	57-55-6	(a)	(a)	(a)
Organochlorine Pesticides	**EPA 3550B**	**EPA 8081A**	2,4-DDD	53-19-0	✓	✓	(d)
			2,4-DDE	3424-82-6	✓	✓	(d)
			4,4-DDD	72-54-8	✓	✓	(d)
			4,4-DDE	72-55-9	✓	✓	(d)
			4,4-DDT	50-29-3	✓	✓	(d)
			Aldrin	309-00-2	✓	✓	(d)
			alpha-BHC	319-84-6	✓	✓	(d)
			alpha-Chlordane	5103-71-9	✓	✓	(d)
			beta-BHC	319-85-7	✓	✓	(d)
			Chlordane	57-74-9	✓	✓	(d)
			delta-BHC	319-86-8	✓	✓	(d)
			Dieldrin	60-57-1	✓	✓	(d)
			Endosulfan I	959-98-8	✓	✓	(d)
			Endosulfan II	33213-65-9	✓	✓	(d)
			Endosulfan sulfate	1031-07-8	✓	✓	(d)
			Endrin	72-20-8	✓	✓	(d)
			Endrin aldehyde	7421-93-4	✓	✓	(d)
			Endrin ketone	53494-70-5	✓	✓	(d)
			gamma-BHC (Lindane)	58-89-9	✓	✓	(d)
			gamma-Chlordane	5103-74-2	✓	✓	(d)
			Heptachlor	76-44-8	✓	✓	(d)
			Heptachlor epoxide	1024-57-3	✓	✓	(d)
			Methoxychlor	72-43-5	✓	✓	(d)
			Toxaphene	8001-35-2	✓	✓	(d)

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Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Polychlorinated Biphenyls	EPA 3510C	EPA 8082	Aroclor 1016	12674-11-2	✓	(b)	(b)
			Aroclor 1221	11104-28-2	✓	(b)	(b)
			Aroclor 1232	11141-16-5	✓	(b)	(b)
			Aroclor 1242	53469-21-9	✓	(b)	(b)
			Aroclor 1248	12672-29-6	✓	(b)	(b)
			Aroclor 1254	11097-69-1	✓	(b)	(b)
			Aroclor 1260	11096-82-5	✓	(b)	(b)
		EPA 1668	PCB-77	32598-13-3	✓	(b)	(b)
			PCB-81	70362-50-4	✓	(b)	(b)
			PCB-105	32598-14-4	✓	(b)	(b)
			PCB-114	74472-37-0	✓	(b)	(b)
			PCB-118	31508-00-6	✓	(b)	(b)
			PCB-123	65510-44-3	✓	(b)	(b)
			PCB-126	57465-28-8	✓	(b)	(b)
			PCB-156	38380-08-4	✓	(b)	(b)
			PCB-157	69782-90-7	✓	(b)	(b)
			PCB-167	52663-72-6	✓	(b)	(b)
			PCB-169	32774-16-6	✓	(b)	(b)
			PCB-189	39635-31-9	✓	(b)	(b)
			PCB-209	2051-24-3	✓	(b)	(b)
Polynuclear Aromatic Hydrocarbons	EPA 3550	EPA 8310 or EPA 8270SIM	Acenaphthene	83-32-9	✓	✓	(d)
			Acenaphthylene	208-96-8	✓	✓	(d)
			Anthracene	120-12-7	✓	✓	(d)
			Benzo(a)anthracene	56-55-3	✓	✓	(d)
			Benzo(a)pyrene	50-32-8	✓	✓	(d)
			Benzo(b)fluoranthene	205-99-2	✓	✓	(d)
			Benzo(g,h,i)perylene	191-24-2	✓	✓	(d)
			Benzo(k)fluoranthene	207-08-9	✓	✓	(d)
			Chrysene	218-01-9	✓	✓	(d)
			Dibenzo(a,h)anthracene	53-70-3	✓	✓	(d)
			Indeno(1,2,3-cd)pyrene	193-39-5	✓	✓	(d)
			Phenanthrene	85-01-8	✓	✓	(d)
			Pyrene	129-00-0	✓	✓	(d)
Radionuclides	HASL 3003	EPA 903.0 / 903.1	Radium-226	13982-63-3	✓	✓	(d)
		EPA 904.0	Radium-228	15262-20-1	✓	✓	(d)

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BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Radionuclides (continued)	**HASL 300 (Total Dissolution)**	**HASL A-01-R**	Thorium-228	7440-29-1	✓	✓	(d)
			Thorium-230	14274-82-9	✓	✓	(d)
			Thorium-232	14269-63-7	✓	✓	(d)
	HASL 300 (Total Dissolution)		Uranium-233/234	13966-29-5	✓	✓	(d)
			Uranium-235/236	15117-96-1	✓	✓	(d)
			Uranium-238	7440-61-1	✓	✓	(d)
Aldehydes	**EPA 8315A**	**EPA 8315A**	Acetaldehyde	75-07-0	✓	✓	(d)
			Chloroacetaldehyde	107-20-0	(e)	(e)	(d)
			Dichloroacetaldehyde	79-02-7	(e)	(e)	(d)
			Formaldehyde	50-00-0	✓	✓	(d)
			Trichloroacetaldehyde	75-87-6	(e)	(e)	(d)
Semivolatile Organic Compounds	**EPA 3550B**	**EPA 8270C**	1,2,4,5-Tetrachlorobenzene	95-94-3	✓	✓	(d)
			1,2-Diphenylhydrazine	122-66-7	✓	✓	(d)
			1,4-Dioxane	123-91-1	✓	✓	(d)
			2,2'/4,4'-Dichlorobenzil	3457-46-3	✓	✓	(d)
			2,4,5-Trichlorophenol	95-95-4	✓	✓	(d)
			2,4,6-Trichlorophenol	88-06-2	✓	✓	(d)
			2,4-Dichlorophenol	120-83-2	✓	✓	(d)
			2,4-Dimethylphenol	105-67-9	✓	✓	(d)
			2,4-Dinitrophenol	51-28-5	✓	✓	(d)
			2,4-Dinitrotoluene	121-14-2	✓	✓	(d)
			2,6-Dinitrotoluene	606-20-2	✓	✓	(d)
			2-Chloronaphthalene	91-58-7	✓	✓	(d)
			2-Chlorophenol	95-57-8	✓	✓	(d)
			2-Methylnaphthalene	91-57-6	✓	✓	(d)
			2-Nitroaniline	88-74-4	✓	✓	(d)
			2-Nitrophenol	88-75-5	✓	✓	(d)
			3,3-Dichlorobenzidine	91-94-1	✓	✓	(d)
			3-Nitroaniline	99-09-2	✓	✓	(d)
			4,4'-Dichlorobenzil	3457-46-3	✓	✓	(d)
			4-Bromophenyl phenyl ether	101-55-3	✓	✓	(d)
			4-Chloro-3-methylphenol	59-50-7	✓	✓	(d)
			4-Chlorophenyl phenyl ether	7005-72-3	✓	✓	(d)
			4-Chlorothioanisole	123-09-1	✓	✓	(d)
			4-Chlorothiophenol	106-54-7	✓	✓	(d)

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Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Semivolatile Organic Compounds (continued)	**EPA 3550B**	**EPA 8270C**	4-Nitroaniline	100-01-6	✓	✓	(d)
			4-Nitrophenol	100-02-7	✓	✓	(d)
			Acetophenone	98-86-2	✓	✓	(d)
			Aniline	62-53-3	✓	✓	(d)
			Azobenzene	103-33-3	✓	✓	(d)
			Benzoic acid	65-85-0	✓	✓	(d)
			Benzyl alcohol	100-51-6	✓	✓	(d)
			bis(2-Chloroethoxy)methane	111-91-1	✓	✓	(d)
			bis(2-Chloroethyl) ether	111-44-4	✓	✓	(d)
			bis(2-Chloroisopropyl) ether	108-60-1	✓	✓	(d)
			bis(2-Ethylhexyl) phthalate	117-81-7	✓	✓	(d)
			bis(Chloromethyl) ether	542-88-1	✓	✓	(d)
			bis(p-Chlorophenyl) sulfone	80-07-9	✓	✓	(d)
			bis(p-Chlorophenyl)disulfide	1142-19-4	✓	✓	(d)
			Butylbenzyl phthalate	85-68-7	✓	✓	(d)
			Carbazole	86-74-8	✓	✓	(d)
			Dibenzofuran	132-64-9	✓	✓	(d)
			Dichloromethyl ether	542-88-1	✓	✓	(d)
			Diethyl phthalate	84-66-2	✓	✓	(d)
			Dimethyl phthalate	131-11-3	✓	✓	(d)
			Di-n-butyl phthalate	84-74-2	✓	✓	(d)
			Di-n-octyl phthalate	117-84-0	✓	✓	(d)
			Diphenyl disulfide	882-33-7	✓	✓	(d)
			Diphenyl sulfide	139-66-2	✓	✓	(d)
			Diphenyl sulfone	127-63-9	✓	✓	(d)
			Fluoranthene	206-44-0	✓	✓	(d)
			Fluorene	86-73-7	✓	✓	(d)
			Hexachlorobenzene	118-74-1	✓	✓	(d)
			Hexachlorobutadiene	87-68-3	✓	✓	(d)
			Hexachlorocyclopentadiene	77-47-4	✓	✓	(d)
			Hexachloroethane	67-72-1	✓	✓	(d)
			Hydroxymethyl phthalimide	118-29-6	✓	✓	(d)
			Isophorone	78-59-1	✓	✓	(d)
			m,p-Cresols	106-44-5	✓	✓	(d)
			Naphthalene	91-20-3	✓	✓	(d)
			Nitrobenzene	98-95-3	✓	✓	(d)

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HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Semivolatile Organic Compounds (continued)	**EPA 3550B**	**EPA 8270C**	N-nitrosodi-n-propylamine	621-64-7	✓	✓	(d)
			N-nitrosodiphenylamine	86-30-6	✓	✓	(d)
			o-Cresol	95-48-7	✓	✓	(d)
			Octachlorostyrene	29082-74-4	✓	✓	(d)
			p-Chloroaniline (4-Chloroaniline)	106-47-8	✓	✓	(d)
			p-Chlorobenzenethiol	106-54-7	✓	✓	(d)
			Pentachlorobenzene	608-93-5	✓	✓	(d)
			Pentachlorophenol	87-86-5	✓	✓	(d)
			Phenol	108-95-2	✓	✓	(d)
			Phthalic acid	88-99-3	✓	✓	(d)
			Pyridine	110-86-1	✓	✓	(d)
			Thiophenol	108-98-5	✓	✓	(d)
			Tentatively Identified Compounds (TICs)		✓	✓	(d)
Volatile Organic Compounds	**EPA 5030B/ EPA 5035**	**EPA 8260B**	1,1,1,2-Tetrachloroethane	630-20-6	✓	✓	(d)
			1,1,1-Trichloroethane	71-55-6	✓	✓	(d)
			1,1,2,2-Tetrachloroethane	79-34-5	✓	✓	(d)
			1,1,2-Trichloroethane	79-00-5	✓	✓	(d)
			1,1-Dichloroethane	75-34-3	✓	✓	(d)
			1,1-Dichloroethene	75-35-4	✓	✓	(d)
			1,1-Dichloropropene	563-58-6	✓	✓	(d)
			1,2,3-Trichlorobenzene	87-61-6	✓	✓	(d)
			1,2,3-Trichloropropane	96-18-4	✓	✓	(d)
			1,2,4-Trichlorobenzene	120-82-1	✓	✓	(d)
			1,2,4-Trimethylbenzene	95-63-6	✓	✓	(d)
			1,2-Dichlorobenzene	95-50-1	✓	✓	(d)
			1,2-Dichloroethane	107-06-2	✓	✓	(d)
			1,2-Dichloroethene	540-59-0	✓	✓	(d)
			1,2-Dichloropropane	78-87-5	✓	✓	(d)
			1,3,5-Trichlorobenzene	108-70-3	✓	✓	(d)
			1,3,5-Trimethylbenzene	108-67-8	✓	✓	(d)
			1,3-Dichlorobenzene	541-73-1	✓	✓	(d)
			1,3-Dichloropropene	542-75-6	✓	✓	(d)
			1,3-Dichloropropane	142-28-9	✓	✓	(d)
			1,4-Dichlorobenzene	106-46-7	✓	✓	(d)
			2,2-Dichloropropane	594-20-7	✓	✓	(d)
			2,2-Dimethylpentane	590-35-2	✓	✓	(d)

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Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Volatile Organic Compounds (continued)	**EPA 5030B/ EPA 5035**	**EPA 8260B**	2,2,3-Trimethylbutane	464-06-2	✓	✓	(d)
			2,3-Dimethylpentane	565-59-3	✓	✓	(d)
			2,4-Dimethylpentane	108-08-7	✓	✓	(d)
			2-Chlorotoluene	95-49-8	✓	✓	(d)
			2-Hexanone	591-78-6	✓	✓	(d)
			2-Methylhexane	591-76-4	✓	✓	(d)
			2-Nitropropane	79-46-9	✓	✓	(d)
			3,3-Dimethylpentane	562-49-2	✓	✓	(d)
			3-Ethylpentane	617-78-7	✓	✓	(d)
			3-Methylhexane	589-34-4	✓	✓	(d)
			4-Chlorobenzene	108-90-7	✓	✓	(d)
			4-Chlorotoluene	106-43-4	✓	✓	(d)
			4-Methyl-2-pentanone (MIBK)	108-10-1	✓	✓	(d)
			Acetone	67-64-1	✓	✓	(d)
			Acetonitrile	75-05-8	✓	✓	(d)
			Benzene	71-43-2	✓	✓	(d)
			Bromobenzene	108-86-1	✓	✓	(d)
			Bromodichloromethane	75-27-4	✓	✓	(d)
			Bromoform	75-25-2	✓	✓	(d)
			Bromomethane	74-83-9	✓	✓	(d)
			Carbon disulfide	75-15-0	✓	✓	(d)
			Carbon tetrachloride	56-23-5	✓	✓	(d)
			Chlorobenzene	108-90-7	✓	✓	(d)
			Chlorobromomethane	74-97-5	✓	✓	(d)
			Chlorodibromomethane	124-48-1	✓	✓	(d)
			Chloroethane	75-00-3	✓	✓	(d)
			Chloroform	67-66-3	✓	✓	(d)
			Chloromethane	74-87-3	✓	✓	(d)
			cis-1,2-Dichloroethene	156-59-2	✓	✓	(d)
			cis-1,3-Dichloropropene	10061-01-5	✓	✓	(d)
			Cymene (Isopropyltoluene)	99-87-6	✓	✓	(d)
			Dibromochloroethane	73506-94-2	✓	✓	(d)
			Dibromochloromethane	124-48-1	✓	✓	(d)
			Dibromochloropropane	96-12-8	✓	✓	(d)
			Dibromomethane	74-95-3	✓	✓	(d)
			Dichloromethane (Methylene chloride)	75-09-2	✓	✓	(d)

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Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Volatile Organic Compounds (continued)	EPA 5030B/ EPA 5035	EPA 8260B	Dimethyldisulfide	624-92-0	✓	✓	(d)
			Ethanol	64-17-5	✓	✓	(d)
			Ethylbenzene	100-41-4	✓	✓	(d)
			Freon-11	75-69-4	✓	✓	(d)
			Freon-113	76-13-1	✓	✓	(d)
			Freon-12	75-71-8	✓	✓	(d)
			Heptane	142-82-5	✓	✓	(d)
			Isoheptane	31394-54-4	✓	✓	(d)
			Isopropylbenzene	98-82-8	✓	✓	(d)
			m,p-Xylene	mp-XYL	✓	✓	(d)
			Methyl ethyl ketone (2-Butanone)	78-93-3	✓	✓	(d)
			Methyl iodide	74-88-4	✓	✓	(d)
			MTBE (Methyl tert-butyl ether)	1634-04-4	✓	✓	(d)
			n-Butylbenzene	104-51-8	✓	✓	(d)
			n-Propylbenzene	103-65-1	✓	✓	(d)
			Nonanal	124-19-6	✓	✓	(d)
			o-Xylene	95-47-6	✓	✓	(d)
			sec-Butylbenzene	135-98-8	✓	✓	(d)
			Styrene	100-42-5	✓	✓	(d)
			tert-Butylbenzene	98-06-6	✓	✓	(d)
			Tetrachloroethene	127-18-4	✓	✓	(d)
			Toluene	108-88-3	✓	✓	(d)
			trans-1,2-Dichloroethene	156-60-5	✓	✓	(d)
			trans-1,3-Dichloropropene	10061-02-6	✓	✓	(d)
			Trichloroethene	79-01-6	✓	✓	(d)
			Vinyl acetate	108-05-4	✓	✓	(d)
			Vinyl chloride	75-01-4	✓	✓	(d)
			Xylenes (total)	1330-20-7	✓	✓	(d)
			Tentatively Identified Compounds (TICs)		✓	✓	(d)
Flashpoint	NA	EPA 1010	Flammables	NA	(a)	(a)	(a)
Total Petroleum Hydrocarbons	EPA 3550	EPA 8015	Diesel	64742-46-7	(a)	(a)	(a)
	EPA 3550		Gasoline	8006-61-9	(a)	(a)	(a)
	EPA 1664A		Grease	68153-81-1	(a)	(a)	(a)
			Mineral Spirits	NA	(a)	(a)	(a)
White Phosphorus	EPA 7580M	EPA 7580M	White phosphorus	12185-10-3	(a)	(a)	(a)

TABLE 3-2
SITE-RELATED CHEMICALS AND INITIAL SAMPLE ANALYSES AND DEPTHS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Sample Depth (from Table 3-1)		
					Depth 1	Depth 2/3	Deep
Methyl Mercury	**EPA 1630**	**EPA 1630**	Methyl mercury	22967-92-6	(a)	(a)	(a)
Soil Physical Parameters	**NA**	**ASTM D2937/ MOSA1Ch .13**	Dry bulk density	NA	(d)	✓	✓
		ASTM D2435/ MOSA1Ch .18	Total porosity	NA	(d)	✓	✓
		ASTM D5084	Soil permeability/saturated hydraulic cond.	NA	(d)	✓	✓
		ASTM D854	Specific gravity of soils	NA	(d)	✓	✓
		SW846 Method 9081	Cation exchange capacity	NA	(d)	✓	✓
		ASTM D2216/D4643/D2974	Volumetric water content	NA	(d)	✓	✓
		ASTM D422	Grain size analysis by sieve and hydrometer	NA	(d)	✓	✓
		EPA 415.1/ASTM 2947	Fractional organic carbon content	NA	(d)	✓	✓

Notes:

Laboratory limits are subject to matrix interferences and may not always be achieved in all samples.

The laboratory was instructed to report the top 25 Tentatively Identified Compounds (TICs) under method 8260B and 8270C.

NA = Not applicable.

a - Removed based on rationale provided in the text.

b - Dioxins/furans and PCBs analyzed for in fill and surface soil samples only.

c - Asbestos analyzed for in current grade surface soil samples only.

d - Soil physical parameters collected from at-depth samples only; from three sample locations (see Table 3-1).

e - Removed based on Revisions to the Analyte List Technical Memorandum approved by NDEP on 10/16/2008.

TABLE 3-3
FINAL CONFIRMATION SOIL SAMPLE LOCATIONS AND ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Depth	Sample Type	Scraped?	Asbestos	Alde-hydes	Dioxins	Gen Chem	Metals	OCPs	PAHs	PCBs	Rads	SVOCs	VOCs
STC1-AI15	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	10	Initial			X		X	X	X	X		X	X	X
STC1-AI16	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-AI16	0	Confirmation	YES	X										
	10	Initial			X		X	X	X	X		X	X	X
STC1-AJ15	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-AJ15	0	Confirmation	YES			X			X	X	X		X	
STC7-AJ15	0	Confirmation	YES			X			X		X			
STC8-AJ15	0	Confirmation	YES			X			X		X			
STC1-AJ15	10	Initial			X		X	X	X	X		X	X	X
STC1-AJ16	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	10	Initial			X		X	X	X	X		X	X	X
STC1-AJ18	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	12	Initial			X		X	X	X	X		X	X	X
STC1-AK15	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	3	Initial			X		X	X	X	X		X	X	X
	13	Initial			X		X	X	X	X		X	X	X
STC1-AK20	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	6	Initial			X		X	X	X	X		X	X	X
	16	Initial			X		X	X	X	X		X	X	X
STC1-JB12	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	10	Initial			X		X	X	X	X		X	X	X
STC1-JD02	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-JD02	0	Confirmation						X				X		
STC1-JD02	10	Initial			X		X	X	X	X		X	X	X
STC1-JD03	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
	10	Initial			X		X	X	X	X		X	X	X
STC1-JD04	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-JD04	0	Confirmation	YES			X					X			
STC7-JD04	0	Confirmation				X					X			
STC1-JD04	10	Initial			X		X	X	X	X		X	X	X
STC1-JD05	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-JD05	0	Confirmation						X						
STC1-JD05	10	Initial			X		X	X	X	X		X	X	X
STC1-JD06	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X

TABLE 3-3
FINAL CONFIRMATION SOIL SAMPLE LOCATIONS AND ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Depth	Sample Type	Scraped?	Asbestos	Alde-hydes	Dioxins	Gen Chem	Metals	OCPs	PAHs	PCBs	Rads	SVOCs	VOCs
STC6-JD06	0	Confirmation				X					X			
STC1-JD06	10	Initial			X		X	X	X	X		X	X	X
STC1-JD07	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
	4	Initial			X		X	X	X	X		X	X	X
	14	Initial			X		X	X	X	X		X	X	X
STC1-JD08	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-JD08	0	Confirmation	YES		X	X		X			X			
STC7-JD08	0	Confirmation				X		X			X			
STC1-JD08	10	Initial			X		X	X	X	X		X	X	X
STC1-JD09	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-JD09	0	Confirmation	YES					X						
STC7-JD09	0	Confirmation	YES					X						
STC8-JD09	0	Confirmation	YES					X						
STC1-JD09	10	Initial	YES		X		X	X	X	X		X	X	X
STC1-JD10	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
	10	Initial	YES		X		X	X	X	X		X	X	X
STC6-JD10	10	Confirmation	YES	X	X	X	X	X	X	X	X	X	X	
STC7-JD10	10	Confirmation	YES	X		X		X	X		X		X	
STC8-JD10	10	Confirmation	YES			X		X			X			
STC1-JD11	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
	10	Initial	YES		X		X	X	X	X		X	X	X
STC6-JD11	10	Confirmation	YES	X		X		X	X	X	X	X	X	
STC7-JD11	10	Confirmation	YES	X		X		X	X		X		X	
STC8-JD11	10	Confirmation	YES					X						
STC10-JD11	0	Confirmation						X						
STC1-JD12	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
	10	Initial	YES		X		X	X	X	X		X	X	X
STC6-JD12	10	Confirmation	YES		X			X		X			X	
STC7-JD12	10	Confirmation	YES					X						
STC8-JD12	10	Confirmation						X						
STC1-JD13	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
	10	Initial	YES		X		X	X	X	X		X	X	X
STC6-JD13	10	Confirmation	YES		X			X		X		X	X	
STC7-JD13	10	Confirmation						X					X	
STC1-JD14	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X

TABLE 3-3
FINAL CONFIRMATION SOIL SAMPLE LOCATIONS AND ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Depth	Sample Type	Scraped?	Asbestos	Alde-hydes	Dioxins	Gen Chem	Metals	OCPs	PAHs	PCBs	Rads	SVOCs	VOCs
STC6-JD14	0	Confirmation				X		X			X			
STC1-JD14	10	Initial			X		X	X	X	X		X	X	X
STC1-JD15	0	Initial	YES	X	X	X	X	X	X	X	X	X	X	X
STC6-JD15	0	Confirmation			X			X						
STC1-JD15	6	Initial			X		X	X	X	X		X	X	X
	16	Initial			X		X	X	X	X		X	X	X
TMC1-JD01	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	11	Initial			X		X	X	X	X		X	X	X
TMC1-JD02	0	Initial		X	X	X	X	X	X	X	X	X	X	X
	10	Initial			X		X	X	X	X		X	X	X
STC9-JW01	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW01	1	Supplemental	YES					X						
	2	Supplemental						X						
	3	Supplemental						X						
STC9-JW02	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC10-JW02	0	Confirmation	YES			X					X		X	
STC11-JW02	0	Confirmation				X					X		X	
STC9-JW03	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW04	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW04	1	Supplemental	YES					X						
	2	Supplemental	YES					X						
	3	Supplemental	YES					X						
STC9-JW05	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW06	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW07	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW07	1	Supplemental	YES					X						
	2	Supplemental						X						
	3	Supplemental						X						
STC9-JW08	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW09	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW10	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW11	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC10-JW11	0	Confirmation								X				
STC9-JW12	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW13	0	Confirmation			X	X		X	X	X	X	X	X	

TABLE 3-3
FINAL CONFIRMATION SOIL SAMPLE LOCATIONS AND ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Depth	Sample Type	Scraped?	Asbestos	Alde-hydes	Dioxins	Gen Chem	Metals	OCPs	PAHs	PCBs	Rads	SVOCs	VOCs
STC9-JW14	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW15	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW15	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW16	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW16	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW17	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW17	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW18	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW19	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW19	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW20	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW20	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW21	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW21	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW22	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW23	0	Confirmation			X	X		X	X	X	X	X	X	
STC9-JW24	0	Confirmation	YES		X	X		X	X	X	X	X	X	
STC9DP-JW24	1	Supplemental	YES						X					
	2	Supplemental							X					
	3	Supplemental							X					
STC9-JW25	0	Confirmation			X	X		X	X	X	X	X	X	
BDE-Floor	0	Supplemental	YES					X						
BDW-F High	0	Supplemental	YES			X		X	X	X	X		X	

TABLE 3-3
FINAL CONFIRMATION SOIL SAMPLE LOCATIONS AND ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Depth	Sample Type	Scraped?	Asbestos	Alde-hydes	Dioxins	Gen Chem	Metals	OCPs	PAHs	PCBs	Rads	SVOCs	VOCs
BDW-F Low	0	Supplemental	YES			X		X	X	X	X		X	
BDW-S S Wall	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-1	0	Supplemental				X		X	X	X	X		X	
GES-JWT-2	0	Supplemental				X		X	X	X	X		X	
GES-JWT-3	0	Supplemental				X		X	X	X	X		X	
GES-JWT-4	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-5	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-6	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-7	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-8	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-9	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-10	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-11	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-12	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-13	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-14	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-15	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-16	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-17	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-18	0	Supplemental	YES			X		X	X	X	X		X	
GES-JWT-19	0	Supplemental	YES			X		X	X	X	X		X	
GES Prov-3	0	Supplemental	YES					X	X				X	
STC8-Prov3	0	Confirmation	YES			X		X	X	X	X		X	
GES Prov-4	0	Supplemental	YES					X	X				X	
STC8-Prov4	0	Confirmation				X		X	X	X	X		X	
GES Prov-5	0	Supplemental	YES					X	X				X	
STC8-Prov5	0	Confirmation				X		X	X	X	X		X	
GES Prov-6	0	Supplemental	YES					X	X				X	
STC8-Prov6	0	Confirmation	YES			X		X	X	X	X		X	
GES Prov-7	0	Supplemental	YES					X	X				X	
STC8-Prov7	0	Confirmation	YES			X		X	X	X	X		X	
STC6-ES01	0	Supplemental	YES	X	X	X		X	X	X	X	X	X	
STC7-ES01	0	Confirmation				X		X	X		X		X	
STC9-FALL01-1	1	Supplemental	YES					X						
STC9-FALL01-2	2	Supplemental	YES					X						

TABLE 3-3
FINAL CONFIRMATION SOIL SAMPLE LOCATIONS AND ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample Location	Sample Depth	Sample Type	Scraped?	Asbestos	Alde-hydes	Dioxins	Gen Chem	Metals	OCPs	PAHs	PCBs	Rads	SVOCs	VOCs
STC9-FALL01-3	3	Supplemental	YES					X						
STC9-FALL02-1	1	Supplemental	YES					X						
STC9-FALL02-2	2	Supplemental						X						
STC9-FALL02-3	3	Supplemental						X						
STC9-FALL03-1	1	Supplemental	YES					X						
STC9-FALL03-2	2	Supplemental						X						
STC9-FALL03-3	3	Supplemental						X						
STC9-FALL04-1	1	Supplemental	YES					X						
STC9-FALL04-2	2	Supplemental						X						
STC9-FALL04-3	3	Supplemental						X						

[shaded box] = Location removed (or below 10 ft bgs). As noted in the text, post-scrape analyses associated with follow-up rounds of remediation focused on the analytes triggering that additional remediation, and did not include the full suite analyses of the original analytical program. Therefore, analytical results from the original SAP dataset were retained for all analytes except those that were re-run after additional scraping.

TABLE 3-4
FINAL HUMAN HEALTH RISK ASSESSMENT SOIL DATASET RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[1]							Worker Soil BCL	Count of Detects > BCL	LBCL (DAF 1)	Count of Detects > DAF 1	LBCL (DAF 20)	Count of Detects > DAF 20	Max. Bkgrnd[2]	Count of Detects > Bkgrnd
					Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max								
Asbestos[3]	Amphibole	Structures	31	0%	31	--	--	--	--	--	--	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chrysotile	Structures	31	32.3%	21	--	--	--	--	--	--	10	1	--	--	--	--	6	--	--	--	--	--	--	--	--
Aldehydes	Acetaldehyde	mg/kg	81	91.4%	7	0.32	0.32	0.32	0.33	0.34	0.344	74	0.44	1.1	1.7	3	3.7	15	69.9	0	--	--	--	--	--	--
	Formaldehyde	mg/kg	81	59.3%	33	0.211	0.23	0.71	0.56	0.72	0.73	48	0.231	0.36	0.6	0.91	0.92	5.6	67000	0	--	--	--	--	--	--
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran[4]	pg/g	63	85.7%	9	0.16	0.54	1.2	1.2	1.8	2.2	54	0.49	41	140	490	770	3200	--	--	--	--	--	--	--	--
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin[4]	pg/g	63	82.5%	11	0.19	0.29	0.94	1.1	1.9	2.2	52	0.41	9.8	23	120	170	830	--	--	--	--	--	--	--	--
	1,2,3,4,7,8,9-Heptachlorodibenzofuran[4]	pg/g	63	84.1%	10	0.12	0.27	0.66	0.68	0.91	1.7	53	0.24	17	59	200	340	1400	--	--	--	--	--	--	--	--
	1,2,3,4,7,8-Hexachlorodibenzofuran[4]	pg/g	63	82.5%	11	0.053	0.27	0.5	0.57	0.71	1.6	52	0.6	21	78	310	490	1700	--	--	--	--	--	--	--	--
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin[4]	pg/g	63	61.9%	24	0.025	0.15	0.26	0.45	0.78	1.3	39	0.24	1.4	6.1	9.6	14	40	--	--	--	--	--	--	--	--
	1,2,3,6,7,8-Hexachlorodibenzofuran[4]	pg/g	63	81.0%	12	0.065	0.22	0.35	0.68	0.55	2.8	51	0.24	14	40	140	230	840	--	--	--	--	--	--	--	--
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin[4]	pg/g	63	69.8%	19	0.049	0.16	0.27	0.61	0.87	2.2	44	0.19	2.8	8.4	19	28	170	--	--	--	--	--	--	--	--
	1,2,3,7,8,9-Hexachlorodibenzofuran[4]	pg/g	63	74.6%	16	0.051	0.12	0.3	0.38	0.48	1.3	47	0.16	2.6	6.6	20	28	120	--	--	--	--	--	--	--	--
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin[4]	pg/g	63	66.7%	21	0.048	0.15	0.39	0.65	1.3	1.8	42	0.1	2.3	7.9	16	20	110	--	--	--	--	--	--	--	--
	1,2,3,7,8-Pentachlorodibenzofuran[4]	pg/g	63	77.8%	14	0.079	0.15	0.25	0.55	0.49	2.5	49	2	13	49	110	150	830	--	--	--	--	--	--	--	--
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin[4]	pg/g	63	60.3%	25	0.039	0.15	0.32	0.68	0.98	2.7	38	0.15	1.9	6.1	11	12	72	--	--	--	--	--	--	--	--
	2,3,4,6,7,8-Hexachlorodibenzofuran[4]	pg/g	63	74.6%	16	0.05	0.15	0.3	0.61	0.68	2.6	47	0.14	4.1	15	41	63	280	--	--	--	--	--	--	--	--
	2,3,4,7,8-Pentachlorodibenzofuran[4]	pg/g	63	76.2%	15	0.04	0.14	0.2	0.46	0.5	1.9	48	0.89	11	31	140	190	1300	--	--	--	--	--	--	--	--
	2,3,7,8-Tetrachlorodibenzofuran[4]	pg/g	63	90.5%	6	0.096	0.098	0.23	0.24	0.36	0.47	57	0.49	5.5	36	85	94	1000	--	--	--	--	--	--	--	--
	2,3,7,8-Tetrachlorodibenzo-p-dioxin[4]	pg/g	63	58.7%	26	0.0085	0.078	0.19	0.47	0.4	2.9	37	0.15	0.71	1.6	3.6	4.3	29	--	--	--	--	--	--	--	--
	Octachlorodibenzodioxin[4]	pg/g	63	84.1%	10	0.54	1.2	2	2.7	4.6	5.2	53	1.8	25	120	730	580	8900	--	--	--	--	--	--	--	--
	Octachlorodibenzofuran[4]	pg/g	63	92.1%	5	0.57	1.1	2.9	2.8	4.4	5.6	58	1.8	130	730	2500	2900	29000	--	--	--	--	--	--	--	--
	TCDD TEQ	pg/g	63	--[4]	--	--	--	--	--	--	--	63	0.068	2.5	25	130	210	910	1000	0	--	--	--	--	--	--
General Chemistry/ Ions	Ammonia (as N)	mg/kg	60	28.3%	43	0.088	0.11	0.53	0.43	0.55	0.58	17	0.11	0.41	0.62	0.77	1.3	1.5	100000	0	--	--	--	--	--	--
	Bromide	mg/kg	60	16.7%	50	0.26	0.26	0.27	0.27	0.28	0.32	10	0.31	0.51	0.64	0.9	1.1	2.4	100000	0	95.6	0	1910	0	--	--
	Chlorate	mg/kg	60	31.7%	41	0.37	0.38	0.39	0.39	0.4	0.46	19	0.42	0.63	0.94	2.9	4.2	14.3	34100	0	1.13	8	22.6	0	--	--
	Chloride	mg/kg	60	100%	0	--	--	--	--	--	--	60	0.6	5.3	46	120	200	748	--	--	--	--	--	--	--	--
	Cyanide, Total	mg/kg	60	20.0%	48	0.12	0.12	0.12	0.12	0.12	0.13	12	0.12	0.16	0.24	0.37	0.45	1.4	27.8	0	2	0	40	0	--	--
	Fluoride	mg/kg	60	100%	0	--	--	--	--	--	--	60	0.45	0.87	1.3	1.7	2	9.9	41000	0	--	--	--	--	--	--
	Nitrate	mg/kg	60	96.7%	2	0.043	--	0.044	0.044	--	0.045	58	0.065	0.66	3.3	9.6	12	97.8	100000	0	7	16	140	0	--	--
	Nitrite	mg/kg	60	6.7%	56	0.034	0.035	0.036	0.036	0.037	0.039	4	0.096	0.097	0.14	0.24	0.47	0.57	100000	0	--	--	--	--	--	--
	Orthophosphate as P	mg/kg	60	8.3%	55	0.56	0.61	5.3	3.6	5.4	5.9	5	4.7	5.1	6.5	6.4	7.8	8.2	--	--	--	--	--	--	--	--
	Perchlorate	mg/kg	59	71.2%	17	0.0106	0.011	0.011	0.011	0.011	0.0111	42	0.0303	0.25	1.3	1.9	3.2	8.92	795	0	0.0185	42	0.371	28	--	--
	Sulfate	mg/kg	60	98.3%	1	5.1	--	5.1	5.1	--	5.1	59	3.3	22	53	220	250	1820	--	--	--	--	--	--	--	--
	Sulfide	mg/kg	60	0%	60	0.85	0.88	0.9	0.91	0.93	1.1	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Total Kjeldahl Nitrogen (TKN)	mg/kg	60	100%	0	--	--	--	--	--	--	60	26	53	69	100	98	438	--	--	--	--	--	--	--	--
Metals	Aluminum	mg/kg	77	100%	0	--	--	--	--	--	--	77	7800	9800	11000	12000	14000	20000	100000	0	75	77	1500	77	15300	9
	Antimony	mg/kg	75	26.7%	55	0.3	0.35	0.85	0.71	0.89	0.94	20	0.36	1.1	1.5	1.7	2.2	4	454	0	0.3	20	6	0	0.5	18
	Arsenic	mg/kg	77	79.2%	16	5.2	5.3	5.5	5.5	5.7	5.8	61	2.9	4.4	5.8	6.4	7.2	15	1.77	61	1	61	20	0	7.2	14
	Barium	mg/kg	77	100%	0	--	--	--	--	--	--	77	145	200	250	270	310	720	100000	0	82	77	1640	0	445	4
	Beryllium	mg/kg	77	76.6%	18	0.51	0.53	0.54	0.54	0.56	0.58	59	0.54	0.62	0.78	0.81	0.91	2.2	2230	0	3	0	60	0	0.89	16
	Boron	mg/kg	77	5.2%	73	15	17	17	19	18	58.4	4	17	18	21	25	35	40	100000	0	23.4	1	467	0	11.6	4
	Cadmium	mg/kg	77	58.4%	32	0.055	0.057	0.06	0.11	0.21	0.29	45	0.06	0.11	0.16	0.21	0.24	1.7	1110	0	0.4	2	8	0	0.1291	30
	Calcium	mg/kg	77	100%	0	--	--	--	--	--	--	77	7700	18000	23000	24000	28000	61500	--	--	--	--	--	--	82800	0
	Chromium	mg/kg	77	100%	0	--	--	--	--	--	--	77	5.4	9.8	15	22	28	78	100000	0	--	--	--	--	16.7	37
	Chromium (VI)	mg/kg	77	55.8%	34	0.1	0.1	0.11	0.19	0.41	0.45	43	0.12	0.18	0.38	1.8	3	13	1230	0	2	11	40	0	0.32	24
	Cobalt	mg/kg	77	100%	0	--	--	--	--	--	--	77	6.8	9.9	11	13	14	36	337	0	0.495	77	9.9	57	16.3	13
	Copper	mg/kg	77	98.7%	1	18.6	--	19	19	--	18.6	76	13.7	19	22	31	32	186	42200	0	45.8	6	915	0	25.9	31
	Iron	mg/kg	77	100%	0	--	--	--	--	--	--	77	14500	17000	19000	21000	26000	37000	100000	0	7.56	77	151	77	19700	34
	Lead	mg/kg	77	100%	0	--	--	--	--	--	--	77	6.4	9	12	19	24	100	--	--	--	--	--	--	35.1	7
	Lithium	mg/kg	77	100%	0	--	--	--	--	--	--	77	7.4	11	14	14	17	25	2270	0	21.9	2	438	0	26.5	0
	Magnesium	mg/kg	77	100%	0	--	--	--	--	--	--	77	8500	9800	11000	12000	14000	18000	100000	0	973	77	19500	0	17500	1

TABLE 3-4
FINAL HUMAN HEALTH RISK ASSESSMENT SOIL DATASET RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[1]							Worker Soil BCL	Count of Detects > BCL	LBCL (DAF 1)	Count of Detects > DAF 1	LBCL (DAF 20)	Count of Detects > DAF 20	Max. Bkgrnd[2]	Count of Detects > Bkgrnd
					Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max								
Metals	Manganese	mg/kg	77	100%	0	--	--	--	--	--	--	77	196	440	630	1200	1000	7000	24900	0	1.3	77	26.1	77	863	25
	Mercury	mg/kg	75	58.7%	31	0.0065	0.012	0.036	0.03	0.037	0.0389	44	0.0094	0.017	0.032	0.086	0.083	0.54	341	0	0.104	8	2.09	0	0.11	8
	Molybdenum	mg/kg	77	42.9%	44	0.385	0.4	0.44	1.1	2.6	2.9	33	0.63	0.9	1.3	1.5	1.7	3.7	5680	0	3.69	1	73.7	0	2	7
	Nickel	mg/kg	77	100%	0	--	--	--	--	--	--	77	13.3	17	20	25	28	77	21800	0	7	77	140	0	30	14
	Potassium	mg/kg	77	100%	0	--	--	--	--	--	--	77	1270	1700	2100	2200	2600	4200	--	--	--	--	--	--	3890	1
	Selenium	mg/kg	77	62.3%	29	0.225	0.23	0.24	0.41	0.25	2.7	48	0.86	1.8	2.8	2.7	3.6	5.1	5680	0	0.3	48	6	0	0.6	48
	Silver	mg/kg	77	39.0%	47	0.04	0.071	0.13	0.51	1.1	1.1	30	0.05	0.12	0.18	0.3	0.43	1.6	5680	0	0.85	1	17	0	0.2609	9
	Sodium	mg/kg	77	100%	0	--	--	--	--	--	--	77	303	550	790	1100	1100	5200	--	--	--	--	--	--	1320	14
	Strontium	mg/kg	77	100%	0	--	--	--	--	--	--	77	160	220	280	280	320	486	100000	0	--	--	--	--	808	0
	Thallium	mg/kg	77	18.2%	63	0.29	0.31	0.33	0.53	0.75	1.2	14	0.83	1.2	1.8	2	2.9	3.4	74.9	0	0.4	14	8	0	1.8	7
	Tin	mg/kg	77	53.2%	36	0.38	0.4	0.42	0.56	0.54	1.2	41	0.44	0.84	1.1	2.2	1.8	33	100000	0	--	--	--	--	0.8	32
	Titanium	mg/kg	77	100%	0	--	--	--	--	--	--	77	487	730	820	900	1000	2000	100000	0	146000	0	2920000	0	1010	17
	Tungsten	mg/kg	77	49.4%	39	0.4105	0.43	0.45	0.83	1.2	2.8	38	1.3	2.9	3.6	6.8	9.3	29	8510	0	41.1	0	822	0	0.0175	38
	Uranium	mg/kg	77	97.4%	2	0.52	--	0.52	0.52	--	0.52	75	0.53	0.81	1.1	1.1	1.3	2.1	3400	0	13.5	0	270	0	2.7	0
	Vanadium	mg/kg	77	100%	0	--	--	--	--	--	--	77	35	46	56	67	79	170	5680	0	300	0	6000	0	59.1	32
	Zinc	mg/kg	77	100%	0	--	--	--	--	--	--	77	33.8	44	51	64	68	320	100000	0	620	0	12400	0	121	5
Organochlorine Pesticides	2,4-DDD	mg/kg	54	3.7%	52	0.00023	0.00023	0.00024	0.00025	0.00025	0.00047	2	0.002	--	0.0043	0.0043	--	0.0066	--	--	--	--	--	--	--	--
	2,4-DDE	mg/kg	54	29.6%	38	0.00032	0.00033	0.00034	0.00034	0.00035	0.00037	16	0.0018	0.0048	0.0064	0.03	0.025	0.27	--	--	--	--	--	--	--	--
	4,4-DDD	mg/kg	89	25.8%	66	0.000084	0.000087	0.00009	0.00013	0.00019	0.00025	23	0.00055	0.0021	0.015	0.03	0.031	0.19	11.1	0	0.8	0	16	0	--	--
	4,4-DDE	mg/kg	89	61.8%	34	0.0004	0.00041	0.00042	0.00042	0.00043	0.00046	55	0.0012	0.0038	0.019	0.28	0.14	5.4	7.81	0	3	2	60	0	--	--
	4,4-DDT	mg/kg	89	60.7%	35	0.00065	0.00066	0.00068	0.00068	0.0007	0.00073	54	0.0012	0.0042	0.023	0.32	0.15	5.1	7.81	0	2	2	40	0	--	--
	Aldrin	mg/kg	89	0%	89	0.00031	0.00032	0.00033	0.00033	0.00034	0.00065	0	--	--	--	--	--	--	0.113	--	0.02	--	0.4	--	--	--
	alpha-BHC	mg/kg	89	15.7%	75	0.00014	0.00014	0.00015	0.00016	0.00019	0.00028	14	0.0004	0.00065	0.0027	0.0037	0.0042	0.019	270	0	0.0291	0	0.583	0	--	--
	alpha-Chlordane	mg/kg	89	6.7%	83	0.00058	0.00059	0.00061	0.00061	0.00062	0.00072	6	0.00063	0.002	0.0045	0.005	0.008	0.011	--	--	--	--	--	--	--	--
	beta-BHC	mg/kg	89	55.1%	40	0.00031	0.00032	0.00033	0.00033	0.00033	0.00035	49	0.00039	0.0018	0.0033	0.007	0.0077	0.064	53.9	0	0.00596	15	0.119	0	--	--
	Chlordane	mg/kg	89	7.9%	82	0.0038	0.0039	0.004	0.004	0.0041	0.0047	7	0.016	0.017	0.044	0.079	0.17	0.23	7.19	0	0.5	0	10	0	--	--
	delta-BHC	mg/kg	89	0%	89	0.00025	0.00025	0.00026	0.00026	0.00027	0.00051	0	--	--	--	--	--	--	270	--	30.8	--	615	--	--	--
	Dieldrin	mg/kg	89	0%	89	0.00022	0.00023	0.00023	0.00023	0.00024	0.00045	0	--	--	--	--	--	--	0.12	--	0.0002	--	0.004	--	--	--
	Endosulfan I	mg/kg	89	0%	89	0.00058	0.0006	0.00061	0.00062	0.00062	0.0012	0	--	--	--	--	--	--	4100	--	0.9	--	18	--	--	--
	Endosulfan II	mg/kg	89	0%	89	0.00024	0.00025	0.00025	0.00025	0.00026	0.0005	0	--	--	--	--	--	--	4100	--	0.9	--	18	--	--	--
	Endosulfan sulfate	mg/kg	89	0%	89	0.00026	0.00027	0.00028	0.00031	0.00036	0.00053	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin	mg/kg	89	0%	89	0.00014	0.00015	0.00015	0.00016	0.00017	0.00029	0	--	--	--	--	--	--	205	--	0.05	--	1	--	--	--
	Endrin aldehyde	mg/kg	89	1.1%	88	0.0004	0.00041	0.00041	0.00042	0.00043	0.00082	1	0.0027	--	0.0027	0.0027	--	0.0027	--	--	--	--	--	--	--	--
	Endrin ketone	mg/kg	89	2.2%	87	0.00031	0.00032	0.00034	0.00038	0.00044	0.00063	2	0.0022	--	0.0096	0.0096	--	0.017	--	--	--	--	--	--	--	--
	gamma-BHC (Lindane)	mg/kg	89	0%	89	0.00017	0.00018	0.00018	0.00018	0.00018	0.00036	0	--	--	--	--	--	--	8.98	--	0.0005	--	0.01	--	--	--
	gamma-Chlordane	mg/kg	89	25.8%	66	0.00016	0.00017	0.00017	0.00017	0.00017	0.00018	23	0.00039	0.0016	0.0042	0.015	0.0094	0.19	--	--	--	--	--	--	--	--
	Heptachlor	mg/kg	72	0%	72	0.000098	0.0001	0.00021	0.00016	0.00022	0.00023	0	--	--	--	--	--	--	0.426	--	1	--	20	--	--	--
	Heptachlor epoxide	mg/kg	89	0%	89	0.00044	0.00045	0.00046	0.00047	0.00047	0.00091	0	--	--	--	--	--	--	0.21	--	0.03	--	0.6	--	--	--
	Methoxychlor	mg/kg	89	0%	89	0.00073	0.00075	0.00077	0.00078	0.00079	0.0015	0	--	--	--	--	--	--	3420	--	8	--	160	--	--	--
	Toxaphene	mg/kg	89	0%	89	0.015	0.016	0.016	0.016	0.017	0.032	0	--	--	--	--	--	--	1.74	--	2	--	40	--	--	--
Polynuclear Aromatic Hydrocarbons	Acenaphthene	mg/kg	73	2.7%	71	0.00167	0.0018	0.0018	0.0018	0.0018	0.00196	2	0.0076	--	0.0077	0.0077	--	0.00771	2350	0	29	0	580	0	--	--
	Acenaphthylene	mg/kg	73	1.4%	72	0.00167	0.0018	0.0018	0.0018	0.0018	0.00196	1	0.00245	--	0.0025	0.0025	--	0.00245	147	0	--	--	--	--	--	--
	Anthracene	mg/kg	73	5.5%	69	0.00167	0.0018	0.0018	0.0018	0.0018	0.00196	4	0.00204	0.0027	0.0055	0.007	0.013	0.0147	9060	0	590	0	11800	0	--	--
	Benzo(a)anthracene	mg/kg	73	19.2%	59	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	14	0.0028	0.0061	0.0093	0.023	0.031	0.0843	2.34	0	0.08	1	1.6	0	--	--
	Benzo(a)pyrene	mg/kg	73	21.9%	57	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	16	0.0017	0.0037	0.0089	0.017	0.018	0.0812	0.234	0	0.4	0	8	0	--	--
	Benzo(b)fluoranthene	mg/kg	73	28.8%	52	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	21	0.00217	0.0048	0.012	0.025	0.028	0.137	2.34	0	0.2	0	4	0	--	--
	Benzo(g,h,i)perylene	mg/kg	73	20.5%	58	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	15	0.0021	0.0039	0.0081	0.012	0.015	0.0438	34100	0	--	--	--	--	--	--
	Benzo(k)fluoranthene	mg/kg	73	20.5%	58	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	15	0.00211	0.0032	0.0075	0.012	0.014	0.0502	23.4	0	2	0	40	0	--	--
	Chrysene	mg/kg	73	24.7%	55	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	18	0.00203	0.0036	0.011	0.02	0.02	0.0961	234	0	8	0	160	0	--	--
	Dibenzo(a,h)anthracene	mg/kg	73	9.6%	66	0.00167	0.0018	0.0018	0.0018	0.0018	0.00196	7	0.00204	0.0035	0.0049	0.0073	0.011	0.0175	0.234	0	0.08	0	1.6	0	--	--

TABLE 3-4
FINAL HUMAN HEALTH RISK ASSESSMENT SOIL DATASET RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 3 of 6)

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[1]							Worker Soil BCL	Count of Detects > BCL	LBCL (DAF 1)	Count of Detects > DAF 1	LBCL (DAF 20)	Count of Detects > DAF 20	Max. Bkgrnd[2]	Count of Detects > Bkgrnd
					Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max								
Polynuclear Aromatic Hydrocarbons	Indeno(1,2,3-cd)pyrene	mg/kg	73	19.2%	59	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	14	0.00234	0.0033	0.0064	0.012	0.015	0.0546	2.34	0	0.7	0	14	0	--	--
	Phenanthrene	mg/kg	73	20.5%	58	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	15	0.00183	0.0029	0.0067	0.018	0.028	0.0722	24.5	0	--	--	--	--	--	--
	Pyrene	mg/kg	73	27.4%	53	0.00169	0.0018	0.0018	0.0018	0.0018	0.00196	20	0.00211	0.0045	0.0097	0.024	0.024	0.112	19300	0	210	0	4200	0	--	--
Polychlorinated Biphenyls	PCB 105[4]	pg/g	63	92.1%	5	0.043	0.046	0.1	0.092	0.14	0.15	58	3.4	230	900	15000	6700	270000	--	--	--	--	--	--	--	--
	PCB 114[4]	pg/g	63	84.1%	10	0.036	0.085	0.12	0.32	0.16	2.2	53	1.5	30	82	1800	1000	23000	--	--	--	--	--	--	--	--
	PCB 118[4]	pg/g	63	95.2%	3	0.039	0.039	0.043	0.081	0.16	0.16	60	2.5	410	1800	31000	15000	550000	--	--	--	--	--	--	--	--
	PCB 123[4]	pg/g	63	50.8%	31	0.041	0.15	0.78	230	100	2000	32	0.62	19	51	740	250	8600	--	--	--	--	--	--	--	--
	PCB 126[4]	pg/g	63	30.2%	44	0.054	0.45	18	670	550	8200	19	2.2	3.6	13	30	41	190	--	--	--	--	--	--	--	--
	PCB 156[4]	pg/g	24	75.0%	6	0.038	0.043	0.096	0.11	0.19	0.19	18	4.4	13	82	200	270	1200	--	--	--	--	--	--	--	--
	PCB 156/157[4]	pg/g	39	100%	0	--	--	--	--	--	--	39	6.4	230	1200	9300	8800	110000	--	--	--	--	--	--	--	--
	PCB 157[4]	pg/g	24	66.7%	8	0.036	0.052	0.11	0.11	0.18	0.18	16	2.5	3.5	43	100	130	700	--	--	--	--	--	--	--	--
	PCB 167[4]	pg/g	63	87.3%	8	0.041	0.059	0.13	0.13	0.2	0.22	55	2	34	180	1900	910	30000	--	--	--	--	--	--	--	--
	PCB 169[4]	pg/g	63	12.7%	55	0.052	0.22	2.1	64	21	1100	8	0.21	2.9	7.3	11	23	29	--	--	--	--	--	--	--	--
	PCB 189[4]	pg/g	63	82.5%	11	0.069	0.094	0.098	0.13	0.19	0.22	52	0.42	10	63	330	260	4200	--	--	--	--	--	--	--	--
	PCB 209[4]	pg/g	63	93.7%	4	0.03	0.03	0.047	0.056	0.091	0.1	59	16	720	3900	12000	15000	130000	--	--	--	--	--	--	--	--
	PCB 77[4]	pg/g	63	66.7%	21	0.046	0.12	0.2	12	26	70	42	0.75	22	95	550	580	4100	--	--	--	--	--	--	--	--
	PCB 81[4]	pg/g	63	58.7%	26	0.041	0.13	0.24	71	17	1500	37	0.31	18	49	320	390	3700	--	--	--	--	--	--	--	--
Radionuclides	Radium-226	pCi/g	69	91.3%	6	--	--	--	--	--	--	63	0.458	0.74	0.9	1	1.1	2.62	0.023	63	0.016	63	0.32	63	2.36	3
	Radium-228	pCi/g	69	71.0%	20	--	--	--	--	--	--	49	-0.0719	1.3	1.7	1.8	2.2	3.97	0.041	49	0.016	49	0.32	49	2.92	4
	Thorium-228	pCi/g	69	95.7%	3	--	--	--	--	--	--	66	0.347	1.4	1.7	1.7	2	2.88	0.025	66	0.0023	66	0.045	66	2.28	3
	Thorium-230	pCi/g	69	98.6%	1	--	--	--	--	--	--	68	0.672	0.97	1.2	1.2	1.5	2.68	8.3	0	0.00084	68	0.017	68	3.01	0
	Thorium-232	pCi/g	69	98.6%	1	--	--	--	--	--	--	68	0.4	1.2	1.5	1.5	1.8	2.63	7.4	0	0.0029	68	0.058	68	2.23	3
	Uranium-233/234	pCi/g	69	98.6%	1	--	--	--	--	--	--	68	0.496	0.83	1.0	1.1	1.3	2.5	11	0	--	--	--	--	2.84	0
	Uranium-235/236	pCi/g	69	5.8%	65	--	--	--	--	--	--	4	-0.0417	0.098	0.25	0.23	0.33	0.58	0.35	0	--	--	--	--	0.21	1
	Uranium-238	pCi/g	69	100%	0	--	--	--	--	--	--	69	0.395	0.81	1.0	1	1.2	2.01	1.4	9	--	--	--	--	2.37	0
Semivolatile Organic Compounds	1,2,4,5-Tetrachlorobenzene	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	205	--	--	--	--	--	--	--
	1,2-Diphenylhydrazine	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	2.39	--	--	--	--	--	--	--
	1,4-Dioxane	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	19.2	--	--	--	--	--	--	--
	2,2'-Dichlorobenzil	mg/kg	74	4.1%	71	0.102	0.11	0.12	0.11	0.12	0.129	3	0.111	0.11	0.19	0.2	0.29	0.291	341	0	0.0003	3	0.006	3	--	--
	2,4,5-Trichlorophenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	68400	--	14	--	280	--	--	--
	2,4,6-Trichlorophenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	174	--	0.008	--	0.16	--	--	--
	2,4-Dichlorophenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	2050	--	0.05	--	1	--	--	--
	2,4-Dimethylphenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	13700	--	0.4	--	8	--	--	--
	2,4-Dinitrophenol	mg/kg	74	0%	74	0.102	0.11	0.13	0.13	0.14	0.149	0	--	--	--	--	--	--	1370	--	0.01	--	0.2	--	--	--
	2,4-Dinitrotoluene	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	6.18	--	0.00004	--	0.0008	--	--	--
	2,6-Dinitrotoluene	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	684	--	0.00003	--	0.0006	--	--	--
	2-Chloronaphthalene	mg/kg	74	0%	74	0.0102	0.011	0.012	0.012	0.013	0.0137	0	--	--	--	--	--	--	351	--	--	--	--	--	--	--
	2-Chlorophenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	1670	--	0.2	--	4	--	--	--
	2-Methylnaphthalene	mg/kg	74	0%	74	0.00681	0.0072	0.0073	0.0084	0.011	0.0109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Nitroaniline	mg/kg	74	0%	74	0.0681	0.072	0.073	0.088	0.12	0.12	0	--	--	--	--	--	--	2050	--	--	--	--	--	--	--
	2-Nitrophenol	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3,3-Dichlorobenzidine	mg/kg	74	0%	74	0.102	0.11	0.11	0.11	0.11	0.118	0	--	--	--	--	--	--	4.26	--	0.0003	--	0.006	--	--	--
	3-Nitroaniline	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Bromophenyl phenyl ether	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chloro-3-methylphenol	mg/kg	74	0%	74	0.034	0.036	0.036	0.074	0.14	0.145	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorophenyl phenyl ether	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorothioanisole	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Nitroaniline	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Nitrophenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	5470	--	--	--	--	--	--	--
	Acetophenone	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	1740	--	--	--	--	--	--	--
	Aniline	mg/kg	74	0%	74	0.102	0.11	0.12	0.12	0.13	0.137	0	--	--	--	--	--	--	336	--	--	--	--	--	--	--

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data Count	Min	Q1	Median	Mean	Q3	Max	Detected Data[1] Count	Min	Q1	Median	Mean	Q3	Max	Worker Soil BCL	Count of Detects > BCL	LBCL (DAF 1)	Count of Detects > DAF 1	LBCL (DAF 20)	Count of Detects > DAF 20	Max. Bkgrnd[2]	Count of Detects > Bkgrnd
Semivolatile Organic Compounds	Benzenethiol	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzoic acid	mg/kg	74	0%	74	0.169	0.18	0.18	0.18	0.18	0.196	0	--	--	--	--	--	--	100000	--	20	--	400	--	--	--
	Benzyl alcohol	mg/kg	73	0%	73	0.102	0.11	0.11	0.11	0.11	0.118	0	--	--	--	--	--	--	100000	--	--	--	--	--	--	--
	bis(2-Chloroethoxy)methane	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Chloroethyl) ether	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	1.3	--	0.00002	--	0.0004	--	--	--
	bis(2-Chloroisopropyl) ether	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	18	--	--	--	--	--	--	--
	bis(2-Ethylhexyl) phthalate	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	137	--	180	--	3600	--	--	--
	bis(p-Chlorophenyl) sulfone	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(p-Chlorophenyl)disulfide	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Butylbenzyl phthalate	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	240	--	810	--	16200	--	--	--
	Carbazole	mg/kg	74	0%	74	0.0102	0.011	0.011	0.011	0.011	0.0118	0	--	--	--	--	--	--	95.8	--	0.03	--	0.6	--	--	--
	Dibenzofuran	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	2270	--	--	--	--	--	--	--
	Dichloromethyl ether	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	0.00127	--	--	--	--	--	--	--
	Diethyl phthalate	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	100000	--	--	--	--	--	--	--
	Dimethyl phthalate	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	100000	--	--	--	--	--	--	--
	Di-n-butyl phthalate	mg/kg	74	0%	74	0.034	0.036	0.036	0.061	0.11	0.109	0	--	--	--	--	--	--	68400	--	270	--	5400	--	--	--
	Di-n-octyl phthalate	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Diphenyl disulfide	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Diphenyl sulfide	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Diphenyl sulfone	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	2050	--	--	--	--	--	--	--
	Diphenylamine	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	17100	--	--	--	--	--	--	--
	Fluoranthene	mg/kg	74	12.2%	65	0.0102	0.011	0.011	0.011	0.011	0.0118	9	0.0108	0.015	0.019	0.037	0.038	0.15	24400	0	210	0	4200	0	--	--
	Fluorene	mg/kg	74	0%	74	0.0102	0.011	0.011	0.011	0.011	0.0118	0	--	--	--	--	--	--	3440	--	28	--	560	--	--	--
	Hexachlorobenzene	mg/kg	74	8.1%	68	0.0691	0.071	0.073	0.083	0.1	0.108	6	0.11	0.13	0.2	0.23	0.32	0.429	1.2	0	0.1	6	2	0	--	--
	Hexachlorobutadiene	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	24.6	--	0.1	--	2	--	--	--
	Hexachlorocyclopentadiene	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	4090	--	20	--	400	--	--	--
	Hexachloroethane	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	137	--	0.02	--	0.4	--	--	--
	Hydroxymethyl phthalimide	mg/kg	73	0%	73	0.104	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Isophorone	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	2020	--	0.03	--	0.6	--	--	--
	m,p-Cresols	mg/kg	74	0%	74	0.102	0.11	0.14	0.13	0.15	0.157	0	--	--	--	--	--	--	34200	--	0.8	--	16	--	--	--
	Naphthalene	mg/kg	74	0%	74	0.0102	0.011	0.011	0.011	0.011	0.0118	0	--	--	--	--	--	--	15.6	--	4	--	80	--	--	--
	Nitrobenzene	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	13.6	--	0.007	--	0.14	--	--	--
	N-nitrosodi-n-propylamine	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	0.274	--	0.000002	--	0.00004	--	--	--
	o-Cresol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	34200	--	0.8	--	16	--	--	--
	Octachlorostyrene	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	p-Chloroaniline	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	9.58	--	0.03	--	0.6	--	--	--
	p-Chlorobenzenethiol	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorobenzene	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	547	--	--	--	--	--	--	--
	Pentachlorophenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	3	--	0.001	--	0.02	--	--	--
	Phenol	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	100000	--	5	--	100	--	--	--
	Phthalic acid	mg/kg	74	0%	74	0.102	0.11	0.12	0.11	0.12	0.129	0	--	--	--	--	--	--	100000	--	--	--	--	--	--	--
	Pyridine	mg/kg	74	0%	74	0.0681	0.072	0.073	0.084	0.11	0.109	0	--	--	--	--	--	--	667	--	--	--	--	--	--	--
Volatile Organic Compounds	1,1,1,2-Tetrachloroethane	mg/kg	60	0%	60	0.00026	0.0004	0.00041	0.00041	0.00042	0.00048	0	--	--	--	--	--	--	19.9	--	--	--	--	--	--	--
	1,1,1-Trichloroethane	mg/kg	60	0%	60	0.00024	0.00025	0.00025	0.00026	0.00026	0.00047	0	--	--	--	--	--	--	1390	--	0.1	--	2	--	--	--
	1,1,2,2-Tetrachloroethane	mg/kg	60	0%	60	0.00043	0.00046	0.00047	0.00048	0.00049	0.00056	0	--	--	--	--	--	--	2.54	--	0.0002	--	0.004	--	--	--
	1,1,2-Trichloroethane	mg/kg	60	0%	60	0.00037	0.00038	0.00039	0.0004	0.0004	0.00063	0	--	--	--	--	--	--	5.51	--	0.0009	--	0.018	--	--	--
	1,1-Dichloroethane	mg/kg	60	0%	60	0.00038	0.00039	0.0004	0.0004	0.00041	0.00047	0	--	--	--	--	--	--	21.4	--	1	--	20	--	--	--
	1,1-Dichloroethene	mg/kg	60	0%	60	0.00024	0.00025	0.00025	0.00031	0.00026	0.0018	0	--	--	--	--	--	--	1270	--	0.003	--	0.06	--	--	--
	1,1-Dichloropropene	mg/kg	60	0%	60	0.00023	0.00023	0.00024	0.00024	0.00025	0.00033	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichlorobenzene	mg/kg	60	5.0%	57	0.00035	0.00047	0.00048	0.00049	0.0005	0.00057	3	0.0007	0.0007	0.0011	0.0017	0.0034	0.0034	--	--	--	--	--	--	--	--
	1,2,3-Trichloropropane	mg/kg	60	0%	60	0.0005	0.00051	0.00052	0.00053	0.00054	0.00061	0	--	--	--	--	--	--	0.106	--	--	--	--	--	--	--

TABLE 3-4
FINAL HUMAN HEALTH RISK ASSESSMENT SOIL DATASET RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data Count	Min	Q1	Median	Mean	Q3	Max	Detected Data[1] Count	Min	Q1	Median	Mean	Q3	Max	Worker Soil BCL	Count of Detects > BCL	LBCL (DAF 1)	Count of Detects > DAF 1	LBCL (DAF 20)	Count of Detects > DAF 20	Max. Bkgrnd[2]	Count of Detects > Bkgrnd
Volatile Organic Compounds	1,2,4-Trichlorobenzene	mg/kg	60	5.0%	57	0.00031	0.00032	0.00033	0.00033	0.00034	0.00039	3	0.00052	0.00052	0.0033	0.0063	0.015	0.015	110	0	0.3	0	6	0	--	--
	1,2,4-Trimethylbenzene	mg/kg	60	3.3%	58	0.00041	0.00044	0.00061	0.00061	0.00075	0.00094	2	0.00041	--	0.00045	0.00045	--	0.00049	604	0	--	--	--	--	--	--
	1,2-Dichlorobenzene	mg/kg	60	10.0%	54	0.0003	0.00037	0.00038	0.00038	0.0004	0.00045	6	0.00043	0.00053	0.00078	0.1	0.16	0.62	373	0	0.9	0	18	0	--	--
	1,2-Dichloroethane	mg/kg	60	0%	60	0.00033	0.00034	0.00035	0.00037	0.00036	0.00095	0	--	--	--	--	--	--	2.24	--	0.001	--	0.02	--	--	--
	1,2-Dichloroethene	mg/kg	60	0%	60	0.00064	0.00066	0.00067	0.00069	0.0007	0.00097	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2-Dichloropropane	mg/kg	60	0%	60	0.00038	0.00039	0.0004	0.0004	0.00041	0.00047	0	--	--	--	--	--	--	4.29	--	0.001	--	0.02	--	--	--
	1,3,5-Trichlorobenzene	mg/kg	60	0%	60	0.00052	0.00054	0.00055	0.00055	0.00057	0.00065	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	mg/kg	60	0%	60	0.00026	0.00026	0.00027	0.00028	0.00028	0.00034	0	--	--	--	--	--	--	246	--	--	--	--	--	--	--
	1,3-Dichlorobenzene	mg/kg	60	1.7%	59	0.00026	0.00046	0.00047	0.00047	0.00049	0.00056	1	0.012	--	0.012	0.012	--	0.012	373	0	--	--	--	--	--	--
	1,3-Dichloropropane	mg/kg	60	0%	60	0.00034	0.00043	0.00044	0.00044	0.00046	0.00052	0	--	--	--	--	--	--	64.6	--	0.001	--	0.02	--	--	--
	1,4-Dichlorobenzene	mg/kg	60	5.0%	57	0.00032	0.00032	0.00033	0.00035	0.00034	0.00066	3	0.00065	0.00065	0.002	0.19	0.56	0.56	13.6	0	0.1	1	2	0	--	--
	2,2,3-Trimethylbutane	mg/kg	60	0%	60	0.00054	0.00055	0.00057	0.00057	0.00059	0.00067	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dichloropropane	mg/kg	60	0%	60	0.00031	0.00032	0.00033	0.00034	0.00034	0.00059	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dimethylpentane	mg/kg	60	0%	60	0.00054	0.00055	0.00057	0.00057	0.00059	0.00067	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,3-Dimethylpentane	mg/kg	60	0%	60	0.00045	0.00046	0.00047	0.00047	0.00048	0.00055	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4-Dimethylpentane	mg/kg	60	0%	60	0.0005	0.00051	0.00052	0.00053	0.00054	0.00062	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Chlorotoluene	mg/kg	60	0%	60	0.00035	0.00035	0.00036	0.00037	0.00037	0.00043	0	--	--	--	--	--	--	511	--	--	--	--	--	--	--
	2-Hexanone	mg/kg	60	0%	60	0.00029	0.0003	0.0003	0.00031	0.00031	0.00049	0	--	--	--	--	--	--	1930	--	--	--	--	--	--	--
	2-Methylhexane	mg/kg	60	0%	60	0.00051	0.00053	0.00054	0.00055	0.00056	0.00064	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Nitropropane	mg/kg	60	0%	60	0.00033	0.00034	0.00035	0.00039	0.00036	0.0015	0	--	--	--	--	--	--	0.0591	--	--	--	--	--	--	--
	3,3-Dimethylpentane	mg/kg	60	0%	60	0.00049	0.0005	0.00051	0.00052	0.00053	0.00061	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Ethylpentane	mg/kg	60	0%	60	0.00046	0.00047	0.00048	0.00049	0.00049	0.00057	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Methylhexane	mg/kg	60	0%	60	0.00048	0.00049	0.0005	0.00051	0.00052	0.00059	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorotoluene	mg/kg	60	0%	60	0.00026	0.00026	0.00027	0.00028	0.00028	0.00041	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Methyl-2-pentanone (MIBK)	mg/kg	60	0%	60	0.00031	0.00032	0.00033	0.00035	0.00034	0.0008	0	--	--	--	--	--	--	17200	--	--	--	--	--	--	--
	Acetone	mg/kg	60	3.3%	58	0.0066	0.0069	0.007	0.0072	0.0072	0.013	2	0.0074	--	0.0079	0.0079	--	0.0083	100000	0	0.8	0	16	0	--	--
	Acetonitrile	mg/kg	60	0%	60	0.0036	0.0037	0.0038	0.004	0.0039	0.011	0	--	--	--	--	--	--	6150	--	--	--	--	--	--	--
	Benzene	mg/kg	60	3.3%	58	0.00027	0.00034	0.00035	0.00035	0.00036	0.00042	2	0.00046	--	0.00071	0.00071	--	0.00096	4.21	0	0.002	0	0.04	0	--	--
	Bromobenzene	mg/kg	60	0%	60	0.00038	0.00039	0.0004	0.00041	0.00042	0.00048	0	--	--	--	--	--	--	695	--	--	--	--	--	--	--
	Bromodichloromethane	mg/kg	60	0%	60	0.00027	0.00033	0.00034	0.00034	0.00035	0.0004	0	--	--	--	--	--	--	3.36	--	0.03	--	0.6	--	--	--
	Bromoform	mg/kg	60	0%	60	0.00039	0.00043	0.00044	0.00045	0.00046	0.00052	0	--	--	--	--	--	--	242	--	0.04	--	0.8	--	--	--
	Bromomethane	mg/kg	60	0%	60	0.00041	0.00042	0.00043	0.00045	0.00044	0.0011	0	--	--	--	--	--	--	39.1	--	0.01	--	0.2	--	--	--
	Carbon disulfide	mg/kg	60	0%	60	0.00028	0.00029	0.0003	0.00031	0.00031	0.00075	0	--	--	--	--	--	--	721	--	2	--	40	--	--	--
	Carbon tetrachloride	mg/kg	60	0%	60	0.00031	0.00032	0.00033	0.00034	0.00034	0.00056	0	--	--	--	--	--	--	3.84	--	0.003	--	0.06	--	--	--
	Chlorobenzene	mg/kg	60	5.0%	57	0.00031	0.00032	0.00032	0.00033	0.00034	0.00042	3	0.00082	0.00082	0.0055	0.015	0.04	0.04	695	0	0.07	0	1.4	0	--	--
	Chlorobromomethane	mg/kg	60	0%	60	0.00045	0.00046	0.00047	0.00048	0.00048	0.0006	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chloroethane	mg/kg	60	0%	60	0.00032	0.00032	0.00033	0.00034	0.00034	0.00057	0	--	--	--	--	--	--	1100	--	--	--	--	--	--	--
	Chloroform	mg/kg	60	3.3%	58	0.00036	0.00038	0.00038	0.00039	0.0004	0.00045	2	0.00042	--	0.00076	0.00076	--	0.0011	1.55	0	0.03	0	0.6	0	--	--
	Chloromethane	mg/kg	60	0%	60	0.00028	0.00029	0.00029	0.00031	0.0003	0.00061	0	--	--	--	--	--	--	8.05	--	--	--	--	--	--	--
	cis-1,2-Dichloroethene	mg/kg	60	0%	60	0.00034	0.00035	0.00036	0.00037	0.00037	0.00065	0	--	--	--	--	--	--	737	--	0.02	--	0.4	--	--	--
	cis-1,3-Dichloropropene	mg/kg	60	0%	60	0.00024	0.00025	0.00025	0.00027	0.00026	0.00065	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Cymene (Isopropyltoluene)	mg/kg	60	0%	60	0.00026	0.00027	0.00028	0.00028	0.00029	0.00035	0	--	--	--	--	--	--	647	--	--	--	--	--	--	--
	Dibromochloromethane	mg/kg	60	0%	60	0.0003	0.00031	0.00031	0.00032	0.00032	0.00037	0	--	--	--	--	--	--	6.03	--	0.02	--	0.4	--	--	--
	Dibromochloropropane	mg/kg	60	0%	60	0.00061	0.00063	0.00064	0.00067	0.00066	0.0013	0	--	--	--	--	--	--	0.0529	--	--	--	--	--	--	--
	Dibromomethane	mg/kg	60	0%	60	0.00035	0.00036	0.00037	0.00038	0.00038	0.00044	0	--	--	--	--	--	--	191	--	--	--	--	--	--	--
	Dichloromethane (Methylene chloride)	mg/kg	60	60.0%	24	0.0017	0.0025	0.0036	0.005	0.0077	0.013	36	0.0034	0.0091	0.016	0.019	0.027	0.053	58.5	0	0.001	36	0.02	12	--	--
	Dimethyldisulfide	mg/kg	60	0%	60	0.00049	0.0005	0.00051	0.00052	0.00053	0.00061	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Ethanol	mg/kg	60	0%	60	0.063	0.065	0.066	0.067	0.068	0.078	0	--	--	--	--	--	--	100000	--	--	--	--	--	--	--
	Ethylbenzene	mg/kg	60	0%	60	0.0003	0.00031	0.00031	0.00032	0.00032	0.00037	0	--	--	--	--	--	--	19.6	--	0.7	--	14	--	--	--
	Freon-11 (Trichlorofluoromethane)	mg/kg	60	0%	60	0.00018	0.00032	0.00033	0.00033	0.00034	0.00039	0	--	--	--	--	--	--	1980	--	--	--	--	--	--	--
	Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethar	mg/kg	60	0%	60	0.00025	0.00026	0.00027	0.00032	0.00028	0.0018	0	--	--	--	--	--	--	5550	--	--	--	--	--	--	--

TABLE 3-4
FINAL HUMAN HEALTH RISK ASSESSMENT SOIL DATASET RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 6 of 6)

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[1]							Worker Soil BCL	Count of Detects > BCL	LBCL (DAF 1)	Count of Detects > DAF 1	LBCL (DAF 20)	Count of Detects > DAF 20	Max. Bkgrnd[2]	Count of Detects > Bkgrnd
					Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max								
Volatile Organic Compounds	Freon-12 (Dichlorodifluoromethane)	mg/kg	60	0%	60	0.00025	0.00026	0.00027	0.00031	0.00028	0.0014	0	--	--	--	--	--	--	340	--	--	--	--	--	--	--
	Heptane	mg/kg	60	0%	60	0.00038	0.00039	0.0004	0.0004	0.00041	0.00047	0	--	--	--	--	--	--	220	--	0.03	--	0.6	--	--	--
	Isopropylbenzene	mg/kg	60	0%	60	0.00028	0.0003	0.0003	0.00031	0.00031	0.00036	0	--	--	--	--	--	--	647	--	--	--	--	--	--	--
	m,p-Xylene	mg/kg	60	0%	60	0.00046	0.00048	0.00049	0.00049	0.0005	0.00062	0	--	--	--	--	--	--	214	--	10	--	200	--	--	--
	Methyl ethyl ketone (2-Butanone)	mg/kg	60	0%	60	0.00058	0.0006	0.00062	0.00065	0.00064	0.0016	0	--	--	--	--	--	--	34100	--	--	--	--	--	--	--
	Methyl iodide	mg/kg	60	0%	60	0.00039	0.00041	0.00042	0.00046	0.00043	0.0017	0	--	--	--	--	--	--	1510	--	--	--	--	--	--	--
	MTBE (Methyl tert-butyl ether)	mg/kg	60	0%	60	0.00047	0.00049	0.0005	0.0005	0.00052	0.00059	0	--	--	--	--	--	--	208	--	--	--	--	--	--	--
	n-Butylbenzene	mg/kg	60	0%	60	0.0003	0.00031	0.00032	0.00033	0.00033	0.00066	0	--	--	--	--	--	--	237	--	--	--	--	--	--	--
	Nonanal	mg/kg	60	1.7%	59	0.00037	0.00038	0.00039	0.00047	0.00041	0.0021	1	0.0067	--	0.0067	0.0067	--	0.0067	--	--	--	--	--	--	--	--
	n-Propylbenzene	mg/kg	60	0%	60	0.00028	0.00029	0.00029	0.0003	0.0003	0.00035	0	--	--	--	--	--	--	237	--	--	--	--	--	--	--
	o-Xylene	mg/kg	60	0%	60	0.00024	0.00025	0.00025	0.00026	0.00026	0.00037	0	--	--	--	--	--	--	282	--	9	--	180	--	--	--
	sec-Butylbenzene	mg/kg	60	0%	60	0.00033	0.00034	0.00035	0.00035	0.00036	0.00041	0	--	--	--	--	--	--	223	--	--	--	--	--	--	--
	Styrene	mg/kg	60	0%	60	0.00021	0.00022	0.00022	0.00023	0.00023	0.00038	0	--	--	--	--	--	--	1730	--	0.2	--	4	--	--	--
	tert-Butylbenzene	mg/kg	60	0%	60	0.00023	0.00024	0.00024	0.00025	0.00025	0.00034	0	--	--	--	--	--	--	393	--	--	--	--	--	--	--
	Tetrachloroethene	mg/kg	60	0%	60	0.0003	0.00048	0.0005	0.0005	0.00051	0.00059	0	--	--	--	--	--	--	3.28	--	0.003	--	0.06	--	--	--
	Toluene	mg/kg	60	0%	60	0.00025	0.00025	0.00026	0.00028	0.00027	0.00066	0	--	--	--	--	--	--	521	--	0.6	--	12	--	--	--
	trans-1,2-Dichloroethene	mg/kg	60	0%	60	0.00035	0.00036	0.00036	0.00037	0.00038	0.00056	0	--	--	--	--	--	--	547	--	0.03	--	0.6	--	--	--
	trans-1,3-Dichloropropene	mg/kg	60	0%	60	0.00018	0.00019	0.00019	0.0002	0.0002	0.00038	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Trichloroethene	mg/kg	60	0%	60	0.00027	0.00028	0.00028	0.00029	0.00029	0.00042	0	--	--	--	--	--	--	5.49	--	0.003	--	0.06	--	--	--
	Vinyl acetate	mg/kg	60	0%	60	0.00039	0.0004	0.00041	0.00043	0.00042	0.00086	0	--	--	--	--	--	--	2710	--	8	--	160	--	--	--
	Vinyl chloride	mg/kg	60	0%	60	0.00033	0.00034	0.00035	0.00035	0.00036	0.00047	0	--	--	--	--	--	--	1.86	--	0.0007	--	0.014	--	--	--
	Xylenes (total)	mg/kg	60	0%	60	0.00065	0.00067	0.00069	0.0007	0.00071	0.00094	0	--	--	--	--	--	--	214	--	10	--	200	--	--	--

Notes:
This table includes only data included in the risk assessment. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in the tables in Appendix B, which include all data, regardless of status.
The values used are simply a comparison to NDEP BCL values for information purposes only.
Because both non-detect and detected radionuclides have reported activity levels, calculated summary statistics (and exceedances of comparison levels) are presented as detected regardless of the lab detect flag. Lab detect flags are represented by the censored (non-detect) and detect count fields in the table.
Values for Q1, median, mean, and Q3 are rounded to 2 significant figures. BCLs are rounded to 3 significant figures.
BCL = Basic Comparison Levels (BCLs) from NDEP 2013.
LBCL = Leaching-based BCLs from NDEP 2013.
Max = Maximum
Min = Minimum
Q1 = 1st quartile (25th percentile)
Q3 = 3rd quartile (75th percentile)
(1) Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the dataset.
(2) Comparisons are for information purposes only. See Chapter 5 for statistical background comparisons, and the background dataset used.
(3) Asbestos results shown are for long protocol structures (>10um). The minimum and maximum values represent the number of protocol structures in an individual sample. The detect count represents the number of samples with at least one detected protocol structure, not the total number of structures.
(4) TCDD TEQ values are calculated from congener-specific (dioxins, furans, and PCBs) concentrations. An individual TCDD TEQ value may include detect and non-detect congeners. Therefore, the number of detects and non-detects, and a frequency of detection for TCDD TEQ are not presented.
-- = Not applicable or no value has been established.

TABLE 3-16
SURFACE FLUX SAMPLE ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Compound	CAS Number	MDL ppbv	RL ppbv	MDL µg/m^3	RL µg/m^3
List of Compounds for USEPA Method TO-15 Full Scan Mode Operation and MDLs					
1,1,1,2-Tetrachloroethane	630-20-6	0.1	0.51	0.72	3.62
1,1,1-Trichloroethane	71-55-6	0.1	0.52	0.58	2.89
1,1,2-Trichloroethane	79-00-5	0.1	0.51	0.57	2.86
1,1-Dichloroethane	75-34-3	0.1	0.52	0.43	2.15
1,1-Dichloroethene	75-35-4	0.1	0.52	0.42	2.13
1,1-Dichloropropene	563-58-6	0.1	0.49	0.46	2.3
1,2,3-Trichloropropane	96-18-4	0.11	0.55	0.68	3.39
1,2,4-Trichlorobenzene	120-82-1	0.1	0.52	0.79	3.94
1,2,4-Trimethylbenzene	95-63-6	0.1	0.52	0.52	2.61
1,2-Dichlorobenzene	95-50-1	0.1	0.52	0.64	3.2
1,2-Dichloropropane	78-87-5	0.1	0.52	0.49	2.46
1,3,5-Trimethylbenzene	108-67-8	0.1	0.52	0.53	2.64
1,3-Dichlorobenzene	541-73-1	0.1	0.52	0.64	3.2
1,3-Dichloropropane	142-28-9	0.11	0.54	0.52	2.58
1,4-Dioxane	123-91-1	0.09	0.44	0.33	1.64
2,2-Dichloropropane	594-20-7	0.11	0.53	0.5	2.53
2-Hexanone	591-78-6	0.09	0.44	0.37	1.86
4-Methyl-2-pentanone (MIBK)	108-10-1	0.09	0.46	0.38	1.95
Acetone	67-64-1	0.09	0.45	0.22	1.1
Acetonitrile	75-05-8	0.22	1.12	0.48	2.39
Benzene	71-43-2	0.1	0.52	0.34	1.7
Bromodichloromethane	75-27-4	0.08	0.4	0.55	2.77
Bromoform	75-25-2	0.09	0.47	0.99	4.96
Bromomethane	74-83-9	0.1	0.51	0.41	2.04
Carbon disulfide	75-15-0	0.09	0.45	0.29	1.45
Chlorobenzene	108-90-7	0.1	0.52	0.5	2.48
Chlorobromomethane	74-97-5	0.1	0.51	0.55	2.76
Chloroethane	75-00-3	0.1	0.51	0.28	1.39

TABLE 3-16
SURFACE FLUX SAMPLE ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Compound	CAS Number	MDL ppbv	RL ppbv	MDL $\mu g/m^3$	RL $\mu g/m^3$
Chloromethane	74-87-3	0.1	0.51	0.22	1.09
cis-1,2-Dichloroethene	156-59-2	0.1	0.52	0.42	2.11
cis-1,3-Dichloropropene	10061-01-5	0.1	0.52	0.48	2.41
Cymene (Isopropyltoluene)	99-87-6	0.11	0.55	0.62	3.12
Dibromomethane	74-95-3	0.11	0.55	0.97	4.84
Dichloromethane (Methylene chloride)	75-09-2	0.1	0.52	0.37	1.86
Ethanol	64-17-5	0.22	1.12	0.44	2.18
Ethylbenzene	100-41-4	0.1	0.52	0.46	2.33
Freon-11 (Trichlorofluoromethane)	75-69-4	0.1	0.51	0.59	2.95
Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)	76-13-1	0.1	0.52	0.81	4.07
Freon-12 (Dichlorodifluoromethane)	75-71-8	0.1	0.51	0.52	2.61
Heptane	142-82-5	0.08	0.42	0.35	1.78
Isopropylbenzene	98-82-8	0.11	0.57	0.58	2.89
Methyl ethyl ketone (2-Butanone)	78-93-3	0.09	0.43	0.26	1.31
Methyl iodide	74-88-4	0.19	0.94	1.13	5.67
MTBE (Methyl tert-butyl ether)	1634-04-4	0.08	0.39	0.29	1.45
Naphthalene	91-20-3	0.22	1.09	1.19	5.9
n-Butylbenzene	104-51-8	0.1	0.52	0.59	2.95
n-Propylbenzene	103-65-1	0.11	0.54	0.55	2.74
o-Xylene	95-47-6	0.1	0.52	0.46	2.31
sec-Butylbenzene	135-98-8	0.11	0.52	0.59	2.95
Styrene	100-42-5	0.1	0.52	0.45	2.26
tert-Butylbenzene	98-06-6	0.11	0.52	0.59	2.85
Tetrachloroethene	127-18-4	0.1	0.52	0.72	3.61
Toluene	108-88-3	0.1	0.52	0.4	2
trans-1,2-Dichloroethene	156-60-5	0.09	0.44	0.36	1.8
trans-1,3-Dichloropropene	10061-02-6	0.1	0.52	0.48	2.41
Trichloroethene	79-01-6	0.1	0.52	0.57	2.85
Vinyl acetate	108-05-4	0.09	0.43	0.31	1.56

TABLE 3-16
SURFACE FLUX SAMPLE ANALYSES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Compound	CAS Number	MDL ppbv	RL ppbv	MDL µg/m^3	RL µg/m^3
Vinyl chloride	75-01-4	0.1	0.51	0.27	1.35
Xylenes (total)	108-38-3	0.21	1.03	0.92	4.61
List of Compounds for USEPA Method TO-15 Selective Ion Mode (SIM) Operation and MDLs					
1,1,2,2-Tetrachloroethane	79-34-5	0.005	0.026	0.035	0.18
1,2-Dichloroethane	107-06-2	0.005	0.026	0.021	0.11
1,4-Dichlorobenzene	106-46-7	0.005	0.026	0.031	0.16
Carbon tetrachloride	56-23-5	0.005	0.026	0.032	0.17
Chloroform	67-66-3	0.005	0.026	0.025	0.13
Dibromochloromethane	124-48-1	0.005	0.026	0.043	0.23
Dibromochloropropane	96-12-8	0.01	0.026	0.098	0.26
Hexachlorobutadiene	87-68-3	0.01	0.026	0.108	0.28

Note:
The actual reported MDL may vary based on Canister dilution or matrix interferences.
CAS - Chemical abstract system
MDL - Method detection limit
RL - Reporting limit
ppbv - Parts per billion by volume
µg/m^3 - microgram per cubic meter

TABLE 3-17
SOIL VAPOR FLUX SAMPLE RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of			Total	Detect	Censored (Non-Detect) Data							Detected Data[1]						
Interest	Compound List	Units	Count	Freq.	Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max
Volatile Organic Compounds	1,1,1,2-Tetrachloroethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0104	0.0106	0.0108	0.0183	0.0112	0.0785	0	--	--	--	--	--	--
	1,1,1-Trichloroethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0219	0.0225	0.0227	0.0389	0.0238	0.167	0	--	--	--	--	--	--
	1,1,2,2-Tetrachloroethane	$\mu g/m^2,min^{-1}$	10	0%	10	0.00277	0.0028	0.00294	0.0051	0.00986	0.01	0	--	--	--	--	--	--
	1,1,2-Trichloroethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0219	0.0225	0.0227	0.0389	0.0238	0.167	0	--	--	--	--	--	--
	1,1-Dichloroethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0162	0.0165	0.0165	0.0285	0.0173	0.123	0	--	--	--	--	--	--
	1,1-Dichloroethene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0158	0.0162	0.0165	0.0279	0.0169	0.12	0	--	--	--	--	--	--
	1,1-Dichloropropene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0108	0.0112	0.0112	0.0192	0.0115	0.0823	0	--	--	--	--	--	--
	1,2,3-Trichloropropane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0108	0.011	0.0112	0.0191	0.0115	0.0819	0	--	--	--	--	--	--
	1,2,4-Trichlorobenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.12	0.123	0.125	0.213	0.13	0.917	0	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0792	0.081	0.0819	0.14	0.0854	0.602	0	--	--	--	--	--	--
	1,2-Dichlorobenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.095	0.097	0.0981	0.168	0.102	0.721	0	--	--	--	--	--	--
	1,2-Dichloroethane	$\mu g/m^2,min^{-1}$	10	10%	9	0.00165	0.00167	0.00177	0.0032	0.00591	0.00596	1	0.00469	--	0.00469	0.00469	--	0.00469
	1,2-Dichloropropane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0188	0.0192	0.0196	0.0334	0.0204	0.143	0	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0215	0.0829	0.085	0.0862	0.0888	0.156	0	--	--	--	--	--	--
	1,3-Dichlorobenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0965	0.0989	0.1	0.171	0.104	0.735	0	--	--	--	--	--	--
	1,3-Dichloropropane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0112	0.0112	0.0115	0.0195	0.0119	0.0838	0	--	--	--	--	--	--
	1,4-Dichlorobenzene	$\mu g/m^2,min^{-1}$	10	0%	10	0.00242	0.00245	0.00258	0.00447	0.00863	0.00877	0	--	--	--	--	--	--
	1,4-Dioxane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0265	0.0271	0.0277	0.0472	0.0288	0.203	0	--	--	--	--	--	--
	2,2-Dichloropropane	$\mu g/m^2,min^{-1}$	9	0%	9	0.015	0.0152	0.0154	0.0264	0.0162	0.113	0	--	--	--	--	--	--
	2-Hexanone	$\mu g/m^2,min^{-1}$	9	0%	9	0.0104	0.0108	0.0108	0.0187	0.0115	0.0804	0	--	--	--	--	--	--
	4-Methyl-2-pentanone (MIBK)	$\mu g/m^2,min^{-1}$	9	0%	9	0.0112	0.0115	0.0115	0.0199	0.0123	0.0854	0	--	--	--	--	--	--
	Acetone	$\mu g/m^2,min^{-1}$	9	78%	2	0.17	--	0.172	0.172	--	0.173	7	0.222	0.223	0.346	0.505	0.506	1.56
	Acetonitrile	$\mu g/m^2,min^{-1}$	9	0%	9	0.0135	0.0138	0.0138	0.0239	0.0146	0.103	0	--	--	--	--	--	--
	Benzene	$\mu g/m^2,min^{-1}$	9	11%	8	0.0131	0.0132	0.0137	0.0278	0.0176	0.123	1	0.106	--	0.106	0.106	--	0.106
	Bromodichloromethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.00962	0.01	0.01	0.0172	0.0104	0.0742	0	--	--	--	--	--	--
	Bromoform	$\mu g/m^2,min^{-1}$	9	0%	9	0.01	0.0104	0.0104	0.0178	0.0108	0.0765	0	--	--	--	--	--	--
	Bromomethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0158	0.0164	0.0165	0.0282	0.0173	0.121	0	--	--	--	--	--	--
	Carbon disulfide	$\mu g/m^2,min^{-1}$	9	11%	8	0.0104	0.0108	0.0108	0.0109	0.0112	0.0112	1	0.113	--	0.113	0.113	--	0.113
	Carbon tetrachloride	$\mu g/m^2,min^{-1}$	10	70%	3	0.00392	0.00392	0.00496	0.00596	0.009	0.009	7	0.00362	0.00588	0.012	0.0111	0.018	0.018
	Chlorobenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0185	0.019	0.0192	0.0328	0.02	0.141	0	--	--	--	--	--	--
	Chlorobromomethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0104	0.0104	0.0108	0.0182	0.0112	0.0777	0	--	--	--	--	--	--
	Chloroethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.0108	0.0112	0.0112	0.0192	0.0115	0.0823	0	--	--	--	--	--	--
	Chloroform	$\mu g/m^2,min^{-1}$	10	80%	2	0.00712	--	0.00712	0.00712	--	0.00712	8	0.00254	0.00372	0.005	0.00538	0.00595	0.0111
	Chloromethane	$\mu g/m^2,min^{-1}$	9	56%	4	0.00846	0.0106	0.0183	0.027	0.0522	0.0631	5	0.0185	0.0193	0.0219	0.0292	0.0429	0.0492
	cis-1,2-Dichloroethene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0162	0.0164	0.0165	0.0284	0.0173	0.122	0	--	--	--	--	--	--
	cis-1,3-Dichloropropene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0188	0.0194	0.0196	0.0335	0.0204	0.144	0	--	--	--	--	--	--
	Cymene (Isopropyltoluene)	$\mu g/m^2,min^{-1}$	9	0%	9	0.0146	0.0558	0.0573	0.058	0.0596	0.105	0	--	--	--	--	--	--
	Dibromochloromethane	$\mu g/m^2,min^{-1}$	10	0%	10	0.00123	0.00127	0.00133	0.0023	0.00444	0.0045	0	--	--	--	--	--	--

TABLE 3-17
SOIL VAPOR FLUX SAMPLE RESULTS SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[1]						
					Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max
Volatile Organic Compounds	Dibromochloropropane	$\mu g/m^2,min^{-1}$	10	30%	7	0.0113	0.0119	0.0124	0.0167	0.0189	0.0345	3	0.0393	0.0393	0.0409	0.0408	0.0422	0.0422
	Dibromomethane	$\mu g/m^2,min^{-1}$	9	0%	9	0.00962	0.01	0.01	0.0172	0.0104	0.0738	0	--	--	--	--	--	--
	Dichloromethane (Methylene chloride)	$\mu g/m^2,min^{-1}$	9	22%	7	0.0142	0.0146	0.0146	0.0148	0.0154	0.0154	2	0.0169	--	0.5	0.5	--	0.983
	Ethanol	$\mu g/m^2,min^{-1}$	9	11%	8	0.102	0.104	0.107	0.19	0.11	0.778	1	0.967	--	0.967	0.967	--	0.967
	Ethylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0177	0.0183	0.0185	0.0315	0.0192	0.135	0	--	--	--	--	--	--
	Freon-11 (Trichlorofluoromethane)	$\mu g/m^2,min^{-1}$	9	22%	7	0.0235	0.0238	0.0242	0.0458	0.025	0.175	2	0.0262	--	0.0316	0.0316	--	0.0369
	Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)	$\mu g/m^2,min^{-1}$	9	0%	9	0.0308	0.0314	0.0319	0.0545	0.0331	0.234	0	--	--	--	--	--	--
	Freon-12 (Dichlorodifluoromethane)	$\mu g/m^2,min^{-1}$	9	44%	5	0.0204	0.0206	0.0212	0.048	0.0888	0.156	4	0.0262	0.0286	0.0375	0.0395	0.0525	0.0569
	Heptane	$\mu g/m^2,min^{-1}$	9	22%	7	0.00885	0.00923	0.00923	0.00934	0.00962	0.00962	2	0.0108	--	0.0714	0.0714	--	0.132
	Hexachlorobutadiene	$\mu g/m^2,min^{-1}$	10	0%	10	0.00435	0.00437	0.00519	0.00814	0.0155	0.0157	0	--	--	--	--	--	--
	Isopropylbenzene	$\mu g/m^2,min^{-1}$	9	11%	8	0.0542	0.0552	0.0562	0.0622	0.0585	0.103	1	0.0254	--	0.0254	0.0254	--	0.0254
	Methyl ethyl ketone (2-Butanone)	$\mu g/m^2,min^{-1}$	9	89%	1	0.0119	--	0.0119	0.0119	--	0.0119	8	0.0131	0.0188	0.0362	0.0949	0.0515	0.535
	Methyl iodide	$\mu g/m^2,min^{-1}$	9	0%	9	0.00692	0.00692	0.00731	0.0122	0.00731	0.0527	0	--	--	--	--	--	--
	MTBE (Methyl tert-butyl ether)	$\mu g/m^2,min^{-1}$	9	0%	9	0.00962	0.00981	0.01	0.0171	0.0104	0.0735	0	--	--	--	--	--	--
	Naphthalene	$\mu g/m^2,min^{-1}$	9	22%	7	0.0181	0.0185	0.0192	0.036	0.0196	0.138	2	0.0477	--	0.0899	0.0899	--	0.132
	n-Butylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0138	0.0523	0.0538	0.0545	0.0562	0.0988	0	--	--	--	--	--	--
	n-Propylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0142	0.0539	0.0554	0.0561	0.0577	0.102	0	--	--	--	--	--	--
	o-Xylene	$\mu g/m^2,min^{-1}$	9	11%	8	0.0173	0.0178	0.0181	0.0325	0.0188	0.133	1	0.0262	--	0.0262	0.0262	--	0.0262
	sec-Butylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.015	0.0566	0.0585	0.0591	0.0608	0.107	0	--	--	--	--	--	--
	Styrene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0173	0.0177	0.0181	0.0308	0.0188	0.132	0	--	--	--	--	--	--
	tert-Butylbenzene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0138	0.0531	0.0546	0.0552	0.0569	0.1	0	--	--	--	--	--	--
	Tetrachloroethene	$\mu g/m^2,min^{-1}$	9	11%	8	0.0273	0.0278	0.0285	0.0508	0.0296	0.207	1	0.0312	--	0.0312	0.0312	--	0.0312
	Toluene	$\mu g/m^2,min^{-1}$	9	33%	6	0.0154	0.0154	0.0158	0.0159	0.0165	0.0165	3	0.0362	0.0362	0.0477	0.0923	0.193	0.193
	trans-1,2-Dichloroethene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0104	0.0106	0.0108	0.0184	0.0112	0.0788	0	--	--	--	--	--	--
	trans-1,3-Dichloropropene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0185	0.019	0.0192	0.0329	0.02	0.142	0	--	--	--	--	--	--
	Trichloroethene	$\mu g/m^2,min^{-1}$	9	0%	9	0.0219	0.0223	0.0227	0.0387	0.0235	0.166	0	--	--	--	--	--	--
	Vinyl acetate	$\mu g/m^2,min^{-1}$	9	0%	9	0.045	0.046	0.0465	0.0796	0.0485	0.342	0	--	--	--	--	--	--
	Vinyl chloride	$\mu g/m^2,min^{-1}$	9	0%	9	0.0104	0.0108	0.0108	0.0185	0.0112	0.0796	0	--	--	--	--	--	--
	Xylenes (total)	$\mu g/m^2,min^{-1}$	9	11%	8	0.0354	0.0359	0.0365	0.0656	0.0381	0.268	1	0.0692	--	0.0692	0.0692	--	0.0692

Notes:

Values for Q1, median, mean, and Q3 are rounded to 3 significant figures.

Max = Maximum

Min = Minimum

Q1 = 1st quartile (25th percentile)

Q3 = 3rd quartile (75th percentile)

(1) Range of detections include estimated values of detect results ("J" flagged values).

-- = Not applicable or no value has been established.

TABLE 5-1
BACKGROUND COMPARISON SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 6)

	Triangle Commercial Sub-Area															
			Censored (Non-Detect) Data							Detected Data[(1)]						
Chemical	Total Count	Detect Freq.	Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max
Aluminum	77	100%	0	--	--	--	--	--	--	77	7800	9800	11000	12000	14000	20000
Antimony	75	27%	55	0.3	0.35	0.85	0.71	0.89	0.94	20	0.36	1.1	1.5	1.7	2.2	4
Arsenic	77	79%	16	5.2	5.3	5.5	5.5	5.7	5.8	61	2.9	4.4	5.8	6.4	7.2	15
Barium	77	100%	0	--	--	--	--	--	--	77	145	200	250	270	310	720
Beryllium	77	77%	18	0.51	0.53	0.54	0.54	0.56	0.58	59	0.54	0.62	0.78	0.81	0.91	2.2
Boron	77	5%	73	15	17	17	19	18	58.4	4	17	18	21	25	35	40
Cadmium	77	58%	32	0.055	0.057	0.06	0.11	0.21	0.29	45	0.06	0.11	0.16	0.21	0.24	1.7
Calcium	77	100%	0	--	--	--	--	--	--	77	7700	18000	23000	24000	28000	61500
Chromium	77	100%	0	--	--	--	--	--	--	77	5.4	9.8	15	22	28	78
Chromium (VI)	77	56%	34	0.1	0.1	0.11	0.19	0.41	0.45	43	0.12	0.18	0.38	1.8	3	13
Cobalt	77	100%	0	--	--	--	--	--	--	77	6.8	9.9	11	13	14	36
Copper	77	99%	1	18.6	--	19	19	--	18.6	76	13.7	19	22	31	32	186
Iron	77	100%	0	--	--	--	--	--	--	77	14500	17000	19000	21000	26000	37000
Lead	77	100%	0	--	--	--	--	--	--	77	6.4	9	12	19	24	100
Lithium	77	100%	0	--	--	--	--	--	--	77	7.4	11	14	14	17	25
Magnesium	77	100%	0	--	--	--	--	--	--	77	8500	9800	11000	12000	14000	18000
Manganese	77	100%	0	--	--	--	--	--	--	77	196	440	630	1200	1000	7000
Mercury	75	59%	31	0.0065	0.012	0.036	0.03	0.037	0.0389	44	0.0094	0.017	0.032	0.086	0.083	0.54
Molybdenum	77	43%	44	0.385	0.4	0.44	1.1	2.6	2.9	33	0.63	0.9	1.3	1.5	1.7	3.7
Nickel	77	100%	0	--	--	--	--	--	--	77	13.3	17	20	25	28	77
Potassium	77	100%	0	--	--	--	--	--	--	77	1270	1700	2100	2200	2600	4200
Selenium	77	62%	29	0.225	0.23	0.24	0.41	0.25	2.7	48	0.86	1.8	2.8	2.7	3.6	5.1
Silver	77	39%	47	0.04	0.071	0.13	0.51	1.1	1.1	30	0.05	0.12	0.18	0.3	0.43	1.6

TABLE 5-1
BACKGROUND COMPARISON SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

	Triangle Commercial Sub-Area														
			Censored (Non-Detect) Data							Detected Data[1]						
Chemical	Total Count	Detect Freq.	Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max
Sodium	77	100%	0	--	--	--	--	--	--	77	303	550	790	1100	1100	5200
Strontium	77	100%	0	--	--	--	--	--	--	77	160	220	280	280	320	486
Thallium	77	18%	63	0.29	0.31	0.33	0.53	0.75	1.2	14	0.83	1.2	1.8	2	2.9	3.4
Tin	77	53%	36	0.38	0.4	0.42	0.56	0.54	1.2	41	0.44	0.84	1.1	2.2	1.8	33
Titanium	77	100%	0	--	--	--	--	--	--	77	487	730	820	900	1000	2000
Tungsten	77	49%	39	0.4105	0.43	0.45	0.83	1.2	2.8	38	1.3	2.9	3.6	6.8	9.3	29
Uranium	77	97%	2	0.52	--	0.52	0.52	--	0.52	75	0.53	0.81	1.1	1.1	1.3	2.1
Vanadium	77	100%	0	--	--	--	--	--	--	77	35	46	56	67	79	170
Zinc	77	100%	0	--	--	--	--	--	--	77	33.8	44	51	64	68	320
Radium-226	69	91%	6	--	--	--	--	--	--	63	0.458	0.74	0.9	1	1.1	2.62
Radium-228	69	71%	20	--	--	--	--	--	--	49	-0.0719	1.3	1.7	1.8	2.2	3.97
Thorium-228	69	96%	3	--	--	--	--	--	--	66	0.347	1.4	1.7	1.7	2	2.88
Thorium-230	69	99%	1	--	--	--	--	--	--	68	0.672	0.97	1.2	1.2	1.5	2.68
Thorium-232	69	99%	1	--	--	--	--	--	--	68	0.4	1.2	1.5	1.5	1.8	2.63
Uranium-233/234	69	99%	1	--	--	--	--	--	--	68	0.496	0.83	1.0	1.1	1.3	2.5
Uranium-235/236	69	6%	65	--	--	--	--	--	--	4	-0.0417	0.098	0.25	0.23	0.33	0.58
Uranium-238	69	100%	0	--	--	--	--	--	--	69	0.395	0.81	1.0	1	1.2	2.01

Note: Background comparison t-tests were performed using one-half the detection limit for metals and using GiSdT¯ (Neptune and Company 2009). The non-parametric Gehan, quantile and slippage tests make no adjustment for detection limits, since their algorithms account for non-detects through Gehan ranking.
Max = Maximum
Min = Minimum
Q1 = 1st quartile (25th percentile)
Q3 = 3rd quartile (75th percentile)
(1) Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the dataset.
BOLD with Highlight indicates Site concentrations are greater than background.
WRS = Wilcoxon Rank Sum Test with the Gehan Modification
N/A = Not applicable.

TABLE 5-1
BACKGROUND COMPARISON SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 3 of 6)

Chemical	Shallow Qal McCullough Background															
			Censored (Non-Detect) Data							Detected Data[1]						
	Total Count	Detect Freq.	Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max
Aluminum	95	100%	0	--	--	--	--	--	--	95	3740	6700	8400	9000	11000	15300
Antimony	95	45%	52	0.3298	0.33	0.33	0.33	0.33	0.3298	43	0.12	0.15	0.22	0.24	0.29	0.5
Arsenic	95	100%	0	--	--	--	--	--	--	95	2.5	3.4	4	4.2	5	7.2
Barium	95	100%	0	--	--	--	--	--	--	95	73	140	170	180	220	445
Beryllium	95	100%	0	--	--	--	--	--	--	95	0.16	0.46	0.57	0.59	0.73	0.89
Boron	95	36%	61	3.2	3.2	3.2	3.2	3.2	3.2	34	5.2	5.8	6.8	7.1	8.3	11.6
Cadmium	95	0%	95	0.1291	0.13	0.13	0.13	0.13	0.1291	0	--	--	--	--	--	--
Calcium	95	100%	0	--	--	--	--	--	--	95	9440	18000	25000	29000	37000	82800
Chromium	95	100%	0	--	--	--	--	--	--	95	2.6	6.8	9	9.1	11	16.7
Chromium (VI)	95	0%	95	0.25	0.25	0.26	0.26	0.26	0.32	0	--	--	--	--	--	--
Cobalt	95	100%	0	--	--	--	--	--	--	95	3.7	7.3	9	8.8	10	16.3
Copper	95	100%	0	--	--	--	--	--	--	95	10.2	15	18	18	20	25.9
Iron	95	100%	0	--	--	--	--	--	--	95	5410	11000	13000	13000	16000	19700
Lead	95	100%	0	--	--	--	--	--	--	95	3	6	7.2	8.2	9.3	35.1
Lithium	95	100%	0	--	--	--	--	--	--	95	7.5	11	13	14	17	26.5
Magnesium	95	100%	0	--	--	--	--	--	--	95	4690	8500	10000	10000	13000	17500
Manganese	95	100%	0	--	--	--	--	--	--	95	151	320	410	410	500	863
Mercury	95	77%	22	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	73	0.0084	0.012	0.018	0.023	0.028	0.11
Molybdenum	95	100%	0	--	--	--	--	--	--	95	0.3	0.41	0.49	0.55	0.61	2
Nickel	95	100%	0	--	--	--	--	--	--	95	7.9	14	16	16	19	30
Potassium	95	100%	0	--	--	--	--	--	--	95	625	1200	1600	1800	2200	3890
Selenium	95	35%	62	0.1579	0.16	0.16	0.16	0.16	0.1579	33	0.23	0.28	0.31	0.33	0.36	0.6
Silver	95	0%	95	0.2609	0.26	0.26	0.26	0.26	0.2609	0	--	--	--	--	--	--

TABLE 5-1
BACKGROUND COMPARISON SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Shallow Qal McCullough Background															
	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[1]						
			Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max
Sodium	95	100%	0	--	--	--	--	--	--	95	128	210	490	500	690	1320
Strontium	95	100%	0	--	--	--	--	--	--	95	75.5	140	190	230	270	808
Thallium	95	22%	74	0.5428	0.54	0.54	0.54	0.54	0.5428	21	1.1	1.2	1.4	1.4	1.7	1.8
Tin	95	100%	0	--	--	--	--	--	--	95	0.24	0.41	0.51	0.5	0.57	0.8
Titanium	95	100%	0	--	--	--	--	--	--	95	262	460	540	560	660	1010
Tungsten	95	0%	95	0.0175	0.018	0.018	0.018	0.018	0.0175	0	--	--	--	--	--	--
Uranium	94	100%	0	--	--	--	--	--	--	94	0.62	0.84	0.97	1	1.1	2.7
Vanadium	95	100%	0	--	--	--	--	--	--	95	20.2	34	38	39	45	59.1
Zinc	95	100%	0	--	--	--	--	--	--	95	15.4	30	38	38	43	121
Radium-226	95	96%	4	--	--	--	--	--	--	91	0.494	0.95	1.1	1.1	1.3	2.36
Radium-228	81	80%	16	--	--	--	--	--	--	65	0.946	1.6	1.9	1.9	2.2	2.92
Thorium-228	95	100%	0	--	--	--	--	--	--	95	1.15	1.5	1.8	1.7	1.9	2.28
Thorium-230	95	100%	0	--	--	--	--	--	--	95	0.73	1	1.2	1.3	1.5	3.01
Thorium-232	95	100%	0	--	--	--	--	--	--	95	1.22	1.4	1.7	1.7	1.9	2.23
Uranium-233/234	95	47%	50	--	--	--	--	--	--	45	0.63	0.9	1.1	1.2	1.2	2.84
Uranium-235/236	95	44%	53	--	--	--	--	--	--	42	0.0009	0.045	0.06	0.07	0.092	0.21
Uranium-238	95	100%	0	--	--	--	--	--	--	95	0.65	0.94	1.1	1.2	1.4	2.37

Note: Background comparison t-tests were performed using one-half the detection limit for metals and using GiSdT (Neptune and Company 2009). The non-parametric Gehan, quantile and slippage tests make no adjustment for detection limits, since their algorithms account for non-detects through Gehan ranking.
Max = Maximum
Min = Minimum
Q1 = 1st quartile (25th percentile)
Q3 = 3rd quartile (75th percentile)
(1) Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the dataset.
BOLD with Highlight indicates Site concentrations are greater than background.
WRS = Wilcoxon Rank Sum Test with the Gehan Modification
N/A = Not applicable.

TABLE 5-1
BACKGROUND COMPARISON SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	T Test *p*	Quantile Test *p*	Slippage Test *p*	WRS Test *p*	Greater than Background?	Units	Basis
Aluminum	1.8 E-11	1.3 E-4	5.5 E-4	6.2 E-10	YES	mg/kg	Multiple tests
Antimony	4.5 E-8	3.0 E-1	1.5 E-12	0.0 E+0	YES	mg/kg	Multiple tests
Arsenic	3.6 E-5	5.1 E-6	6.4 E-6	2.5 E-11	YES	mg/kg	Multiple tests
Barium	1.9 E-11	2.0 E-9	3.8 E-2	1.3 E-13	YES	mg/kg	Multiple tests
Beryllium	1.2 E-2	2.6 E-4	1.0 E-6	1.6 E-6	YES	mg/kg	Multiple tests
Boron	1.4 E-16	1.0 E+0	2.7 E-7	0.0 E+0	YES	mg/kg	Multiple tests
Cadmium	3.6 E-4	1.9 E-17	NA	5.6 E-1	YES	mg/kg	Multiple tests
Calcium	1.0 E+0	1.0 E+0	1.0 E+0	9.7 E-1	NO	mg/kg	Multiple tests
Chromium	2.7 E-9	8.3 E-14	2.2 E-16	5.3 E-12	YES	mg/kg	Multiple tests
Chromium (VI)	4.5 E-4	1.1 E-19	NA	7.7 E-1	YES	mg/kg	Multiple tests
Cobalt	8.5 E-10	8.3 E-7	1.6 E-5	7.9 E-13	YES	mg/kg	Multiple tests
Copper	6.6 E-5	2.0 E-9	2.3 E-13	7.7 E-11	YES	mg/kg	Multiple tests
Iron	8.8 E-20	2.6 E-14	7.8 E-15	0.0 E+0	YES	mg/kg	Multiple tests
Lead	5.1 E-7	3.4 E-11	3.1 E-3	2.8 E-15	YES	mg/kg	Multiple tests
Lithium	2.8 E-1	6.8 E-1	1.0 E+0	1.1 E-1	NO	mg/kg	Multiple tests
Magnesium	5.1 E-5	3.0 E-3	4.5 E-1	3.3 E-4	YES	mg/kg	Multiple tests
Manganese	1.1 E-5	3.4 E-11	1.5 E-10	1.0 E-10	YES	mg/kg	Multiple tests
Mercury	1.6 E-3	3.8 E-2	1.2 E-3	2.4 E-10	YES	mg/kg	Multiple tests
Molybdenum	3.0 E-5	3.1 E-5	1.5 E-3	2.1 E-7	YES	mg/kg	Multiple tests
Nickel	1.4 E-8	1.0 E-6	6.4 E-6	4.1 E-11	YES	mg/kg	Multiple tests
Potassium	9.2 E-6	8.5 E-3	4.5 E-1	9.3 E-7	YES	mg/kg	Multiple tests
Selenium	1.0 E-14	4.3 E-19	3.1 E-23	0.0 E+0	YES	mg/kg	Multiple tests
Silver	1.2 E-5	1.1 E-9	NA	1.0 E+0	YES	mg/kg	Multiple tests

TABLE 5-1
BACKGROUND COMPARISON SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	T Test *p*	Quantile Test *p*	Slippage Test *p*	WRS Test *p*	Greater than Background?	Units	Basis
Sodium	3.2 E-7	1.5 E-7	6.4 E-6	3.5 E-10	YES	mg/kg	Multiple tests
Strontium	1.8 E-3	2.1 E-1	1.0 E+0	9.9 E-7	YES	mg/kg	Multiple tests
Thallium	3.0 E-1	5.7 E-1	3.1 E-3	9.4 E-1	YES	mg/kg	Slippage test
Tin	3.5 E-2	4.7 E-10	6.3 E-15	7.0 E-7	YES	mg/kg	Multiple tests
Titanium	1.8 E-17	2.0 E-9	3.9 E-7	0.0 E+0	YES	mg/kg	Multiple tests
Tungsten	1.8 E-7	4.3 E-19	NA	0.0 E+0	YES	mg/kg	Multiple tests
Uranium	1.2 E-1	1.4 E-2	1.0 E+0	1.1 E-1	YES	mg/kg	Quantile test
Vanadium	5.2 E-12	6.4 E-13	7.7 E-14	0.0 E+0	YES	mg/kg	Multiple tests
Zinc	6.2 E-7	1.7 E-10	1.7 E-2	2.4 E-15	YES	mg/kg	Multiple tests
Radium-226	9.8 E-1	9.6 E-1	7.3 E-2	1.0 E+0	NO	pCi/g	Multiple tests
Radium-228	9.2 E-1	5.0 E-1	4.3 E-2	9.8 E-1	NO	pCi/g	Multiple tests
Thorium-228	8.4 E-1	2.1 E-1	7.3 E-2	7.8 E-1	NO	pCi/g	Multiple tests
Thorium-230	8.1 E-1	6.1 E-1	1.0 E+0	8.8 E-1	NO	pCi/g	Multiple tests
Thorium-232	1.0 E+0	8.9 E-1	7.3 E-2	1.0 E+0	NO	pCi/g	Multiple tests
Uranium-233/234	9.8 E-1	5.5 E-1	1.0 E+0	9.4 E-1	NO	pCi/g	Multiple tests
Uranium-235/236	3.5 E-12	2.1 E-20	2.9 E-28	9.4 E-11	NO	pCi/g	All other radionuclides not greater than background; all results near noise level of instrument
Uranium-238	1.0 E+0	9.2 E-1	1.0 E+0	1.0 E+0	NO	pCi/g	Multiple tests

Note: Background comparison t-tests were performed using one-half the detection limit for metals and using GiSdT (Neptune and Company 2009). The non-parametric Gehan, quantile and slippage tests make no adjustment for detection limits, since their algorithms account for non-detects through Gehan ranking.
Max = Maximum
Min = Minimum
Q1 = 1st quartile (25th percentile)
Q3 = 3rd quartile (75th percentile)
(1) Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the dataset.
BOLD with Highlight indicates Site concentrations are greater than background.
WRS = Wilcoxon Rank Sum Test with the Gehan Modification
N/A = Not applicable.

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
Aldehydes									
Acetaldehyde	mg/kg	74	81	91.4%	15	--	69.9	6.99	YES
Formaldehyde	mg/kg	48	81	59.3%	5.6	--	67,000	6,700	NO
Asbestos									
Asbestos	Structures	10	31	32.3%	6	--	--	--	--
Dioxins / Furans									
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	54	63	85.7%	3200	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	52	63	82.5%	830	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	53	63	84.1%	1400	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	52	63	82.5%	1700	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	39	63	61.9%	40	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	51	63	81.0%	840	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	44	63	69.8%	170	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	47	63	74.6%	120	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	42	63	66.7%	110	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran	pg/g	49	63	77.8%	830	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	38	63	60.3%	72	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	47	63	74.6%	280	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran	pg/g	48	63	76.2%	1300	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran	pg/g	57	63	90.5%	1000	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	37	63	58.7%	29	--	--	--	--
Octachlorodibenzodioxin	pg/g	53	63	84.1%	8900	--	--	--	--
Octachlorodibenzofuran	pg/g	58	63	92.1%	29000	--	--	--	--
TCDD TEQ	pg/g	63	63	100%	910	--	1,000	--	--
General Chemistry/Ions									
Ammonia (as N)	mg/kg	17	60	28.3%	1.5	--	100,000	10,000	NO
Bromide	mg/kg	10	60	16.7%	2.4	--	100,000	10,000	NO
Chlorate	mg/kg	19	60	31.7%	14.3	--	34,100	3,410	NO
Chloride	mg/kg	60	60	100%	748	--	--	--	--
Cyanide, Total	mg/kg	12	60	20.0%	1.4	--	27.8	2.78	NO
Fluoride	mg/kg	60	60	100%	9.9	--	41,000	4,100	NO
Nitrate	mg/kg	58	60	96.7%	97.8	--	100,000	10,000	NO
Nitrite	mg/kg	4	60	6.7%	0.57	--	100,000	10,000	NO
Orthophosphate as P	mg/kg	5	60	8.3%	8.2	--	--	--	--
Perchlorate	mg/kg	42	59	71.2%	8.92	--	795	79.5	NO
Sulfate	mg/kg	59	60	98.3%	1820	--	--	--	--
Sulfide	mg/kg	0	60	0%	--	--	--	--	--
Total Kjeldahl Nitrogen (TKN)	mg/kg	60	60	100%	438	--	--	--	--

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
Metals									
Aluminum	mg/kg	77	77	100%	20000	YES	100,000	10,000	YES
Antimony	mg/kg	20	75	26.7%	4	YES	454	45.4	NO
Arsenic	mg/kg	61	77	79.2%	15	YES	1.77	0.177	YES
Barium	mg/kg	77	77	100%	720	YES	100,000	10,000	NO
Beryllium	mg/kg	59	77	76.6%	2.2	YES	2,230	223	NO
Boron	mg/kg	4	77	5.2%	40	YES	100,000	10,000	NO
Cadmium	mg/kg	45	77	58.4%	1.7	YES	1,110	111	NO
Calcium	mg/kg	77	77	100%	61500	NO	--	--	--
Chromium	mg/kg	77	77	100%	78	YES	100,000	10,000	NO
Chromium (VI)	mg/kg	43	77	55.8%	13	YES	1,230	123	NO
Cobalt	mg/kg	77	77	100%	36	YES	337	33.7	YES
Copper	mg/kg	76	77	98.7%	186	YES	42,200	4,220	NO
Iron	mg/kg	77	77	100%	37000	YES	100,000	10,000	YES
Lead	mg/kg	77	77	100%	100	YES	--	--	--
Lithium	mg/kg	77	77	100%	25	NO	2,270	227	--
Magnesium	mg/kg	77	77	100%	18000	YES	100,000	10,000	YES
Manganese	mg/kg	77	77	100%	7000	YES	24,900	2,490	YES
Mercury	mg/kg	44	75	58.7%	0.54	YES	341	34.1	NO
Molybdenum	mg/kg	33	77	42.9%	3.7	YES	5,680	568	NO
Nickel	mg/kg	77	77	100%	77	YES	21,800	2,180	NO
Potassium	mg/kg	77	77	100%	4200	YES	--	--	--
Selenium	mg/kg	48	77	62.3%	5.1	YES	5,680	568	NO
Silver	mg/kg	30	77	39.0%	1.6	YES	5,680	568	NO
Sodium	mg/kg	77	77	100%	5200	YES	--	--	--
Strontium	mg/kg	77	77	100%	486	YES	100,000	10,000	NO
Thallium	mg/kg	14	77	18.2%	3.4	YES	74.9	7.49	NO
Tin	mg/kg	41	77	53.2%	33	YES	100,000	10,000	NO
Titanium	mg/kg	77	77	100%	2000	YES	100,000	10,000	NO
Tungsten	mg/kg	38	77	49.4%	29	YES	8,510	851	NO
Uranium	mg/kg	75	77	97.4%	2.1	YES	3,400	340	NO
Vanadium	mg/kg	77	77	100%	170	YES	5,680	568	NO
Zinc	mg/kg	77	77	100%	320	YES	100,000	10,000	NO
Organochlorine Pesticides									
2,4-DDD	mg/kg	2	54	3.7%	0.0066	--	--	--	--
2,4-DDE	mg/kg	16	54	29.6%	0.27	--	--	--	--
4,4-DDD	mg/kg	23	89	25.8%	0.19	--	11.1	1.11	NO
4,4-DDE	mg/kg	55	89	61.8%	5.4	--	7.81	0.781	YES

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
4,4-DDT	mg/kg	54	89	60.7%	5.1	--	7.81	0.781	YES
Aldrin	mg/kg	0	89	0%	--	--	0.113	0.0113	--
alpha-BHC	mg/kg	14	89	15.7%	0.019	--	270	27	NO
alpha-Chlordane	mg/kg	6	89	6.7%	0.011	--	--	--	--
beta-BHC	mg/kg	49	89	55.1%	0.064	--	53.9	5.39	NO
Chlordane	mg/kg	7	89	7.9%	0.23	--	7.19	0.719	NO
delta-BHC	mg/kg	0	89	0%	--	--	270	27	--
Dieldrin	mg/kg	0	89	0%	--	--	0.12	0.012	--
Endosulfan I	mg/kg	0	89	0%	--	--	4,100	410	--
Endosulfan II	mg/kg	0	89	0%	--	--	4,100	410	--
Endosulfan sulfate	mg/kg	0	89	0%	--	--	--	--	--
Endrin	mg/kg	0	89	0%	--	--	205	20.5	--
Endrin aldehyde	mg/kg	1	89	1.1%	0.0027	--	--	--	--
Endrin ketone	mg/kg	2	89	2.2%	0.017	--	--	--	--
gamma-BHC (Lindane)	mg/kg	0	89	0%	--	--	8.98	0.898	--
gamma-Chlordane	mg/kg	23	89	25.8%	0.19	--	--	--	--
Heptachlor	mg/kg	0	72	0%	--	--	0.426	0.0426	--
Heptachlor epoxide	mg/kg	0	89	0%	--	--	0.21	0.021	--
Methoxychlor	mg/kg	0	89	0%	--	--	3,420	342	--
Toxaphene	mg/kg	0	89	0%	--	--	1.74	0.174	--
Polynuclear Aromatic Hydrocarbons									
Acenaphthene	mg/kg	2	73	2.7%	0.00771	--	2,350	235	NO
Acenaphthylene	mg/kg	1	73	1.4%	0.00245	--	147	14.7	NO
Anthracene	mg/kg	4	73	5.5%	0.0147	--	9,060	906	NO
Benzo(a)anthracene	mg/kg	14	73	19.2%	0.0843	--	2.34	0.234	NO
Benzo(a)pyrene	mg/kg	16	73	21.9%	0.0812	--	0.234	0.0234	YES
Benzo(b)fluoranthene	mg/kg	21	73	28.8%	0.137	--	2.34	0.234	NO
Benzo(g,h,i)perylene	mg/kg	15	73	20.5%	0.0438	--	34,100	3,410	NO
Benzo(k)fluoranthene	mg/kg	15	73	20.5%	0.0502	--	23.4	2.34	NO
Chrysene	mg/kg	18	73	24.7%	0.0961	--	234	23.4	NO
Dibenzo(a,h)anthracene	mg/kg	7	73	9.6%	0.0175	--	0.234	0.0234	NO
Indeno(1,2,3-cd)pyrene	mg/kg	14	73	19.2%	0.0546	--	2.34	0.234	NO
Phenanthrene	mg/kg	15	73	20.5%	0.0722	--	24.5	2.45	NO
Pyrene	mg/kg	20	73	27.4%	0.112	--	19,300	1,930	NO

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
Polychlorinated Biphenyls									
PCB 105	pg/g	58	63	92.1%	270000	--	--	--	--
PCB 114	pg/g	53	63	84.1%	23000	--	--	--	--
PCB 118	pg/g	60	63	95.2%	550000	--	--	--	--
PCB 123	pg/g	32	63	50.8%	8600	--	--	--	--
PCB 126	pg/g	19	63	30.2%	190	--	--	--	--
PCB 156	pg/g	18	24	75.0%	1200	--	--	--	--
PCB 156/157	pg/g	39	39	100%	110000	--	--	--	--
PCB 157	pg/g	16	24	66.7%	700	--	--	--	--
PCB 167	pg/g	55	63	87.3%	30000	--	--	--	--
PCB 169	pg/g	8	63	12.7%	29	--	--	--	--
PCB 189	pg/g	52	63	82.5%	4200	--	--	--	--
PCB 209	pg/g	59	63	93.7%	130000	--	--	--	--
PCB 77	pg/g	42	63	66.7%	4100		--		
PCB 81	pg/g	37	63	58.7%	3700	--	--	--	--
Radionuclides									
Radium-226	pCi/g	63	69	91.3%	2.62	NO	0.023	0.0023	--
Radium-228	pCi/g	49	69	71.0%	3.97	NO	0.041	0.0041	--
Thorium-228	pCi/g	66	69	95.7%	2.88	NO	0.025	0.0025	--
Thorium-230	pCi/g	68	69	98.6%	2.68	NO	8.3	0.83	--
Thorium-232	pCi/g	68	69	98.6%	2.63	NO	7.4	0.74	--
Uranium-233/234	pCi/g	68	69	98.6%	2.5	NO	11	1.1	--
Uranium-235/236	pCi/g	4	69	5.8%	0.58	NO	0.35	0.035	--
Uranium-238	pCi/g	69	69	100%	2.01	NO	1.4	0.14	--
Semi-Volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	mg/kg	0	74	0%	--	--	205	20.5	--
1,2-Diphenylhydrazine	mg/kg	0	74	0%	--	--	2.39	0.239	--
1,4-Dioxane	mg/kg	0	74	0%	--	--	19.2	1.92	--
2,2'-Dichlorobenzil	mg/kg	3	74	4.1%	0.291	--	341	34.1	NO
2,4,5-Trichlorophenol	mg/kg	0	74	0%	--	--	68,400	6,840	--
2,4,6-Trichlorophenol	mg/kg	0	74	0%	--	--	174	17.4	--
2,4-Dichlorophenol	mg/kg	0	74	0%	--	--	2,050	205	--
2,4-Dimethylphenol	mg/kg	0	74	0%	--	--	13,700	1,370	--
2,4-Dinitrophenol	mg/kg	0	74	0%	--	--	1,370	137	--
2,4-Dinitrotoluene	mg/kg	0	74	0%	--	--	6.18	0.618	--
2,6-Dinitrotoluene	mg/kg	0	74	0%	--	--	684	68.4	--
2-Chloronaphthalene	mg/kg	0	74	0%	--	--	351	35.1	--
2-Chlorophenol	mg/kg	0	74	0%	--	--	1,670	167	--

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
2-Methylnaphthalene	mg/kg	0	74	0%	--	--	--	--	--
2-Nitroaniline	mg/kg	0	74	0%	--	--	2,050	205	--
2-Nitrophenol	mg/kg	0	74	0%	--	--	--	--	--
3,3-Dichlorobenzidine	mg/kg	0	74	0%	--	--	4.26	0.426	--
3-Nitroaniline	mg/kg	0	74	0%	--	--	--	--	--
4-Bromophenyl phenyl ether	mg/kg	0	74	0%	--	--	--	--	--
4-Chloro-3-methylphenol	mg/kg	0	74	0%	--	--	--	--	--
4-Chlorophenyl phenyl ether	mg/kg	0	74	0%	--	--	--	--	--
4-Chlorothioanisole	mg/kg	0	74	0%	--	--	--	--	--
4-Nitroaniline	mg/kg	0	74	0%	--	--	--	--	--
4-Nitrophenol	mg/kg	0	74	0%	--	--	5,470	547	--
Acetophenone	mg/kg	0	74	0%	--	--	1,740	174	--
Aniline	mg/kg	0	74	0%	--	--	336	33.6	--
Benzenethiol	mg/kg	0	74	0%	--	--	--	--	--
Benzoic acid	mg/kg	0	74	0%	--	--	100,000	10,000	--
Benzyl alcohol	mg/kg	0	73	0%	--	--	100,000	10,000	--
bis(2-Chloroethoxy)methane	mg/kg	0	74	0%	--	--	--	--	--
bis(2-Chloroethyl) ether	mg/kg	0	74	0%	--	--	1.3	0.13	--
bis(2-Chloroisopropyl) ether	mg/kg	0	74	0%	--	--	18	1.8	--
bis(2-Ethylhexyl) phthalate	mg/kg	0	74	0%	--	--	137	13.7	--
bis(p-Chlorophenyl) sulfone	mg/kg	0	74	0%	--	--	--	--	--
bis(p-Chlorophenyl)disulfide	mg/kg	0	74	0%	--	--	--	--	--
Butylbenzyl phthalate	mg/kg	0	74	0%	--	--	240	24	--
Carbazole	mg/kg	0	74	0%	--	--	95.8	9.58	--
Dibenzofuran	mg/kg	0	74	0%	--	--	2,270	227	--
Dichloromethyl ether	mg/kg	0	74	0%	--	--	0.00127	0.000127	--
Diethyl phthalate	mg/kg	0	74	0%	--	--	100,000	10,000	--
Dimethyl phthalate	mg/kg	0	74	0%	--		100,000	10,000	--
Di-n-butyl phthalate	mg/kg	0	74	0%	--	--	68,400	6,840	--
Di-n-octyl phthalate	mg/kg	0	74	0%	--	--	--	--	--
Diphenyl disulfide	mg/kg	0	74	0%	--	--	--	--	--
Diphenyl sulfide	mg/kg	0	74	0%	--	--	--	--	--
Diphenyl sulfone	mg/kg	0	74	0%	--	--	2,050	205	--
Diphenylamine	mg/kg	0	74	0%	--	--	17,100	1,710	--
Fluoranthene	mg/kg	9	74	12.2%	0.15	--	24,400	2,440	NO
Fluorene	mg/kg	0	74	0%	--	--	3,440	344	--
Hexachlorobenzene	mg/kg	6	74	8.1%	0.429	--	1.2	0.12	YES
Hexachlorobutadiene	mg/kg	0	74	0%	--	--	24.6	2.46	--

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
Hexachlorocyclopentadiene	mg/kg	0	74	0%	--	--	4,090	409	--
Hexachloroethane	mg/kg	0	74	0%	--	--	137	13.7	--
Hydroxymethyl phthalimide	mg/kg	0	73	0%	--	--	--	--	--
Isophorone	mg/kg	0	74	0%	--		2,020	202	--
m,p-Cresols	mg/kg	0	74	0%	--	--	34,200	3,420	--
Naphthalene	mg/kg	0	74	0%	--	--	15.6	1.56	--
Nitrobenzene	mg/kg	0	74	0%	--	--	13.6	1.36	--
N-nitrosodi-n-propylamine	mg/kg	0	74	0%	--	--	0.274	0.0274	--
o-Cresol	mg/kg	0	74	0%	--	--	34,200	3,420	--
Octachlorostyrene	mg/kg	0	74	0%	--	--	--	--	--
p-Chloroaniline	mg/kg	0	74	0%	--	--	9.58	0.958	--
p-Chlorobenzenethiol	mg/kg	0	74	0%	--	--	--	--	--
Pentachlorobenzene	mg/kg	0	74	0%	--	--	547	54.7	--
Pentachlorophenol	mg/kg	0	74	0%	--	--	3	0.3	--
Phenol	mg/kg	0	74	0%	--	--	100,000	10,000	--
Phthalic acid	mg/kg	0	74	0%	--	--	100,000	10,000	--
Pyridine	mg/kg	0	74	0%	--	--	667	66.7	--
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	mg/kg	0	60	0%	--	--	19.9	1.99	--
1,1,1-Trichloroethane	mg/kg	0	60	0%	--	--	1,390	139	--
1,1,2,2-Tetrachloroethane	mg/kg	0	60	0%	--	--	2.54	0.254	--
1,1,2-Trichloroethane	mg/kg	0	60	0%	--	--	5.51	0.551	--
1,1-Dichloroethane	mg/kg	0	60	0%	--	--	21.4	2.14	--
1,1-Dichloroethene	mg/kg	0	60	0%	--	--	1,270	127	--
1,1-Dichloropropene	mg/kg	0	60	0%	--	--	--	--	--
1,2,3-Trichlorobenzene	mg/kg	3	60	5.0%	0.0034	--	--	--	--
1,2,3-Trichloropropane	mg/kg	0	60	0%	--	--	0.106	0.0106	--
1,2,4-Trichlorobenzene	mg/kg	3	60	5.0%	0.015	--	110	11	NO
1,2,4-Trimethylbenzene	mg/kg	2	60	3.3%	0.00049	--	604	60.4	NO
1,2-Dichlorobenzene	mg/kg	6	60	10.0%	0.62	--	373	37.3	NO
1,2-Dichloroethane	mg/kg	0	60	0%	--	--	2.24	0.224	--
1,2-Dichloroethene	mg/kg	0	60	0%	--	--	--	--	--
1,2-Dichloropropane	mg/kg	0	60	0%	--	--	4.29	0.429	--
1,3,5-Trichlorobenzene	mg/kg	0	60	0%	--	--	--	--	--
1,3,5-Trimethylbenzene	mg/kg	0	60	0%	--	--	246	24.6	--
1,3-Dichlorobenzene	mg/kg	1	60	1.7%	0.012	--	373	37.3	NO
1,3-Dichloropropane	mg/kg	0	60	0%	--	--	64.6	6.46	--
1,4-Dichlorobenzene	mg/kg	3	60	5.0%	0.56	--	13.6	1.36	NO

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
2,2,3-Trimethylbutane	mg/kg	0	60	0%	--	--	--	--	--
2,2-Dichloropropane	mg/kg	0	60	0%	--	--	--	--	--
2,2-Dimethylpentane	mg/kg	0	60	0%	--	--	--	--	--
2,3-Dimethylpentane	mg/kg	0	60	0%	--	--	--	--	--
2,4-Dimethylpentane	mg/kg	0	60	0%	--	--	--	--	--
2-Chlorotoluene	mg/kg	0	60	0%	--	--	511	51.1	--
2-Hexanone	mg/kg	0	60	0%	--	--	1,930	193	--
2-Methylhexane	mg/kg	0	60	0%	--	--	--	--	--
2-Nitropropane	mg/kg	0	60	0%	--	--	0.0591	0.00591	--
3,3-Dimethylpentane	mg/kg	0	60	0%	--	--	--	--	--
3-Ethylpentane	mg/kg	0	60	0%	--	--	--	--	--
3-Methylhexane	mg/kg	0	60	0%	--	--	--	--	--
4-Chlorotoluene	mg/kg	0	60	0%	--	--	--	--	--
4-Methyl-2-pentanone (MIBK)	mg/kg	0	60	0%	--	--	17,200	1,720	--
Acetone	mg/kg	2	60	3.3%	0.0083	--	100,000	10,000	NO
Acetonitrile	mg/kg	0	60	0%	--	--	6,150	615	--
Benzene	mg/kg	2	60	3.3%	0.00096	--	4.21	0.421	NO
Bromobenzene	mg/kg	0	60	0%	--	--	695	69.5	--
Bromodichloromethane	mg/kg	0	60	0%	--	--	3.36	0.336	--
Bromoform	mg/kg	0	60	0%	--	--	242	24.2	--
Bromomethane	mg/kg	0	60	0%	--	--	39.1	3.91	--
Carbon disulfide	mg/kg	0	60	0%	--	--	721	72.1	--
Carbon tetrachloride	mg/kg	0	60	0%	--	--	3.84	0.384	--
Chlorobenzene	mg/kg	3	60	5.0%	0.04	--	695	69.5	NO
Chlorobromomethane	mg/kg	0	60	0%	--	--	--	--	--
Chloroethane	mg/kg	0	60	0%	--	--	1,100	110	--
Chloroform	mg/kg	2	60	3.3%	0.0011	--	1.55	0.155	NO
Chloromethane	mg/kg	0	60	0%	--	--	8.05	0.805	--
cis-1,2-Dichloroethene	mg/kg	0	60	0%	--	--	737	73.7	--
cis-1,3-Dichloropropene	mg/kg	0	60	0%	--	--	--	--	--
Cymene (Isopropyltoluene)	mg/kg	0	60	0%	--	--	647	64.7	--
Dibromochloromethane	mg/kg	0	60	0%	--	--	6.03	0.603	--
Dibromochloropropane	mg/kg	0	60	0%	--	--	0.0529	0.00529	--
Dibromomethane	mg/kg	0	60	0%	--	--	191	19.1	--
Dichloromethane (Methylene chloride)	mg/kg	36	60	60.0%	0.053	--	58.5	5.85	NO
Dimethyldisulfide	mg/kg	0	60	0%	--	--	--	--	--
Ethanol	mg/kg	0	60	0%	--	--	100,000	10,000	--
Ethylbenzene	mg/kg	0	60	0%	--	--	19.6	1.96	--

TABLE 5-5
RESULTS OF COMPARISON TO WORKER SOIL BCLs
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Max. Detect	Greater than Background?	Worker Soil BCL	1/10th Worker Soil BCL	Max. Detect Greater than 1/10th Worker BCL
Freon-11 (Trichlorofluoromethane)	mg/kg	0	60	0%	--	--	1,980	198	--
Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)	mg/kg	0	60	0%	--	--	5,550	555	--
Freon-12 (Dichlorodifluoromethane)	mg/kg	0	60	0%	--	--	340	34	--
Heptane	mg/kg	0	60	0%	--	--	220	22	--
Isopropylbenzene	mg/kg	0	60	0%	--	--	647	64.7	--
m,p-Xylene	mg/kg	0	60	0%	--	--	214	21.4	--
Methyl ethyl ketone (2-Butanone)	mg/kg	0	60	0%	--	--	34,100	3,410	--
Methyl iodide	mg/kg	0	60	0%	--	--	1,510	151	--
MTBE (Methyl tert-butyl ether)	mg/kg	0	60	0%	--	--	208	20.8	--
n-Butylbenzene	mg/kg	0	60	0%	--	--	237	23.7	--
Nonanal	mg/kg	1	60	1.7%	0.0067	--	--	--	--
n-Propylbenzene	mg/kg	0	60	0%	--	--	237	23.7	--
o-Xylene	mg/kg	0	60	0%	--	--	282	28.2	--
sec-Butylbenzene	mg/kg	0	60	0%	--	--	223	22.3	--
Styrene	mg/kg	0	60	0%	--	--	1,730	173	--
tert-Butylbenzene	mg/kg	0	60	0%	--	--	393	39.3	--
Tetrachloroethene	mg/kg	0	60	0%	--	--	3.28	0.328	--
Toluene	mg/kg	0	60	0%	--	--	521	52.1	--
trans-1,2-Dichloroethene	mg/kg	0	60	0%	--	--	547	54.7	--
trans-1,3-Dichloropropene	mg/kg	0	60	0%	--	--	--	--	--
Trichloroethene	mg/kg	0	60	0%	--	--	5.49	0.549	--
Vinyl acetate	mg/kg	0	60	0%	--	--	2,710	271	--
Vinyl chloride	mg/kg	0	60	0%	--	--	1.86	0.186	--
Xylenes (total)	mg/kg	0	60	0%	--	--	214	21.4	--

mg/kg - milligrams per kilogram

pCi/g - picoCuries per gram

ppt - parts per trillion

-- - Not available or not applicable

Chemical with at least one detection was compared to it's respective BCL.

Dioxin/furans and PCB congeners are evaluated as TCDD TEQs. These constituents, as well as lead, are evaluated using a separate process (see text).

Highlight indicates metals exceeding background and other inorganic/organic chemicals exceeding 1/10th worker BCLs.

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Aldehydes														
Acetaldehyde	mg/kg	74	81	91.4%	0.32	0.344	0.44	15	2.7	2.90	--	No	Yes	(5)(14)
Formaldehyde	mg/kg	48	81	59.3%	0.211	0.73	0.231	5.6	0.77	0.82	--	No	No	(5)(13)
Asbestos														
Asbestos	Structures	10	31	32.3%	--	--	1	6	--	--	--	Yes	Yes	(1)
Dioxins / Furans														
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	54	63	85.7%	0.16	2.2	0.49	3200	420	680	--	Yes	No	(1)(3)
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	52	63	82.5%	0.19	2.2	0.41	830	98	170	--	Yes	No	(1)(3)
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	53	63	84.1%	0.12	1.7	0.24	1400	170	280	--	Yes	No	(1)(3)
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	52	63	82.5%	0.053	1.6	0.6	1700	250	410	--	Yes	No	(1)(3)
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	39	63	61.9%	0.025	1.3	0.24	40	6.1	9.4	--	Yes	No	(1)(3)
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	51	63	81.0%	0.065	2.8	0.24	840	110	180	--	Yes	No	(1)(3)
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	44	63	69.8%	0.049	2.2	0.19	170	14	26	--	Yes	No	(1)(3)
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	47	63	74.6%	0.051	1.3	0.16	120	15	25	--	Yes	No	(1)(3)
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	42	63	66.7%	0.048	1.8	0.1	110	11	19	--	Yes	No	(1)(3)
1,2,3,7,8-Pentachlorodibenzofuran	pg/g	49	63	77.8%	0.079	2.5	2	830	83.0	140	--	Yes	No	(1)(3)
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	38	63	60.3%	0.039	2.7	0.15	72	6.7	12	--	Yes	No	(1)(3)
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	47	63	74.6%	0.05	2.6	0.14	280	30	51	--	Yes	No	(1)(3)
2,3,4,7,8-Pentachlorodibenzofuran	pg/g	48	63	76.2%	0.04	1.9	0.89	1300	100	210	--	Yes	No	(1)(3)
2,3,7,8-Tetrachlorodibenzofuran	pg/g	57	63	90.5%	0.096	0.47	0.49	1000	77	150	--	Yes	No	(1)(3)
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	37	63	58.7%	0.0085	2.9	0.15	29	2.3	4.4	--	Yes	No	(1)(3)
Octachlorodibenzodioxin	pg/g	53	63	84.1%	0.54	5.2	1.8	8900	610	1600	--	Yes	No	(1)(3)
Octachlorodibenzofuran	pg/g	58	63	92.1%	0.57	5.6	1.8	29000	2300	4600	--	Yes	No	(1)(3)
TCDD TEQ	pg/g	63	63	100%	--	--	0.068	910	130	210	--	Yes	No	(1)(3)
General Chemistry/Ions														
Ammonia (as N)	mg/kg	17	60	28.3%	0.088	0.58	0.11	1.5	0.52	0.32	--	No	No	(5)(13)
Bromide	mg/kg	10	60	16.7%	0.26	0.32	0.31	2.4	0.38	0.36	--	No	No	(9)
Chlorate	mg/kg	19	60	31.7%	0.37	0.46	0.42	14.3	1.2	2.3	--	No	No	(5)(13)
Chloride	mg/kg	60	60	100%	--	--	0.6	748	120	170	--	No	No	(9)
Cyanide, Total	mg/kg	12	60	20.0%	0.12	0.13	0.12	1.4	0.17	0.19	--	No	No	(5)(13)
Fluoride	mg/kg	60	60	100%	--	--	0.45	9.9	1.7	1.6	--	No	No	(5)(13)
Nitrate	mg/kg	58	60	96.7%	0.043	0.045	0.065	97.8	9.3	17	--	No	No	(5)(13)
Nitrite	mg/kg	4	60	6.7%	0.034	0.039	0.096	0.57	0.049	0.072	--	No	No	(5)(13)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Orthophosphate as P	mg/kg	5	60	8.3%	0.56	5.9	4.7	8.2	3.8	2.4	--	No	No	(9)
Perchlorate	mg/kg	42	59	71.2%	0.0106	0.0111	0.0303	8.92	1.4	2	--	No	No	(5)(13)
Sulfate	mg/kg	59	60	98.3%	5.1	5.1	3.3	1820	220	400	--	No	No	(9)
Sulfide	mg/kg	0	60	0%	0.85	1.1	--	--	0.91	0.043	--	No	No	(2)(9)
Total Kjeldahl Nitrogen (TKN)	mg/kg	60	60	100%	--	--	26	438	100	90	--	No	No	(9)
Metals														
Aluminum	mg/kg	77	77	100%	--	--	7800	20000	12000	2800	YES	No	Yes	(8)(14)
Antimony	mg/kg	20	75	26.7%	0.3	0.94	0.36	4	0.97	0.65	YES	No	No	(8)(13)
Arsenic	mg/kg	61	77	79.2%	5.2	5.8	2.9	15	6.2	2.5	YES	Yes	Yes	(1)(8)(14)
Barium	mg/kg	77	77	100%	--	--	145	720	270	95	YES	No	No	(8)(13)
Beryllium	mg/kg	59	77	76.6%	0.51	0.58	0.54	2.2	0.75	0.25	YES	No	No	(8)(13)
Boron	mg/kg	4	77	5.2%	15	58.4	17	40	19	7.9	YES	No	No	(8)(13)
Cadmium	mg/kg	45	77	58.4%	0.055	0.29	0.06	1.7	0.17	0.2	YES	No	No	(8)(13)
Calcium	mg/kg	77	77	100%	--	--	7700	61500	24000	8400	NO	No	No	(6)(12)
Chromium	mg/kg	77	77	100%	--	--	5.4	78	22	17	YES	No	No	(8)(13)
Chromium (VI)	mg/kg	43	77	55.8%	0.1	0.45	0.12	13	1.1	2.3	YES	Yes	No	(8)(13)
Cobalt	mg/kg	77	77	100%	--	--	6.8	36	13	4.8	YES	No	Yes	(8)(14)
Copper	mg/kg	76	77	98.7%	18.6	18.6	13.7	186	30	27	YES	No	No	(8)(13)
Iron	mg/kg	77	77	100%	--	--	14500	37000	21000	5700	YES	No	No	(8)(12)
Lead	mg/kg	77	77	100%	--	--	6.4	100	19	17	YES	Yes	No	(11)
Lithium	mg/kg	77	77	100%	--	--	7.4	25	14	3.8	NO	No	No	(6)
Magnesium	mg/kg	77	77	100%	--	--	8500	18000	12000	2600	YES	No	No	(8)(12)
Manganese	mg/kg	77	77	100%	--	--	196	7000	1200	1500	YES	No	Yes	(8)(14)
Mercury	mg/kg	44	75	58.7%	0.0065	0.0389	0.0094	0.54	0.063	0.11	YES	No	No	(8)(13)
Molybdenum	mg/kg	33	77	42.9%	0.385	2.9	0.63	3.7	1.2	0.94	YES	No	No	(8)(13)
Nickel	mg/kg	77	77	100%	--	--	13.3	77	25	12	YES	No	No	(8)(13)
Potassium	mg/kg	77	77	100%	--	--	1270	4200	2200	640	YES	No	No	(8)(12)
Selenium	mg/kg	48	77	62.3%	0.225	2.7	0.86	5.1	1.9	1.5	YES	No	No	(8)(13)
Silver	mg/kg	30	77	39.0%	0.04	1.1	0.05	1.6	0.42	0.44	YES	No	No	(8)(13)
Sodium	mg/kg	77	77	100%	--	--	303	5200	1100	900	YES	No	No	(8)(12)
Strontium	mg/kg	77	77	100%	--	--	160	486	280	69	YES	No	No	(8)(13)
Thallium	mg/kg	14	77	18.2%	0.29	1.2	0.83	3.4	0.79	0.72	YES	No	No	(8)(13)
Tin	mg/kg	41	77	53.2%	0.38	1.2	0.44	33	1.4	3.8	YES	No	No	(8)(13)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Titanium	mg/kg	77	77	100%	--	--	487	2000	900	270	YES	No	No	(8)(13)
Tungsten	mg/kg	38	77	49.4%	0.4105	2.8	1.3	29	3.8	5.5	YES	No	No	(8)(13)
Uranium	mg/kg	75	77	97.4%	0.52	0.52	0.53	2.1	1.1	0.37	YES	No	No	(8)(13)
Vanadium	mg/kg	77	77	100%	--	--	35	170	67	31	YES	No	No	(8)(13)
Zinc	mg/kg	77	77	100%	--	--	33.8	320	64	43	YES	No	No	(8)(13)
Organochlorine Pesticides														
2,4-DDD	mg/kg	2	54	3.7%	0.00023	0.00047	0.002	0.0066	0.0004	0.00089	--	Yes	No	(1)(4)(13)
2,4-DDE	mg/kg	16	54	29.6%	0.00032	0.00037	0.0018	0.27	0.0091	0.038	--	Yes	No	(1)(5)(13)
4,4-DDD	mg/kg	23	89	25.8%	0.000084	0.00025	0.00055	0.19	0.0077	0.027	--	Yes	No	(1)(5)(13)
4,4-DDE	mg/kg	55	89	61.8%	0.0004	0.00046	0.0012	5.4	0.17	0.73	--	Yes	Yes	(1)(5)(14)
4,4-DDT	mg/kg	54	89	60.7%	0.00065	0.00073	0.0012	5.1	0.19	0.68	--	Yes	Yes	(1)(5)(14)
Aldrin	mg/kg	0	89	0%	0.00031	0.00065	--	--	0.00033	0.000036	--	Yes	No	(2)
alpha-BHC	mg/kg	14	89	15.7%	0.00014	0.00028	0.0004	0.019	0.00072	0.00220	--	No	No	(5)(13)
alpha-Chlordane	mg/kg	6	89	6.7%	0.00058	0.00072	0.00063	0.011	0.00091	0.0014	--	Yes	No	(5)(13)
beta-BHC	mg/kg	49	89	55.1%	0.00031	0.00035	0.00039	0.064	0.004	0.0086	--	No	No	(5)(13)
Chlordane	mg/kg	7	89	7.9%	0.0038	0.0047	0.016	0.23	0.0099	0.03000	--	Yes	No	(5)(13)
delta-BHC	mg/kg	0	89	0%	0.00025	0.00051	--	--	0.00026	0.000028	--	No	No	(2)
Dieldrin	mg/kg	0	89	0%	0.00022	0.00045	--	--	0.00023	0.000025	--	Yes	No	(2)
Endosulfan I	mg/kg	0	89	0%	0.00058	0.0012	--	--	0.00062	0.000066	--	No	No	(2)
Endosulfan II	mg/kg	0	89	0%	0.00024	0.0005	--	--	0.00025	0.000028	--	No	No	(2)
Endosulfan sulfate	mg/kg	0	89	0%	0.00026	0.00053	--	--	0.00031	0.00005	--	No	No	(2)
Endrin	mg/kg	0	89	0%	0.00014	0.00029	--	--	0.00016	0.000018	--	No	No	(2)
Endrin aldehyde	mg/kg	1	89	1.1%	0.0004	0.00082	0.0027	0.0027	0.00045	0.00025	--	No	No	(4)(13)
Endrin ketone	mg/kg	2	89	2.2%	0.00031	0.00063	0.0022	0.017	0.00058	0.0018	--	No	No	(4)(13)
gamma-BHC (Lindane)	mg/kg	0	89	0%	0.00017	0.00036	--	--	0.00018	0.00002	--	No	No	(2)
gamma-Chlordane	mg/kg	23	89	25.8%	0.00016	0.00018	0.00039	0.19	0.004	0.021	--	Yes	No	(5)(13)
Heptachlor	mg/kg	0	72	0%	0.000098	0.00023	--	--	0.00016	0.000057	--	No	No	(2)
Heptachlor epoxide	mg/kg	0	89	0%	0.00044	0.00091	--	--	0.00047	0.000051	--	No	No	(2)
Methoxychlor	mg/kg	0	89	0%	0.00073	0.0015	--	--	0.00078	0.000082	--	No	No	(2)
Toxaphene	mg/kg	0	89	0%	0.015	0.032	--	--	0.016	0.0018	--	Yes	No	(2)
Polynuclear Aromatic Hydrocarbons														
Acenaphthene	mg/kg	2	73	2.7%	0.00167	0.00196	0.0076	0.00771	0.0019	0.00097	--	No	No	(4)(13)
Acenaphthylene	mg/kg	1	73	1.4%	0.00167	0.00196	0.00245	0.00245	0.0018	0.000091	--	No	No	(4)(13)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Anthracene	mg/kg	4	73	5.5%	0.00167	0.00196	0.00204	0.0147	0.0021	0.0016	--	No	No	(5)(13)
Benzo(a)anthracene	mg/kg	14	73	19.2%	0.00169	0.00196	0.0028	0.0843	0.0051	0.015	--	No	Yes	(5)(13)(10)
Benzo(a)pyrene	mg/kg	16	73	21.9%	0.00169	0.00196	0.0017	0.0812	0.0045	0.012	--	Yes	Yes	(5)(14)
Benzo(b)fluoranthene	mg/kg	21	73	28.8%	0.00169	0.00196	0.00217	0.137	0.0078	0.021	--	No	Yes	(5)(13)(10)
Benzo(g,h,i)perylene	mg/kg	15	73	20.5%	0.00169	0.00196	0.0021	0.0438	0.004	0.007	--	No	No	(5)(13)
Benzo(k)fluoranthene	mg/kg	15	73	20.5%	0.00169	0.00196	0.00211	0.0502	0.0032	0.0077	--	No	Yes	(5)(13)(10)
Chrysene	mg/kg	18	73	24.7%	0.00169	0.00196	0.00203	0.0961	0.0055	0.015	--	No	Yes	(5)(13)(10)
Dibenzo(a,h)anthracene	mg/kg	7	73	9.6%	0.00167	0.00196	0.00204	0.0175	0.0015	0.0025	--	No	Yes	(5)(13)(10)
Indeno(1,2,3-cd)pyrene	mg/kg	14	73	19.2%	0.00169	0.00196	0.00234	0.0546	0.0031	0.0079	--	No	Yes	(5)(13)(10)
Phenanthrene	mg/kg	15	73	20.5%	0.00169	0.00196	0.00183	0.0722	0.0051	0.011	--	No	No	(5)(13)
Pyrene	mg/kg	20	73	27.4%	0.00169	0.00196	0.00211	0.112	0.0079	0.02	--	No	No	(5)(13)
Polychlorinated Biphenyls														
PCB 105	pg/g	58	63	92.1%	0.043	0.15	3.4	270000	14000	41000	--	Yes	No	(1)(3)
PCB 114	pg/g	53	63	84.1%	0.036	2.2	1.5	23000	1500	4100	--	Yes	No	(1)(3)
PCB 118	pg/g	60	63	95.2%	0.039	0.16	2.5	550000	30000	83000	--	Yes	No	(1)(3)
PCB 123	pg/g	32	63	50.8%	0.041	2000	0.62	8600	490	1400	--	Yes	No	(1)(3)
PCB 126	pg/g	19	63	30.2%	0.054	8200	2.2	190	480	1300	--	Yes	No	(1)(3)
PCB 156	pg/g	18	24	75.0%	0.038	0.19	4.4	1200	150	280	--	Yes	No	(1)(3)
PCB 156/157	pg/g	39	39	100%	--	--	6.4	110000	9300	20000	--	Yes	No	(1)(3)
PCB 157	pg/g	16	24	66.7%	0.036	0.18	2.5	700	66	150	--	Yes	No	(1)(3)
PCB 167	pg/g	55	63	87.3%	0.041	0.22	2	30000	1700	4600	--	Yes	No	(1)(3)
PCB 169	pg/g	8	63	12.7%	0.052	1100	0.21	29	57	160	--	Yes	No	(1)(3)
PCB 189	pg/g	52	63	82.5%	0.069	0.22	0.42	4200	270	670	--	Yes	No	(1)(3)
PCB 209	pg/g	59	63	93.7%	0.03	0.1	16	130000	12000	22000	--	Yes	No	(1)(3)
PCB 77	pg/g	42	63	66.7%	0.046	70	0.75	4100	370	850	--	Yes	No	(1)(3)
PCB 81	pg/g	37	63	58.7%	0.041	1500	0.31	3700	220	550	--	Yes	No	(1)(3)
Radionuclides														
Radium-226	pCi/g	63	69	91.3%	--	--	0.458	2.62	1	0.44	NO	Yes	No	(6)
Radium-228	pCi/g	49	69	71.0%	--	--	-0.0719	3.97	1.8	0.72	NO	Yes	No	(6)
Thorium-228	pCi/g	66	69	95.7%	--	--	0.347	2.88	1.7	0.47	NO	Yes	No	(6)
Thorium-230	pCi/g	68	69	98.6%	--	--	0.672	2.68	1.2	0.42	NO	Yes	No	(6)
Thorium-232	pCi/g	68	69	98.6%	--	--	0.4	2.63	1.5	0.43	NO	Yes	No	(6)
Uranium-233/234	pCi/g	68	69	98.6%	--	--	0.496	2.5	1.1	0.39	NO	Yes	No	(6)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Uranium-235/236	pCi/g	4	69	5.8%	--	--	-0.0417	0.58	0.23	0.16	NO	Yes	No	(6)
Uranium-238	pCi/g	69	69	100%	--	--	0.395	2.01	1.0	0.34	NO	Yes	No	(6)
Semi-Volatile Organic Compounds														
1,2,4,5-Tetrachlorobenzene	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
1,2-Diphenylhydrazine	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
1,4-Dioxane	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
2,2'-Dichlorobenzil	mg/kg	3	74	4.1%	0.102	0.129	0.111	0.291	0.12	0.023	--	No	No	(4)(13)
2,4,5-Trichlorophenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
2,4,6-Trichlorophenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
2,4-Dichlorophenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
2,4-Dimethylphenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
2,4-Dinitrophenol	mg/kg	0	74	0%	0.102	0.149	--	--	0.13	0.015	--	No	No	(2)
2,4-Dinitrotoluene	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
2,6-Dinitrotoluene	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
2-Chloronaphthalene	mg/kg	0	74	0%	0.0102	0.0137	--	--	0.012	0.001	--	No	No	(2)
2-Chlorophenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
2-Methylnaphthalene	mg/kg	0	74	0%	0.00681	0.0109	--	--	0.0084	0.0016	--	No	No	(2)
2-Nitroaniline	mg/kg	0	74	0%	0.0681	0.12	--	--	0.088	0.022	--	No	No	(2)
2-Nitrophenol	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
3,3-Dichlorobenzidine	mg/kg	0	74	0%	0.102	0.118	--	--	0.11	0.0025	--	No	No	(2)
3-Nitroaniline	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
4-Bromophenyl phenyl ether	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
4-Chloro-3-methylphenol	mg/kg	0	74	0%	0.034	0.145	--	--	0.074	0.051	--	No	No	(2)
4-Chlorophenyl phenyl ether	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
4-Chlorothioanisole	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
4-Nitroaniline	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
4-Nitrophenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Acetophenone	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
Aniline	mg/kg	0	74	0%	0.102	0.137	--	--	0.12	0.01	--	No	No	(2)
Benzenethiol	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Benzoic acid	mg/kg	0	74	0%	0.169	0.196	--	--	0.18	0.0041	--	No	No	(2)
Benzyl alcohol	mg/kg	0	73	0%	0.102	0.118	--	--	0.11	0.0025	--	No	No	(2)
bis(2-Chloroethoxy)methane	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	Yes	No	(2)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
bis(2-Chloroethyl) ether	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
bis(2-Chloroisopropyl) ether	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
bis(2-Ethylhexyl) phthalate	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
bis(p-Chlorophenyl) sulfone	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
bis(p-Chlorophenyl)disulfide	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Butylbenzyl phthalate	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Carbazole	mg/kg	0	74	0%	0.0102	0.0118	--	--	0.011	0.00025	--	No	No	(2)
Dibenzofuran	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Dichloromethyl ether	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Diethyl phthalate	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Dimethyl phthalate	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Di-n-butyl phthalate	mg/kg	0	74	0%	0.034	0.109	--	--	0.061	0.034	--	No	No	(2)
Di-n-octyl phthalate	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Diphenyl disulfide	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Diphenyl sulfide	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Diphenyl sulfone	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Diphenylamine	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Fluoranthene	mg/kg	9	74	12.2%	0.0102	0.0118	0.0108	0.15	0.014	0.017	--	No	No	(5)(13)
Fluorene	mg/kg	0	74	0%	0.0102	0.0118	--	--	0.011	0.00025	--	No	No	(2)
Hexachlorobenzene	mg/kg	6	74	8.1%	0.0691	0.108	0.11	0.429	0.056	0.060	--	Yes	Yes	(5)(14)
Hexachlorobutadiene	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Hexachlorocyclopentadiene	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Hexachloroethane	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Hydroxymethyl phthalimide	mg/kg	0	73	0%	0.104	0.129	--	--	0.11	0.0066	--	No	No	(2)
Isophorone	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
m,p-Cresols	mg/kg	0	74	0%	0.102	0.157	--	--	0.13	0.019	--	No	No	(2)
Naphthalene	mg/kg	0	74	0%	0.0102	0.0118	--	--	0.011	0.00025	--	No	No	(2)
Nitrobenzene	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
N-nitrosodi-n-propylamine	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	Yes	No	(2)
o-Cresol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Octachlorostyrene	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
p-Chloroaniline	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
p-Chlorobenzenethiol	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Pentachlorobenzene	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Pentachlorophenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Phenol	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Phthalic acid	mg/kg	0	74	0%	0.102	0.129	--	--	0.11	0.0067	--	No	No	(2)
Pyridine	mg/kg	0	74	0%	0.0681	0.109	--	--	0.084	0.016	--	No	No	(2)
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	mg/kg	0	60	0%	0.00026	0.00048	--	--	0.00041	0.000033	--	No	No	(2)
1,1,1-Trichloroethane	mg/kg	0	60	0%	0.00024	0.00047	--	--	0.00026	0.00004	--	No	No	(2)
1,1,2,2-Tetrachloroethane	mg/kg	0	60	0%	0.00043	0.00056	--	--	0.00048	0.000022	--	No	No	(2)
1,1,2-Trichloroethane	mg/kg	0	60	0%	0.00037	0.00063	--	--	0.0004	0.0000460	--	No	No	(2)
1,1-Dichloroethane	mg/kg	0	60	0%	0.00038	0.00047	--	--	0.0004	0.000018	--	No	No	(2)
1,1-Dichloroethene	mg/kg	0	60	0%	0.00024	0.0018	--	--	0.00031	0.00027	--	No	No	(2)
1,1-Dichloropropene	mg/kg	0	60	0%	0.00023	0.00033	--	--	0.00024	0.000019	--	No	No	(2)
1,2,3-Trichlorobenzene	mg/kg	3	60	5.0%	0.00035	0.00057	0.0007	0.0034	0.00055	0.000380	--	No	No	(5)(13)
1,2,3-Trichloropropane	mg/kg	0	60	0%	0.0005	0.00061	--	--	0.00053	0.000026	--	No	No	(2)
1,2,4-Trichlorobenzene	mg/kg	3	60	5.0%	0.00031	0.00039	0.00052	0.015	0.00063	0.0019	--	No	No	(5)(13)
1,2,4-Trimethylbenzene	mg/kg	2	60	3.3%	0.00041	0.00094	0.00041	0.00049	0.00061	0.00017	--	No	No	(4)(13)
1,2-Dichlorobenzene	mg/kg	6	60	10.0%	0.0003	0.00045	0.00043	0.62	0.011	0.08	--	No	No	(5)(13)
1,2-Dichloroethane	mg/kg	0	60	0%	0.00033	0.00095	--	--	0.00037	0.0001100	--	No	No	(2)
1,2-Dichloroethene	mg/kg	0	60	0%	0.00064	0.00097	--	--	0.00069	0.000059	--	No	No	(2)
1,2-Dichloropropane	mg/kg	0	60	0%	0.00038	0.00047	--	--	0.0004	0.000018	--	No	No	(2)
1,3,5-Trichlorobenzene	mg/kg	0	60	0%	0.00052	0.00065	--	--	0.00055	0.000024	--	No	No	(2)
1,3,5-Trimethylbenzene	mg/kg	0	60	0%	0.00026	0.00034	--	--	0.00028	0.000017	--	No	No	(2)
1,3-Dichlorobenzene	mg/kg	1	60	1.7%	0.00026	0.00056	0.012	0.012	0.00066	0.0015	--	No	No	(4)(13)
1,3-Dichloropropane	mg/kg	0	60	0%	0.00034	0.00052	--	--	0.00044	0.000028	--	No	No	(2)
1,4-Dichlorobenzene	mg/kg	3	60	5.0%	0.00032	0.00066	0.00065	0.56	0.0097	0.072	--	No	No	(5)(13)
2,2,3-Trimethylbutane	mg/kg	0	60	0%	0.00054	0.00067	--	--	0.00057	0.000025	--	No	No	(2)
2,2-Dichloropropane	mg/kg	0	60	0%	0.00031	0.00059	--	--	0.00034	0.000048	--	No	No	(2)
2,2-Dimethylpentane	mg/kg	0	60	0%	0.00054	0.00067	--	--	0.00057	0.000025	--	No	No	(2)
2,3-Dimethylpentane	mg/kg	0	60	0%	0.00045	0.00055	--	--	0.00047	0.00002	--	No	No	(2)
2,4-Dimethylpentane	mg/kg	0	60	0%	0.0005	0.00062	--	--	0.00053	0.000023	--	No	No	(2)
2-Chlorotoluene	mg/kg	0	60	0%	0.00035	0.00043	--	--	0.00037	0.000016	--	No	No	(2)
2-Hexanone	mg/kg	0	60	0%	0.00029	0.00049	--	--	0.00031	0.000035	--	No	No	(2)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
2-Methylhexane	mg/kg	0	60	0%	0.00051	0.00064	--	--	0.00055	0.000024	--	No	No	(2)
2-Nitropropane	mg/kg	0	60	0%	0.00033	0.0015	--	--	0.00039	0.00021	--	No	No	(2)
3,3-Dimethylpentane	mg/kg	0	60	0%	0.00049	0.00061	--	--	0.00052	0.000023	--	No	No	(2)
3-Ethylpentane	mg/kg	0	60	0%	0.00046	0.00057	--	--	0.00049	0.000021	--	No	No	(2)
3-Methylhexane	mg/kg	0	60	0%	0.00048	0.00059	--	--	0.00051	0.000022	--	No	No	(2)
4-Chlorotoluene	mg/kg	0	60	0%	0.00026	0.00041	--	--	0.00028	0.0000270	--	No	No	(2)
4-Methyl-2-pentanone (MIBK)	mg/kg	0	60	0%	0.00031	0.0008	--	--	0.00035	0.000085	--	No	No	(2)
Acetone	mg/kg	2	60	3.3%	0.0066	0.013	0.0074	0.0083	0.0072	0.00085	--	No	No	(4)(13)
Acetonitrile	mg/kg	0	60	0%	0.0036	0.011	--	--	0.004	0.0013	--	No	No	(2)
Benzene	mg/kg	2	60	3.3%	0.00027	0.00042	0.00046	0.00096	0.00037	0.000082	--	Yes	No	(4)(13)
Bromobenzene	mg/kg	0	60	0%	0.00038	0.00048	--	--	0.00041	0.000018	--	No	No	(2)
Bromodichloromethane	mg/kg	0	60	0%	0.00027	0.0004	--	--	0.00034	0.00002	--	No	No	(2)
Bromoform	mg/kg	0	60	0%	0.00039	0.00052	--	--	0.00045	0.000022	--	No	No	(2)
Bromomethane	mg/kg	0	60	0%	0.00041	0.0011	--	--	0.00045	0.00011	--	No	No	(2)
Carbon disulfide	mg/kg	0	60	0%	0.00028	0.00075	--	--	0.00031	0.000082	--	No	No	(2)
Carbon tetrachloride	mg/kg	0	60	0%	0.00031	0.00056	--	--	0.00034	0.000043	--	No	No	(2)
Chlorobenzene	mg/kg	3	60	5.0%	0.00031	0.00042	0.00082	0.04	0.0011	0.0052	--	No	No	(5)(13)
Chlorobromomethane	mg/kg	0	60	0%	0.00045	0.0006	--	--	0.00048	0.00003	--	No	No	(2)
Chloroethane	mg/kg	0	60	0%	0.00032	0.00057	--	--	0.00034	0.000044	--	No	No	(2)
Chloroform	mg/kg	2	60	3.3%	0.00036	0.00045	0.00042	0.0011	0.0004	0.000093	--	No	No	(4)(13)
Chloromethane	mg/kg	0	60	0%	0.00028	0.00061	--	--	0.00031	0.000058	--	No	No	(2)
cis-1,2-Dichloroethene	mg/kg	0	60	0%	0.00034	0.00065	--	--	0.00037	0.000054	--	No	No	(2)
cis-1,3-Dichloropropene	mg/kg	0	60	0%	0.00024	0.00065	--	--	0.00027	0.000072	--	No	No	(2)
Cymene (Isopropyltoluene)	mg/kg	0	60	0%	0.00026	0.00035	--	--	0.00028	0.000017	--	No	No	(2)
Dibromochloromethane	mg/kg	0	60	0%	0.0003	0.00037	--	--	0.00032	0.000016	--	No	No	(2)
Dibromochloropropane	mg/kg	0	60	0%	0.00061	0.0013	--	--	0.00067	0.00011	--	No	No	(2)
Dibromomethane	mg/kg	0	60	0%	0.00035	0.00044	--	--	0.00038	0.000021	--	No	No	(2)
Dichloromethane (Methylene chloride)	mg/kg	36	60	60.0%	0.0017	0.013	0.0034	0.053	0.013	0.013	--	No	No	(5)(13)
Dimethyldisulfide	mg/kg	0	60	0%	0.00049	0.00061	--	--	0.00052	0.000023	--	No	No	(2)
Ethanol	mg/kg	0	60	0%	0.063	0.078	--	--	0.067	0.0029	--	No	No	(2)
Ethylbenzene	mg/kg	0	60	0%	0.0003	0.00037	--	--	0.00032	0.000014	--	No	No	(2)
Freon-11 (Trichlorofluoromethane)	mg/kg	0	60	0%	0.00018	0.00039	--	--	0.00033	0.000031	--	No	No	(2)
Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)	mg/kg	0	60	0%	0.00025	0.0018	--	--	0.00032	0.00028	--	No	No	(2)

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale
Freon-12 (Dichlorodifluoromethane)	mg/kg	0	60	0%	0.00025	0.0014	--	--	0.00031	0.00021	--	No	No	(2)
Heptane	mg/kg	0	60	0%	0.00038	0.00047	--	--	0.0004	0.000018	--	No	No	(2)
Isopropylbenzene	mg/kg	0	60	0%	0.00028	0.00036	--	--	0.00031	0.000015	--	No	No	(2)
m,p-Xylene	mg/kg	0	60	0%	0.00046	0.00062	--	--	0.00049	0.000031	--	No	No	(2)
Methyl ethyl ketone (2-Butanone)	mg/kg	0	60	0%	0.00058	0.0016	--	--	0.00065	0.00018	--	No	No	(2)
Methyl iodide	mg/kg	0	60	0%	0.00039	0.0017	--	--	0.00046	0.00022	--	No	No	(2)
MTBE (Methyl tert-butyl ether)	mg/kg	0	60	0%	0.00047	0.00059	--	--	0.0005	0.000022	--	No	No	(2)
n-Butylbenzene	mg/kg	0	60	0%	0.0003	0.00066	--	--	0.00033	0.000063	--	No	No	(2)
Nonanal	mg/kg	1	60	1.7%	0.00037	0.0021	0.0067	0.0067	0.00057	0.00086	--	No	No	(4)(13)
n-Propylbenzene	mg/kg	0	60	0%	0.00028	0.00035	--	--	0.0003	0.000016	--	No	No	(2)
o-Xylene	mg/kg	0	60	0%	0.00024	0.00037	--	--	0.00026	0.000023	--	No	No	(2)
sec-Butylbenzene	mg/kg	0	60	0%	0.00033	0.00041	--	--	0.00035	0.000016	--	No	No	(2)
Styrene	mg/kg	0	60	0%	0.00021	0.00038	--	--	0.00023	0.000029	--	No	No	(2)
tert-Butylbenzene	mg/kg	0	60	0%	0.00023	0.00034	--	--	0.00025	0.00002	--	No	No	(2)
Tetrachloroethene	mg/kg	0	60	0%	0.0003	0.00059	--	--	0.0005	0.000042	--	No	No	(2)
Toluene	mg/kg	0	60	0%	0.00025	0.00066	--	--	0.00028	0.000072	--	No	No	(2)
trans-1,2-Dichloroethene	mg/kg	0	60	0%	0.00035	0.00056	--	--	0.00037	0.000037	--	No	No	(2)
trans-1,3-Dichloropropene	mg/kg	0	60	0%	0.00018	0.00038	--	--	0.0002	0.000035	--	No	No	(2)
Trichloroethene	mg/kg	0	60	0%	0.00027	0.00042	--	--	0.00029	0.000027	--	No	No	(2)
Vinyl acetate	mg/kg	0	60	0%	0.00039	0.00086	--	--	0.00043	0.000081	--	No	No	(2)
Vinyl chloride	mg/kg	0	60	0%	0.00033	0.00047	--	--	0.00035	0.000026	--	No	No	(2)
Xylenes (total)	mg/kg	0	60	0%	0.00065	0.00094	--	--	0.0007	0.000052	--	No	No	(2)

mg/kg - milligrams per kilogram

pCi/g - picoCuries per gram

ppt - parts per trillion

-- - Not available or not applicable.

ND - Not detected.

Highlight indicates selected as COPC.

(1) Persistent, Bioaccumulative, and Toxic (PBT) Program.

(2) Not detected.

(3) Dioxin and PCB congeners are not evaluated separately. Dioxin and PCB congeners are evaluated as TCDD TEQs. The maximum TCDD TEQ was less than the 1,000 ppt worker BCL (see text).

(4) Chemical detected in less than 5 percent of the samples and is not a PBT or Class A carcinogen.

TABLE 5-6
SELECTION OF CHEMICALS OF POTENTIAL CONCERN (COPCs)
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect	Mean	Standard Deviation	Greater than Background?	PBT(1) or Class A Carcinogen?	COPC?	Rationale

(5) Chemical detected in greater than 5 percent of samples.

(6) Chemical concentrations are equivalent to background.

(7) Chemical detected in less than 5 percent of the samples, but is a PBT or Class A carcinogen.

(8) Based on statistical tests, Site concentrations are elevated compared to background.

(9) No toxicity criteria or applicable surrogate criteria are available.

(10) At least one carcinogenic polynuclear aromatic hydrocarbon (PAH) is a COPC, therefore all detected carcinogenic PAHs are COPCs.

(11) Lead was not selected as a COPC because the maximum concentration is below 400 mg/kg.

(12) USEPA (1989) states that “Chemicals that are (1) essential human nutrients, (2) present at low concentrations (i.e., only slightly elevated above naturally occurring levels), and (3) toxic only at very high doses (i.e., much higher than those that could be associated with contact at the site) need not be considered further in the quantitative risk assessment. Examples of such chemicals are iron, magnesium, calcium, potassium, and sodium.”

(13) Maximum detected site concentration below one-tenth worker BCL.

(14) Maximum detected site concentration greater than one-tenth worker BCL.

TABLE 6-1
EXPOSURE POINT CONCENTRATIONS IN SOIL
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Number of Detects	Total Count	Detect Freq.	Min ND	Max ND	Min Detect	Max Detect
Aldehydes								
Acetaldehyde	mg/kg	74	81	91%	0.32	0.344	0.44	15
Inorganics								
Aluminum	mg/kg	77	77	100%	NA	NA	7800	20000
Arsenic	mg/kg	61	77	79%	5.2	5.8	2.9	15
Cobalt	mg/kg	77	77	100%	NA	NA	6.8	36
Manganese	mg/kg	77	77	100%	NA	NA	196	7000
Organochlorine Pesticides								
4,4-DDE	mg/kg	55	89	62%	0.0004	0.00046	0.0012	5.4
4,4-DDT	mg/kg	54	89	61%	0.00065	0.00073	0.0012	5.1
Semi-Volatile Organic Compounds								
Hexachlorobenzene	mg/kg	6	74	8.1%	0.0691	0.108	0.11	0.429
Polynuclear Aromatic Hydrocarbons								
Benzo(a)anthracene	mg/kg	14	73	19.2%	0.00169	0.00196	0.0028	0.0843
Benzo(a)pyrene	mg/kg	16	73	22%	0.00169	0.00196	0.0017	0.0812
Benzo(b)fluoranthene	mg/kg	21	73	29%	0.00169	0.00196	0.00217	0.137
Benzo(k)fluoranthene	mg/kg	15	73	21%	0.00169	0.00196	0.00211	0.0502
Chrysene	mg/kg	18	73	25%	0.00169	0.00196	0.00203	0.0961
Dibenzo(a,h)anthracene	mg/kg	7	73	10%	0.00167	0.00196	0.00204	0.0175
Indeno(1,2,3-cd)pyrene	mg/kg	14	73	19.2%	0.00169	0.00196	0.00234	0.0546

(1) The EPC is either the maximum of the All, Fill, Surface, All-Fill or Surface/Fill 95 UCLs unless it exceeds the maximum detection concentration, then it is the maximum detected concentration.

EPC - Exposure point concentration.

UCL - Upper Confidence Limit

NA - Not applicable.

TABLE 6-1
EXPOSURE POINT CONCENTRATIONS IN SOIL
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	Mean	Standard Deviation	95%UCL All	95%UCL Fill	95%UCL Surface/Fill	95%UCL Surface	95%UCL All - Fill	EPC[1]
		Aldehydes							
Acetaldehyde	mg/kg	2.7	2.9	3.4	3.6	3.8	3.9	3.4	3.9
		Inorganics							
Aluminum	mg/kg	12000	2800	13000	12000.0	12000	13000	13000	13000
Arsenic	mg/kg	6.2	2.5	6.2	3.9	5.6	5.9	6.4	6.4
Cobalt	mg/kg	13	4.8	14	13	12	12.00	14	14
Manganese	mg/kg	1200	1500	1500	720	780	820	1500	1500
		Organochlorine Pesticides							
4,4-DDE	mg/kg	0.17	0.73	0.36	0.029	0.11	0.13	0.42	0.42
4,4-DDT	mg/kg	0.19	0.68	0.38	0.013	0.18	0.2	0.39	0.39
		Semi-Volatile Organic Compounds							
Hexachlorobenzene	mg/kg	0.056	0.060	0.073	0.036	0.085	0.093	0.076	0.093
		Polynuclear Aromatic Hydrocarbons							
Benzo(a)anthracene	mg/kg	0.0051	0.015	0.0094	0.0022	0.013	0.013	0.0099	0.013
Benzo(a)pyrene	mg/kg	0.0045	0.012	0.0084	0.0023	0.0093	0.011	0.0084	0.011
Benzo(b)fluoranthene	mg/kg	0.0078	0.0210	0.014	0.0037	0.016	0.019	0.015	0.019
Benzo(k)fluoranthene	mg/kg	0.0032	0.0077	0.0055	0.0016	0.0061	0.0065	0.0058	0.0065
Chrysene	mg/kg	0.0055	0.015	0.01	0.0021	0.012	0.013	0.01	0.013
Dibenzo(a,h)anthracene	mg/kg	0.0015	0.0025	0.0023	0.00091	0.0025	0.0024	0.0023	0.0025
Indeno(1,2,3-cd)pyrene	mg/kg	0.0031	0.0079	0.0054	0.0015	0.0062	0.0068	0.0056	0.0068

(1) The EPC is either the maximum of the All, Fill, Surface, All-Fill or Surface/Fill 95 UCLs unless it exceeds the maximum detection concentration, then it is the maximum detected concentration.

EPC - Exposure point concentration.

UCL - Upper Confidence Limit

NA - Not applicable.

TABLE 6-2
ASBESTOS RESULTS AND ANALYTICAL SENSITIVITIES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Analytical Sensitivity (10^6 s/gPM$_{10}$)	Concentration Protocol Structures[1] Chrysotile (10^6 s/gPM$_{10}$)		Concentration Protocol Structures[1] Amphibole (10^6 s/gPM$_{10}$)		Number of Protocol Structures[2] Chrysotile Total	Chrysotile Long	Amphibole Total	Amphibole Long
STC1-AI15	0	NORM	06/11/10	2.960	<	8.850 E+6	<	8.850 E+6	0	0	0	0
STC1-AI15	0	FD	06/11/10	2.960	<	8.850 E+6	<	8.850 E+6	0	0	0	0
STC1-AJ15	0	NORM	06/11/10	2.980	<	8.900 E+6	<	8.900 E+6	0	0	0	0
STC1-AJ16	0	NORM	06/11/10	2.950		8.820 E+6	<	8.820 E+6	2	2	1	0
STC1-AJ18	0	NORM	05/28/10	2.970	<	8.880 E+6	<	8.880 E+6	0	0	0	0
STC1-AJ18	0	FD	05/28/10	2.990	<	8.930 E+6	<	8.930 E+6	0	0	0	0
STC1-AK15	0	NORM	06/11/10	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0
STC1-AK20	0	NORM	06/10/10	17.200	<	5.130 E+7	<	5.130 E+7	0	0	0	0
STC1-JB12	0	NORM	10/15/10	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0
STC1-JD02	0	NORM	06/11/10	2.990		8.930 E+6	<	8.930 E+6	2	1	0	0
STC1-JD03	0	NORM	06/11/10	2.970	<	8.870 E+6	<	8.870 E+6	5	0	0	0
STC1-JD04	0	NORM	06/11/10	2.990	<	8.930 E+6	<	8.930 E+6	0	0	0	0
STC1-JD05	0	NORM	06/11/10	2.990	<	8.950 E+6	<	8.950 E+6	0	0	1	0
STC1-JD06	0	NORM	06/11/10	3.000	<	8.970 E+6	<	8.970 E+6	0	0	0	0
STC1-JD07	0	NORM	06/11/10	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0
STC1-JD08	0	NORM	06/11/10	2.960		8.880 E+6	<	8.850 E+6	3	3	0	0
STC1-JD08	0	FD	06/11/10	2.990		8.950 E+6	<	8.950 E+6	2	1	0	0
STC1-JD09	0	NORM	06/11/10	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0
STC1-JD12	0	NORM	06/10/10	2.960		1.780 E+7	<	8.850 E+6	15	6	0	0
STC1-JD13	0	NORM	06/10/10	3.000		9.000 E+6	<	8.970 E+6	3	3	0	0
STC1-JD14	0	NORM	06/10/10	2.990		1.500 E+7	<	8.940 E+6	8	5	0	0
STC1-JD14	0	FD	06/10/10	2.970		8.870 E+6	<	8.870 E+6	4	1	0	0
STC1-JD15	0	NORM	06/10/10	2.980	<	8.900 E+6	<	8.900 E+6	0	0	0	0
STC6-AI16	0	NORM	07/20/12	2.960		8.860 E+6	<	8.860 E+6	8	1	0	0
STC6-ES01	0	NORM	07/20/12	2.980		8.940 E+6	<	8.910 E+6	11	3	0	0
STC7-JD10	0	NORM	12/11/12	2.990	<	8.930 E+6	<	8.930 E+6	0	0	0	0
STC7-JD11	0	NORM	12/11/12	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0
TMC1-JD01	0	NORM	03/30/10	2.990	<	8.940 E+6	<	8.940 E+6	0	0	0	0
TMC1-JD01	0	FD	03/30/10	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0
TMC1-JD02	0	NORM	03/30/10	3.000	<	8.960 E+6	<	8.960 E+6	0	0	0	0

(1)Fiber dimensions are presented in the respective analytical reports for each sample.

(2)Protocol structures include structures >5 µm in length and < 0.4 µm in width. Only long structures (>10µm in length) present a potential risk and are used for estimating asbestos risks. Total protocol structure counts are presented for informational purposes only.

TABLE 6-4
EXPOSURE POINT CONCENTRATIONS FROM SURFACE FLUX
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

	STC1-AJ16			STC1-AJ16R		
Chemical	Method	Commercial Indoor Air	Outdoor Air	Method	Commercial Indoor Air	Outdoor Air
1,1-Dichloroethane		--	--		--	--
1,2-Dichloropropane		--	--		--	--
Bromodichloromethane		--	--		--	--
Carbon tetrachloride	S	3.5 E-6	2.9 E-6	S	4.3 E-6	3.6 E-6
Chloroform	S	1.2 E-6	9.7 E-7	S	1.5 E-6	1.2 E-6
Dichloromethane (Methylene chloride)		--	--		--	--
Tetrachloroethene		--	--		--	--
Trichloroethene		--	--		--	--

	STC1-JD03			STC1-JD05		
Chemical	Method	Commercial Indoor Air	Outdoor Air	Method	Commercial Indoor Air	Outdoor Air
1,1-Dichloroethane		--	--		--	--
1,2-Dichloropropane		--	--		--	--
Bromodichloromethane		--	--		--	--
Carbon tetrachloride	S	1.4 E-6	1.2 E-6	S	4.3 E-6	3.6 E-6
Chloroform	S	1.2 E-6	1.0 E-6		--	--
Dichloromethane (Methylene chloride)		--	--	F	4.1 E-6	3.4 E-6
Tetrachloroethene		--	--		--	--
Trichloroethene		--	--		--	--

	STC1-JD06			STC1-JD07		
Chemical	Method	Commercial Indoor Air	Outdoor Air	Method	Commercial Indoor Air	Outdoor Air
1,1-Dichloroethane		--	--		--	--
1,2-Dichloropropane		--	--		--	--
Bromodichloromethane		--	--		--	--
Carbon tetrachloride	S	2.9 E-6	2.4 E-6		--	--
Chloroform		--	--	S	2.7 E-6	2.2 E-6
Dichloromethane (Methylene chloride)		--	--		--	--
Tetrachloroethene		--	--		--	--
Trichloroethene		--	--		--	--

TABLE 6-4
EXPOSURE POINT CONCENTRATIONS FROM SURFACE FLUX
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 2 of 2)

	STC1-JD12			STC1-JD14A		
Chemical	**Method**	**Commercial Indoor Air**	**Outdoor Air**	**Method**	**Commercial Indoor Air**	**Outdoor Air**
1,1-Dichloroethane		--	--		--	--
1,2-Dichloropropane		--	--		--	--
Bromodichloromethane		--	--		--	--
Carbon tetrachloride	S	8.7 E-7	7.3 E-7		--	--
Chloroform	S	6.1 E-7	5.1 E-7	S	1.3 E-6	1.1 E-6
Dichloromethane (Methylene chloride)		--	--	F	2.4 E-4	2.0 E-4
Tetrachloroethene	F	7.5 E-6	6.3 E-6		--	--
Trichloroethene		--	--		--	--

	STC1-JD14B			TMC1-JD02		
Chemical	**Method**	**Commercial Indoor Air**	**Outdoor Air**	**Method**	**Commercial Indoor Air**	**Outdoor Air**
1,1-Dichloroethane		--	--		--	--
1,2-Dichloropropane		--	--		--	--
Bromodichloromethane		--	--		--	--
Carbon tetrachloride		--	--	S	1.4 E-6	1.2 E-6
Chloroform	S	1.1 E-6	8.8 E-7	S	8.4 E-7	7.0 E-7
Dichloromethane (Methylene chloride)		--	--		--	--
Tetrachloroethene		--	--		--	--
Trichloroethene		--	--		--	--

Notes:
All units in mg/m^3.
Method represents the surface flux measurement used in the risk calculations for that particular chemical/location: S = SIM; F = Full Scan.
See Appendix H for all indoor and outdoor air concentration calculations from surface flux measurement data. See Table 6-7 for outdoor air exposure point concentrations for non-volatile COPCs in soil. Exposure point concentrations for surface flux data are based on a sample by sample basis. Averaging of the data was not conducted. Therefore only those chemicals detected in a particular sample were included in the risk estimates.
A "--" is presented for those chemical not detected and not included in the risk estimates for each sample location. The exposure point concentration is the maximum of the full scan or SIM analysis results (when both had detected values, otherwise the detected value from one or the other is used). Thus, summary statistics are not presented in this table (see Table 3-17 for the surface flux data summary).

TABLE 6-5
PARTICULATE EMISSION FACTOR (PEF) FOR NON-CONSTRUCTION SCENARIO
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Parameter	Abbrev.	Units	Value
Wind Erosion and Construction Activities			
Fraction of vegetative cover(1)	V	--	0.5
Mean annual wind speed(2)	U_m	m/s	4.10
Equivalent threshold value of wind speed(1)	U_t	m/s	11.32
Function dependent on U/U_t(1)	F(x)	--	0.19
Air Dispersion Factor for Area Source(4)	**Q/C_{wind}**	**g/m^2-sec per kg/m^3**	**39.48**
Constant A(1)	A	--	13.31
Constant B(1)	B	--	19.84
Constant C(1)	C	--	230.17
Areal Extent of site surface contamination(3)	A_{surf}	acres	55.7
Onsite Residential PEF(5)	**$PEF_{Onsite\ Resident}$**	**m^3/kg**	**8.57E+08**
Total outdoor ambient air dust concentration(6)	**$D_{Onsite\ Resident}$**	**kg/m^3**	**1.17E-09**

(1) Assumed value for the site based upon USEPA (2002b). Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites.
Office of Solid Waste and Emergency Response, Washington, DC. OSWER 9355.4-24. December.

(2) Derived by averaging data from the Las Vegas Airport and Nellis AFB stations.

(3) Site area.

(4) From USEPA 2002b - $Q/C_{sa} = A \times \exp[(\ln(A_{surf}) - B)^2/C]$.

$\{[2.6 \times (s/12)^{0.8} \times (W/3)^{0.4}/(M/0.2)^{0.3}] \times [(365\text{-}p)/365] \times 281.9 \times \sum VKT_{road}\}$.

(5) From USEPA 2002b - $PEF_{Onsite\ Resident} = Q/C_{wind} * (3600/(0.036*(1-V)*((U_m/U_t)^3)*F(x)))$

(6) $D_{Onsite\ Resident} = 1/PEF_{Onsite\ Resident}$

TABLE 6-6
PARTICULATE EMISSION FACTOR (PEF) FOR CONSTRUCTION SCENARIO
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 3)

Parameter	Abbrev.	Units	Value
Wind Erosion and Construction Activities			
Fugitive dust from wind erosion[(1)]	M_{wind}	g	**2.3E+05**
Fraction of vegetative cover[(2)]	V	--	0.00
Mean annual wind speed[(3)]	U_m	m/s	4.10
Equivalent threshold value of wind speed[(2)]	U_t	m/s	11.32
Function dependent on U/U_t[(2)]	F(x)	--	0.194
Areal Extent of site surface contamination[(4)]	A_{surf}	m^2	79,321
Exposure duration[(5)]	ED	year	1
Fugitive dust from excavation soil dumping[(6)]	M_{excav}	g	**1.1E+04**
In situ wet soil bulk density[(7)]	ρ_{soil}	Mg/m^3	1.76
Gravimetric Soil Moisture Content %[(8)]	M	%	7.6
Areal extent of site excavation[(9)]	A_{excav}	m^2	15864
Average depth of site excavation[(2)]	d_{excav}	m	1.00
Number of times soil is dumped[(2)]	N_A	--	2.00
Fugitive dust from dozing[(10)]	M_{doz}	g	**6.6E+03**
Soil silt content %[(7)]	s	%	11.5
Gravimetric Soil Moisture Content %[(8)]	M	%	7.6
Average dozing speed[(2)]	S_{doz}	km/hr	11.40
Number of times area is dozed	N_{doze}	--	3.00
Length of dozer blade	B_d	m	2.44
Sum dozing kilometers traveled[(11)]	VKT_{doz}	km	97.53
Fugitive dust from grading[(12)]	M_{grade}	g	**4.3E+04**
Average grading speed[(2)]	S_{grade}	km/hr	11.40
Number of times area is graded	N_{grade}	--	3.00
Length of grading blade	B_g	m	2.44
Sum grading kilometers traveled[(12)]	VKT_{grade}	km	97.53

TABLE 6-6
PARTICULATE EMISSION FACTOR (PEF) FOR CONSTRUCTION SCENARIO
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter	Abbrev.	Units	Value
Fugitive dust from tilling[13]	M_{till}	g	**1.5E+04**
Soil silt content %[7]	s	%	11.5
Areal extent of site tilling[9]	A_{till}	acre	3.92
Number of times soil is tilled[2]	N_A	--	2.00
Total Time Averaged PM_{10} Emission[14]	J'_T	g/m2-sec	**1.22E-07**
Duration of construction[2]	T	sec	3.15E+07
Subchronic Dispersion Factor for Area Source[15]	Q/C_{sa}	g/m^2-sec per kg/m^3	**7.57**
Constant A[2]	A	--	2.45
Constant B[2]	B	--	17.57
Constant C[2]	C	--	189.04
Areal Extent of site surface contamination[4]	A_{surf}	acres	19.6
Dispersion correction factor[16]	F_D	--	**0.186**
Duration of construction (time period during which construction activities occur)	t_c	hr	8760
Subchronic PEF for Construction Activities[17]	PEF_{sc}	m^3/kg	**3.33E+08**
Unpaved Road Traffic			
Length of road segment[18]	L_R	m	281.64
Width of road segment[2]	W_R	m	6.10
Surface area of contaminated road segment[19]	A_R	m^2	1716.88
Road surface silt content %[20]	s	%	11.5
Mean vehicle weight[2]	W	tons	8.00
Percent moisture in dry road surface[20]	M	%	7.6
Number of days/year with at least 0.01 inches of precipitation[3]	p	days	27.00
Number of vehicles for duration of construction	N_V	vehicles	30.00
Length of road traveled per day	L_D	m/day	281.64
Sum of fleet vehicle kilometers traveled during the exposure duration[21]	VKT_{road}	km	1098.40

TABLE 6-6
PARTICULATE EMISSION FACTOR (PEF) FOR CONSTRUCTION SCENARIO
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter	Abbrev.	Units	Value
Subchronic Dispersion Factor for road segment[22]	Q/C_{sr}	g/m^2-sec per kg/m^3	14.39
Constant A[2]	A		12.94
Constant B[2]	B		5.74
Constant C[2]	C		71.77
Subchronic PEF for Unpaved Road Traffic[23]	**PEF_{sc_road}**	**m^3/kg**	**1.17E+07**
Total construction related PEF[24]	**PEF_{sc_total}**	**m^3/kg**	**1.13E+07**
Total outdoor ambient air dust concentration[25]	**$D_{construct}$**	**kg/m^3**	**8.84E-08**

(1) From USEPA. (2002b). Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response, Washington, DC. OSWER 9355.4-24. December. - Mwind = 0.036 × (1-V) × $(Um/Ut)^3$ × F(x) × Asurf × ED × 8760hr/yr.

(2) Assumed value for the site based upon USEPA (2002b).

(3) Derived by averaging data from the Las Vegas Airport and Nellis AFB stations.

(4) Site area.

(5) Construction worker ED

(6) From USEPA 2002b - $M_{excav} = 0.35 \times 0.0016 \times [(U_m/2.2)^{1.3}/(M/2)^{1.4}] \times \rho_{soil} \times A_{excav} \times d_{excav} \times N_A \times 10^3$g/kg.

(7) This value can change based on site specific characteristics

(8) Based on the average of percent moisture across the site.

(9) Assumed value of one fifth of the site based upon USEPA (2002b).

(10) From USEPA 2002b - $M_{doz} = 0.75 \times [(0.45 \times s^{1.5})/(M)^{1.4}] \times \sum VKT_{doz}/S_{doz} \times 10^3$g/kg.

(11) From USEPA 2002b - $VKT_{doz} = [(A_{surf}^{0.5}/2.44m) \times A_{surf}^{0.5} \times 3]/1{,}000$ m/km.

(12) From USEPA 2002b - $M_{grade} = 0.60 \times (0.0056 \times S^{2.0}) \times \sum VKT_{grade} \times 10^3$g/kg.

(13) From USEPA 2002b - $M_{till} = 1.1 \times s^{0.6} \times A_{till} \times 4{,}047m^2/acre \times 10^{-4} ha/m^2 \times 10^3 g/kg \times N_A$.

(14) From USEPA 2002b - $J'_T = (M_{wind} + M_{excav} + M_{doz} + M_{grade} + M_{till})/(A_{surf} \times T)$.

(15) From USEPA 2002b - $Q/C_{sa} = A \times \exp[(\ln(A_{surf}) - B)^2/C]$.

(16) From USEPA 2002b - $F_D = 0.1852 + (5.3537/t_c)+(-9.6318/t_c^2)$, t_c = T/(3,600sec/hour).

(17) From USEPA 2002b - $PEF_{sc} = Q/C_{sa} \times (1/F_D) \times (1/J'_T)$.

(18) Assumed value of the square root of the site area, based upon USEPA (2002b).

(19) From USEPA 2002b - $A_R = L_R \times W_R$ * 0.092903 m2/ft2

(20) Average of surface soil percent moisture results.

(21) From USEPA 2002b - VKT_{road} = 30 vehicles × L_R × [(52 wks/yr)/2] × (5 days/week) / (1000 m/km).

(22) From USEPA 2002b - $Q/C_{sr} = A \times \exp[(\ln(A_{surf}) - B)^2/C]$.

(23) From USEPA 2002b - $PEF_{sc\_road} = Q/C_{sr} \times (1/F_D) \times T \times A_R / \{[2.6 \times (s/12)^{0.8} \times (W/3)^{0.4}/(M/0.2)^{0.3}] \times [(365-p)/365] \times 281.9 \times \sum VKTroad\}$.

(24) $PEF_{sc\_total} = \{1/[(1/PEF_{sc})+(1/PEF_{sc\_road})]\}$.

(25) $D_{construct} = 1/PEF_{sc\_total}$.

TABLE 6-7
OUTDOOR AIR EXPOSURE POINT CONCENTRATIONS FROM SOIL
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

		Construction Worker Outdoor Air		Non-Construction Worker Outdoor Air	
Chemical	**Soil Conc. (mg/kg)**	**PEF/VF(1) (kg/m^3)**	**Air Conc.(2) (mg/m^3)**	**PEF/VF(3) (kg/m^3)**	**Air Conc.(2) (mg/m^3)**
Aldehydes					
Acetaldehyde	3.9 E+0	8.8 E-8	3.4 E-7	1.2 E-9	4.6 E-9
Inorganics					
Aluminum	1.3 E+4	8.8 E-8	1.1 E-3	1.2 E-9	1.5 E-5
Arsenic	6.4 E+0	8.8 E-8	5.7 E-7	1.2 E-9	7.5 E-9
Cobalt	1.4 E+1	8.8 E-8	1.2 E-6	1.2 E-9	1.6 E-8
Manganese	1.5 E+3	8.8 E-8	1.3 E-4	1.2 E-9	1.8 E-6
Organochlorine Pesticides					
4,4-DDE	4.2 E-1	8.8 E-8	3.7 E-8	1.2 E-9	4.9 E-10
4,4-DDT	3.9 E-1	8.8 E-8	3.4 E-8	1.2 E-9	4.6 E-10
Polynuclear Aromatic Hydrocarbons					
Benzo(a)anthracene	1.3 E-2	8.8 E-8	1.1 E-9	1.2 E-9	1.5 E-11
Benzo(a)pyrene	1.1 E-2	8.8 E-8	9.7 E-10	1.2 E-9	1.3 E-11
Benzo(b)fluoranthene	1.9 E-2	8.8 E-8	1.7 E-9	1.2 E-9	2.2 E-11
Benzo(k)fluoranthene	6.5 E-3	8.8 E-8	5.7 E-10	1.2 E-9	7.6 E-12
Chrysene	1.3 E-2	8.8 E-8	1.1 E-9	1.2 E-9	1.5 E-11
Dibenzo(a,h)anthracene	2.5 E-3	8.8 E-8	2.2 E-10	1.2 E-9	2.9 E-12
Indeno(1,2,3-cd)pyrene	6.8 E-3	8.8 E-8	6.0 E-10	1.2 E-9	7.9 E-12
Semi-Volatile Organic Compounds					
Hexachlorobenzene	9.3 E-2	8.8 E-8	8.2 E-9	1.2 E-9	1.1 E-10

Notes:

(1) Construction worker PEF from Table 6-6.

(2) Soil concentration × PEF.

(3) Non-construction PEF from Table 6-5.

TABLE 6-8
WORKERS EXPOSURE FACTORS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Parameter	Abbrev.	Value	Units	Reference
Dermal absorption fraction	ABS	---chemical-specific--		see text
Maintenance worker dermal adherence facto	AF_{mw}	0.2	mg/cm^2	Closure Plan
Commercial worker dermal adherence facto	AF_{cmw}	NA	mg/cm^2	Closure Plan
Construction worker dermal adherence facto	AF_{cw}	0.3	mg/cm^2	Closure Plan
Averaging time, carcinogeni	AT_c	70	years	Closure Plan
Averaging time, carcinogenic (inhalation	AT_c	613200	hours	Closure Plan
Averaging time, non-carcinogenic, maintenance/commercial work	AT_{nc}	25	years	Closure Plan
Averaging time, non-carcinogenic, maintenance/commercial worker (inhalatio	AT_{nc}	219000	hours	Closure Plan
Averaging time, non-carcinogenic, construction work	$AT_{nc,c}$	1	years	Closure Plan
Averaging time, non-carcinogenic, construction worker (inhalatio	$AT_{nc,c}$	8760	hours	Closure Plan
Adult body weigh	BW_a	70	kg	Closure Plan
Maintenance worker exposure frequenc	EF_{mw}	225	days/year	Closure Plan
Commercial worker exposure frequenc	EF_{cmw}	250	days/year	Closure Plan
Construction worker exposure frequenc	EF_{cmw}	250	days/year	Closure Plan
Exposure duration, maintenance/commercial worker	ED	25	years	Closure Plan
Exposure duration, maintenance/commercial worker (inhalation)	ED	219000	hours	Closure Plan
Exposure duration, construction worker	ED	1	years	Closure Plan
Exposure duration, construction worker (inhalation)	ED	8760	hours	Closure Plan
Maintenance worker exposed surface are	SA_{mw}	3,300	cm^2/day	Closure Plan
Construction worker exposed surface are	SA_{mw}	3,300	cm^2/day	Closure Plan
Commercial worker exposed surface are	SA_{cmw}	NA	cm^2/day	Closure Plan
Maintenance worker soil ingestion rat	$IR_{s,mw}$	100	mg/day	Closure Plan
Commercial worker soil ingestion rat	$IR_{s,cmw}$	50	mg/day	Closure Plan
Construction worker soil ingestion rat	$IR_{s,cmw}$	330	mg/day	Closure Plan
Commercial worker exposure time, indoor	$ET_{cmw,i}$	8	based on 8 hr/d	Closure Plan
Commercial worker exposure time, outdoor	$ET_{cmw,o}$	0	indoor worker	Closure Plan
Maintenance worker exposure time, indoor	$ET_{mw,i}$	0	outdoor worker	Closure Plan
Maintenance worker exposure time, outdoor	$ET_{mw,o}$	8	based on 8 hr/d	Closure Plan
Soil ingestion, non-cancer, commercial worker	--	4.89 E-7	day^{-1}	Calculated
Soil ingestion, cancer, commercial worker	--	1.75 E-7	day^{-1}	Calculated
Soil ingestion, non-cancer, maintenance worker	--	8.81 E-7	day^{-1}	Calculated
Soil ingestion, cancer, maintenance worker	--	3.15 E-7	day^{-1}	Calculated
Soil dermal contact, non-cancer, maintenance worker	--	5.81 E-6	day^{-1}	Calculated
Soil dermal contact, cancer, maintenance worker	--	2.08 E-6	day^{-1}	Calculated
Inhalation, fugitive-dust, outdoor, non-cancer, maintenance worker	--	2.05 E-1	unitless	Calculated
Inhalation, fugitive-dust, outdoor, cancer, maintenance worker	--	7.34 E-2	unitless	Calculated
Soil ingestion, noncancer, construction worker	--	3.23 E-6	day^{-1}	Calculated
Soil ingestion, cancer, construction worker	--	4.61 E-8	day^{-1}	Calculated
Soil dermal contact, noncancer, construction worker	--	9.69 E-6	day^{-1}	Calculated
Soil dermal contact, cancer, construction worker	--	1.38 E-7	day^{-1}	Calculated
Inhalation, soil-dust, outdoor, noncancer, construction worker	--	2.28 E-1	unitless	Calculated
Inhalation, soil-dust, outdoor, cancer, construction worker	--	3.26 E-3	unitless	Calculated

Note: Exposure parameters for maintenance workers and commerical workers are based on outdoor and indoor commercial/industrial worker exposure factors, respectively, from USEPA, 2002b.

TABLE 6-9
TOXICITY CRITERIA FOR SURFACE FLUX
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Compound	Cancer IUR 1/(μg/m^3)		Non-Cancer RfC (mg/m^3)	
1,1-Dichloroethane	1.6 E-6	CA	--	
1,2-Dichloropropane	1.0 E-5	CA	4.0 E-3	I
Bromodichloromethane	3.7 E-5	CA	1.0 E+0	S
Carbon tetrachloride	6.0 E-6	I	1.0 E-1	I
Chloroform	2.3 E-5	I	9.8 E-2	A
Dichloromethane (Methylene chloride)	4.7 E-7	I	1.1 E+0	A
Tetrachloroethene	2.6 E-7	I	4.0 E-2	I
Trichloroethene	4.1 E-6	I	2.0 E-3	I

Key:
A = ATSDR
CA = Cal/EPA (from NDEP 2013)
I = IRIS (USEPA 2015)
S = NDEP Surrogate (from NDEP 2013)

TABLE 6-10
NON-CANCER TOXICITY CRITERIA FOR SOIL
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Chemical	Inhalation - Chronic		Inhalation - Subchronic		Oral(1) - Chronic		Oral(1) - Subchronic		Oral BIO	Dermal ABS(2)
	Value (mg/m^3)	Reference	Value (mg/m^3)	Reference	Value (mg/kg/day)	Reference	Value (mg/kg/day)	Reference		
Inorganics										
Aluminum	5.0 E-3	PPRTV	5.0 E-3	Chronic	1.0 E+0	PPRTV	1.0 E+0	Chronic	1.0	NA
Arsenic	1.5 E-5	CalEPA	1.5 E-5	Chronic	3.0 E-4	USEPA 2015	3.0 E-4	Chronic	0.3	NA
Cobalt	6.0 E-6	PPRTV	6.0 E-6	Chronic	3.0 E-4	PPRTV	3.0 E-4	Chronic	1.0	NA
Manganese	5.0 E-5	USEPA 2015	5.0 E-5	Chronic	4.7 E-2	USEPA 2015	4.7 E-2	Chronic	1.0	NA
Organic Compounds										
4,4-DDE	NA		NA		NA				1.0	0.03
4,4-DDT	NA		NA		5.0 E-4	USEPA 2015	5.0 E-4	Chronic	1.0	0.03
Acetaldehyde	9.0 E-3	USEPA 2015	9.0 E-3	Chronic	NA				1.0	NA
Benzo(a)anthracene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13
Benzo(a)pyrene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13
Benzo(b)fluoranthene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13
Benzo(k)fluoranthene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13
Chrysene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13
Dibenzo(a,h)anthracene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13
Hexachlorobenzene	NA		NA		8.0 E-4	USEPA 2015	8.0 E-4	Chronic	1.0	0.1
Indeno(1,2,3-cd)pyrene	NA		NA		3.0 E-2	pyrene as surrogate	3.0 E-2	Chronic	1.0	0.13

Notes

Values obtained from NDEP (2013).

NA = Not applicable. Data is either not applicable for this chemical or not available.

BIO = bioavailability.

ABS = dermal absorption efficiency.

PPRTV = USEPA Provisional Peer Reviewed Toxicity Values.

(1) Manganese required adjustment of the oral toxicity criteria for the dermal soil exposure pathway (USEPA 2004e).

(2) Dermal absorption factors obtained from USEPA 2004e.

TABLE 6-11
CANCER TOXICITY CRITERIA FOR SOIL
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Inhalation		Oral[1]		Oral BIO	Dermal ABS[2]
	Value $(\mu g/m^3)^{-1}$	Reference	Value $(mg/kg\text{-}day)^{-1}$	Reference		
Inorganics						
Aluminum	NA		NA		1.0	NA
Arsenic	4.3 E-3	USEPA 2015	1.5 E+0	USEPA 2015	0.3	NA
Cobalt	9.0 E-3	PPRTV	NA		1.0	NA
Manganese	NA		NA		1.0	NA
Organic Compounds						
4,4-DDE	9.7 E-5	USEPA 2015	3.4 E-1	USEPA 2015	1.0	0.03
4,4-DDT	9.7 E-5	USEPA 2015	3.4 E-1	USEPA 2015	1.0	0.03
Acetaldehyde	2.2 E-6	USEPA 2015	NA		1.0	NA
Benzo(a)anthracene	1.1 E-4	OEHHA 2015	7.3 E-1	USEPA 1993	1.0	0.13
Benzo(a)pyrene	1.1 E-3	OEHHA 2015	7.3 E+0	USEPA 2015	1.0	0.13
Benzo(b)fluoranthene	1.1 E-4	OEHHA 2015	7.3 E-1	USEPA 1993	1.0	0.13
Benzo(k)fluoranthene	1.1 E-4	OEHHA 2015	7.3 E-2	USEPA 1993	1.0	0.13
Chrysene	1.1 E-5	OEHHA 2015	7.3 E-3	USEPA 1993	1.0	0.13
Dibenzo(a,h)anthracene	1.2 E-3	OEHHA 2015	7.3 E+0	USEPA 1993	1.0	0.13
Hexachlorobenzene	4.6 E-4	USEPA 2015	1.6 E+0	USEPA 2015	1.0	0.1
Indeno(1,2,3-cd)pyrene	1.1 E-4	OEHHA 2015	7.3 E-1	USEPA 1993	1.0	0.13

Notes

Values obtained from NDEP (2013).

NA = Not applicable. Data is either not applicable for this chemical (*i.e.* , not carcinogenic) or not available.

BIO = bioavailability - NOTE: The basis for the arsenic oral bioavailability is presented in Closure Plan.

ABS = dermal absorption efficiency.

OEHHA = California Office of Environmental Health Hazard Assessment.

(1) No COPCs required oral toxicity criteria adjustment for the dermal soil exposure pathway (USEPA 2004e).

(2) Dermal absorption factors obtained from USEPA 2004e.

TABLE 6-12
CHEMICAL RISK SUMMARY FOR CONSTRUCTION WORKER RECEPTORS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Receptor	HI	ILCR
Future On-Site Construction Worker		
Soil, Dermal, and Dust	1	2 E-7
Volatile Inhalation (from Flux)(1)	0.00004	4 E-10
Combined	1	2 E-7

Chemical	**Soil Conc. (mg/kg)**	**Oral HQ**	**Dermal HQ**	**Outdoor Inhal HQ**	**Total HI**	**Oral ILCR**	**Dermal ILCR**	**Outdoor Inhal ILCR**	**Total ILCR**
Inorganics									
Aluminum	13000	4.2 E-2	NA	5.3 E-2	9.4 E-2	NA	NA	NA	NA
Arsenic	6.4	2.1 E-2	NA	8.6 E-3	2.9 E-2	1 E-7	NA	8 E-9	1 E-7
Cobalt	14	1.5 E-1	NA	4.7 E-2	2.0 E-1	NA	NA	4 E-8	4 E-8
Manganese	1500	1.0 E-1	NA	6.1 E-1	7.1 E-1	NA	NA	NA	NA
Aldehydes									
Acetaldehyde	3.9	NA	NA	8.8 E-6	8.8 E-6	NA	NA	2 E-12	2 E-12
Organochlorine Pesticides									
4,4-DDE	0.42	NA	NA	NA	NA	7 E-9	6 E-10	1 E-11	7 E-9
4,4-DDT	0.39	2.5 E-3	2.3 E-4	NA	2.7 E-3	6 E-9	6 E-10	1 E-11	7 E-9
Polynuclear Aromatic Hydrocarbons									
Benzo(a)anthracene	0.013	1.4 E-6	5.5 E-7	NA	1.9 E-6	4 E-10	2 E-10	4 E-13	6 E-10
Benzo(a)pyrene	0.011	1.2 E-6	4.6 E-7	NA	1.6 E-6	4 E-9	1 E-9	3 E-12	5 E-9
Benzo(b)fluoranthene	0.019	2.0 E-6	8.0 E-7	NA	2.8 E-6	6 E-10	2 E-10	6 E-13	9 E-10
Benzo(k)fluoranthene	0.0065	7.0 E-7	2.7 E-7	NA	9.7 E-7	2 E-11	9 E-12	2 E-13	3 E-11
Chrysene	0.013	1.4 E-6	5.5 E-7	NA	1.9 E-6	4 E-12	2 E-12	4 E-14	6 E-12
Dibenzo(a,h)anthracene	0.0025	2.7 E-7	1.0 E-7	NA	3.7 E-7	8 E-10	3 E-10	9 E-13	1 E-9
Indeno(1,2,3-cd)pyrene	0.0068	7.3 E-7	2.9 E-7	NA	1.0 E-6	2 E-10	9 E-11	2 E-13	3 E-10
Semi-Volatile Organic Compounds									
Hexachlorobenzene	0.093	3.8 E-4	1.1 E-4	NA	4.9 E-4	7 E-9	2 E-9	1 E-11	9 E-9
Total		0.3	0.0002	0.7	**1**	2 E-7	3 E-9	4 E-8	**2 E-7**

HQ = hazard quotient
HI - hazard index
ILCR = incremental lifetime cancer risk
(1) Note that risk estimates for surface flux data were done on a sample-by-sample basis, therefore, risks are presented as a range. See Appendix H for sample-specific risk estimates.

TABLE 6-13
CHEMICAL RISK SUMMARY FOR COMMERCIAL (INDOOR) WORKER RECEPTORS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Receptor	HI	ILCR
Future On-Site Commercial Worker		
Soil and Dust	0.05	6 E-7
Volatile Inhalation (from Flux)[(1)]	0.00005	1 E-8
Combined	0.05	6 E-7

Chemical	Soil Concentration (mg/kg)	Oral HQ	Indoor Dust Inhal HQ	Total HI	Oral ILCR	Indoor Dust Inhal ILCR	Total ILCR
Inorganics							
Aluminum	13000	6.4 E-3	2.8 E-4	6.6 E-3	NA	NA	NA
Arsenic	6.4	3.1 E-3	4.5 E-5	3.2 E-3	5 E-7	1 E-9	5 E-7
Cobalt	14	2.3 E-2	2.5 E-4	2.3 E-2	NA	5 E-9	5 E-9
Manganese	1500	1.6 E-2	3.2 E-3	1.9 E-2	NA	NA	NA
Aldehydes							
Acetaldehyde	3.9	NA	4.6 E-8	4.6 E-8	NA	3 E-13	3 E-13
Organochlorine Pesticides							
4,4-DDE	0.42	NA	NA	NA	2 E-8	2 E-12	2 E-8
4,4-DDT	0.39	3.8 E-4	NA	3.8 E-4	2 E-8	1 E-12	2 E-8
Polynuclear Aromatic Hydrocarbons							
Benzo(a)anthracene	0.013	2.1 E-7	NA	2.1 E-7	2 E-9	5 E-14	2 E-9
Benzo(a)pyrene	0.011	1.8 E-7	NA	1.8 E-7	1 E-8	5 E-13	1 E-8
Benzo(b)fluoranthene	0.019	3.1 E-7	NA	3.1 E-7	2 E-9	8 E-14	2 E-9
Benzo(k)fluoranthene	0.0065	1.1 E-7	NA	1.1 E-7	8 E-11	3 E-14	8 E-11
Chrysene	0.013	2.1 E-7	NA	2.1 E-7	2 E-11	5 E-15	2 E-11
Dibenzo(a,h)anthracene	0.0025	4.1 E-8	NA	4.1 E-8	3 E-9	1 E-13	3 E-9
Indeno(1,2,3-cd)pyrene	0.0068	1.1 E-7	NA	1.1 E-7	9 E-10	3 E-14	9 E-10
Semi-Volatile Organic Compounds							
Hexachlorobenzene	0.093	5.7 E-5	NA	5.7 E-5	3 E-8	2 E-12	3 E-8
Total		0.05	0.004	**0.05**	6 E-7	6 E-9	**6 E-7**

HQ = hazard quotient
HI - hazard index
ILCR = incremental lifetime cancer risk
(1) Note that risk estimates for surface flux data were done on a sample-by-sample basis, therefore, risks are presented as a range. See Appendix H for sample-specific risk estimates.

TABLE 6-14
CHEMICAL RISK SUMMARY FOR MAINTENANCE (OUTDOOR) WORKER RECEPTORS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Receptor	HI	ILCR
Future On-Site Maintenance Worker		
Soil, Dermal, and Dust	0.1	1 E-6
Volatile Inhalation (from Flux)(1)	0.00004	9 E-9
Combined	0.1	1 E-6

Chemical	**Soil Conc. (mg/kg)**	**Oral HQ**	**Dermal HQ**	**Outdoor Inhal HQ**	**Total HI**	**Oral ILCR**	**Dermal ILCR**	**Outdoor Inhal ILCR**	**Total ILCR**
Inorganics									
Aluminum	13000	1.1 E-2	NA	6.2 E-4	1.2 E-2	NA	NA	NA	NA
Arsenic	6.4	5.6 E-3	NA	1.0 E-4	5.7 E-3	9 E-7	NA	2 E-9	9 E-7
Cobalt	14	4.1 E-2	NA	5.6 E-4	4.2 E-2	NA	NA	1 E-8	1 E-8
Manganese	1500	2.8 E-2	NA	7.2 E-3	3.5 E-2	NA	NA	NA	NA
Aldehydes									
Acetaldehyde	3.9	NA	NA	1.0 E-7	1.0 E-7	NA	NA	7 E-13	7 E-13
Organochlorine Pesticides									
4,4-DDE	0.42	NA	NA	NA	NA	4 E-8	9 E-9	3 E-12	5 E-8
4,4-DDT	0.39	6.9 E-4	1.4 E-4	NA	8.2 E-4	4 E-8	8 E-9	3 E-12	5 E-8
Polynuclear Aromatic Hydrocarbons									
Benzo(a)anthracene	0.013	3.8 E-7	3.3 E-7	NA	7.1 E-7	3 E-9	3 E-9	1 E-13	6 E-9
Benzo(a)pyrene	0.011	3.2 E-7	2.8 E-7	NA	6.0 E-7	3 E-8	2 E-8	1 E-12	5 E-8
Benzo(b)fluoranthene	0.019	5.6 E-7	4.8 E-7	NA	1.0 E-6	4 E-9	4 E-9	2 E-13	8 E-9
Benzo(k)fluoranthene	0.0065	1.9 E-7	1.6 E-7	NA	3.5 E-7	1 E-10	1 E-10	6 E-14	3 E-10
Chrysene	0.013	3.8 E-7	3.3 E-7	NA	7.1 E-7	3 E-11	3 E-11	1 E-14	6 E-11
Dibenzo(a,h)anthracene	0.0025	7.3 E-8	6.3 E-8	NA	1.4 E-7	6 E-9	5 E-9	3 E-13	1 E-8
Indeno(1,2,3-cd)pyrene	0.0068	2.0 E-7	1.7 E-7	NA	3.7 E-7	2 E-9	1 E-9	6 E-14	3 E-9
Semi-Volatile Organic Compounds									
Hexachlorobenzene	0.093	1.0 E-4	6.8 E-5	NA	1.7 E-4	5 E-8	3 E-8	4 E-12	8 E-8
Total		0.09	0.0001	0.008	**0.1**	1 E-6	5 E-8	1 E-8	**1 E-6**

HQ = hazard quotient
HI - hazard index
ILCR = incremental lifetime cancer risk
(1) Note that risk estimates for surface flux data were done on a sample-by-sample basis, therefore, risks are presented as a range. See Appendix H for sample-specific risk estimates.

TABLE 6-15
ASBESTOS RISK SUMMARY
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Asbestos Risk Calculations ***Risk = $(C_{soil} * URF * (ET_{out} + (ET_{in} * ATT_{in})) * EF * ED) / (PEF * AT)$***

		CHRYSOTILE				***AMPHIBOLE***			
ESTIMATED RISK	**Units**	**Construction**	**Outdoor Worker**	**Indoor Worker**	**Onsite Resident**	**Construction**	**Outdoor Worker**	**Indoor Worker**	**Onsite Resident**
Estimated Risk (Total Structures)	Unitless	4 E-8	1 E-8	6 E-9	NA	0 E+0	0 E+0	0 E+0	NA
95% UCL (Total Structures)	Unitless	6 E-8	2 E-8	8 E-9	NA	6 E-7	2 E-7	7 E-8	NA
ESTIMATED AIR CONCENTRATIONS									
Estimated Airborne Concentration, C_{air} (best estimate)[A]	f/m^3	2.35E+02	3.10E+00	3.10E+00	3.10E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Estimated Airborne Concentration (upper bound)[B]	f/m^3	3.26E+02	4.31E+00	4.31E+00	4.31E+00	2.71E+01	3.58E-01	3.58E-01	3.58E-01

[A] *Estimated Airborne Concentration = Estimated C_{soil} * 1/PEF*

[B] *Estimated Airborne Concentration = 95% UCL (upper bound) * 1/PEF*

TABLE 7-1
UNCERTAINTY ANALYSIS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Source of Uncertainty	May Underestimate Risk	May Overestimate Risk	May Under or Overestimate Risk
Environmental Sampling and Analysis			
Sampling and laboratory analyses may have been inadequate to fully characterize the concentrations at the site.			Moderate
Systematic or random errors in the chemical analyses may yield erroneous data.			Low
The risk estimates are based on the COPCs only. Other chemicals were not quantified.	Moderate		
Some non-detect analytes had SQLs that exceeded risk-based comparison levels.	Low		
Although radon flux sampling was performed, the results were not evaluated in the human health risk assessment based on results of recent radon testing performed in groundwater and indoor air samples.	Low		
Exposure Assumptions			
Fate and transport modeling did not take into account biodegradation or other degradation processes.		Moderate	
Modeling did not take into account interactions that may occur among the different chemicals which may influence their migration.		Moderate	
Only primary receptors of concern were evaluated. Other populations (e.g., visitors, off-site residents) were not assessed.	Low		
Only primary exposure pathways were evaluated. Other pathways were not assessed.	Low		
Worker receptors were evaluated; however, the planned development of the Site includes retail. Potential worker exposures are considered more conservative, and therefore, protective and representative of any potential visitor receptors.		Moderate	

Source of Uncertainty	May Underestimate Risk	May Overestimate Risk	May Under or Overestimate Risk
Some of the exposure point concentrations used in the exposure assessment were based on modeled, rather than measured, levels in various media (e.g., air).			Moderate
Reasonable maximum exposure values were combined to arrive at the ADD and LADD estimates. There is a low probability that all of the various upper bound assumptions used in the exposure assessment would occur in conjunction with the 95 percent UCL chemical concentration.		Moderate	
Exposure point concentrations and the amount of media intake were assumed to be constant over time.		Low	
Toxicological Data			
Sub-chronic RfDs are appropriate to characterize non-cancer effects for short-term expo-sures (i.e., construction workers). However, sub-chronic RfDs were not available and therefore, chronic RfDs were used.		Moderate	
RfDs are derived and extrapolated from laboratory animal studies that expose animals to relatively high intakes. Errors are inherent in the extrapolation of data from animals to humans, from high to low doses, and from one exposure route to another.			Moderate
RfDs used to estimate non-carcinogenic risk are derived from NOAELs which are based on the sensitive endpoints in the sensitive species. As a result, extrapolation of toxicity data from animals to humans is uncertain. There may be differences in metabolism, uptake, or distribution of chemicals in the body between animals and humans. To account for this, NOAELs are divided by uncertainty factors spanning several orders of magnitude to establish the RfD. The combination of these two conservative assumptions may establish RfDs which greatly overprotect human health.		Moderate	

TABLE 7-1
UNCERTAINTY ANALYSIS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Source of Uncertainty	May Underestimate Risk	May Overestimate Risk	May Under or Overestimate Risk
CSFs used for the animal carcinogens are the 95% UCL derived from the linearized multistage model using animal chronic bioassay data, which tends to greatly overestimate carcinogenic risk in humans. The linearized multistage model ignores many known factors that have been documented to protect humans against the carcinogenic actions of chemicals, such as DNA repair and immunosurveillence.		High	
RfDs, CSFs and defensible carcinogenicity data were not available for some COPCs, which were therefore not quantitatively evaluated.	Low		
Aggregation of Exposure Units			
Aggregating the exposure areas or extrapolating from Site analytical results to estimated concentrations for individual 1/8-acre exposure areas.	Low		

TABLE 9-1
DATA QUALITY ASSESSMENT
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Table 9-1a: Sample Size Results for 4,4-DDE with BCL = 7.81 mg/kg

Number of samples = 89		s = 0.73		
Threshold = 7.81 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (0.781 mg/kg)	β = 15%	9	6	5
	β = 20%	8	6	4
	β = 25%	7	5	4
MDD = 20% (1.562 mg/kg)	β = 15%	3	2	2
	β = 20%	3	2	2
	β = 25%	3	2	1
MDD = 30% (2.343 mg/kg)	β = 15%	2	2	1
	β = 20%	2	1	1
	β = 25%	2	1	1

Table 9-1b: Sample Size Results for 4,4-DDT with BCL = 7.81 mg/kg

Number of samples = 89		s = 0.68		
Threshold = 7.81 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (0.781 mg/kg)	β = 15%	8	6	4
	β = 20%	7	5	4
	β = 25%	6	4	3
MDD = 20% (1.562 mg/kg)	β = 15%	3	2	2
	β = 20%	3	2	1
	β = 25%	3	2	1
MDD = 30% (2.343 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

Table 9-1c: Sample Size Results for Acetaldehyde with BCL = 69.9 mg/kg

Number of samples = 81		s = 2.9		
Threshold = 69.9 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (6.99 mg/kg)	β = 15%	3	2	1
	β = 20%	3	2	1
	β = 25%	3	2	1
MDD = 20% (13.98 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 30% (20.97 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

Table 9-1d: Sample Size Results for Aluminum with BCL = 100000 mg/kg

Number of samples = 77		s = 2800		
Threshold = 100000 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (10000 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 20% (20000 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 30% (30000 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

TABLE 9-1
DATA QUALITY ASSESSMENT
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Table 9-1e: Sample Size Results for Arsenic with Background = 7.2 mg/kg

Number of samples = 77		s = 2.5		
Threshold = 7.2 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (0.72 mg/kg)	β = 15%	102	76	61
	β = 20%	88	64	50
	β = 25%	77	54	42
MDD = 20% (1.44 mg/kg)	β = 15%	27	20	16
	β = 20%	23	17	13
	β = 25%	20	14	11
MDD = 30% (2.16 mg/kg)	β = 15%	13	9	7
	β = 20%	11	8	6
	β = 25%	10	7	5

Table 9-1f: Sample Size Results for Benzo(a)pyrene with BCL = 0.234 mg/kg

Number of samples = 73		s = 0.012		
Threshold = 0.234 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (0.0234 mg/kg)	β = 15%	4	3	2
	β = 20%	3	2	2
	β = 25%	3	2	2
MDD = 20% (0.0468 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 30% (0.0702 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

Table 9-1g: Sample Size Results for Cobalt with BCL = 337 mg/kg

Number of samples = 77		s = 4.8		
Threshold = 337 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (33.7 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 20% (67.4 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 30% (101.1 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

Table 9-1h: Sample Size Results for Hexachlorobenzene with BCL = 1.2 mg/kg

Number of samples = 74		s = 0.06		
Threshold = 1.2 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (0.12 mg/kg)	β = 15%	4	3	2
	β = 20%	3	2	2
	β = 25%	3	2	1
MDD = 20% (0.24 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 30% (0.36 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

TABLE 9-1
DATA QUALITY ASSESSMENT
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Table 9-1i: Sample Size Results for Manganese with BCL = 24900 mg/kg

Number of samples = 77		s = 1500		
Threshold = 24900 mg/kg		α = 5%	α = 10%	α = 15%
MDD = 10% (2490 mg/kg)	β = 15%	5	3	2
	β = 20%	4	3	2
	β = 25%	4	3	2
MDD = 20% (4980 mg/kg)	β = 15%	2	2	1
	β = 20%	2	1	1
	β = 25%	2	1	1
MDD = 30% (7470 mg/kg)	β = 15%	2	1	1
	β = 20%	2	1	1
	β = 25%	2	1	1

Table 9-1j: Sample Size Results for TCDD TEQ with BCL = 1000 ppt

Number of samples = 63		s = 210		
Threshold = 1000 ppt		α = 5%	α = 10%	α = 15%
MDD = 10% (100 ppt)	β = 15%	38	28	23
	β = 20%	33	24	19
	β = 25%	29	21	16
MDD = 20% (200 ppt)	β = 15%	11	8	6
	β = 20%	9	7	5
	β = 25%	8	6	4
MDD = 30% (300 ppt)	β = 15%	6	4	3
	β = 20%	5	4	3
	β = 25%	5	3	2

α = alpha
β = beta
s = standard deviation of sample data

APPENDIX A

NDEP COMMENTS AND BRC'S RESPONSE TO COMMENTS AND REDLINE/STRIKEOUT TEXT

APPENDIX A

NDEP Comments Dated September 1, 2015 on the Human Health Risk Assessment and Closure Report for the Triangle Commercial Sub-Area, BMI Common Areas (Eastside), Clark County, Nevada

1. Executive Summary, page ES-2, first paragraph of 'Conceptual Site Model'. The three proposed land uses described are "urban core", "retail/commercial", and "roads/parking". These land uses are also shown in Figure 6 (Current Development Plan), where "urban core" is depicted as buildings. Please define the term "urban core" here.

Response: *'Urban Core' is defined as retail and office space, and a casino/resort. A footnote with this information has been added to Figure 6 and on page 2-10 of the report text. This land use definition is consistent with the commercial land use evaluated in the human health risk assessment.*

2. Section 1.1, page 1-5, last paragraph of Section 1.1. Please identify in the report, appendix or attachment where the TEQ calculations described are documented. These could not be found.

Response: *This information (on the CD in Appendix B, in the electronic datafile) has been provided in Section 1.1 of the report.*

3. Section 2.5 Conceptual Site Model, Footnote 9, p. 2-10. For this footnote, please verify that the imported soil form other subareas are from those that have received a "no further action" determination. If so, then please add this in the footnote so that it documents that the imported soil would not adversely impact the Triangle subarea.

Response: *This information has been added to the text of this footnote.*

4. Section 2.5.3, pages 2-13 and 2-14. The Executive Summary (page ES-2) and Section 2.5 (page 2-10, first complete paragraph) both refer to "urban core" and "retail/commercial" land uses separately. However, no discussion of receptors, activities, exposure pathways and exposure frequency is provided for "urban core" land use in these pages. Please describe the nature of the "urban core" land use, explain how the exposure characteristics of receptors in these areas may differ from those in the "retail/commercial" scenario, and explain why the exposure model for the commercial worker receptors is applicable "urban core".

Response: *See response to comment #1 above. Information regarding this has been added to Section 2.5, page 2-10.*

5. Section 4.4, page 4-6, bullet-paragraph at top of page. Please provide an explanation of why the dichloromethyl ether SQL is considered adequate despite the fact that the SQLs >100x the BCL value. This explanation may involve one or more of the following arguments: 1) whether dichloromethyl ether is potentially related to site operations, 2) whether it's presence

or absence may be inferred based on results for other analytes, and, 3) information regarding it's environmental persistence.

Response: *This sentence has been removed and replaced with the following sentence: "These chemicals are further discussed in the Uncertainty Analysis section (Section 7.1)."*

6. Section 4.5.3.1, page 4-12, last paragraph. Note where (table or section) the 5 samples rejected due to low MS/MSD recoveries can be found.

Response: *A reference to Section 4.5 has been added.*

7. Section 5, Selection of Chemicals of Potential Concern, Footnote 28, p. 5-1. This footnote needs to be updated to reflect that the COPC selection process uses worker BCLs for comparison purposes and not residential BCLs. It is recommended that 1/10th the worker BCL be used to identify COPCs to take into account multiple chemical exposure. Table 5-5 does identify those chemicals that exceed 1/10th the worker BCL.

Response: *This footnote has been deleted from the report.*

8. Section 5.3 Comparison to Worker Soil BCLs, Footnotes 34 p. 5-6. Please change "Sunset North" to "Triangle".

Response: *This text has been corrected.*

9. Table 6-2, Footnote (2), last sentence. The last sentence of this footnote should be revised to state, "Total protocol structure counts are presented for informational purposes only."

Response: *This footnote text has been corrected.*

10. Table 6-9, Toxicity Criteria for Surface Flux. The inhalation unit risk value for bromodichloromethane should be 3.7E-05 $(\mu g/m^3)^{-1}$ as noted in the NDEP BCL document.

Response: *This value has been corrected.*

11. Section 7.2, page 7-5, last paragraph of Section 7.2. The text refers to risk calculations for 8 VOCs, but a review of Appendix H risk calculations (BRC Triangle Commercial Sub-Area HHRA-Closure Report_Risk Calcs-Commercial.xlsx) indicates that risk calculations across all flux chamber samples was limited to chloroform, carbon tetrachloride, methylene chloride, and tetrachloroethene. This discrepancy is presumably related to the mis-match between the groundwater screening (which identified 8 COPCs, as shown in Table J-1) and the flux chamber measurements. Please revise the text of this paragraph to identify the four VOCs for which risks were calculated.

Response: *All eight VOCs were included in the evaluation, but the comment is correct in that only four were detected in surface flux data. The sentence as it stands is correct. The text has been added to note that only four of the eight were detected.*

12. Table B-1 of Appendix B. Table B-1 includes the data qualifiers for asbestos data, but these are excluded in the asbestos tab of the BRC Triangle Commercial Sub-Area HHRA-Closure Report_Data.xlsx file. The data qualifiers should follow the asbestos data through the data summaries and also be uploaded to the NDEP database.

Response: *These qualifiers have been added to the asbestos data tab within the data file.*

13. Appendix H. The tab in BRC Triangle Commercial Sub-Area HHRA-Closure Report_Risk Calcs-Construction.xlsx labeled “App H Main Work_Calc” should probably be labeled “App H CW_Calc”.

    The VLOOKUP for hexachlorobenzene for Conc. in tab “App H Main Work_Calc” in BRC Triangle Commercial Sub-Area HHRA-Closure Report_Risk Calcs-Construction.xlsx for the oral exposure pathway references column 16 in Table 6-1 instead of column 17 which contains the EPC value. The VLOOKUP for the other pathways for hexachlorobenzene are correct. This causes the Oral HQ and Oral ILCR for hexachlorobenzene in Table 6-12 to be incorrect. These values should be 3.8E-4 for the oral HQ and 7E-9 for the oral ILCR.

    The VLOOKUP for hexachlorobenzene for Conc. in tab “App H Main Work_Calc” in BRC Triangle Commercial Sub-Area HHRA-Closure Report_Risk Calcs-Maintenance.xlsx for the oral exposure pathway references column 16 in Table 6-1 instead of column 17 which contains the EPC value. The VLOOKUP for the other pathways for hexachlorobenzene are correct. This causes the Oral HQ and Oral ILCR for hexachlorobenzene in Table 6-12 to be incorrect. These values should be 1.0E-4 for the oral HQ and 4E-8 for the oral ILCR.

Response: *These issues have been corrected.*

REDLINE/STRIKEOUT TEXT

EXECUTIVE SUMMARY

Basic Remediation Company LLC (BRC) has prepared this Human Health Risk Assessment (HHRA) and Closure Report for the Triangle Commercial Sub-Area (Site) of the Basic Management, Inc. (BMI) Common Areas (Eastside) in Clark County, Nevada. The Site comprises portions of the Staging and TIMET Ponds sub-areas as originally defined within the Eastside property. The purpose of this report is to support a request for a No Further Action Determination (NFAD) by the Nevada Division of Environmental Protection (NDEP) for the Site.

The HHRA evaluates the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and air following remediation of the Site. If the residual risks do not pose an unacceptable risk to human health and the environment, then an NFAD will be requested from the NDEP. Upon issuance of an NFAD by the NDEP, redevelopment of the Site is expected to proceed in a manner consistent with the Environmental Covenant (Instrument 201102030002818 Clark County Recorders Office) that is attached to the property. This report also describes the various remediation actions that were performed and presents the subsequent confirmation data collected between 2012 and 2014 at the Site.

BACKGROUND

Initial confirmation sampling investigations were conducted at the Site in 2010 in accordance with BRC's Sampling and Analysis Plans for the Staging and TIMET Ponds sub-areas (SAPs, approved by the NDEP on May 10, 2010, and January 29, 2010, respectively). The SAPs addressed sampling procedures such that remaining contaminants and their potential impacts to future Site uses (as discussed in Section 1.1 of the *BRC Closure Plan* for the BMI Common Areas [BRC, Environmental Resources Management (ERM), and Daniel B. Stephens & Associates, Inc. (DBS&A) 2007[1]]) can be determined. The Site investigations involved collection of soil matrix and surface flux samples from throughout the Site. The sampling plans performed for this purpose, as described in Section 4 of each SAP (BRC 2010a,b), were consistent with the approach presented in Section 2 of the *Statistical Methodology Report* (NewFields 2006). The *Statistical Methodology Report* describes the statistical methods that are

[1] The *BRC Closure Plan* was finalized and approved by NDEP in 2007. Subsequent to this date, revisions were made to Section 9 of the *BRC Closure Plan* (Risk Assessment Methodology–Human Health). The latest revision to Section 9 is March 2010. No other sections of the *BRC Closure Plan* have been revised since 2007.

used to confirm the final soils closure at each of the Eastside sub-areas of the BMI Common Areas. Several subsequent rounds of soil remediation and confirmation sampling were performed. The final number of samples collected was determined to be adequate for the completion of a statistically robust dataset upon which to perform an HHRA.

CONCEPTUAL SITE MODEL

The conceptual site model for the Site considers current and potential future land-use conditions. Currently, the Site is undeveloped except for Pabco Road, which transects the site from northwest to southeast. Current receptors that may be exposed to Site chemicals of potential concern (COPCs) include on-site trespassers, occasional on-site workers, and off-site residents. Future receptors identified as "on-site receptors" are defined as receptors located within the current Site boundaries (Figure 1), while future "off-site receptors" are those located outside the current Site boundaries. Under the prospective redevelopment plan, the Site is proposed for a variety of potential purposes, primarily urban core, retail/commercial and roads/parking. For the evaluation in this Closure Report, the focus is for retail/commercial land use and the HHRA assumes future receptors will include indoor commercial workers, outdoor maintenance workers, and construction workers.

Due to the requirement for use of default reasonable maximum exposure parameters for future receptors, exposures to future receptors are greater than current exposures. Accordingly, only future receptors were assessed in the HHRA. Potential exposures to off-site residents were qualitatively evaluated. The HHRA conforms to the methodology included in Section 9 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

The entire Site will be enhanced by restoration and redevelopment once remediation is complete. Therefore, there is no exposure to ecological receptors, because the Site will be prepared for retail/commercial land use.

DATA REVIEW AND USABILITY EVALUATION

A data review and usability evaluation was performed to identify appropriate data for use in the HHRA. The results of the data usability evaluation indicate that the data collected between 2010 and 2014 are adequate in terms of quality for use in a risk assessment.

HUMAN HEALTH RISK ASSESSMENT

An HHRA was conducted to determine if chemical concentrations in Site soils are either: (1) representative of background conditions; or (2) do not pose an unacceptable risk to human health and the environment under current and potential future use conditions. The HHRA followed the procedures outlined in U.S. Environmental Protection Agency (USEPA) and the NDEP guidance documents. As noted above, the HHRA also conforms to the methodology presented in Section 9 of the NDEP-approved *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010) and includes all COPCs for the Site. Results of the HHRA are summarized below.

TABLE ES-1: SUMMARY OF HUMAN HEALTH RISK ASSESSMENT CALCULATIONS

	Construction Worker	Commercial (Indoor) Worker	Maintenance (Outdoor) Worker
Site Chemical Non-Cancer HI[1]	1	0.05	0.1
Site Chemical Cancer Risk[2]	2×10^{-7}	6×10^{-7}	1×10^{-6}
Asbestos Risk[3]	0 to 6×10^{-7}	0 to 7×10^{-8}	0 to 2×10^{-7}

1 – HI = hazard index; the value presented is the total cumulative non-cancer HI.
2 – Cancer risk is the maximum theoretical upper-bound incremental lifetime cancer risk.
3 – Asbestos risk refers to the sum of cancer risks for mesothelioma and lung cancer. Asbestos risks represent the cumulative chrysotile and cumulative amphibole asbestos risks for chrysotile and amphibole fibers, respectively. Risks shown are the higher of the risks for chrysotile or amphibole fibers. Asbestos risks are not included in Site Cancer Risk (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

Air exposures to volatile organic compounds are evaluated on a sample-by-sample basis, per NDEP requirements, using the surface flux data measurements. Because of this, the minimum and maximum surface flux risks and HI estimates are summed with the soil risk and HI estimates to provide a range of cumulative risks and HIs. The risk estimates shown above incorporate the maximum surface flux risks. Primary risk contributors are discussed in the main body of the report.

EVALUATION OF UNCERTAINTIES

Risk estimates are values that have uncertainties associated with them. These uncertainties, which arise at every step of a risk assessment, are evaluated in the report to provide an indication of the uncertainty associated with a risk estimate. Uncertainties from different sources are compounded in the HHRA. Because the uncertainties are compounded and because the exposure assumptions and toxicity criteria used are considered conservative, the risk estimates calculated in this HHRA are likely to overestimate rather than underestimate potential risks. A detailed discussion of these uncertainties is provided in the Uncertainty Analysis (Section 7) of the report.

POTENTIAL IMPACTS TO GROUNDWATER

As noted in a letter dated September 17, 2012, from Greg Lovato, NDEP, to Mark Paris, BRC, HHRA reports for the project no longer evaluate the potential leaching impacts to groundwater for any sub-area. This issue will be addressed in the Eastside groundwater remedial alternatives study (GW RAS). As provided for in Section XVII of the Phase III Administrative Order on Consent, No Further Action Determinations issued for sub-areas are subject to Continuing Work to Address Water Pollution Conditions, Operation and Maintenance, Maintenance of Existing Institutional Controls, and/or Efficacy Review.

SUMMARY

Based on the results of the 2010 to 2014 sampling, the HHRA, and the conclusions presented there from in this report, exposures to residual levels of chemicals in soil at the Triangle Commercial Sub-Area should not result in adverse health effects to any of the future receptors evaluated. As a result, an NFAD for the Triangle Commercial Sub-Area is warranted, given the following provisos:

1. The NFAD does not pertain to groundwater. BRC retains the responsibility to address any environmental impacts to groundwater beneath the Site, pursuant to the *Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3* (NDEP 2006). As such, additional investigation may be necessary on the Site as it relates to BRC's responsibilities for groundwater. BRC must be granted access to the Site for activities such as well or soil boring installations or other investigative or remedial efforts.

2. The soils beneath 10 feet below ground surface of the Recorded Environmental Covenant (Instrument 201102030002818 Clark County Recorders Office) redevelopment grading plan for the Site have not been evaluated to date. Accordingly, the NFAD does not pertain to soil below the top 10 feet of the redevelopment grading plan for the Site. The property owner should note that these soils should not be disturbed without additional investigation or evaluation. BRC understands that this provision will be reflected in an Environmental Covenant for the Site.

3. The property owner should ensure that activities at the Site do not exacerbate existing, sub-surface, environmental conditions. The redevelopment grading plan (Figure 2) that has been prepared for redevelopment of the Site has been incorporated as an Environmental Covenant for the Site to control subsurface excavation.

4. Site use is otherwise suitable for purposes as retail/commercial land use.

1.0 INTRODUCTION

Basic Remediation Company LLC (BRC) has prepared this Human Health Risk Assessment (HHRA) and Closure Report for the Triangle Commercial Sub-Area (Site; Figure 1) of the Basic Management, Inc. (BMI) Common Areas (Eastside) in Clark County, Nevada. The Site comprises portions of the Staging and TIMET Ponds sub-areas as originally defined within the Eastside property. The purpose of this report is to support a request for a No Further Action Determination (NFAD) by the Nevada Division of Environmental Protection (NDEP) for the Site.[2] As presented in Section XVII.1.a. of the *Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3* (AOC3; NDEP 2006), the NDEP acknowledges that discrete Eastside areas may be issued an NFAD as remedial actions are completed for selected environmental media. Any such NFAD request shall identify the remedial actions and other work completed at the property in question, the results of such remedial actions and other work, the proposed land use(s), and the reasons supporting the eligibility of the property for an NFAD. This report provides this information for the Site.

BRC recognizes that the following conditions will be included in a Recorded Environmental Covenant (Instrument 201102030002818 Clark County Recorders Office) as a condition to receiving an NFAD from the NDEP:

1. The NFAD does not pertain to groundwater. BRC retains the responsibility to address any environmental impacts to groundwater beneath the Site, pursuant to the AOC3. As such, additional investigation may be necessary on the Site as it relates to BRC’s responsibilities for groundwater. BRC must be granted access to the Site for activities such as well or soil boring installations or other investigative or remedial efforts.

2. The soils beneath 10 feet below ground surface (bgs) of the redevelopment grading plan for the Site have not been evaluated to date. Accordingly, the NFAD does not pertain to soil below the top 10 feet of the redevelopment grading plan for the Site. The property owner should note that these soils should not be disturbed without additional investigation or evaluation.

[2] Note that a small portion of the Site was granted an NFAD by the NDEP on October 6, 1998. This NFAD was granted for purposes of construction of the Pabco Road extension. This portion has been included in this current report as part of the Site such that the NFAD will be extended to include retail/commercial land use, along with the rest of the Site.

3. The property owner should ensure that activities at the Site do not exacerbate existing, sub-surface, environmental conditions. The grading plan (Figure 2), which has been prepared for redevelopment of the Site, has been incorporated as an Environmental Covenant for the Site to control subsurface excavation.

4. Site use is otherwise suitable for purposes as retail/commercial land use.

As stated in Section VI of the NDEP's *Record of Decision, Remediation of Soils and Sediments in the Upper and Lower Ponds at the BMI Complex* (ROD; NDEP 2001), cleanup of the Site proceeded under Alternative 4B (soils transferred from the Site to a dedicated Corrective Action Management Unit [CAMU] within the BMI Complex),[3] as identified and described in Section 9 of the Remedial Alternatives Study (RAS) for the Eastside. The *Remedial Alternatives Study for Soils and Sediments in the Upper and Lower Ponds at the BMI Complex* (Environmental Resources Management [ERM] 2000) was submitted to the NDEP in March 2000. The RAS is documented via issuance of the ROD, dated November 2, 2001, by the NDEP.

This report is consistent in format with prior closure reports for other study areas, and incorporates comments received from the NDEP on those reports. Appendix A has been reserved for potential future NDEP comments on this report and BRC's response to these comments. An electronic version of the entire report, as well as original format files (MS Word and MS Excel) of all text, tables, modeling, and risk calculations are included on the report compact disc (CD) in Appendix B.

1.1 PURPOSE OF THE RISK ASSESSMENT

The purpose of the HHRA is to evaluate the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and air following remediation, and to assess whether any additional remedial actions are necessary in order to request an NFAD from the NDEP to allow redevelopment of the Site to proceed. The results of the risk assessment provide risk managers an understanding of the potential human health risks associated with background conditions and additional risks

[3] Under this alternative, the Site could be developed in accordance with the current development plan and the recorded Environmental Covenant for the Site that assures appropriate management of soils beneath 10 feet bgs (post-graded), should they need to be disturbed in the future.

associated with past Site activities.[4] Pending issuance of an NFAD by the NDEP, redevelopment of the Site is expected to proceed in a manner consistent with the Recorded Environmental Covenant attached to the property.

As presented in Section 2.5 of the Sampling and Analysis Plans for the Staging and TIMET Ponds sub-areas, BMI Common Areas (Eastside) Clark County, Nevada (BRC 2010a,b; hereinafter "SAPs"; approved by the NDEP on May 10, 2010, and January 29, 2010, respectively), remediation activities conducted at the Site prior to sampling in accordance with the SAPs involved the following:

- In 2000, a localized Interim Remedial Measure (IRM) was initiated in the Beta Ditch (Figure 3) to address elevated detections of metals, hexachlorobenzene and dioxins, but BRC elected to pursue further remediation, as needed, in accordance with the standard closure process set forth in the Closure Plan. The initial IRM was not performed in accordance with an NDEP-approved work plan.

- Starting in summer 2008, the TIMET ponds were dewatered, and their contents were removed and transported to the off-site CAMU for disposal. Certain pond contents were temporarily staged in secured locations within the Site and adjacent sub-areas for further dewatering to reduce the moisture content to a level appropriate for placement into the CAMU. These stockpile locations were along the Beta Ditch, as noted on Figure 3. As of the date of this report submittal, these stockpiled soils have been removed to the CAMU. During soil handling, the soils were treated to prevent generation of wind-blown dusts and runoff. Activities associated with stockpile management and disposal in the CAMU are documented in daily progress reports and monthly Interim Status Reports submitted to NDEP.

When the sampling conducted in accordance with the SAPs was performed, areas within the Site that warranted remediation were identified, as discussed in Section 3.3. These areas have been addressed. The overall goal of the risk assessment presented in this report, therefore, is to

[4] The HHRA presents total Site-related risk. Background risk is the risk to which a population is normally exposed, and does not include risks from Site contamination. Total Site-related risk includes both incremental (Site only) and background risks. Because naturally occurring constituents are typically included in a risk assessment (i.e., metals and radionuclides), the total Site-related risk will have some element of total risk included. However, because risks are only calculated for a subset of metal and radionuclides, a 'total' risk is not calculated. In instances where the total Site-related risk is calculated to exceed a cancer risk of 10^{-5} (typically when radionuclides are included in the risk assessment calculations) or a non-cancer hazard index greater than 1.0, then a background risk, only including those naturally occurring constituents included in the risk assessment, will also be calculated to provide context to the risk assessment results.

confirm that residual chemical concentrations are: (1) either representative of background conditions; or (2) do not pose an unacceptable risk to human health and the environment under current and potential future land use conditions. Findings of the HHRA are intended to support the Site closure process. While, in general, BRC's overall goal is to remediate Site soils for human health protection such that they are suitable for residential uses, that is not appropriate nor necessary for this Site since its intended use is as retail/commercial land use.

Project-specific risk level and remediation goals consistent with USEPA precedents and guidelines have been established, as summarized below. It should be noted that: (1) all comparisons to risk or chemical-specific goals are made on an exposure area basis consistent with likely exposure assumptions; and (2) these comparisons are demonstrated through the use of spatial statistical analysis to apply to each one-eighth-acre exposure area.

Human health risks are represented by estimated theoretical upper-bound cancer risks and non-cancer hazards derived in accordance with standard USEPA and NDEP methods. If the carcinogenic risks or non-cancer hazards exceed USEPA acceptable levels or NDEP risk goals, then remedial action alternatives must be considered. The acceptable risk levels defined by USEPA for the protection of human health, as identified in Section 9.1.1 of the *BRC Closure Plan* (BRC, ERM, and Daniel B. Stephens & Associates, Inc. [DBS&A] 2007; Section 9 revised March 2010), are:

- Post-NFAD chemical and radionuclide concentrations in Site soils are targeted to have an associated residual, cumulative theoretical upper-bound incremental lifetime cancer risk (ILCR) level point of departure of 10^{-6}. This is the target risk goal for the project. For cases where the NDEP identifies this goal to be unfeasible, it is BRC's understanding that the NDEP will re-evaluate the goal in accordance with USEPA (1991a) guidance. In no case will the residual, cumulative theoretical upper-bound carcinogenic risk levels exceed those allowed per USEPA guidance.

- Post-NFAD chemical concentrations in Site soils are targeted to have an associated cumulative, non-carcinogenic hazard index (HI) of 1.0 or less. If the screening HI is determined to be greater than 1.0, target organ-specific HIs will be calculated for primary and secondary organs. The final risk goal will be to achieve target organ-specific non-carcinogenic HIs of 1.0 or less.

- Where background levels exceed risk level goals or chemical-specific remediation goals, metal concentrations and radionuclide activities in Site soils are targeted to have risks no greater than those associated with background conditions.

In addition to the risk goals discussed above, chemical-specific remediation goals have been established for lead and dioxins/furans. The target goal for lead is 400 milligrams per kilogram (mg/kg) for residential land use, which is a residential soil concentration identified by USEPA (based on the Integrated Exposure Uptake Biokinetic Model [IEUBK] model) as protective of any exposure scenario (USEPA 2004a).

For dioxins/furans and polychlorinated biphenyl (PCB) congeners, the USEPA toxicity equivalency (TEQ) procedure, developed to describe the cumulative toxicity of these compounds, is used. This procedure involves assigning individual toxicity equivalency factors (TEFs) to the 2,3,7,8 substituted dioxin/furan and PCB congeners. TEFs are estimates of the toxicity of dioxin-like compounds relative to the toxicity of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD), which is assigned a TEF of 1.0. Calculating the TEQ of a mixture involves multiplying the concentration of individual congeners by their respective TEF. One-half the detection limit is used for calculating the TEQ for individual congeners that are non-detect in a particular sample. The sum of the TEQ concentrations for the individual congeners is the TCDD TEQ concentration for the mixture. TEFs from USEPA (2010) are used.[5] The calculation of the TCDD TEQs are included in the data file on the report CD in Appendix B. Consistent with the Agency for Toxic Substances and Disease Registry (ATSDR) *Update to the ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil* (2008), the target goal for retail/commercial land use is the ATSDR screening value and the NDEP worker Basic Comparison Level (BCL; NDEP 2013) of 1,000 parts per trillion (ppt) TCDD TEQ.

1.2 METHODOLOGY AND REGULATORY GUIDANCE

This risk assessment follows procedures outlined in USEPA *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual* (RAGS; USEPA 1989), and conforms to Section 9 (Risk Assessment Methodology–Human Health) of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010) which was approved by the NDEP on July 16, 2007. Various NDEP guidance documents are also relied on for the risk assessment (as

[5] Consistent with the letter dated November 9, 2010, from Greg Lovato, NDEP, to Mark Paris, BRC. BRC will revise the *BRC Closure Plan* accordingly.

referenced throughout this report). In addition, the NDEP's BCLs (NDEP 2013) are used for comparison of Site characterization data to provide for an initial screening evaluation, assist in the evaluation of data usability, and aid in determination of extent of contamination. A full list of guidance documents consulted is provided in Section 6 and the References section at the end of this document.

This report also relies upon methodology and information provided in the NDEP-approved *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010). The main text of the *BRC Closure Plan* provides discussions of the following elements relative to the BMI Common Areas project as a whole:

- The project history, including cleanup goals and project objective (Closure Plan Sections 1 and 2);
- The list of Site-related chemicals (SRCs; Closure Plan Section 3);
- The conceptual site model (CSM) addressing potential contaminant sources, the nature and extent of chemical of potential concern (COPC) occurrence, and potential exposure pathways (Closure Plan Section 4; a CSM discussion specific to the Site is provided in Section 5 of this report);
- Data verification and validation procedures (Closure Plan Section 5);
- The procedures used to evaluate the usability and adequacy of data for use in the risk assessment (Closure Plan Sections 6 and 9 [2010 revision]);
- The data quality objectives (DQOs; Closure Plan Section 7[6]);
- The RAS process for the Site (Closure Plan Section 8);
- Risk assessment procedures that will be used for Site closure (Closure Plan Section 9 for human health [2010 revision] and Section 10 for ecological); and
- Data quality assessment (Closure Plan Section 5).

[6] As noted in the *BRC Closure Plan*, per discussions with the NDEP, the DQO process is addressed, on an Eastside sub-area by sub-area basis (for soils), in the respective sub-area SAPs developed for each sub-area relating to the soils cleanup. Therefore, the DQO process for the Site is presented in the SAP and is not repeated here. This DQO process was incorporated in the data usability/data adequacy evaluation for the Site data used in the risk assessment.

As discussed in this report, the risk assessment for the Site is conducted primarily using the data collected during implementation of the Site-specific SAPs and subsequent confirmation sampling events, which have been designed to produce data representative of the conditions to which current (non-remediation workers) and future users would be exposed.

1.3 REPORT ORGANIZATION

The closure report is composed of 11 sections, as outlined below:

- This section (Section 1) presents the purpose of the risk assessment and the methods used in this assessment.
- Section 2 presents Site background, the environmental setting for the Site, and a summary of previous investigations. Section 2 also presents the CSM for the risk assessment. This includes identification of potentially exposed populations, and the potential pathways of human exposure.
- Section 3 presents the confirmation data collected between 2010 and 2014, as well as discussions on the various remedial actions conducted at the Site.
- Section 4 presents data evaluation procedures, including statistical analysis of background concentrations, and data usability and quality.
- Section 5 presents the selection of COPCs recommended for further assessment, including comparisons of Site metals and radionuclides to background conditions.
- Section 6 presents the HHRA. This includes relevant statistical analyses, determination of representative exposure point concentrations, applicable fate and transport modeling, exposure assessment, toxicity assessment, and risk characterization.
- In Section 7, the uncertainties associated with the risk assessment are discussed.
- A summary of the risk assessment results is provided in Section 8.
- The data quality assessment for the risk assessment is presented in Section 9.
- A summary of the HHRA and Closure Report is provided in Section 10.
- A list of references is provided in Section 11.

Smaller tables with supporting information are inserted in the text at the place of reference. The text is followed by the figures, larger tables, and appendices.

2.0 SITE DESCRIPTION

This section presents a description of the Site, including Site background and history, the environmental setting, and a summary of previous investigations. The area known as the “BMI Common Areas,” of which the Triangle Commercial Sub-Area is a part, is delineated in Appendix A of the AOC3. The subject Site is near the BMI Industrial Complex, in Clark County, Nevada, approximately 13 miles southeast of Las Vegas, within the City of Henderson (CoH) corporate limits, northeast of the City Hall (Figure 1). The total extent of the Site is 19.6 acres. The Site is a portion of the sub-areas within the Eastside property that were previously defined as the Staging and TIMET Ponds sub-areas in Section 1 and Figure 1-2 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), as subsequently modified in the Staging and TIMET Ponds SAPs (BRC 2010a,b). As seen on Figure 3, the majority of the Site falls within the former Staging sub-area (18.7 acres); 0.9 acre is within the former TIMET Ponds sub-area.

The Site is an irregularly shaped, generally triangular area immediately north of the Warm Springs Road right-of-way, where it intersects with Boulder Highway. Pabco Road was previously located immediately west of the Site, but the southern portion of this roadway was diverted to the east in the late 1990s and Pabco Road now transects the Site from northwest to southeast. Pabco Road is paved and in use.

The Joker’s Wild Casino is located immediately west of most of the Site; vacant land and residential housing is present to the northwest. The Site is bounded to the south by the Southern Rapid Infiltration Basins (RIBs) sub-area, and to the east and north by the Eastside Main sub-area. Each of these surrounding sub-areas has received an NFAD from the NDEP.

In addition to the Pabco Road segment, the Site contains the following historical features:

- Portions of unlined wastewater effluent evaporation/infiltration ponds (Figure 3) that were built and into which various plant wastewaters were discharged from 1942 through 1976;
- Portions of two former effluent conveyance ditches, the Alpha Ditch and the Beta Ditch, associated with the historical effluent discharge (Figure 3);
- An outlet that leads to a subsurface, culverted extension to the Beta Ditch (historically known as the BMI Siphon) that passes beneath Boulder Highway; and

- A cross-over pipe within the Staging sub-area that allowed operators of ditch effluent to divert flows between the Alpha and Beta Ditches, as desired.

Since 1976, when wastewater discharge to the Alpha Ditch ceased, the Site has been vacant and unused other than activities associated with Pabco Road.

2.1 SITE HISTORY

Approximately 400 of the more than 2,200 acres comprising the BMI Common Areas contained a network of ditches, canals, flumes, and unlined ponds that were used for the disposal of aqueous waste from the original magnesium plant and, later, other industrial plants and the adjacent municipality. Effluent wastes discharged to the ponds of the BMI Common Areas from the war-time Basic Magnesium operations can be characterized as salts from the production process (chloride salts of a variety of metals and radionuclides), organic solids, and inorganic solids and dissolved components of various types. Chlorinated organic chemicals were included in the effluent. Notable processes that contributed to the waste stream from the plants that succeeded Basic Magnesium included effluents from the manufacture of the following types of products: chlorine and sodium hydroxide (caustic soda); a variety of chlorate and perchlorate compounds, and halogenated boron compounds; manganese dioxide; titanium and related compounds; and a variety of pesticides. Among these wastes were salts, organic and inorganic chemicals, and metals. A more detailed description of these processes and their effluents is found in Sections 2.2 and 2.3 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

As described in the Staging sub-area SAP (BRC 2010b), the following additional activities were identified as having occurred historically within the Site:

- Based on historical topographic maps, borrow pits are noted as being present in the 1970s and 1980s near the intersection of the Alpha and Beta Ditches. No documentation of use of this area for borrow pits has been found; however, surface expressions of disturbances in this area are apparent in aerial photographs through the 1980s. Subsequent aerial photographs suggest that these depressions were filled in over time, and current aerial photographs show no obvious surface expressions of these features. An area of buried debris was observed in 1998 in this area during site walks conducted in preparation for the then-proposed Warm Springs/Pabco Road realignment. Trenches were dug in this area prior to the realignment construction activities to evaluate environmental conditions within the then-proposed realignment. Demolition debris (*e.g.*, primarily soil, concrete, glass, asphalt, rebar, and piping) was observed to depths of approximately 7 feet bgs in those trenches. The source of this debris is unknown. Because debris tends to be preferentially placed into depressions, it is plausible that borrow pits once existed in this area.

- Starting in 2008, staging activities associated with the excavation of soils from other Eastside areas were conducted at the Site. These activities primarily involved employee/visitor parking. Additional remediation-related activities included construction management, including construction trailers that provided storage of supplies and offices for management and field personnel and construction and use of designated haul roads that transected the Site for transport of impacted materials to the off-site CAMU. As indicated on Figure 3, a portion of the Beta Ditch within the Site was used as a temporary staging area for materials removed from the TIMET Ponds prior to transportation of these materials to the CAMU.

2.2 ENVIRONMENTAL SETTING

The BMI Common Areas and Complex are located in Clark County, Nevada, and are situated approximately 2 miles west of the River Mountains and 1 mile north of the McCullough Range. The local surface topography slopes in a westerly to northwesterly direction from the River Mountains and in a northerly to northeasterly direction from the McCullough Range. Near the BMI Common Areas and Complex, the surface topography slopes north toward the Las Vegas Wash. The River Mountains and McCullough Range consist of volcanic rocks: dacite in the River Mountains and andesite in the McCullough Range (Umhoefer et al. 2010).

The Site (Figure 3) comprises 19.6 acres of undeveloped land with little surface relief that is gently sloping to the northeast. The Site is currently undeveloped, except for Pabco Road, the previously noted ditch segments and associated features, and former effluent ponds (remnants that are no longer readily apparent). The native soils are compacted, poorly sorted, non-plastic, light brown to red silty sand with varying amounts of gravel.

2.2.1 Site Location, Climate and Physical Attributes

The Site is in the northeastern quarter of Section 5, Township 22 South, Range 63 East Mount Diablo Base and Meridian. The Site is in the Las Vegas Valley, a broad alluvial valley that occupies a structural basin in the Basin and Range Physiographic Province. The valley is about 1,550 square miles in size, and the structural and topographical axis is aligned approximately northwest to southeast. The eastern edge of the valley is about 5 miles west of Lake Mead, a major multipurpose artificial reservoir on the Colorado River. The Las Vegas Valley is surrounded mostly by mountains, ranging from 2,000 to 10,000 feet higher than the valley floor. The valley floor ranges in elevation from about 3,000 feet above mean sea level (msl), in the west at the mountain front, to 1,500 feet above msl, in the east at the Wash (Clark County GIS Management Office 2003). The surrounding mountain ranges are:

- Sheep Range to the north;
- Frenchman and Sunrise Mountains to the northeast;
- River Range to the east;
- McCullough Range to the south; and
- Spring Mountains and Sierra Nevada mountain range of California to the west.

The Site is within the CoH corporate limits, northeast of the City Hall, and approximately 13 miles southeast of the city of Las Vegas (Figure 1). At its closest point, the Site is approximately 2.3 miles south of the Las Vegas Wash.

The Site is situated in a natural desert area, where evaporation/evapotranspiration rates are high, due to high temperatures, high winds, and low humidity. Precipitation in this area averages approximately 0.4 inch per month or 4.8 inches per year (Western Regional Climate Center 2008). As discussed in the *Sources/Sinks and Input Parameters for Groundwater Flow Model Revised Technical Memorandum* (DBS&A 2009), in arid settings, recharge from precipitation is typically a small percentage of annual precipitation. Based on values from Scanlon et al. (2006), recharge as a percentage of annual precipitation for the Site area was estimated to be between 0.1 and 5 percent. Recharge is thus estimated to be between 0.0048 and 0.24 inch per year.

According to the Southern Nevada Water Authority's document entitled *Extent and Potential Use of the Shallow Aquifer and Wash Flow in Las Vegas Valley, Nevada* (1996), annual potential evapotranspiration exceeds 86 inches. Pan evaporation data measured from 1985 through 1988 were as high as 17 inches per month; the months with the highest evaporation (May through September) coincide with those months with the highest intensity of rainfall (Law Engineering 1993). However, evaporation and evapotranspiration are functions of vegetation type and density and other Site-specific conditions (especially anthropogenic conditions). Therefore, Site-specific evaporation/evapotranspiration may vary from these regional conditions. These climatic parameters may be appreciably influenced by future redevelopment (e.g., vegetation removal, pavement extent, and construction).

Wind flow patterns are fairly consistent from one month to another, but vary slightly between measurement stations (McCarran International Airport and a station within the BMI Complex adjacent to the employee parking lot at the Titanium Metals Corporation [TIMET] plant entrance). For the McCarran station, the prevailing wind direction is from the southwest. The TIMET station also showed a predominant wind direction from the southwest, with southeasterly components. Wind velocity at both locations tends to be the highest in the spring and early summer months (April through July).

2.2.2 Geology/Hydrology

As is common throughout the Las Vegas Valley, Site soils are primarily sand and gravel, with occasional cobbles. This is consistent with the depositional environment of an alluvial fan. The Site is located on alluvial fan sediments, with a surface that slopes to the north-northeast at a gradient of approximately 0.02 foot per foot towards the Las Vegas Wash. Regional drainage is generally to the east.

The uppermost strata beneath the Site consist primarily of alluvial sands and gravels derived from the volcanic source rocks in the McCullough Range, located southwest of the Site. These uppermost alluvial sediments were deposited within the last 2 million years and are of Quaternary Age, and are thus mapped and referred to as the Quaternary alluvium (Qal; Carlsen et al. 1991). The Qal is typically on the order of 50 feet thick at the Site with variations due, in part, to the non-uniform contact between the Qal and the underlying Tertiary Muddy Creek Formation (TMCf).

The TMCf underlies the Qal. The Muddy Creek formation, of which the TMCf is the uppermost part, is a lacustrine deposition from the Tertiary Age, and it underlies much of the Las Vegas Valley. It is more than 2,000 feet thick in places. The lithology of the TMCf underlying the Site is typically fine-grained (sandy silt and clayey silt), although layers with increased sand content are sporadically encountered. These TMCf materials have typically low permeability, with hydraulic conductivities on the order of 10^{-6} to 10^{-8} centimeters per second (Weston 1993). The TMCf in the vicinity of the Site was encountered to the maximum explored depth of 430 feet bgs. Lithologic cross sections are shown on Figures 4 and 5.

Two distinct, laterally continuous water-bearing zones are present within the upper 400 feet of the Site subsurface: (1) an upper, unconfined water-bearing zone primarily within the Qal referred to herein as the alluvial aquifer (Aa); and (2) a deep, confined water-bearing zone that occurs in a sandier depth interval within the silts of the deeper TMCf. Both of these water-bearing zones contain high concentrations of total dissolved solids. Between these two distinct water-bearing zones, a series of saturated sand stringers was sporadically and unpredictably encountered during drilling.

The Aa is an unconfined, shallower, water-bearing zone that occurs across the Site. For the most part, water in the Aa occurs in the Qal. The water surface in the Aa generally follows topography, with the water surface sloping towards the Las Vegas Wash. The depth from the surface to first groundwater at the Site is approximately 40 to 47 feet bgs (Figure 3). Wells completed in the Aa are not highly productive, with sustainable flows typically less than 5 gallons per minute.

2.2.3 Surface Water

Surface water flow occurs for brief periods of time during periodic precipitation events. The Las Vegas Wash collects storm water, shallow groundwater, urban runoff, and treated municipal wastewater. It is the receiving water body for all major Las Vegas area discharges. In dry weather, flow in the Wash comprises mainly treated effluent from the Clark County Water Reclamation District City of North Las Vegas, City of Las Vegas Water Pollution Control Facility, and the CoH Water Reclamation Facility (WRF). The CoH contributes smaller amounts. Aggregate flow is in excess of 160 million gallons per day (Las Vegas Wash Coordination Committee 2000). Discharge from these sources is sufficient to maintain surface flows in the Wash throughout the year. In winter, low-intensity rains fall over broad areas; in the spring and fall, thunderstorms provide short periods of high-intensity rainfall. The latter creates high run-off conditions. Run-off is also affected by human development, which tends to (1) create conduits for surface water flow and (2) decrease infiltration into native soils by covering them with man-made structures or materials (e.g., pavement).

Under current conditions, it is unlikely that ephemeral surface waters generated within the Site will migrate via overland transport to the Las Vegas Wash from the Site due to (1) the distance to the Wash (greater than 2 miles); (2) the intervening presence of the existing berms associated with the former effluent ponds, and the CoH WRF between the Site and the Wash. However, the presence of the drainage ditches suggests the current potential for rainfall to be carried from those portions of the Site to the Wash. After redevelopment, when the ditches have been removed, there will be an even lower likelihood that ephemeral surface waters generated within the Site will migrate via overland transport to the Las Vegas Wash from the Site because of the proposed design of the future storm water facilities and the regional requirement that nuisance flows not be discharged directly into the Las Vegas Wash unless they do so under existing conditions. (Flows from future development do not meet this criterion.)

Groundwater seeps currently exist at various locations north of the BMI Common Areas near the Las Vegas Wash. No seeps currently exist within the Site. An evaluation of historical aerial photos taken between 1964 and 1970 indicates apparent historical seeps within Eastside and at nearby off-site locations in association with past effluent infiltration at the Eastside ponds and with infiltration of municipal wastewater at the southern RIBs. Evidence of seeps was not observed within the Site in these aerial photographs.

2.3 SUMMARY OF HISTORICAL INVESTIGATIONS

Several historical field investigations were conducted at the Site to characterize the nature and extent of chemical occurrence in Site soils and groundwater. Based on these sampling events, BRC identified portions of the Site that warranted remediation for protection of human health and the environment,[7] and subsequently performed remediation in those areas. The SAPs present a detailed analysis of data collected during the historical field investigations conducted at the Staging and TIMET Ponds sub-areas. Of those investigations, the following sampling events included sampling within the Site boundaries:

- The BMI Common Areas Environmental Conditions Investigation (ECI) conducted during March and April 1996 (dataset 1a). The soil investigation activities were performed in accordance with a work plan approved by NDEP in February 1996 (ERM 1996a). The soil sampling results for the investigation activities were presented in the ECI report (ERM 1996b), which was approved by NDEP in March 1997. Data validation results are presented in the Data Validation Summary Report (DVSR) for dataset 1a (ERM 2006a), which was approved by NDEP on September 12, 2006.

- An investigation conducted in 1998 in the rights-of way for the Pabco Road realignment and Warm Springs Road extension (dataset 2). The soil investigation activities were performed in accordance with a March 26, 1998, work plan. The soil sampling results for the investigation activities were presented in a July 9, 1998 letter report that was submitted to NDEP (ERM 1998). NDEP granted a No Further Action Status of the rights-of-way on

[7] It should be noted that this determination was based on comparison of chemical detections to then-applicable human-health risk-based screening levels.

October 6, 1998. Data validation results are presented in the DVSR for dataset 2 (ERM 2006b), which was approved by NDEP on October 25, 2006;

- An investigation conducted during December 2000/January 2001 (dataset 14) to assess conditions in this area to support potential transfer of the property for educational uses. The soil investigation activities were not performed in accordance with an NDEP-approved work plan and the soil sampling results have not been formally presented to NDEP prior to this SAP. Data validation results are presented in the DVSR for dataset 14 (MWH 2006a), which was approved by NDEP on 8 November 2006;

- Waste characterization conducted in July and August 2006 (dataset 39). The soil investigation activities were performed in accordance with BRC's SAP submitted on June 29, 2006, and approved by NDEP in July 2006. The soil sampling results for the investigation activities were previously presented in the *Remedial Action Plan* (RAP; BRC 2007), which was approved by NDEP on September 24, 2007. Data validation results are presented in the DVSR for dataset 39 (MWH 2006b), which was approved by NDEP on November 3, 2006.

The Site-related data from the above investigations were also presented in Appendix B of the SAPs. During these investigations, soil samples at various depths were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine pesticides, organophosphorus pesticides, PCBs, chlorinated herbicides, dioxins/furans, metals, perchlorate, and/or radionuclides. The data from these investigations have been validated, as noted above. Data validations are presented in the respective DVSRs for each of the datasets, and all have been approved by the NDEP.

Several of the samples collected during these historical investigations were composite samples and were collected more than 10 years ago; few of the previous samples were analyzed for all of the major chemicals or chemical families now mandated; several analyses used different analytical methods than established in the current analytical program for the BMI Common Areas; and spatial coverage of the Site was incomplete. Therefore, because of these various factors, the data collected as part of the SAPs (as discussed in Section 3) are considered more representative of current Site conditions[8] than data collected from previous investigations, and

[8] This determination is also based on the data usability evaluation summarized in Section 4.2.

these recent data (collected between 2010 and 2014) are therefore relied upon for risk assessment purposes as described in this report.

2.4 HISTORICAL REMEDIAL ACTIVITIES

Remediation activities conducted at the Site prior to sampling in accordance with the SAPs involved the following:

- In 2000, a localized IRM was initiated in the Beta Ditch (Figure 3) to address elevated detections of metals, hexachlorobenzene, and dioxins; but BRC elected to pursue further remediation, as needed, in accordance with the standard closure process set forth in the Closure Plan. The initial IRM was not performed in accordance with an NDEP-approved work plan.

- Starting in Summer 2008, the TIMET ponds were dewatered, and their contents were removed and transported to the off-site CAMU for disposal. Certain pond contents were temporarily staged in secured locations within the Site and adjacent sub-areas for further dewatering to reduce the moisture content to a level appropriate for placement into the CAMU. These stockpile locations were along the Beta Ditch, as noted on Figure 3. As of the date of this report submittal, these stockpiled soils have been removed to the CAMU. During soil handling, the soils were treated to prevent generation of wind-blown dusts and runoff. Activities associated with stockpile management and disposal in the CAMU are documented in daily progress reports and monthly Interim Status Reports submitted to NDEP.

These IRM areas are shown on Figure 3.

2.5 CONCEPTUAL SITE MODEL

The CSM is a tool used in risk assessment to describe relationships between chemicals and potentially exposed human receptor populations, thereby delineating the relationships between the suspected sources of chemicals identified at the Site, the mechanisms by which the chemicals might be released and transported in the environment, and the means by which the receptors could come in contact with the chemicals. The CSM provides a basis for defining DQOs, guiding Site characterization, and developing exposure scenarios. The Site history; land uses; climate; physical attributes, including geology and hydrogeology; and various field investigations are described in Sections 2.1 through 2.4 of this HHRA. The history and environmental conditions of the BMI Common Areas are described in Sections 2 and 4 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), and in the Site-wide CSM (in preparation).

The HHRA evaluates current and potential future land-use conditions. The Site is currently undeveloped with the exception of Pabco Road. The potential on- and off-site receptors are currently trespassers, occasional on-site workers, and off-site residents. Exposures to current receptors are being managed through Site access control. Under the prospective redevelopment plan, the Site will have urban core and retail/commercial land uses, including roads, parking and landscaping. Therefore, for the evaluation in this Closure Report, the HHRA assumes future receptors will include indoor commercial workers, outdoor maintenance workers, and construction workers.

The entire Site will be enhanced by restoration and redevelopment once remediation is complete. Therefore, exposures to ecological receptors will be mitigated or removed. Future receptors identified as "on-site receptors" are defined as receptors located within current Site boundaries (Figure 1), while future "off-site receptors" are those located outside current Site boundaries. Many potential human receptors are possible at the Site in the period during and after redevelopment. The potentially exposed populations and their potential routes of exposure are discussed in Section 2.5.3.

The current development plan for the Site is shown on Figure 6. This is an example and actual features may change in the future. To construct the retail/commercial buildings, as well as roads, parking, landscaping and associated features, the land will be cut and/or filled and nurtured with imported top soils[9] as needed. As identified on Figure 6, 'Urban Core' is defined as retail and office space, and a casino/resort. This is consistent with the land use and potential human receptors evaluated in this HHRA. Figure 2 shows the Redevelopment Grading Plan for the Site, indicating which areas will be filled and which areas will be cut.

The CSM includes the planned redevelopment of the Site. All potential transfer pathways are included in the CSM. The human health aspects of the CSM for the Site are presented on Figure 7.

[9] Imported soil data are not included in risk assessment calculations because imported soils are not expected to be used. However, the chemical data for fill material from a given site within the Eastside property may be useful for evaluating sub-areas to receive fill from that site. Any soil that is imported to a sub-area will be from a sub-area that has received an NFAD.

Numerous release mechanisms influence chemical behavior in environmental media. Under both current and future land use conditions at the Site, the principal release mechanisms involved are:

- Vertical migration in the vadose zone;
- Storm/surface water runoff into surface water and sediments;
- Fugitive dust generation and transport; and
- Vapor emission and transport.

Although these release mechanisms are identified here, no quantitative modeling is presented in this section. Instead, those primary release mechanisms identified for particular receptors are presented in this section, and are quantitatively evaluated in Section 6.

2.5.1 Impacted Environmental Media

Environmental media at the Site consist of five categories: surface soil, subsurface soil, groundwater, indoor air, and ambient outdoor air. Samples relative to Site baseline conditions have been collected at the Site for soil. Generally, impacted soil is the source of chemical exposures for other media at the Site.

Because the background water quality of groundwater beneath the Site and in the surrounding area is generally poor (viz., high total dissolved solids concentration) and because BRC has placed Environmental Covenants in the form of a deed restriction to prevent future users from utilizing groundwater beneath the Site, the use of private water wells by businesses for drinking water, irrigation water, or other non-potable uses (e.g., washing cars, filling swimming pools) will not occur in the post-redevelopment phase. Furthermore, there are no anticipated groundwater uses associated with the proposed retail/commercial land use. Therefore, exposure pathways relating to this type of use are incomplete, as defined by USEPA (1989).

Although direct exposures to groundwater will not occur; indirect exposures are possible. The primary indirect exposure pathway from groundwater is the infiltration of VOCs from soil and groundwater to indoor air. In addition, residual levels of chemicals in soil may leach and impact groundwater quality beneath the Site.

2.5.2 Inter-Media Transfers

Exposure to Site chemicals may be direct, as in the case of impacted surface soil, or indirect following inter-media transfers. Impacted soil is the initial source for inter-media transfers at the Site, which can be primary or secondary. For example, upward migration of VOCs from impacted subsurface soil into ambient air thereby reaching a point of human inhalation represents a secondary inter-media transfer.

These inter-media transfers represent the potential migration pathways that may transport one or more chemicals to an area away from the Site where a human receptor could be exposed. Discussions of each of the identified potential transfer pathways are presented below. Figure 7 presents a conceptualized diagram of the inter-media transfers and fate and transport modeling for the Site.

Five initial transfer pathways for which chemicals can migrate from impacted soil to other media have been identified. The first of these pathways is volatilization from soil and upward migration from soil into ambient air. Ambient air can be both indoor and outdoor air. The pathway of volatilization from both soil and groundwater and upward migration into ambient air was evaluated using the surface flux measurements collected. The secondary transfer pathway is downward migration of chemicals from soil to groundwater. The third transfer pathway is migration of chemicals in surface soil via surface runoff to sediments or surface water bodies. However, as discussed in Section 2.2.3, because of the distance to the Wash (greater than 2 miles) and the intervening presence of the existing berms associated with the former effluent ponds, and the CoH WRF, it is unlikely that surface waters (which are ephemeral) will drain to the Las Vegas Wash from the Site. Therefore, the surface water pathway was not evaluated in this risk assessment. The fourth transfer pathway is on-site fugitive dust generation. Finally, chemicals in soil can be transferred to plants grown on the Site via uptake through the roots. However, the plant uptake pathway is only evaluated for residential receptors, and therefore is not included for the Site.

2.5.3 Potential Human Exposure Scenarios

The following subsections summarize land use and the human exposure scenarios that are assessed herein.

2.5.3.1 Current and Future Land Use

Current receptors that may use the Site include trespassers, occasional on-site workers, and off-site residents. Current exposures to native soils at the Site are minimal, but exposures to future receptors will be much greater. For example, future receptors evaluated in the HHRA include on-site workers who are assumed to be exposed to soil at the Site for 250 days per year for 25 years, which is much greater than any current exposure scenario. In addition, as discussed above, exposures to current receptors are limited through Site access control. Therefore, a current land use scenario is not quantitatively evaluated in this risk assessment.

USEPA risk assessment guidance (1989) states that potential future land use should be considered in addition to current land use when evaluating the potential for human exposure at a site. As indicated above, under the prospective redevelopment plan, the Site will be used for retail/commercial land use, including parking and landscaping. The entire Eastside property will be redeveloped in several phases. Throughout the redevelopment process, the sub-areas of the Site will be redeveloped sequentially. Future receptors identified as "on-site receptors" are defined as receptors located within the current Site boundaries (Figure 1), while future "off-site receptors" are those located outside the current Site boundaries. "On-site receptors" are those future receptors that will be located within the Site under evaluation. "Off-site receptors" are those future receptors that will be located outside the Site under evaluation that may have complete exposure pathways associated with sources within the Site. As noted above, remediation of the Site is to on-site indoor/outdoor/construction worker standards. Consequently, risks to off-site receptors are addressed qualitatively in this risk assessment.

2.5.3.2 Identification of Potentially Exposed Populations and Pathways

Many potential human receptors are possible at the Site in the period during and after redevelopment. The potentially exposed populations and their potential routes of exposure are presented on Figure 7 and summarized below. For a complete exposure pathway to exist, each of the following elements must be present (USEPA 1989):

- A source and mechanism for chemical release;
- An environmental transport medium (i.e., air, water, soil);
- A point of potential human contact with the medium; and
- A route of exposure (e.g., inhalation, ingestion, dermal contact).

As presented in Section 9 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), the following are the primary exposure pathways for each of the potential receptors following remediation and redevelopment at the Site.

- Indoor commercial workers
  - Incidental soil ingestion*
  - External exposure from soil†
  - Indoor inhalation of VOCs from soil and groundwater

- Outdoor maintenance workers
  - Incidental soil ingestion*
  - External exposure from soil†
  - Dermal contact with soil
  - Outdoor inhalation of dust*‡
  - Outdoor inhalation of VOCs from soil and groundwater

- Construction workers
  - Incidental soil ingestion*
  - External exposure from soil†
  - Dermal contact with soil
  - Outdoor inhalation of dust*‡
  - Outdoor inhalation of VOCs from soil and groundwater

*Includes radionuclide exposures
†Only radionuclide exposures
‡Includes asbestos exposures

Although trespassers/recreational users and downwind off-site residents are another potential receptor identified in the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), exposures for these receptors are less than those evaluated above. As noted in Sections 9.1.1 and 9.7.1 of the *Closure Plan*, potential exposures for trespassers/recreational users will only be evaluated in areas of the BMI Common Areas that are designated as recreational end use (specifically the Western Hook-Open Space sub-area shown on Figure 1). Also, as noted in Section 9.5.4 of the *Closure Plan*, off-site dust levels based on USEPA's model are much lower than those generated for on-site, construction-related activities. Therefore, risks evaluated for an on-site construction worker, as performed in this HHRA, are considered protective of off-site residents.

3.0 CONFIRMATION DATA PROCESS AND SUMMARY

Based on the historical data for the Site, the IRMs discussed in Section 2.4 were conducted prior to implementing the sampling prescribed in the SAPs. Decisions for excavation during SAP implementation were based on the initial data (discussed below) in accordance with the Risk Assessment Methodology provided in the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010). The following is the initial scope of work for investigating the Site and meeting the SAP objectives. Much of the discussion below regarding confirmation soil sampling is taken from the *Statistical Methodology Report* (NewFields 2006).

3.1 INITIAL CONFIRMATION SOIL SAMPLING

As per Section 2 of the *Statistical Methodology Report*, the initial confirmation sampling at the Site was conducted on the basis of combined random and biased (judgmental) sampling, as follows:

- **Stratified Random Locations:** For this purpose, the Site was covered by a 3-acre cell grid network. Within each 3-acre cell, a sampling location was randomly selected. Sampling locations were randomly selected within both full and partial grid cells if they were greater than 50 percent of the total grid cell area (based on the project-wide grid cell network and the Site boundaries; those partial grid cells that contain less than 50 percent of their area within the Site were included in the adjacent sub-area SAPs). The main objective of this stratified random sampling was to provide uniform coverage of each Site within the Eastside property.

- **Biased Locations:** Additional sampling locations were selected within or near small-scale contamination points of interests, including but not limited to previous debris locations, ponds, and berms. For this purpose, the randomly selected location within a corresponding 3-acre cell was adjusted to cover a nearby point of interest. In the event that currently unknown impacted areas were identified during remediation, the presence of these areas were drawn to the NDEP's attention, the need for additional biased sampling points to address those areas was evaluated, and the sampling program modified as needed.

Within the Site, biased sampling was conducted along the length of the Alpha and Beta ditches, at approximately 200-foot linear spacing (16 locations within the Site). In addition, a biased sampling location (STC1-JB12) was added to provide a non-ditch sampling point within cell AJ,17. Figure 8 and accompanying Table 3-1 (Tables section) show the initial sampling locations within the Site.

The following discusses the multi-depth soil samples that were collected and analyzed for the SRC list at each selected location. Samples were collected at:

1. Existing surface (0 foot bgs) and 10 feet bgs for sample locations in relatively flat (ungraded) locations;

2. Existing surface (0 foot bgs), post-grading surface (post-redevelopment as shown on Figure 2), and post-grade 10 feet bgs for sample locations with substantial grading (that is, cut depths greater than 2 feet[10]) and the uppermost sampled soil is expected to be used as surface fill;

3. Existing surface (0 foot bgs) and 10 feet bgs for sample locations with minimal grading (that is, cut depths less than 2 feet) and the uppermost sampled soil is expected to be used as surface fill (at any Eastside location); and

4. Existing surface (0 foot bgs) and 10 feet bgs for sampling locations in an area expected to be covered by fill material.

The analytical sample results were then divided into surface (0- to 2-foot depth), subsurface (2- to 10-foot depth), and deep (>10-foot depth) layers, according to the following rules:

- **Rule 1: IF** the sample is collected in a relatively flat (ungraded) part of the Site (i.e., an area not targeted for substantial grading), **THEN** the depth of the collected soil sample is used to designate its soil layer grouping.

- **Rule 2: IF** the sample is collected in a part of the Site targeted for substantial grading, **AND** the sampled soil is located in an area expected to be covered by fill material (e.g., exposed excavated surfaces of ponds), **THEN** the current surface soil sample is classified as a surface (0- to 2-foot depth) sample, and the soil layer grouping of the remaining deeper sampled soil is determined based on the difference between its elevation and the final (post-graded) surface elevation in that part of the Site.

- **Rule 3: IF** the sample is collected in a part of the Site targeted for substantial grading, **AND** the cut depth is expected to be greater than 2 feet, **AND** the sampled soil is expected to be

[10] Because sample collection was over a 2- to 3-foot depth interval, locations with an anticipated cut depth less than 3 feet were only sampled at the surface and one post-grade subsurface depth. The sample depth designation (e.g., 10 feet bgs) is based on the center depth of the sample collection interval.

used as surface fill (e.g., soil within a berm), **THEN** the current surface soil sample is classified as a fill material sample, a final (post-graded) surface sample is classified as a surface (0- to 2-foot depth) sample, and the soil layer grouping of the remaining deeper sampled soil is determined based on the difference between its elevation and the final (post-development, graded) surface elevation in that part of the Site.

- **Rule 4: IF** the sample is collected in a part of the Site targeted for substantial grading, **AND** the cut depth is expected to be less than 2 feet, **AND** the sampled soil is expected to be used as surface fill (e.g., soil within a berm), **THEN** the current surface soil sample is classified as both a fill material sample and as a surface (0- to 2-foot depth) sample, and the soil layer grouping of the remaining deeper sampled soil is determined based on the difference between its elevation and the final (post-graded) surface elevation in that part of the Site.

A schematic example of these rules is shown on Figure 9. The Redevelopment Grading Plan for the Site is shown on Figure 2.[11] The sample-specific collection depths are presented in Table 3-1 (Tables section).

As noted above, soil samples were generally collected over a 2- to 3-foot depth interval. This was because of volume of soil required for completion of all analyses. The 10 feet bgs (and deeper) samples were collected in 2- to 3-foot intervals centered on 10 feet (or centered on the deeper sampling depth as indicated in Table 3-1). Confirmation samples, which usually have a shortened analyte list, were collected over a smaller sampling interval. Contamination by the historical manufacturing processes upgradient is usually found predominantly in surface soils. The objective of remedial actions at the Site was to remove surface soils that were impacted by surface releases of off-site chemicals. Therefore, higher concentrations are expected—and have been generally observed—in surface samples. However, to adequately characterize the vertical extent of possible contamination, one or more deeper samples were also collected at each sampling location, as described above.

As discussed in Section 6.1.1, given the potential for change to the prospective grading plan, these samples were classified into two different exposure depths: surface and all (surface and subsurface) depths. These different soil exposure depth classifications are considered to represent

[11] Note that the grading plan is reflected in an Environmental Covenant for the Site as a condition to receiving an NFAD from NDEP.

all possible exposure potential for all receptors, and thus a reasonable worst-case scenario has been assessed.

Although some samples are designated as Fill samples, the grading across the Site is anticipated to be primarily shallow grading with limited ‘cut’ areas. The separate evaluation of fill data is done primarily to determine if fill material from a particular sub-area can be used elsewhere. Given the limited amount of cut areas across the Site, the few samples designated as ‘Fill,’ that more fill areas exist than cut areas, and that the limited amount of fill material will likely be used within the Site, the separate evaluation of the fill data was not conducted for the Site.

Initial sampling for the Site was conducted in June 2010 for locations in the former Staging sub-area, and March 2010 for locations in the former TIMET Ponds sub-area. All soil samples were tagged in the database with numeric designations of their corresponding assigned soil layer grouping based on the rules presented above. During these initial sampling events (Table 3-1), 60 soil samples were collected from 24 locations (including field duplicates, but not including deep samples collected for soil physical parameter data).[12] This included seven “random”[13] and 17 “biased” sample locations. At these locations, BRC initially collected 32 surface samples (one at each location, and duplicates at eight locations in accordance with the duplicate frequency specified in the *BRC Quality Assurance Project Plan* (QAPP; BRC and ERM 2009a) and 28 subsurface soil samples. Six of the surface soil samples also represent Fill samples. All sampling results are presented electronically on the report CD in Appendix B, and in Tables B-1 through B-11.

3.2 CHEMICALS SELECTED FOR ANALYSIS

The analyte list for soil samples collected during the initial 2010 investigation comprised the BRC project SRC list, and was consistent with the analytical program presented in Section 3 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010)[14] and Table 3-2 (Tables section), with the following exceptions for this Site:

[12] Note that in Table 3-4, which summarizes the analyses performed on Site samples, the number of samples reported in that table for a given analysis does not always equal 60. This is due to (1) inclusion in the final dataset of supplemental samples collected to assess the extent of chemical impacts in certain areas; (2) certain analytes were not included in the subsurface samples, as noted in the following section; some samples were remediated for particular analytes, and confirmation samples collected, and (3) rejected data are not included in the statistical summary in Table 3-4.

[13] As noted before, in some cases, random sampling locations were shifted slightly to address debris locations.

[14] Specific analytes and analyte-specific reporting limits for each analysis are listed in Table 4 of the QAPP.

- Asbestos and dioxins/furans were only analyzed for in surface soil samples.[15]

- USEPA Method 8141A for organophosphorus pesticides was not conducted. There have been only 47 detections of these compounds in over 10,000 soil sample records (<0.5 percent) from throughout the Eastside. The few detections are well below the NDEP BCLs.

- USEPA Method 8151A for chlorinated herbicides was not conducted. There have been no detections of these compounds in over 1,400 soil sample records from throughout the Eastside. Detection limits are below the NDEP BCLs.

- High performance liquid chromatography (HPLC) Method for organic acids was not conducted. There have been only three detections of these compounds in 567 soil sample records (<0.5 percent) from throughout the Eastside. Moreover, the NDEP has not established BCLs for these compounds.

- USEPA Method 8015B for non-halogenated organics (e.g., methanol and glycols) was not conducted. There have been only five detections of these compounds in 420 soil sample records (1 percent) from throughout the Eastside. The few detections have been well below the NDEP BCLs.

- USEPA Method 8015 for total petroleum hydrocarbons (TPH) was not conducted. There have been only three detections of these compounds in over 299 soil sample records (1 percent) from throughout the Eastside. The few detections have been below 100 mg/kg, which is the typical low-end aesthetic threshold used for these compounds There are no indications of possible TPH source areas (e.g., abandoned vehicles, dumping of oils/ hydraulic fluids) at the Site. While TPH was not analyzed for, its components were via other methods. In addition, TPH cannot be included in a risk assessment while its components can.

- Consistent with the current project analyte list, the following radionuclides were analyzed for: radium-226, radium-228, thorium-228, thorium-230, thorium-232, uranium-233/234, uranium-235/236, and uranium-238.

[15]Note that all samples collected at the Site were discrete samples, with the exception of asbestos samples, which were composite samples collected as per the NDEP-approved Standard Operating Procedure [SOP]-12 as provided in the *Field Sampling and Standard Operating Procedures* [FSSOP; BRC, ERM and MWH 2009]).

The soil analyte list consisted of 272 of the 418 compounds (including water-only parameters) on the project SRC list. The analytical and preparatory methods (Table 3-2) used in accordance with the SAPs adhered to the most recent version of the BRC QAPP (BRC and ERM 2009a; see Section B4, Table 4 of that document). As noted in Section 3.6, the analyte list for surface flux samples was composed of the list specified in the NDEP-approved Standard Operating Procedure (SOP)-16, as provided in the *Field Sampling and Standard Operating Procedures* (FSSOP; BRC, ERM and MWH 2009). Surface flux samples were analyzed for VOCs by USEPA Method TO-15 full scan, plus selective ion mode (SIM) analyses for a subset of the analytes.

3.3 INTERMEDIATE SAMPLING AND CLEANUP

All initial data were reviewed and a determination made, in consultation with the NDEP, as to whether localized soil removals were warranted. The initial round of remediation conducted in the summer of 2012 (Figure 10) targeted portions of the Alpha ditch and two non-ditch areas between the Alpha Ditch and Pabco Road, including a 140-foot portion of Pabco Road. The constituents triggering the remediation activities were asbestos, metals, dioxins/furans, organochlorine pesticides, aldehydes, polynuclear aromatic hydrocarbons (PAHs)/SVOCs, PCBs, perchlorate and/or radionuclides.

The second and third rounds of remediation (conducted December 2012 through February 2013) expanded the Alpha Ditch and the northern non-ditch excavation areas, and added excavation within and near the Beta Ditch. These remediation events addressed soils with asbestos and elevated metals, dioxin/furan, organochlorine pesticide, aldehydes, PAH/SVOC and/or PCB concentrations.

The fourth round of remediation, which was conducted between November 2013 and January 2014, included additional excavation within the Beta Ditch and expanded the non-ditch excavation areas from the first round of remediation west of Pabco Road. These remedial actions were undertaken to address elevated detections of SVOCs in the Beta Ditch, and metals, dioxin/furans, aldehydes organochlorine pesticides, PAHs/SVOCs, PCBs, and radionuclides in the area west of Pabco Road.

The fifth round of remediation (May 2014) involved additional (deeper) excavation within and immediately adjacent to the footprint of the fourth round excavation. This additional remediation was conducted to address elevated concentrations of metals, dioxins/furans, organochlorine pesticides, PAHs/SVOCs, and/or PCBs at the following locations STC9-JD11, -JW02, and -JW11. The sixth round of remediation (August 2014) involved additional (deeper) excavation within the footprint of the fourth round excavation. This additional remediation was conducted to address elevated concentrations of dioxin/furans, PCBs, and SVOCs at STC10-JW02.

The non-ditch remediation areas were developed based on a Thiessen map overlaid across the Site. Thiessen maps are constructed from a series of polygons formed around each sampling location. Thiessen polygons are created so that every location within a polygon is closer to the sampling location in that polygon than any other sampling location. These polygons do not take into account the respective concentrations at each location. These polygons were used as the basis for the areal extent of remediation for each of the non-ditch locations with elevated asbestos or perchlorate levels.

For the ditch location, the remediation areas were centered about the initial sampling locations that triggered remediation. The extent of excavation at these areas was a 50-foot-wide segment of the ditch, extended such that the limits of excavation reached half the distance to the adjacent ditch samples on either side. In addition certain areas adjacent to the Beta Ditch were excavated during the second and third rounds of remediation based on visual evidence of impacts. These areas are indicated on Figure 10.

Remediation consisted of excavation and removal of impacted soils to the CAMU. The extent of the excavations is depicted on Figure 10. Following remediation, confirmation surface soil samples were collected at each of the original sample locations associated with the remediation area polygons and ditch segments described above.[16] All sampling locations are shown on Figure 11. The analyte list was composed of those analytes that triggered the remediation at each sampling location.

3.4 FINAL CONFIRMATION DATASET

Post-scrape analyses associated with follow-up rounds of remediation focused on the constituents triggering that additional remediation and, therefore, did not include the full suite analyses of the original analytical program. Analytical results from the original SAPs dataset were retained for all constituents except those that were re-analyzed after additional scraping. The final confirmation dataset included the following sampling results:

[16] The naming convention for confirmation samples uses the same sample identification as the initial (pre-remediation) sample, with an updated numerical prefix. For example, confirmation samples associated with STC1-JD02 are named STC6-JD02, etc.

- SAP sampling data, retaining the results that were not superseded by subsequent sampling;
- Supplemental data collected subsequent to the initial SAP sampling; and
- Additional samples collected for confirmation after completion of remediation activities.

The soil dataset was subjected to a series of statistical analyses to determine representative exposure concentrations for the sub-area, as described in Sections 4 and 5 of the NDEP-approved *Statistical Methodology Report* (NewFields 2006). Consistent with the project *Statistical Methodology Report*, kriging or geostatistical analysis was not performed on the data because each measurement was assumed to be equally representative for that chemical at any point in each sub-area of the Eastside property. Hence, calculation of the 95 percent upper confidence limit (UCL) by exposure area directly from the data is considered reasonable.

As discussed in Section 4, all data have been validated. Results of all confirmation sampling and analysis are presented in Appendix B, and electronically on the report CD in Appendix B, as is the dataset used in the HHRA for the Site. All confirmation sampling locations for the Site are shown on Figure 11. Table 3-3 provides a matrix of which analytical suite was analyzed for in each of the samples collected from the Site. Geotechnical and Environmental Services (GES) conducted all fieldwork at the Site. The GES field reports, including boring logs, for each investigation are provided electronically in Appendix C (included on the report CD in Appendix B).

3.5 FINAL CONFIRMATION DATA SUMMARY

Using the compound-specific information presented in Table 2 of the QAPP (BRC and ERM 2009a), the comparison levels for each chemical included in the investigation were compiled for comparison to Site data. Specific soil comparison levels used for this effort were as follows:

- NDEP BCLs for worker soil (NDEP 2013; lower of either indoor or outdoor worker BCLs were used);
- NDEP BCLs for protection of groundwater (LBCL), assuming dilution attenuation factors (DAF) of 1 and 20 (NDEP 2013); and

- The maximum background concentration (for metals and radionuclides only), derived from the shallow Qal McCullough background soil dataset presented in Section 5.[17]

A DAF of 1 is used when little or no dilution or attenuation of soil leachate concentrations is expected, and a DAF of 20 may be used when significant attenuation of the leachate is expected due to Site-specific conditions. For the Site, the LBCLs based on a DAF of 1 were used for discussion purposes. Data for the Site, including the number of instances in which chemical concentrations exceed each of the comparison levels, are listed in Table 3-4,[18] and summarized below. It is important to note that these comparisons are used to provide for an initial screening evaluation, assist in the evaluation of data usability, and determine the extent of contamination. They are not used for decision-making purposes or as an indication of the risks associated with the Site.

Aluminum

Aluminum was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 100,000 mg/kg BCL, but were higher than the 75 mg/kg $LBCL_{DAF1}$. Nine of these samples were also above the 15,300 mg/kg maximum shallow Qal McCullough background level, as listed in Table 3-5 below.

TABLE 3-5: ALUMINIUM $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL04-3	3	20000
STC9-FALL02-3	3	19000
STC9DP-JW07	3	18000
STC9-FALL04-2	2	18000
STC9-JW22	0	18000

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9DP-JW07	2	16000
STC9-FALL02-2	2	16000
STC9-JW06	0	16000
STC9-JW09	0	16000

[17] This value, for the shallow Qal McCullough background dataset, is used for comparison only; as discussed in Section 5.1, background comparisons were performed for the Site dataset using statistical tests.

[18] Pre-scrape data for the target constituents are not included in Table 3-4. That is, these have been replaced by post-scrape data; however, pre-scrape data for the non-target constituents are included in Table 3-4. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in the tables in Appendix B, which include all data, regardless of status.

Antimony

Antimony was detected in 20 of the 75 soil samples in which it was analyzed for (41 surface and 34 subsurface samples; Table B-4). All of the detections were lower than the 454 mg/kg BCL, but all of the detections were higher than the 0.3 mg/kg $LBCL_{DAF1}$. Of these, 18 were also higher than the 0.5 mg/kg maximum shallow Qal McCullough background level, as listed in Table 3-6 below.

TABLE 3-6: ANTIMONY $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC8-JD12	10	4 J-	STC9-JW12	0	1.5 J
STC9-FALL03-2	2	2.9 J-	STC9-JW06	0	1.4 J
STC9-FALL04-2	2	2.7 J-	STC9-JW09	0	1.4 J
STC9-FALL03-3	3	2.5 J-	STC9-FALL02-3	3	1.3 J-
STC9-FALL04-3	3	2.2 J-	STC9-FALL02-2	2	1.3 J
STC9-JW10	0	2.2 J	STC9-JW03	0	1.2 J
STC9-JW05	0	1.8 J	STC9-JW18	0	1.1 J-
STC9-JW08	0	1.8 J	STC10-JD11	0	1 J-
STC9-JW05	0	1.6 J	STC9-JW14	0	0.94 J-

In addition, antimony was reported as non-detect in 55 soil samples; the associated analytical reporting limits for these samples were routinely higher than the 0.5 mg/kg background concentration for antimony, with reporting limits ranging up to 0.94 mg/kg.

Arsenic

Arsenic was detected in 61 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were higher than the 1.77 mg/kg BCL and the 1 mg/kg $LBCL_{DAF1}$. Of these, 14 of the detections were higher than the maximum shallow Qal McCullough background level (7.2 mg/kg), as listed in Table 3-7 below.

TABLE 3-7: ARSENIC BCL AND $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL03-3	3	15	STC9-JW10	0	11
STC9-FALL03-2	2	13	STC1-JD15	6	10.5
STC9-JW18	0	13	STC8-Prov4	0	10
STC9-FALL04-2	2	12	STC9-FALL02-2	2	9.4
STC10-JD11	0	11	STC9-JW06	0	9.3
STC9-FALL02-3	3	11	STC9-JW12	0	8.6
STC9-FALL04-3	3	11	STC9-JW05	0	8

In addition, arsenic was reported as a non-detection in 16 surface soil samples; the associated analytical reporting limits (5.2 to 5.8 mg/kg) were sufficiently low to indicate that these 16 samples did not contain arsenic at concentrations above background.

Barium

Barium was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 100,000 mg/kg BCL, but were higher than the 82 mg/kg $LBCL_{DAF1}$. Four of the samples were also above the much higher maximum shallow Qal McCullough background level (445 mg/kg). These four samples are listed below:

- STC9-JW18, 0 ft bgs, 720 J+ mg/kg
- STC9-JW10, 0 ft bgs, 590 J+ mg/kg
- STC9-JW06, 0 ft bgs, 480 J+ mg/kg
- STC9-JW12, 0 ft bgs, 460 J+ mg/kg

Boron

Boron was detected in four of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 100,000 mg/kg BCL. One detection was higher than the 23.4 mg/kg $LBCL_{DAF1}$ and the 11.6 mg/kg maximum shallow Qal McCullough background level (surface sample STC9-JD11 [40 J mg/kg]). For the 73 non-detect results, reporting limits were generally lower than the $LBCL_{DAF1}$.

Cadmium

Cadmium was detected in 45 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were lower than the 1,110 mg/kg BCL. The following two detections were higher than the 0.4 mg/kg $LBCL_{DAF1}$ and the 0.1291 mg/kg maximum shallow Qal McCullough background level for this compound: the surface sample at STC9-JW18 (1.7 mg/kg) and the 3 feet bgs sample from STC9-FALL03-3 (0.42 mg.kg).

Chromium (VI)

Chromium (VI) was detected in 43 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 1,230 mg/kg BCL. Eleven surface samples were higher than the 2 mg/kg $LBCL_{DAF1}$ and the maximum shallow Qal McCullough background level (0.32 mg/kg). The 11 samples that exceeded the chromium (VI) $LBCL_{DAF1}$ are listed in Table 3-8 below.

TABLE 3-8: CHROMIUM (VI) $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC6-JD14	0	13
STC9-FALL03-3	3	9.6 J-
STC6-JD15	0	8
STC9-FALL04-2	2	6.4 J-
STC9-FALL02-3	3	4.6 J-
STC9-FALL04-3	3	4.3 J-

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL03-2	2	4.2 J-
STC9-FALL02-2	2	3.9 J-
STC8-Prov4	0	3.1
STC10-JD11	0	3
STC8-Prov4	0	3

The analytical reporting limits for non-detections were generally lower than the BCL, $LBCL_{DAF1}$, and maximum background.

Cobalt

Cobalt was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 337 mg/kg BCL, but all detections were higher than the 0.495 mg/kg $LBCL_{DAF1}$. Of these, 13 exceeded the 16.3 mg/kg maximum shallow Qal McCullough background level. The 13 cobalt detections above background that exceeded the $LBCL_{DAF1}$ are listed in Table 3-9 below.

TABLE 3-9: COBALT $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW18	0	36
STC9-JW05	0	30
STC9-JW10	0	26
STC9-FALL02-3	3	20
STC9-JW05	0	20
STC1-JD02	10	19.2
STC9-FALL04-2	2	19

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9DP-JW01	2	18
STC9-FALL03-3	3	18
STC9DP-JW01	3	17
STC9-FALL02-2	2	17
STC9-FALL03-2	2	17
STC9-FALL04-3	3	17

Copper

Copper was detected in all but one of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 42,200 mg/kg BCL; however, six of the detections were higher than the 45.8 mg/kg $LBCL_{DAF1}$ and the maximum shallow Qal McCullough background level (25.9 mg/kg). The six samples that were above the $LBCL_{DAF1}$ are listed below.

- TMC1-JD02, 0 ft bgs, 186 J mg/kg
- STC9-FALL02-2, 2 ft bgs, 140 mg/kg
- STC9-FALL02-3, 3 ft bgs, 130 mg/kg
- STC9-JW10, 0 ft bgs, 63 mg/kg
- STC9-JW18, 0 ft bgs, 58 J+ mg/kg
- STC9DP-JW01, 3 ft bgs, 55 mg/kg

Iron

Iron was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 100,000 mg/kg BCL, but all detections were higher than the 7.56 mg/kg $LBCL_{DAF1}$. Of these, 34 detections were higher than the 19,700 mg/kg maximum shallow Qal McCullough background level, as listed in Table 3-10.

TABLE 3-10: IRON $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-FALL04-3	3	37000	STC9-JW06	0	27000
STC9-JW08	0	33000	STC9DP-JW07	2	26000
STC9-FALL02-3	3	32000	STC9-FALL02-2	2	26000
STC9-FALL03-3	3	32000	STC9-JW25	0	26000
STC9-JW09	0	31000	STC9-JW13	0	25000
STC9-JW10	0	31000	STC9-JW25	0	25000
STC9-JW22	0	30000	STC10-JD11	0	23000
STC9-JW23	0	30000	STC9-JW14	0	23000
STC9-JW05	0	29000 J	GES-JWT-3	0	22000
STC9DP-JW01	3	29000	STC6-JD02	0	22000
STC9-FALL04-2	2	29000	STC6-JD15	0	22000
STC9-JW03	0	29000	TMC1-JD02	0	21000 J
STC9DP-JW07	3	28000	STC1-JB12	0	20700
STC9-FALL03-2	2	28000	GES-JWT-2	0	20000
STC9-JW12	0	28000	STC6-JD05	0	20000
STC9-JW18	0	28000	STC8-JD12	10	20000
STC9DP-JW01	2	27000	STC1-AJ18	0	19800

Lithium

Lithium was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 2,270 mg/kg BCL; however, two of detections were higher than the 21.9 mg/kg $LBCL_{DAF1}$. Neither of these detections was above the 26.5 mg/kg maximum shallow Qal McCullough background level for this compound.

Magnesium

Magnesium was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 100,000 mg/kg BCL, but all detections were higher than the 973 mg/kg $LBCL_{DAF1}$. However, only one of the magnesium detections was higher than the 17,500 mg/kg maximum shallow Qal McCullough background level. This exceedance was associated with surface sample STC9-JW18 (18,000 mg/kg).

Manganese

Manganese was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). Of these detections, none were higher than the 24,900 mg/kg BCL; however, all detections were higher than the 1.3 mg/kg $LBCL_{DAF1}$. Of these, 25 detections were higher than the 863 mg/kg maximum shallow Qal McCullough background level. The 25 $LBCL_{DAF1}$ exceedances above background are listed in Table 3-11.

TABLE 3-11: MANGANESE $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW18	0	7000
STC9-FALL04-2	2	6800
STC9-FALL03-3	3	6300
STC9-FALL04-3	3	4600
STC9-FALL03-2	2	4400
STC9-JW10	0	4300
STC8-JD12	10	3600
STC9-FALL02-3	3	2900
STC9-JW06	0	2800
STC9-JW05	0	2300
STC9-FALL02-2	2	2100
STC9-JW05	0	1900
STC9-JW12	0	1700

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC8-Prov4	0	1300
STC10-JD11	0	1200
STC6-JD14	0	1200
STC9-JW09	0	1100
STC9-JW25	0	1100
STC7-JD13	10	1000
STC8-Prov4	0	990
STC9DP-JW01	2	990
STC9DP-JW01	3	960
STC9-JW08	0	910
STC1-AJ18	0	884
STC9DP-JW07	3	880

Mercury

Mercury was detected in 44 of the 75 soil samples in which it was analyzed for (40 surface and 35 subsurface samples; Table B-4). Of these detections, none were higher than the 341 mg/kg BCL; however, eight of the detections were higher than the 0.104 mg/kg $LBCL_{DAF1}$ and the 0.11 mg/kg maximum shallow Qal McCullough background level for this compound, and are listed below. The analytical reporting limits for non-detections were lower than the comparison levels.

- STC9-FALL03-2, 2 ft bgs, 0.54 mg/kg
- STC9-JW23, 0 ft bgs, 0.53 mg/kg
- STC10-JD11, 0 ft bgs, 0.47 mg/kg
- STC9-FALL03-3, 3 ft bgs, 0.41 J mg/kg
- STC9-JW22, 0 ft bgs, 0.16 mg/kg
- STC9-JW09, 0 ft bgs, 0.15 mg/kg
- STC9-JW18, 0 ft bgs, 0.14 mg/kg
- STC9-JD06, 0 ft bgs, 0.136 mg/kg

Molybdenum

Molybdenum was detected in 33 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of these detections were higher than the 5,680 mg/kg BCL. One of the detections was above the 3.69 mg/kg $LBCL_{DAF1}$, and the 2.0 mg/kg maximum shallow Qal McCullough background level for this compound. The one $LBCL_{DAF1}$ sample above background was associated with location STC9-FALL02-3 from 3 feet bgs (3.7 mg/kg). For all non-detect samples, the analytical reporting limits were lower than the BCL and $LBCL_{DAF1}$.

Nickel

Nickel was detected in all 77 of the soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). Of these detections, none were higher than the 21,800 mg/kg BCL; however, all detections were higher than the 7 mg/kg $LBCL_{DAF1}$. Of these, 14 detections were higher than the 30 mg/kg maximum shallow Qal McCullough background level. Table 3-12 presented below lists the 14 $LBCL_{DAF1}$ exceedances that were above the background concentration for nickel.

TABLE 3-12: NICKEL $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW05	0	77
STC9-FALL02-3	3	58
STC9-FALL04-2	2	52
STC9-JW05	0	51
STC9-FALL02-2	2	48
STC9-FALL04-3	3	47
STC9-FALL03-3	3	45

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-JD02	10	43
STC9-FALL03-2	2	39
STC9-JW18	0	38
STC9-JW10	0	35
STC9-JW06	0	34
STC8-JD12	10	33
STC9-JW09	0	31

Selenium

Selenium was detected in 48 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were higher than the 5,680 mg/kg BCL. However, all detections were higher than the 0.3 mg/kg $LBCL_{DAF1}$ and the 0.6 mg/kg maximum shallow Qal McCullough background level, and are listed below in Table 3-13.

TABLE 3-13: SELENIUM $LBCL_{DAF1}$ EXCEEDANCES GREATER THAN BACKGROUND

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9DP-JW01	2	5.1	STC9-JW05	0	2.7
STC8-JD12	10	4.8 J+	STC9-JW22	0	2.7
STC9-FALL02-3	3	4.8	STC8-Prov5	0	2.6 J+
STC9-FALL03-3	3	4.6	STC6-JD02	0	2.5 J
STC1-AJ18	0	3.9	STC9-JW12	0	2.5
STC9-JW18	0	3.9	STC6-JD14	0	2.4 J
STC1-JB12	0	3.8	STC9-JW05	0	2.4
STC9DP-JW01	3	3.8	STC6-JD05	0	2.3 J
STC9-FALL04-3	3	3.8	STC7-ES01	0	2.3 J
STC9-JW09	0	3.7	STC10-JD11	0	2.3
STC9DP-JW07	2	3.6	STC9-JW23	0	2.2 J
STC9-JW03	0	3.6	STC6-JD15	0	1.8 J
STC8-Prov4	0	3.5 J+	STC7-JD13	10	1.8 J
GES-JWT-1	0	3.5	STC9-JW10	0	1.7 J
GES-JWT-2	0	3.4	STC9-JW25	0	1.6 J
GES-JWT-3	0	3.2	STC1-AK20	0	1.5 J
STC9-JW06	0	3.2	STC1-AK20	6	1.5 J
STC9-JW13	0	3.1	STC9-FALL03-2	2	1.4 J
STC9DP-JW07	3	3	STC1-AK20	0	1.3 J
STC9-JW08	0	3	STC9-FALL02-2	2	1.3 J
STC8-Prov4	0	2.9 J+	STC9-JW25	0	1.3 J
STC1-JB12	10	2.9	STC1-AK20	16	1.1 J
STC9-JW14	0	2.9	STC9-FALL04-2	2	1 J
STC1-AJ18	12	2.8	STC7-JD08	0	0.86 J

The analytical reporting limits for the non-detections were generally lower than the comparison levels.

Silver

Silver was detected in 30 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). All of the detections were below the 5,680 mg/kg BCL; one of the detections was above the 0.85 mg/kg $LBCL_{DAF1}$ and the 0.2609 mg/kg maximum shallow Qal McCullough background level. The one $LBCL_{DAF1}$ exceedance was associated with surface sample STC10-JD11 (1.6 mg/kg). The reporting limits for the non-detect samples were generally lower than the $LBCL_{DAF1}$.

Thallium

Thallium was detected in 14 of the 77 soil samples in which it was analyzed for (42 surface and 35 subsurface samples; Table B-4). None of the detections were above the 74.9 mg/kg BCL; however, all of the detections were above the 0.4 mg/kg $LBCL_{DAF1}$. Of these, seven were higher than the 1.8 mg/kg maximum shallow Qal McCullough background level for thallium. The seven $LBCL_{DAF1}$ exceedances above background are listed below.

- STC9-FALL03-3, 3 ft bgs, 3.4 mg/kg
- STC9-FALL03-2, 2 ft bgs, 3.3 mg/kg
- STC9-FALL02-2, 3 ft bgs, 3.1 mg/kg
- STC9-FALL04-2, 2 ft bgs, 2.8 mg/kg
- STC8-JD12, 10 ft bgs, 2.4 J mg/kg
- STC9-FALL02-2, 2 ft bgs, 2.3 J mg/kg
- STC9-FALL04-3, 3 ft bgs, 1.9 J mg/kg

The reporting limits for non-detect samples were lower than the background level for thallium.

Other Inorganics

As seen in Table 3-4 (Tables section) and Tables B-3 and B-4 in Appendix B, several inorganic constituents in addition to those listed above were routinely detected in soil samples. None of these additional inorganic constituents were detected at concentrations in excess of either the BCL or the $LBCL_{DAF1}$, with the exception of the following:

- Chlorate detections exceeded the 1.13 mg/kg $LBCL_{DAF1}$ in eight samples;
- Nitrate detections exceeded the 7.0 mg/kg $LBCL_{DAF1}$ in 16 samples; and
- Perchlorate detections exceeded the 0.0185 mg/kg $LBCL_{DAF1}$ in all 42 of the samples in which it was detected.

The analytical reporting limits for these additional inorganic constituents were all lower than their established BCL and $LBCL_{DAF1}$ values.

Organochlorine Pesticides

Organochlorine pesticides were analyzed for in 89 soil samples (47 surface and 42 subsurface samples; Table B-5). The following constituents were detected in at least one sample:

- 2,4-DDD
- 2,4-DDE
- 4,4-DDD
- 4,4-DDE
- 4,4-DDT
- alpha-BHC
- alpha-Chlordane
- beta-BHC
- Chlordane
- Endrin aldehyde
- Endrin ketone
- gamma-Chlordane

The organochlorine pesticides beta-BHC, 4,4-DDT, and 4,4-DDE were detected the most frequently; detection frequencies for these compounds ranged from approximately 55 to 62 percent of the samples (49 to 55 samples). The nine other organochlorine pesticides that were detected at a frequency ranging from 1 to 23 detections, with four of the compounds detected in fewer than seven samples.

No organochlorine pesticides were detected above their established BCL. Beta-BHC, 4,4-DDT, and 4,4-DDE were the only organochlorine pesticides detected above their established $LBCL_{DAF1.}$

Beta-BHC was detected in 49 (~55 percent) of the 89 samples for which it was analyzed (47 surface and 42 subsurface samples; Table B-5). While none of the detections were above the 53.9 mg/kg BCL, the 15 samples listed in Table 3-14 had detections above the 0.00596 mg/kg $LBCL_{DAF1}$:

TABLE 3-14: BETA-BHC DETECTIONS GREATER THAN $LBCL_{DAF1}$

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC9-JW10	0	0.064	STC9-JW09	0	0.0089
STC9-JW23	0	0.028	STC1-JD14	0	0.0087 J
STC9-JW25	0	0.02	STC7-JD11	10	0.0078
STC9-JW25	0	0.019	STC1-JD08	0	0.0078 J
STC1-JD13	0	0.011	STC9-JW22	0	0.0075
STC1-AI15	0	0.028 J	STC1-JD06	0	0.0067
STC9-JW18	0	0.026 J+	STC7-JD10	10	0.0061
TMC1-JD01	0	0.01 J+			

4,4-DDT was detected in 54 (~61 percent) of the 89 samples for which it was analyzed (47 surface and 42 subsurface samples; Table B-5). None of the detections were above the 7.81 mg/kg BCL, but two of the detections did exceed the 2.0 mg/kg $LBCL_{DAF1}$. These two exceedances occurred at surface samples STC9-JW23 (5.1 mg/kg) and STC9-JW10 (3.3 mg/kg).

4,4-DDE was detected in 55 (~62 percent) of the 89 samples for which it was analyzed (47 surface and 42 subsurface samples; Table B-5). None of the detections were above the

7.81 mg/kg BCL, but two of the detections did exceed the 3.0 mg/kg $LBCL_{DAF1}$. These two exceedances occurred at surface samples STC9-JW10 (5.4 mg/kg) and STC9-JW23 (4.1 mg/kg).

With one exception, the standard analytical reporting limits for organochlorine pesticides were lower than the comparison levels. The reporting limits for dieldrin (0.00022 to 0.00045 mg/kg) were well below the 0.12 mg/kg BCL, but above the 0.0002 mg/kg $LBCL_{DAF1}$.

Volatile Organic Compounds

VOCs were analyzed for in 60 soil samples (32 surface and 28 subsurface samples; Table B-10). As seen in Table 3-4 and Table B-10, the following 12 VOCs were detected in at least one sample:

- 1,2,3-Trichlorobenzene
- 1,2,4-Trichlorobenzene
- 1,2,4-Trimethylbenzene
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Acetone
- Benzene
- Chlorobenzene
- Chloroform
- Dichloromethane
- Nonanal

Dichloromethane was detected the most frequently in 60 percent of the samples. None of the detections were above the BCLs. With the exception of dichloromethane and 1,4-dichlorobenzene, the VOC detections were also lower than the $LBCL_{DAF1}$. Dichloromethane was detected in 36 soil samples, as listed in Table 3-15 below, at concentrations in excess of the 0.001 $LBCL_{DAF1}$.

TABLE 3-15: DICHLOROMETHANE DETECTIONS GREATER THAN $LBCL_{DAF1}$

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-JD04	10	0.053
STC1-JD05	10	0.051
STC1-JD04	0	0.05
STC1-JD05	0	0.045
STC1-JD03	0	0.043
STC1-AI15	10	0.028
STC1-JD03	10	0.028
STC1-AI15	0	0.027
STC1-JD02	0	0.027
STC1-JD02	10	0.027
STC1-AI15	0	0.024

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-AK20	0	0.016
STC1-JD14	0	0.013
STC1-JD14	0	0.01
STC1-JD14	10	0.01
STC1-JD15	6	0.01
STC1-JD15	16	0.01
STC1-JD15	0	0.0097
TMC1-JD01	11	0.0094
TMC1-JD02	10	0.0092
STC1-JD13	10	0.009 J-
TMC1-JD02	0	0.0089

TABLE 3-15: DICHLOROMETHANE DETECTIONS GREATER THAN $LBCL_{DAF1}$

Sample ID	Depth (ft bgs)	Reported Value (mg/kg)	Sample ID	Depth (ft bgs)	Reported Value (mg/kg)
STC1-AJ18	12	0.022	TMC1-JD01	0	0.0082
STC1-AK20	0	0.017	TMC1-JD02	0	0.0082
STC1-AK20	6	0.017	STC1-AJ18	0	0.0076
STC1-AK20	16	0.017	STC1-JD13	0	0.0064 J-
STC1-JD11	10	0.017	STC1-JD07	14	0.0064
STC1-JD12	10	0.017	STC1-AI16	10	0.0062
STC1-AK15	0	0.016	STC1-JD10	0	0.0034 J

1,4-Dichlorobenzene had only one exceedance of its 0.1 mg/kg $LBCL_{DAF1}$, at surface sample STC1-AJ15 (0.56 J mg/kg).

It should be noted that the analytical reporting limits for dichloromethane and 1,1,2,2-tetrachloroethane were higher than their $LBCL_{DAF1}$. For the other VOCs, the standard reporting limits were lower than the BCLs and $LBCL_{DAF1}$.

Semi-Volatile Organic Compounds

SVOCs were analyzed for in 74 soil samples (46 surface and 28 subsurface samples; Table B-9). As seen in Table 3-4 and Table B-9, only three SVOCs; 2,2'-dichlorobenzil, fluoranthene, and hexachlorobenzene were detected. All SVOC detections were lower than the BCLs, but two of the three had exceedances of their applicable $LBCL_{DAF1.}$ All three of the 2,2'-dichlorobenzil detections exceeded the 0.0003 mg/kg $LBCL_{DAF1}$, and all six of the hexachlorobenzene detections exceeded the 0.1 mg/kg $LBCL_{DAF1}$. For SVOC non-detects, the standard reporting limits were lower than the BCLs, except for dichloromethyl ether, which routinely had analytical reporting limits higher than the BCL.

For the following SVOC non-detections, the analytical reporting limits are routinely higher than the $LBCL_{DAF1}$:

- 2,2'-Dichlorobenzil
- 2,4,6-Trichlorophenol
- 2,4-Dichlorophenol
- 2,4-Dinitrophenol
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- 3,3-Dichlorobenzidine
- Hexachlorobenzene
- Hexachloroethane
- Isophorone
- Nitrobenzene
- N-nitrosodi-n-propylamine
- p-Chloroaniline
- Pentachlorophenol

- bis(2-Chloroethyl) ether

Dioxins and Furans

For dioxins/furans, as discussed in Section 1.1, the USEPA TEQ procedure, developed to describe the cumulative toxicity of these compounds, is used. Dioxins and furans were analyzed for in 63 surface soil samples[19] (Table B-2). All of the individual dioxins and furans congeners analyzed were reported as detections in at least one sample. None of the samples analyzed had calculated TCDD TEQ concentrations in excess of the NDEP worker BCL of 1,000 ppt. $LBCL_{DAF1}$ values have not been established for dioxin/furans, thus the potential for impacts to groundwater quality due to their presence could not be assessed by comparisons to the $LBCL_{DAF1}$.

Polychlorinated Biphenyls

PCBs were analyzed for in 63 surface soil samples[20] (individual PCB congeners) (Table B-7). All of the PCB congeners were detected in at least one sample. BCL values have not been established for individual congeners. PCB congeners are included in the calculation of the TCDD TEQ, and are evaluated in this manner, not on an individual congener basis. $LBCL_{DAF1}$ values have not been established for individual PCB congeners.

Polynuclear Aromatic Hydrocarbons

PAHs were analyzed for in 73 soil samples (46 surface and 27 subsurface samples; Table B-6); Each PAH was detected in at least one soil sample. None of the PAH detections exceed either their established BCL, and, with one exception, there were no exceedances of the $LBCL_{DAF1}$. The one $LBCL_{DAF1}$ exceedance was for benzo(a)anthracene with a detection of 0.0843 mg/kg at surface sample STC10-JW11, compared to a $LBCL_{DAF1}$ of 0.08 mg/kg. The standard PAH analytical reporting limits were lower than the BCL and the $LBCL_{DAF1}$, thus concentrations in excess of these comparison levels, if present, would have been reported.

Aldehydes

Aldehydes were analyzed for in 81 soil samples (53 surface and 28 subsurface samples; Table B-9). Acetaldehyde was detected in 74 samples, and formaldehyde was detected in

[19] This tally includes field duplicates and confirmation samples.
[20] This tally includes field duplicates and confirmation samples.

48 samples. None of the detections exceeded the established BCLs for the two compounds. The analytical reporting limits were lower than the BCL, thus concentrations in excess of the BCL, if present, would have been reported. $LBCL_{DAF1}$ values have not been established for these compounds.

Radionuclides

Radionuclides were detected in all 69 of the soil samples analyzed (41 surface, 28 subsurface samples; Table B-8). Exceedances of comparison levels for radionuclides are shown in Table 3-4 for the eight radionuclides currently included in the project analyte list (radium-226, radium-228, thorium-228, thorium-230, thorium-232, uranium-233/234, uranium-235/236, and uranium-238). Of those activities greater than comparison levels, the majority are lower than the maximum shallow Qal McCullough background activity, as shown in Table 3-4. With the exception of thorium-230, uranium-233/234, and uranium-238, the other five radionuclides were reported at activities higher than at least one of their comparison levels and background in at least one sample.

Radium-226 activities in 63 of the 69 samples were higher than the 0.023 picoCurie per gram (pCi/g) BCL and the 0.016 pCi/g $LBCL_{DAF1}$. Of these, the following three detections were higher than the 2.36 pCi/g maximum soil background activity:

- STC6-JD10, 10 ft bgs, 2.62 pCi/g
- STC6-JD11, 10 ft bgs, 2.37 pCi/g
- STC6-ES01, 0 ft bgs, 2.39 pCi/g

Radium-228 activities in 49 of the 69 samples were higher than the 0.041 pCi/g BCL and higher than the 0.016 pCi/g $LBCL_{DAF1}$. Of these, four of the detections were higher than the 2.92 pCi/g maximum soil background activity, as listed below.

- STC1-JD02, 10 ft bgs, 3.97 pCI/g
- STC6-JD02, 0 ft bgs, 3.57 pCi/g
- STC9-JW25, 0 ft bgs, 3.6 pCi/g
- STC9-JW18, 0 ft bgs, 3.22 pCi/g

Thorium-228 activities in 66 of the 69 samples were higher than the 0.025 pCi/g BCL and the 0.0023 pCi/g $LBCL_{DAF1}$. Of these, the following three detections were higher than the 2.28 pCi/g maximum soil background activity:

- STC1-JD06, 0 ft bgs, 2.88 pCi/g
- STC1-JD12, 0 ft bgs, 2.35 pCi/g

- STC1-JD09, 10 ft bgs, 2.71 pCi/g

Thorium-230 activities in 68 of the 69 samples were higher than the 0.00084 pCi/g $LBCL_{DAF1}$. None of the samples were above the much higher 8.3 pCi/g BCL or the 3.01 pCi/g maximum soil background activity.

Thorium-232 activities in 68 of the 69 samples were higher than the 0.0029 pCi/g $LBCL_{DAF1}$. None of the samples were higher than the 7.4 pCi/g BCL. The following three detections exceeded the 2.23 pCi/g maximum soil background activity:

- TMC1-JD02, 0 ft bgs, 2.63 J pCi/g
- STC1-AJ16, 0 ft bgs, 2.31 pCi/g
- STC1-AK15, 0 ft bgs, 2.53 pCi/g

Uranium-238 activities for nine of the 69 samples for which it was analyzed were above the 1.4 pCi/g BCL. No $LBCL_{DAF1}$ has been established for this compound. None of the nine detections above the BCL were above the 2.37 pCI/g maximum soil background activity for this compound.

As presented in NDEP guidance (NDEP 2009a), as part of the process used to evaluate radionuclide data for the BMI Common Areas, BRC assessed whether radionuclides are in secular equilibrium. As discussed in Section 5.1, secular equilibrium is an indication of background conditions.

The data indicate that radionuclides are in secular equilibrium at the Site. Specifically, the mean radio activities for the thorium-232 decay chain (i.e., thorium-232, radium-228, and thorium-228) are comparable (1.5, 1.8, and 1.7 pCi/g, respectively). Similarly, the mean values for the uranium-238 decay chain (uranium-238, uranium-233/234, thorium-230, and radium-226) are also comparable, ranging from 1.0 to 1.2 pCi/g. All of the mean values are lower than their respective maximum background activity levels. A quantitative evaluation of secular equilibrium is presented in Section 5.1.

Summary of Soil Exceedances

As summarized above and in the associated data tables (Table 3-4 and Appendix B), some BCL and $LBCL_{DAF1}$ exceedances are currently observed in Site soils. The following constituents were reported at concentrations higher than the worker BCL and the maximum shallow Qal McCullough background level (where applicable):

- Arsenic (14 samples)
- Radium-228 (4 samples)
- Radium-226 (3 samples)
- Thorium-228 (3 samples)

The following constituents were reported at concentrations higher than the $LBCL_{DAF1}$ and the maximum shallow Qal McCullough background level (where applicable):

- Selenium (48 samples)
- Perchlorate (42 samples)
- Dichloromethane (36 samples)
- Iron (34 samples)
- Manganese (25 samples)
- Antimony (18 samples)
- Nitrate (16 samples)
- Beta-BHC (15 samples)
- Arsenic (14 samples)
- Nickel (14 samples)
- Cobalt (13 samples)
- Chromium (VI) (11 samples)
- Aluminum (9 samples)
- Mercury (8 samples)
- Chlorate (8 samples)
- Thallium (7 samples)
- Copper (6 samples)
- Hexachlorobenzene (6 samples)
- Radium-228 (4 samples)
- Barium (4 samples)
- Radium-226 (3 samples)
- Thorium-228 (3 samples)
- Thorium-232 (3 samples)
- 2,2'-dichlorobenzil (3 samples)
- Cadmium (2 samples)
- 4,4-DDE (2 samples)
- 4,4-DDT (2 samples)
- 1,4-dichlorobenzene (1 sample)
- Benzo(a)anthracene (1 sample)
- Magnesium (1 sample)
- Molybdenum (1 sample)
- Boron (1 sample)
- Silver (1 sample)

Elevated chemical concentrations (notably, arsenic, barium, boron, chromium, chromium [VI], cobalt, copper, lead, manganese, mercury, thallium, tungsten, vanadium, zinc, 4,4-DDE, and 4,4-DDT), have been detected in several samples clustered near the central portion of the Site where several rounds of remediation occurred, and/or along the Beta Ditch, which also had several rounds of remediation. However, all except arsenic are well below their respective worker BCLs. Therefore, because of this, and the absence of residential receptors at the Site, separate exposure areas were not evaluated in the HHRA; that is, the Site was evaluated as a single exposure area, consistent with the project *Statistical Methodology Report* (NewFields 2006), and as discussed further in Section 6.1.1.

The limited number of BCL and $LBCL_{DAF1}$ exceedances indicates that there is a low likelihood of adverse impacts to human health and the environment due to residual chemical concentrations in Site soils. Consistent with the methodology in the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), an HHRA was conducted to further evaluate this possibility, as discussed in subsequent sections of this report.

3.6 SURFACE FLUX SAMPLING

Concurrent with the confirmation soil sampling, BRC implemented surface flux sampling across the Site. This sampling conformed to the most recent NDEP-approved version of SOP-16 (BRC, ERM, and MWH 2009). The sampling procedure for the effort included the USEPA surface emission isolation flux chamber (flux chamber) sampling to support an air pathway analysis for the Site.

It should be noted that while radon samples were collected, they are not included in this HHRA for the following reason: BRC submitted a technical memorandum to the NDEP (BRC 2010c), in which the results of recent radon testing performed in groundwater and indoor air samples were presented. Based on the findings of this memorandum, the NDEP concluded that HHRAs for Eastside property sub-areas do not need to evaluate the pathway of radon migration from groundwater to indoor air for sub-areas with a separation distance of at least 15 feet between any current or future building structure base and the high water table (letter dated November 9, 2010, from Greg Lovato, NDEP, to Mark Paris, BRC). Based on this conclusion and given the depth to groundwater at the Site is at least 40 feet bgs, the intrusion of radon into indoor air is not evaluated in the HHRA.

The flux chamber sample collection rationale was based on the project goal of obtaining a representative dataset of air emissions per sub-area. Flux chamber samples were collected from eight locations with one duplicate sample collected at location STC1-AJ16 (Figure 11): one random sampling location and seven biased locations along the ditches. This density of sample collection is considered adequate for sub-area characterization given the biased nature of the sample locations, the size of the sub-area, and the number of sample locations suggested by the USEPA (1986) in the flux chamber User's Guide for assessing zones of homogeneous site properties.

The analyte list for surface flux samples is composed of the list provided in the most recent NDEP-approved version of SOP-16 (BRC, ERM, and MWH 2009). This analyte list is provided in Table 3-16, and consists of the USEPA Method TO-15 full scan, plus SIM analyses for a subset of the analytes. The analytical results are summarized in Table B-11 (Appendix B), and the principal investigator Report of Findings (which includes descriptions of sampling procedures) is provided in Appendix D (included on the report CD in Appendix B).[21] It should be noted that, in addition to VOC data for the Site, the flux chamber report also contains data for the remainder of the Staging sub-area outside the Site boundaries. Data collected from outside the Site boundaries are not included in this HHRA. A data summary for the flux chamber sample results is provided in Table 3-17.

As seen in Tables 3-17 and B-11, 20 of the 67 organic constituents included in the TO-15 scan were detected in at least one surface flux sample. The most commonly detected constituents were as follows:

- Methyl-ethyl ketone (2-butanone) was detected in eight of nine samples (89 percent);
- Chloroform was detected in eight of 10 samples (80 percent);
- Acetone was detected in seven of nine samples (78 percent); and
- Carbon tetrachloride was detected in seven of 10 samples (70 percent).

The highest reported concentrations were as follows:

- Acetone (1.56 micrograms per square meter per minute [$\mu g/m^2,min^{-1}$] at STC1-JD14A);
- Dichloromethane (0.983 $\mu g/m^2,min^{-1}$ at STC1-JD14A);
- Ethanol (0.967 $\mu g/m^2,min^{-1}$ at STC1-JD05); and
- Methyl ethyl ketone (0.535 $\mu g/m^2,min^{-1}$ at STC1-JD14A).

As discussed in Section 4, all data have been validated. The HHRA surface flux dataset for the Site is included on the report CD in Appendix B. Surface flux sample locations are shown on Figure 11.

[21] Note that this report was prepared prior to data validation; therefore, data qualifiers may differ from those in the remainder of this report.

3.7 LEACHATE DATA

No samples collected within the Site during the confirmation sampling events included synthetic precipitation leaching procedure (SPLP) analysis. Findings from SPLP samples within the adjacent Eastside Main and Southern RIBs sub-areas are applicable to the Site as well. The potential leaching impacts to groundwater will be addressed in the Eastside groundwater remedial alternatives study.

4.0 DATA EVALUATION

This section describes the procedures used to evaluate the acceptability of data for use in the risk assessment. Overall quality of sample results is a function of proper sample management. Management of samples began at the time of collection and continued throughout the analytical process. SOPs were followed to ensure that samples were collected and managed properly and consistently and to optimize the likelihood that the resultant data are valid and representative.

The primary objective of the data review and usability evaluation was to identify appropriate data for use in the HHRA. The analytical data were reviewed for applicability and usability following procedures in USEPA's *Guidance for Data Usability in Risk Assessment (Part A)* (1992a) and *Risk Assessment Guidance for Superfund: Volume I* (1989), and the NDEP's *Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas* (2008a). A quality assurance/quality control (QA/QC) review of the analytical results was conducted during the sampling events. According to the USEPA Data Usability Guidance, there are six principal evaluation criteria by which data are judged for usability in risk assessment. The six criteria are:

- Reports to risk assessor (availability of information associated with Site data);
- Documentation;
- Data sources;
- Analytical methods and detection limits;
- Data review; and
- Data quality indicators (DQIs), including precision, accuracy, representativeness, comparability, and completeness (PARCC).

A summary of these six criteria for determining data usability is provided below. In addition to the six principal evaluation criteria, the NDEP's Data Usability Guidance includes a step for data usability analysis, which is discussed after these six USEPA evaluation criteria. Data usability evaluation tables are provided electronically in Appendix E (included on the report CD in Appendix B).

4.1 CRITERION I – REPORTS TO RISK ASSESSOR (AVAILABILITY OF INFORMATION ASSOCIATED WITH SITE DATA)

The usability analysis of the site characterization data requires the availability of sufficient data for review. The required information is available from documentation associated with the Site data and data collection efforts. Data have been validated as described in the following DVSRs, which are provided electronically in Appendix F:

- *Data Validation Summary Report, Staging Sub-Area Soil Investigation – May-June 2010 (Dataset 66)* (BRC and ERM 2010a), approved by the NDEP on January 9, 2012;

- *Data Validation Summary Report, TIMET Ponds Sub-Area Soil Investigation – March, April and July 2010 (Dataset 65)* (BRC and ERM 2011a), which was re-submitted to the NDEP on January 14, 2011;

- *Data Validation Summary Report, Eastside North Surface Flux Investigations (Remaining Sub-Areas) – July through August 2010 (Dataset 71)* (BRC and ERM 2011b), approved by the NDEP on July 25, 2011;

- *Data Validation Summary Report, Eastside North Confirmation Soil Investigations – December 2008 through October 2010 – Part II (Dataset 72b)* (BRC and ERM 2011c), approved by the NDEP on May 9, 2011;

- *Eastside Confirmation/Supplemental Sampling Events – July 2012 Through February 2014 (Dataset 72f)* (BRC and ERM 2014a) approved by the NDEP on January 15, 2015; and

- *Eastside Confirmation/Supplemental Sampling Events – March 2014 Through August 2014 (Dataset 72g)* (BRC and ERM 2014b) [pending approval by the NDEP].

The information sources and the availability of such information for the data usability process are as follows:

- A Site description provided in this report and the NDEP-approved SAPs identify the location and features of the Site, the characteristics of the vicinity, and contaminant transport mechanisms.

- A Site map with sampling locations is provided on Figure 11.

- Sampling design and procedures were provided in the NDEP-approved SAPs.

- Analytical methods and sample quantitation limits (SQLs) are provided in the dataset file included on the report CD in Appendix B.
- A complete dataset is provided in the dataset file included on the report CD in Appendix B.
- A narrative of qualified data is provided with each analytical data package; the laboratory provided a narrative of QA/QC procedures and results. These narratives are included as part of the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b).
- QC results are provided by the laboratory, including blanks, replicates, and spikes. The laboratory QC results are included as part of the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b).
- Data flags used by the laboratory were defined adequately.
- Electronic files containing the raw data made available by the laboratory are included as part of the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b).

4.2 CRITERION II – DOCUMENTATION REVIEW

The objective of the documentation review is to confirm that the analytical results provided are associated with a specific sampling location and collection procedure, using available documentation. For the purposes of this data usability analysis, the chain-of-custody forms prepared in the field were reviewed and compared to the analytical data results provided by the laboratory to ensure completeness of the dataset as discussed in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b). Based on the documentation review, all samples analyzed by the laboratory were correlated to the correct geographic location at the Site, as shown on Figure 11. The samples were collected in accordance with the SAPs (BRC 2010a,b), and the SOPs developed for the BMI Common Areas as provided in the FSSOP (BRC, ERM, and MWH 2009). Field procedures included documentation of sample times, dates, and locations; other sample-specific information such as sample depth was also recorded. Information from field forms generated during sample collection activities was imported into the project database.

The analytical data were reported in a format that provides adequate information for evaluation, including appropriate QC measures and acceptance criteria. Each laboratory report describes the analytical method used, provides results on a sample-by-sample basis along with sample-specific SQLs, and provides the results of appropriate QC samples such as laboratory control spike samples, sample surrogates and internal standards, and matrix spike samples. All laboratory reports, except for asbestos, were prepared as provided by the documentation required by USEPA's Contract Laboratory Program (USEPA 2003a, 2004b,c) which includes chain-of-custody records, calibration data, QC results for blanks, duplicates, and spike samples from the field and laboratory, and all supporting raw data generated during sample analysis were also included. Reported analytical results were imported into the project database.

Measurement of asbestos was conducted consistent with the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a). The recommended method for providing asbestos data that are useful for risk assessment purposes was performed by EMSL Analytical, Inc., in Westmont, New Jersey. Although this laboratory is not currently certified in Nevada, it does have State of California and U.S. accreditation for asbestos analysis. Because many of the QC procedures associated with other analyses do not apply to asbestos analysis (e.g., laboratory blanks, duplicates and spikes), data validation of the asbestos laboratory reports involved a somewhat lesser level of effort than for other analyses (consistent with the NDEP's 2012 *Guidance on Data Validation for Asbestos Data in Soils*).

4.3 CRITERION III – DATA SOURCES

The review of data sources is performed to determine whether the analytical techniques used in the site characterization process (i.e., SAP sampling) are appropriate for risk assessment purposes. The data collection activities specified in the SAP were developed to characterize a broad spectrum of chemicals potentially present on the Site, including asbestos, aldehydes, general chemistry and ions, VOCs, SVOCs, metals, dioxins/furans, PAHs, organochlorine pesticides, radionuclides, and PCBs (SRCs and analyses performed under SAP implementation are listed in Table 3-2, and Table 3-16 for surface flux samples).[22] Because of the soil removals that have occurred on the Site, data collected prior to SAP implementation had significant gaps and inconsistencies in analytical methodology, and as discussed in Section 2, those historical data are not evaluated further in the data usability process, or the HHRA. Only post-remediation data collected under the SAPs (and subsequent confirmation sampling events) are being used in the HHRA, and these were subjected to the formal data usability evaluation described in this section. Figure 11 demonstrates that samples collected in accordance with the SAPs are situated across the entire Site; analyses associated with these samples are summarized in Tables 3-2 (soil) and 3-16 (surface flux).

[22] Although radon samples were collected and analyzed for the Site, radon has been evaluated through a separate process and is not considered further in the data usability process (see Section 3.6).

The State of Nevada is in the process of certifying the laboratories used to generate the analytical data. As such, standards of practice in these laboratories follow the quality program developed by the Nevada Revised Statutes and are within the guidelines of the analytical methodologies established by the USEPA. Based on the review of the available information, the data sources for chemical and physical parameter measurements are adequate for use in a risk assessment.

4.4 CRITERION IV – ANALYTICAL METHODS AND DETECTION LIMITS

In addition to the appropriateness of the analytical techniques evaluated as part of Criterion III, it is necessary to evaluate if the detection limits are low enough to allow adequate characterization of risks. At a minimum, this data usability criterion can be met through the determination that routine USEPA and U.S. Department of Energy (DOE) reference analytical methods were used in analyzing samples collected from the Site. The USEPA and DOE methods that were used in conducting the laboratory analysis of soil and surface flux samples are identified in the dataset file included on the report CD in Appendix B. Each of the identified methods is considered the most appropriate method for the respective constituent class and each was approved by the NDEP as part of the SAPs (BRC 2010a,b). As recommended by NDEP’s guidance on *Detection Limits and Data Reporting* (NDEP 2008b), the laboratory reported SQL was used in evaluating detection limits.

Laboratory practical quantitation limits (PQLs) were based on those outlined in the reference method, the SAPs (BRC 2010a,b), and the project QAPP. In accordance with respective laboratory SOPs, the analytical processes included performing instrument calibration, laboratory method blanks, and other verification standards used to ensure QC during the analyses of collected samples.

The range of SQLs achieved in field samples was compared to NDEP BCLs (NDEP 2013). As seen in the summary of the Site dataset provided in Tables 3-4 (soil) and 3-18 (surface flux), of the standard analytes, only five constituents had SQLs that exceeded their respective worker soil BCLs. The SQLs exceedances of NDEP BCLs are discussed below.

- The radium-226 in six of 69 samples, radium-228 in 19 of 69 samples, and thorium-228 in three of 69 samples had minimum detectable activities (MDA) higher than the BCL; the uranium-235/236 MDA in most sample analyses were higher than the BCL.
- Arsenic SQLs exceeding the PQL were identified in all 16 non-detect results. All 16 non-detects were due to blank contamination where the non-detect value was raised to the PQL.

- The only organic analytes with a SQL higher than the BCL was dichloromethyl ether in all 74 samples analyzed and N-nitrosodi-n-propylamine with a SQL higher than the BCL in 72 of 74 samples analyzed. These compounds were not detected in any samples. The dichloromethyl ether SQL is greater than 100 times the BCL and a reduction in the SQL is not likely to be achieved by the laboratory. The N-nitrosodi-n-propylamine SQL is close to the BCL. ~~Therefore, the analytical SQLs are considered adequate for risk assessment purposes.~~These chemicals are further discussed in the Uncertainty Analysis section (Section 7.1).

As discussed in the *2008 Supplemental Shallow Soil Background Report* (BRC and ERM 2009b), there are differences in SQLs among datasets that may affect data comparability for datasets comprised primarily of non-detect values. For these datasets, left-censored data can result in difficulties in differentiating whether datasets are actually different or merely an artifact of detection limits.

4.5 CRITERION V – DATA REVIEW

The data review portion of the data usability process focuses primarily on the quality of the analytical data received from the laboratory. Soil and surface flux sample data were subject to data validation. DVSRs were prepared as separate deliverables (BRC and ERM 2010a, 2011a,b,c, 2014a,b; Appendix F). The analytical data were validated according to the internal procedures using the principles of USEPA National Functional Guidelines (USEPA 1999, 2004d, 2005a, 2008) and were designed to ensure completeness and adequacy of the dataset. Additionally, the DVSRs were issued utilizing the NDEP's two *Supplemental Guidance on Data Validation* documents (NDEP 2009b,c). Any analytical errors and/or limitations in the data have been addressed and an explanation for data qualification provided in the respective data tables. The results of ERM's data review for these issues are presented in the DVSRs and are summarized below.

A limited number of results for certain analytes/samples (28 data points, all non-detections) were rejected as unusable for the following reasons:

- The formaldehyde result for sample STC1-JD12-10 was rejected due a very low surrogate recovery.

- The antimony results for two samples, STC1-AJ18-0 and STC1-AJ18-12 (all associated with TestAmerica SDG#FOE250440) were rejected due to very low matrix spike/matrix spike duplicate (MS/MSD) recoveries.

- The mercury results for two samples STC7-ES01 and STC7-JD08 (all associated with TestAmerica SDG#160-1092-1) were rejected due to negative MS/MSD recoveries.

- The benzyl alcohol result for sample STC1-JD15-0 was rejected due to a zero MS recovery.

- The hydroxymethyl phthalimide result for sample STC10-JW02 was rejected due to a calibration violation.

- Heptachlor results in 21 samples were rejected due to calibration violations. The rejected samples are listed in Table 4-1.

TABLE 4-1: HEPTACHLOR SAMPLES REJECTED DUE TO CALIBRATION VIOLATIONS

Sample ID	Lab ID	Sample ID	Lab ID
STC1-AI16-0	F0F080484004	STC1-AI16-10	F0F080484005
STC1-AJ15-0	F0F080484008	STC1-AJ15-0-DUP	F0F080484009
STC1-AJ15-10	F0F080484010	STC1-AJ16-0	F0F080484006
STC1-AJ16-10	F0F080484007	STC1-JD07-0	F0F080484001
STC1-JD07-14	F0F080484003	STC1-JD07-4	F0F080484002
STC1-JD08-0	F0E210435007	STC1-JD08-0-DUP	F0E210435008
STC1-JD08-10	F0E210435009	STC1-JD09-0	F0E210435010
STC1-JD09-10	F0E210435011	STC1-JD14-0	F0F020455001
STC1-JD14-0-DUP	F0F020455002	STC1-JD14-10	F0F020455003
STC1-JD15-0	F0F020455004	STC1-JD15-16	F0F020455006
STC1-JD15-6	F0F020455005		

Data qualifications are discussed in the subsections that follow.

4.5.1 Holding Time Exceedances / Sample Condition Qualifications

Holding time refers to the period of time between sample collection and the preparation and/or analysis of the sample. The accuracy of analytical results may depend upon analysis within specified holding times and sample temperature. In general, a longer holding time is assumed to result in a less accurate measurement due to the potential for loss or degradation of the analyte over time. Sample temperature is of greatest concern for VOCs that may volatilize from the sample at higher temperatures. As described in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), sample results were reviewed for compliance with the method-prescribed preparation and analysis holding times.

USEPA guidance for validation allows professional judgment to be used in evaluating qualification due to holding time exceedances. Sample results that were generated after the required holding time, but less than two times after the holding time, were qualified as estimated (J- or UJ flagged). If the samples were prepared after two times the holding time was exceeded, non-detect results were qualified as rejected (R) and detections were qualified as estimated (J-). Qualifications to 32 samples (datasets 66, 72b, and 72f) were made on the basis of exceeded holding times (see Table 2-2 of DVSRs 66, 72b, and 72f [BRC and ERM 2010a, 2011c, 2014a]; Appendix F; included on the report CD in Appendix B), as follows:

- Chromium (VI) results for 14 soil samples were qualified as estimated (J-/UJ) due to holding time exceedances. The lengths of time between sample preparation and analysis for these batches varied between 6 and 7 days (1 to 3 days beyond the method-prescribed 4-day period). For the data evaluated in DVSR 72f, samples exceeding the 30-day holding time from collection to preparation were used. Samples in these batches were prepared 44, 59 or 64 days from collection to preparation. The samples qualified are listed in Table 4-2.

TABLE 4-2: CHROMIUM (VI) SAMPLES QUALIFIED DUE TO HOLDING TIME EXCEEDANCES

Sample ID	Lab ID	Sample ID	Lab ID
STC1-AI16-10	F0F080484005	STC1-AJ15-10	F0F080484010
STC1-AJ16-0	F0F080484006	STC1-AJ16-10	F0F080484007
STC1-JB12-0	F0H310456001	STC1-JB12-10	F0H310456002
STC1-JD07-14	F0F080484003	STC1-JD07-4	F0F080484002
STC9-FALL02-2	160-4969-2	STC9-FALL02-3	160-5233-2
STC9-FALL03-2	160-4969-3	STC9-FALL03-3	160-5233-3
STC9-FALL04-2	160-4969-4	STC9-FALL04-3	160-5233-4

- Acetaldehyde results for 15 soil samples were qualified as estimated (J-) due to holding time exceedances. The length of time between sample preparation and analysis for these batches was 4 days (1 day beyond the method-prescribed 3-day period). The samples qualified are listed in Table 4-3.

TABLE 4-3: ACETALDEHYDE SAMPLES QUALIFIED DUE TO HOLDING TIME EXCEEDANCES

Sample ID	Lab ID	Sample ID	Lab ID
STC1-JD11-0	NTE2436-08RE2	STC1-JD11-10	NTE2436-09RE2
STC9-JW01	160-5052-15	STC9-JW02	160-5052-16
STC9-JW03	160-5052-17	STC9-JW04	160-5052-18
STC9-JW05	160-5052-19	STC9-JW05-DUP	160-5052-1
STC9-JW06	160-5052-2	STC9-JW07	160-5052-3
STC9-JW08	160-5052-4	STC9-JW09	160-5052-6

TABLE 4-3: ACETALDEHYDE SAMPLES QUALIFIED DUE TO HOLDING TIME EXCEEDANCES

Sample ID	Lab ID	Sample ID	Lab ID
STC9-JW10	160-5052-7	STC9-JW11	160-5052-8
STC9-JW12	160-5052-9		

- Mercury results for three soil samples were qualified as estimated (J-) due to holding time exceedances. The length of time between sample collection and analysis for these batches was 59 days (31 days beyond the method-prescribed 28-day period). The samples qualified are STC9-FALL02-3, STC9-FALL03-3, and STC9-FALL04-3.

As noted in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), all samples were received at the laboratory within the required temperatures range of 4°± 2° Celsius. No sample results were qualified based on sample temperatures.

4.5.2 Blank Contamination

Blanks are artificial samples designed to evaluate the nature and extent of contamination of environmental samples that may be introduced by field or laboratory procedures. Field and laboratory blanks, consisting of contaminant-free water, were prepared and analyzed as part of standard QA/QC procedures to monitor for potential contamination of field equipment, laboratory process reagents, and sample containers. As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), 341 results were qualified as undetected (U) or estimated (J+) due to laboratory or field blank contamination, as discussed below. Of these, the majority, 283 results, were qualified as undetected (U). Detections of constituents qualified as non-detections due to comparable detections in laboratory or field blanks are known as "censored" data, and are presented in Tables 2-4 and 2-5 of DVSR 65, Tables 2-5 and 2-6 of DVSR 66, Tables 2-3 and 2-4 of DVSR 71, and Tables 2-6 and 2-7 of DVSR 72b (Appendix F). In these cases, non-detections are represented in the database as "< [*the PQL*]" in the case of inorganics detected below the PQL, or as "<[*result value*]" for all others. [23]

These censored data are summarized in Appendix E, Table E-14 (included on the report CD in Appendix B) by compound class. As seen in that table, analytes were initially reported as detections in samples, but were later qualified as non-detections based on the presence of

[23] Although NDEP has issued recent guidance regarding qualifying data due to blank contamination (NDEP 2011c); BRC has addressed this issue in the *Technical Memorandum – BRC Comments on NDEP Blank Contamination Guidance* (BRC 2011) and, consistent with this Technical Memorandum, no changes were made to the Site dataset.

comparable concentrations of that analyte in blank samples. As seen in Appendix E, compounds most often censored for soil results included the following:

- Ammonia (as N) (32 samples)
- Beryllium (18 samples)
- Silver (20 samples)
- Orthophosphate (34 samples)
- Mercury (23 samples)
- 1,2,4-Trimethylbenzene (35 samples)

In addition, dibromochloropropane (seven of 10 results) was frequently censored for flux samples.

Table 4-4 presents the metals most likely to be affected by this issue.

TABLE 4-4: METALS MOST FREQUENTLY CENSORED DURING BLANK SAMPLE EVALUATION

Metal	Number of Detect	Number of Samples	Number of Censored Results	Max Non-Detect (mg/kg)	NDEP Worker BCL (mg/kg)
Arsenic	61	77	16	5.8	1.77
Beryllium	59	77	18	0.58	2230
Mercury	44	75	23	0.0389	341
Molybdenum	33	77	12	2.9	5680
Silver	30	77	20	1.1	5680

What this table demonstrates is that while the number of censored results is numerous for some metals compared to the number of detections, the censored values are still much lower than soil BCLs. The one exception is arsenic; however, while 20 percent of the results were censored, the maximum censored result is less than the maximum detected result (15 mg/kg) and did not affect the conclusions regarding arsenic.

4.5.3 Sample/Duplicate Differences Outside Permissible Range or Greater than Permissible Values

During the data validation process, sample/duplicate results are evaluated to determine whether differences in those results suggest potential issues with data quality. Specifically, the analyst evaluates the following:

- MS/MSD relative percent difference (RPDs), to determine if the RPDs are outside acceptance limits;
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPDs, to determine if the RPDs are outside acceptance limits;

- Sample/field duplicate results to determine if differences are greater than the permissible value; and
- Sample/laboratory duplicate results to determine if differences are greater than the permissible value.

4.5.3.1 Qualifications Due to Matrix Spike/Matrix Spike Duplicate Recoveries Outside Acceptance Criteria

As discussed in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), 491 inorganic sample results and one organic sample result were qualified as estimated (either UJ for non-detections or J for detections; "+" or " – " added to denote potential high or low bias, respectively) based on MS/MSD recoveries. Five results were rejected due to MS/MSD recoveries and were discussed in Section 4.5. The qualifications applied on the basis of MS/MSD recoveries were as follows:

- The benzyl alcohol result for one soil sample (STC1-AJ18-0) was qualified as estimated (UJ) due to a recovery lower than the acceptance criteria of 19 to 112 percent.
- The radium-228 results for two soil samples (STC1-AJ18-0 and STC1-AJ18-10) were qualified as estimated (UJ) due to a recovery below than the acceptance criteria of 75 to 125 percent.
- The Total Kjeldahl Nitrogen results for the seven soil samples (STC1-AJ18-0, STC1-AJ18-12, TMC1-JD01-0, TMC1-JD01-11, TMC1-JD02-0, TMC1-JD02-0-DUP, and TMC1-JD02-10) identified in Table 4-3 were qualified as estimated due to recoveries below than the acceptance criteria of 75 to 125 percent.
- Metals results for soil samples in various laboratory data packages were qualified due to recoveries outside the acceptance criteria of 75 to 125 percent, as summarized in Table 4-5.

TABLE 4-5: METALS SAMPLES QUALIFIED DUE TO RECOVERIES OUTSIDE ACCEPTANCE CRITERIA

Lab Data Package	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Tungsten	Uranium	Vanadium	Zinc
160-1092-1	+	-					+		+			-		-	+							-		-	
160-1457-1		-		+/-		-											+	+	-		+				
160-1661-1			+	+	+		+	+	+	+	+					+	+		-	+	+		+	+	+

TABLE 4-5: METALS SAMPLES QUALIFIED DUE TO RECOVERIES OUTSIDE ACCEPTANCE CRITERIA

Lab Data Package	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Tungsten	Uranium	Vanadium	Zinc
160-336-1		-	+	+			+	+	+							+	+		-	+	+	-		+	+
160-340-1		-							+								+		-	+		-			+
160-4969-1		-		-															+	-	+/-				-
160-5052-1		-		+													+				+/-				
160-5054-1		-		+					+								+			+	+/-				-
160-5233-1		-		+													+			+	+	-			
160-5353-1		-					-										+					-			
160-6633-1		-		-													+			+	+				
F0D060425		-		+													+					-			
F0E210435		-		+													+				+	-			
F0E250440				+													+			+	+	-			
F0E280497		-		+													+				+	-			
F0F020455		-																			+	-			
F0F040509		-		+		-							-				+				+	-		-	
F0F050477		-		+													+			+	+	-			
F0F080484		-		+													+				+	-			
F0H310456		-		-													-				+	-			

+ = Recovery greater than the acceptance limits
- = Recovery less than the acceptance limits
Blank entry signifies that the recovery was within the acceptance limits

Appendix E, Table E-11 (included on the report CD in Appendix B) lists the samples and associated analytes exhibiting MS/MSD percent recoveries below the laboratory control limits. In cases in which the recoveries were higher than the acceptance criteria, the results have the potential of being similarly biased high, and using these data in the HHRA could result in risks being calculated that are higher than would be associated with actual Site conditions. Of more concern for the HHRA is underestimation of risk, which could be associated with the use of data that are biased low.

As indicated in that table, reported detections and non-detects for soil data were flagged as estimated ("J-" or "UJ," respectively) due to low MS/MSD recoveries (*i.e.*, from 30 to 74 percent for metals).[24] Non-detects associated with "very low" MS/MSD recoveries (*i.e.*, less than

[24] If additional validation criteria (aside from the MS/MSD recoveries) did not suggest a low bias for a given result, the sample result was flagged with "J" (no bias inferred).

30 percent for metals), are generally rejected as unusable. Five results were rejected due to MS/MSD recoveries~~.~~ as discussed above in Section 4.5. The data flagged as estimated based on low MS/MSD recoveries were subjected to further review in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.3.2 Qualifications Due to Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries Outside Acceptance Criteria

Organic and inorganic constituent results for 18 soil samples were qualified as estimated (either UJ for non-detections or J for detections; "+" or " – " added to denote potential high or low bias, respectively) based on LCS/LCSD recoveries. No data were rejected due to LCS recoveries. The qualifications applied on the basis of LCS/LCSD recoveries to soil samples are presented in Table 4-6.

TABLE 4-6: RESULTS QUALIFIED DUE TO LCS/LCSD RECOVERIES OUTSIDE ACCEPTANCE CRITERIA

Laboratory Data Package	Total Kjeldahl Nitrogen[1]	Total Cyanide[2]	Benzyl Alcohol[3]
F0E220430	+	+	
253523			-
253899			-

[1] = Acceptance limits of 90%-110%.
[2] = Acceptance limits of 85%-115%.
[3] = Acceptance limits of 27%-108%.

As noted above, recoveries below the lower laboratory limits are of the most concern in terms of data usability. Appendix E, Table E-11 (included on the report CD in Appendix B) lists the samples and associated analytes exhibiting LCS/LCSD percent recoveries below the lower laboratory control limit. The data flagged as estimated based on low LCS/LCSD recoveries were subjected to further review in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.3.3 Qualifications Due to Sample/Field Duplicate Differences Outside Acceptance Criteria

The following 14 soil field duplicates were collected during the sampling activities

- STC1-AI15-0-DUP
- STC1-AJ15-0-DUP
- STC1-AK15-0-DUP
- STC1-AK20-0-DUP
- STC1-JD08-0-DUP
- STC1-JD12-0-DUP
- STC1-JD14-0-DUP
- STC6-ES01-DUP

- STC6-JD14-DUP
- STC8-Prov4-DUP
- STC9-JW05-DUP
- STC9-JW15-DUP
- STC9-JW25-DUP
- TMC1-JD02-0-DUP

In addition, the following surface flux field duplicate was also collected during the sampling activities: STC1-AJ16R.

If field duplicate results are less than five times the PQL, results are qualified if the absolute difference between the two results is greater than the PQL. If results are greater than five times the PQL, results are compared to a precision goal of <u><</u>50 percent RPD. Field duplicate differences in excess of acceptance limits were noted in 13 of the 14 field duplicate pairs of soil samples. The differences are presented in Appendix E, Table E-12 (included on the report CD in Appendix B). All associated data were flagged as estimated (J/UJ). No data were rejected on the basis of sample/field duplicate differences.

4.5.3.4 Qualifications Due to Sample/Laboratory Duplicate Differences Outside Acceptance Criteria

Of the samples representing post-remediation conditions (i.e., not including those data points associated with samples from soil intervals subsequently removed from the Site), results for the 22 soil samples (22 data points) identified in Table 4-7 had sample/laboratory duplicate differences greater than permissible values (i.e., for radionuclides, absolute difference greater than 1 pCi/g; for inorganics, if the result for either the primary or duplicate are less than five times the PQL, results are qualified if the absolute difference between the two results is greater than the PQL, otherwise the precision goal is RPD $\leq$ 20 percent).

TABLE 4-7: RESULTS QUALIFIED DUE TO SAMPLE/LABORATORY DUPLICATE DIFFERENCES OUTSIDE ACCEPTANCE CRITERIA

Field Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD or Difference
STC1-AI16-0	F0F080484004	Total Kjeldahl Nitrogen [TKN]	81.4	mg/kg	RPD=30
STC1-AI16-10	F0F080484005	Total Kjeldahl Nitrogen [TKN]	48.2	mg/kg	RPD=30
STC1-AJ15-0	F0F080484008	Total Kjeldahl Nitrogen [TKN]	129	mg/kg	RPD=30
STC1-AJ15-0-DUP	F0F080484009	Total Kjeldahl Nitrogen [TKN]	113	mg/kg	RPD=30
STC1-AJ15-10	F0F080484010	Total Kjeldahl Nitrogen [TKN]	53.6	mg/kg	RPD=30
STC1-AJ16-0	F0F080484006	Total Kjeldahl Nitrogen [TKN]	84.3	mg/kg	RPD=30
STC1-AJ16-10	F0F080484007	Total Kjeldahl Nitrogen [TKN]	51.1	mg/kg	RPD=30
STC1-JD07-0	F0F080484001	Total Kjeldahl Nitrogen [TKN]	57.8	mg/kg	RPD=30
STC1-JD07-14	F0F080484003	Total Kjeldahl Nitrogen [TKN]	65	mg/kg	RPD=30

TABLE 4-7: RESULTS QUALIFIED DUE TO SAMPLE/LABORATORY DUPLICATE DIFFERENCES OUTSIDE ACCEPTANCE CRITERIA

Field Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD or Difference
STC1-JD07-4	F0F080484002	Total Kjeldahl Nitrogen [TKN]	62.6	mg/kg	RPD=30
STC1-JD12-0	253459010	Thorium-232	1.86	pCi/g	Difference=1.647
STC1-JD12-0-DUP	253459011	Thorium-232	1.23	pCi/g	Difference=1.647
STC1-JD12-10	253459012	Thorium-232	1.33	pCi/g	Difference=1.647
STC1-AI15-0	254200007	Thorium-232	1.5	pCi/g	Difference=1.348
STC1-AI15-0-DUP	254200008	Thorium-232	1.96	pCi/g	Difference=1.348
STC1-AI15-10	254200009	Thorium-232	1.99	pCi/g	Difference=1.348
STC1-JD02-10	254200013	Thorium-232	1.6	pCi/g	Difference=1.348
STC1-JD03-10	254200006	Thorium-232	1.4	pCi/g	Difference=1.348
STC1-JD04-0	254200003	Thorium-232	2.03	pCi/g	Difference=1.348
STC1-JD04-10	254200004	Thorium-232	1.76	pCi/g	Difference=1.348
STC1-JD05-0	254200001	Thorium-232	1.17	pCi/g	Difference=1.348
STC1-JD05-10	254200002	Thorium-232	1.63	pCi/g	Difference=1.348

The above data flagged as estimated based on sample/laboratory duplicate differences were subjected to further review in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.4 Internal Standards Outside Acceptance Criteria

Internal standards are prepared for certain organic gas chromatograph/mass spectrometry (GC/MS) and inductively coupled plasma/mass spectrometry analyses by adding compounds similar to target compounds of interest to sample aliquots. Internal standards are used in the quantitation of target compounds in the sample or sample extract. The evaluation of internal standards involved comparing the instrument response and retention time from the target compounds in the sample with the response and retention time of specific internal standards added to the sample extract prior to analysis. No data were rejected due to internal standard recoveries.

As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), the following results were qualified as estimated (J/UJ) due to internal standard exceedances:

- PCB results for two soil samples (GES-JWT-3 and STC9-JW05) were qualified as estimated (J/UJ) due to low internal standard recoveries if the percent recovery was below 25 percent or above 150 percent.

- VOC results for one flux sample (STC1-JD12) were qualified as estimated (J/UJ) due to high internal standard recoveries if the area of the internal standard of the sample was greater than

200 percent of the area of the same internal standard of the continuing calibration verification.

- VOC results for nine soil samples (STC1-JD08-0-DUP, STC1-JD08-10, STC1-JD09-0, STC1-JD10-0, STC1-JD10-10, STC1-JD11-0, STC1-JD12-0, STC1-JD12-0-DUP, and TMC1-JD02-0-DUP) were qualified as estimated (J/UJ) due to high internal standard recoveries if the area of the internal standard of the sample was greater than 200 percent of the area of the same internal standard of the continuing calibration verification.

- Dioxins/furans results for 17 soil samples were qualified as estimated (J/UJ) due to low or high internal standard recoveries if the percent recovery was below 40 percent or above 135 percent. Qualified samples are presented in Table 4-8.

TABLE 4-8: DIOXIN/FURAN SOIL SAMPLE RESULTS QUALIFIED DUE TO INTERNAL STANDARDS OUTSIDE ACCEPTANCE CRITERIA

Laboratory Data Package #	Sample ID	
160-1661-2	GES-JWT-3	
160-340-1	STC6-JD14	STC6-JD14-DUP
160-5052-2	STC9-JW05	
160-5054-2	STC9-JW15 STC9-JW24	STC9-JW15-DUP STC9-JW25
F0D060418	TMC1-JD01-0 TMC1-JD02-0-DUP	TMC1-JD02-0
F0E210419	STC1-JD09-0	
F0E220426	STC1-JD12-0	STC1-JD13-0
F0E280501	STC1-AK20-0	STC1-AK20-0-DUP
F0F020461	STC1-JD15-0	
F0F040505	STC1-AK15-0-DUP	
F0F050475	STC1-AI15-0 STC1-JD02-0	STC1-AI15-0-DUP

4.5.5 Surrogate Percent Recoveries Outside Laboratory Control Limit

As discussed in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), surrogate spikes were added to each of the samples submitted for organic analysis to monitor potential interferences from the matrix. Results associated with unacceptable surrogate recoveries were qualified as estimated (J+, J- or UJ). Generally, when surrogate recoveries are less than 10 percent, associated non-detect results are qualified as rejected (R) because false negatives are a possibility. No sample results were rejected due to surrogate recoveries. The soil samples listed in Table 4-9 were qualified due to surrogate recovery exceedances.

TABLE 4-9: RESULTS QUALIFIED DUE TO SURROGATE RECOVERIES OUTSIDE LABORATORY CONTROL LIMIT

Sample ID	Lab ID	Analysis	Recovery	Acceptable Range
STC1-AI15-0-DUP	F0F050477008	Organochlorine Pesticides	480%	36-150
STC1-AJ15-0	F0F080484008	VOCs	12%	76-130
STC1-AJ18-0	F0E250440002	Organochlorine Pesticides	46%	53-120
STC1-AK15-3	F0F040509008	Organochlorine Pesticides	42%	53-120
STC1-AK20-6	NTE2995-14	Aldehydes	17%	34-150
STC1-JD04-0	F0F050477003	Organochlorine Pesticides	190%	36-150
STC1-JD08-0	F0E210435007	Organochlorine pesticides	588%	36-150
STC1-JD08-0-DUP	F0E210435008	Organochlorine pesticides	518%	36-150
STC1-JD09-10	F0E210435011	Organochlorine Pesticides	174%	36-150
STC1-JD12-0	F0E220430010	Organochlorine Pesticides	144%	53-120
STC1-JD13-0	F0E220430013	VOCs	73%	76-130
STC1-JD13-10	F0E220430014	VOCs	70%	76-130
STC1-JD14-0	F0F020455001	Organochlorine Pesticides	290%	36-150
STC8-Prov4-DUP	160-1457-17	Organochlorine Pesticides	163%	46-150
STC9-JW09	160-5052-6	Organochlorine Pesticides	127%, 256%, 299%	41-125, 29-150, 29-150
STC9-JW10	160-5052-7	Organochlorine Pesticides	0%, 410%, 0%, 510%	41-125, 29-150, 41-125, 29-150
STC9-JW18	160-5054-7	Organochlorine Pesticides	165%, 614%, 129%, 647%	41-125, 29-150, 41-125, 29-150
STC9-JW23	160-5054-12	Organochlorine Pesticides	0%, 305%, 0%, 188%	41-125, 29-150, 41-125, 29-150
TMC1-JD01-0	F0D060425008	Organochlorine Pesticides	196%	36-150
TMC1-JD01-11	F0D060425009	Organochlorine Pesticides	50%	53-120
TMC1-JD02-0	F0D060425005	Organochlorine Pesticides	48%	53-120
TMC1-JD02-0-DUP	F0D060425006	Organochlorine Pesticides	49%	53-120
TMC1-JD02-10	F0D060425007	Organochlorine Pesticides	46%	53-120

Several surrogate recoveries outside the acceptance criteria were below the lower laboratory control limit. Further review of low surrogate recoveries is necessary in terms of data usability for the Site, as discussed in Section 4.6.2.3.

4.5.6 Calibrations Outside Laboratory Control Limits

Requirements for instrument calibration ensure that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run. Continuing calibration checks document satisfactory maintenance and adjustment of the instrument on a day-to-day basis. As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), certain data were qualified due to initial or continuing calibration issues. Of specific concern, are analytes with a final qualifier indicating a low bias due to calibration. In the following tables, the percentage of analyte recovered is based on the percent difference of the actual amount and recovered amount reported from the continuing calibration. As the percentage decreases, the potential for false negatives increases.

Table 4-10 summarizes the metals results that were qualified during the evaluation of the continuing calibrations.

TABLE 4-10: SUMMARY OF METAL RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-Detect	Percentage of Analyte Recovered as Indicated by Outlier
Boron	1	0%	118%

Note: The control limits are 90-110%. Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Table 4-11 summarizes the SVOC results that were qualified during the evaluation of the continuing calibrations.

TABLE 4-11: SUMMARY OF SEMI-VOLATILE ORGANIC COMPOUND RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-Detect	Percentage of Analyte Recovered as Indicated by Outlier
2,4-Dimethylphenol	5	100%	70%
2,4-Dinitrophenol	12	100%	66-74%
3-Nitroaniline	18	100%	42-71%
4-Chlorothiophenol	1	100%	63%
4-Nitroaniline	12	100%	46-70%
4-Nitrophenol	12	100%	55-70%
Benzyl alcohol	16	100%	50-70%
Carbazole	19	100%	65-73%
Dichloromethyl ether	5	100%	74.8%
Hexachlorocyclopentadiene	18	100%	57-74%
Hydroxymethyl phthalimide	12	100%	48-61%
Octachlorostyrene	2	100%	74.5%
p-Chloroaniline	7	100%	71%
p-Chlorobenzenethiol	4	100%	64%
Phthalic Acid	48	100%	40-74%
Pyridine	7	100%	71-73%

Note: The control limits are 75-125% (%D $\leq$ 25%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ).

Table 4-12 summarizes the organochlorine pesticide results that were qualified due to continuing calibrations.

TABLE 4-12: SUMMARY OF ORGANOCHLORINE PESTICIDE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
4,4'-DDT	4	0%	120-140%
Gamma-BHC (Lindane)	5	100%	35%
Gamma-Chlordane	1	0%	121%
Heptachlor	27	100%	25-39%

Note: The control limits are 85-115% (%D $\leq$15%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Table 4-13 summarizes the aldehyde results that were qualified in soil samples due to continuing calibrations.

TABLE 4-13: SUMMARY OF ALDEHYDE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
Acetaldehyde	24	0%	123-124%
Formaldehyde	4	0%	144-145%

Note: The control limits are 80-120% (%D $\leq$ 20%). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Table 4-14 summarizes the dioxin/furan results that were qualified in soil samples due to continuing calibrations.

TABLE 4-14: SUMMARY OF DIOXIN/FURAN RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
1,2,3,4,7,8-Hexachlorodibenzofuran	2	0%	130.1%
1,2,3,6,7,8-Hexachlorodibenzofuran	2	0%	130.1%
1,2,3,7,8,9-Hexachlorodibenzofuran	2	0%	130.1%
2,3,4,6,7,8-Hexachlorodibenzofuran	4	0%	130.1%

Note: The control limits are 70-130% (%D $\leq$ 30%). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

Low instrument response was noted for 2-nitropropane, acetonitrile and ethanol as indicated by the relative response factor.

Table 4-15 summarizes the VOC (TO-15) results that were qualified in surface flux samples due to continuing calibrations.

TABLE 4-15: SUMMARY OF VOLATILE ORGANIC COMPOUND (TO-15) SURFACE FLUX SAMPLE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
1,2,3-Trichloropropane	6	100%	67%
1,2,4-Trichlorobenzene	8	100%	42-53%
1,2-Dichlorobenzene	7	100%	60-69.5%
1,3-Dichlorobenzene	1	100%	60%
1,4-Dioxane	1	100%	65%
Acetonitrile	2	100%	64-67%
Ethanol	1	100%	56%
Naphthalene	8	88%	51-53%
n-Butylbenzene	6	100%	67%

Note: The control limits are 70-130% (%D $\leq$ 30%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ).

Table 4-16 summarizes the VOC (TO-15 SIM) results that were qualified in surface flux samples due to continuing calibrations.

TABLE 4-16: SUMMARY OF VOLATILE ORGANIC COMPOUND (TO-15 SIM) SURFACE FLUX SAMPLE RESULTS QUALIFIED DUE TO CALIBRATIONS OUTSIDE LABORATORY CONTROL LIMIT

Analyte	# of Samples Qualified	Percent of Qualified Non-detect	Percentage of Analyte Recovered as Indicated by Outlier
1,1,2,2-Tetrachloroethane	9	100%	63-69.7%
1,2-Dichloroethane	1	100%	69.6%
Dibromochloropropane	9	0%	53-66%
Hexachlorobutadiene	2	100%	64%

Note: The control limits are 70-130% (%D $\leq$ 30%). Detected and non-detected results associated with calibration recoveries below the lower control limit were qualified as estimated (J-/UJ). Detected results associated with calibration recoveries above the upper control limit were qualified as estimated (J+).

4.5.7 Tentatively Identified Compounds

For the GC/MS methods, a list and estimated concentrations for tentatively identified compounds (TICs) was provided by the laboratory if detected. Most of the reported TICs were identified as “unknown” or “unknown aldol condensate.” Others were as follows:

- (1R,2R,8S,8Ar)-8-hydroxy-1-(2-hydroxyeth
- (3,6-Dichloropyridazin-4-yl)(4-methoxyphenyl)amine
- .alpha.-Chlordene
- 1,1'-Biphenyl, 2,2',4,4',6-Pentach
- 1,1'-Biphenyl, 2,2',5-trichloro-
- 1,1'-Biphenyl, 2,3,3',4,4'-pentach
- 1,1'-Biphenyl, 2,3,3',4',6-pentach
- 1,1'-Biphenyl, 2,3',4,4',5-pentach
- 1,1'-Biphenyl, 2,4-dichloro-
- 1,1-Dichloro-2,2-bis(p-chlorophenyl
- 1,2,2-Trichloro-1-(4-chlorophenyl)
- 1,2-Benzenedicarboxylic acid, bis(
- 10-Heneicosene (c,t)
- 11H-Benzo(b)fluorene
- 1-Bromodocosane
- 1-Eicosene
- 2,2-Bis(4-chlorophenyl)acetic acid
- 2,4-DDD
- 2,4'-DDT
- 2,5-Pyrrolidinedione, 1-((4-chloro
- 2-Chlorobenzoic acid, 2-naphthyl ester
- 2-Pentanone
- 3-Butanone, 1,1-bis(4-chlorophenyl
- 4,4-DDE
- 4,4'-Dichlorobenzophenone
- 4-Chlorodibenzoyl
- 5-Eicosene, (E)-
- 9-Octadecenamide, (Z)-
- Acetic acid
- Anthracene, 9,10-dichloro-
- Benzamide, 4-chloro-N-(4-methylthiazol-2
- Benzene, 1,1'-(1,2-dichloro-1,2-et
- Benzene, 1,1'-(1,2-dichloro-1,2-ethenediyl)bis(2-c
- Benzene, 1,1'-(dichloroethenylidene)bis(
- Benzene, 1,2,3,4-tetrachloro-
- Benzene, 1,2,3-trichloro-
- Benzene, 1,2,4-trichloro-5-(chloromethyl)-
- Benzimidazole, 1-(4-chlorobenzoyl)
- Benzoic acid, 4-chloro-, 2-acetylp
- Benzonitrile, pentachloro-
- Bromoacetic acid, hexadecyl ester
- Chlorobenzilate
- Cyclohexadecane, 1,2-diethyl-
- Cyclopentene, 1,2,3,3,4-pentamethyl-
- Decane, 2-methyl-
- Dicofol
- Dodecane, 2,6,11-trimethyl-
- Eicosane, 2-methyl-
- Fluoranthene, 2-methyl-
- Heneicosane
- Hentriacontane
- Heptadecane
- (1R,2S,8R,8Ar)-8-acetoxy-1-(2-hydroxyeth
- (Z)-4-Nitro-alpha-(p-nitrophenyl)c
- 1,1'-Biphenyl, 2,2',3,5,5'-pentach
- 1,1'-Biphenyl, 2,2',4,4'-tetrachlo
- 1,1'-Biphenyl, 2,3,3',4,4',5-hexac
- 1,1'-Biphenyl, 2,3,3',4,5,6-hexach
- 1,1'-Biphenyl, 2,3',4,4',5,5'-hexa
- 1,1'-Biphenyl, 2,3,4',5,6-Pentachl
- 1,1'-Biphenyl, 4,4'-dichloro-
- 1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane
- 1,2,2-Trichloro-1-(4-chlorophenyl)ethane
- 1,3-Butadiyne, 1-(3-bromophenyl)-4-phenyl-
- 11H-Benzo(a)fluoren-11-one
- 19-Norpregna-1,3,5(10),17(20)-tetr
- 1-Docosene
- 2-(4-Chlorophenyl)-2-oxoethyl 2-ch
- 2,2'-Dichlorostilbene
- 2,4-DDE
- 2,4'-Dichlorobenzophenone
- 2-Chlorobenzoic acid, 2-methylphen
- 2-Chlorobenzoic acid, 3,4-dichlorophenyl
- 2-Phenanthrenol, 4b,5,6,7,8,8a,9,1
- 4,4-DDD
- 4,4-DDT
- 4-Chlorobenzoic acid, 3-methylphen
- 4H-1-Benzopyran-2-carboxylic acid, 6-bromo-4-oxo-,
- 9H-Fluorene, 9-(dichloromethylene)
- Acenaphthylene, octachloro-
- Anthracene, 1,8-dichloro-
- Benzamide, 2-chloro-N-(4-hydroxyphenyl)-
- Benzene, (trichloroethenyl)-
- Benzene, 1,1'-(1,2-dichloro-1,2-ethenedi
- Benzene, 1,1'-(dichloroethenyliden
- Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro-
- Benzene, 1,2,3,5-tetrachloro-
- Benzene, 1,2,4,5-tetrachloro-
- Benzene, 1,4-dichloro-2-(2-chloroe
- Benzo(e)pyrene
- Benzoic acid, 4-chloro-, 3-(4-methylphenyl)-3-oxo-
- Bis(p-chlorophenyl)acetylene
- Chlordane
- Cycloeicosane
- Cyclohexene, pentachloro-
- Decane, 2,6,8-trimethyl-
- Dibenzylidene 4,4'-biphenylenediam
- Docosane, 9-butyl-
- Eicosane
- Ethyl 3,7,11,15-tetramethyl-2-hexa
- Furan, 2,5-dimethyl-
- Heneicosane, 11-decyl-
- Heptacosane
- Heptadecane, 9-octyl-

- Heptane, 2,3-dimethyl-
- Hexadecane, 2,6,10,14-tetramethyl-
- Methane, oxybis(dichloro-
- Methanone, (3-chlorophenyl)(4-chlorophen
- N-(4-Bromo-phenyl)-2-chloro-benzam
- Naphthalene, octachloro-
- Nonacosane
- Nonadecane, 1-chloro-
- o,p'-DDE
- Octacosane
- Octadecane
- Octadecanoic acid
- Oxirane, hexadecyl-
- Pentacosane
- Perylene
- Propanenitrile, 3-(2-chlorobenzoyl
- Quebrachamine
- Tetracosane
- Tetradecane, 2,6,10-trimethyl-
- Thiophene, tetrachloro-
- trans-Chlordane
- Trichloromethane
- Tricosane, 2-methyl-
- Tridecane, 1-iodo-
- Vinyl o-chlorobenzoate
- Hexadecane
- m,p'-DDD
- Methanone, (3-chlorophenyl)(4-chlo
- Mitotane
- Naphthalene, 1,3,5,7-tetrachloro-
- n-Hexadecanoic acid
- Nonadecane
- Nonadecane, 9-methyl-
- o,p'-DDT
- Octadecanamide
- Octadecane, 2-methyl-
- Oxalic acid, cyclobutyl heptadecyl
- Oxirane, tetradecyl-
- Pentadecane, 8-heptyl-
- Phenanthrene, 2-methyl-
- Pyrene, 1-methyl-
- Sulfurous acid, butyl tetradecyl e
- Tetradecanamide
- Tetratriacontane
- Toluene
- trans-Nonachlor
- Tricosane
- Tridecane
- Tridecane, 6-methyl-

In addition to the above, an unknown aldol condensate was also reported by the laboratory as being present in 112 samples; as previously noted, the reported concentrations were flagged “U” due to blank contamination. With the exception of the alkylated biphenyls, DDD, DDE, DDT, alkylated benzenes, chlordane, dicofol, toluene, trichloromethane, and alkylated PAHs, the above named compounds are indicative of column breakdown and are not likely site related. The PCBs, pesticides, PAHs, and VOCs with available toxicity criteria have been characterized. Dicofol is an organochlorine pesticide that has not come up as a TIC previously. Toxicity criteria have not been established for any of the other TICs.

4.5.8 Data Review Summary

For 2,784 of the 19,758 analytical results in the final HHRA dataset, quality criteria were not met and various data qualifiers were added to indicate limitations and/or bias in the data. The definitions for the data qualifiers, or data validation flags, used during validation are those defined in SOP-40 (BRC, ERM and MWH 2009) and the project QAPP (BRC and ERM 2009a). Sample results are rejected based on findings of significant deficiencies in the ability to properly collect or analyze the sample and meet QC criteria. Only rejected data are considered unusable for decision-making purposes, and rejected analytical results are not used in the HHRA.

As noted above, 28 sample results were rejected in the Site dataset and excluded from the HHRA for the reasons previously noted. Other data points were excluded from the risk assessment not due to data quality issues, but for one of the following reasons: (1) the sample was reanalyzed by the laboratory, or (2) the sample location was removed during a remedial action.

4.6 CRITERION VI – DATA QUALITY INDICATORS

DQIs are used to verify that sampling and analytical systems used in support of project activities are in control and the quality of the data generated for this project is appropriate for making decisions affecting future activities. The DQIs address the field and analytical data quality aspects as they affect uncertainties in the data collected for site characterization and risk assessment. The DQIs include PARCC. The project QAPP provides the definitions and specific criteria for assessing DQIs using field and laboratory QC samples and is the basis for determining the overall quality of the dataset. Data validation activities included the evaluation of PARCC parameters, and all data not meeting the established PARCC criteria were qualified during the validation process using the guidelines presented in the National Functional Guidelines for Laboratory Data Review for Organics, Inorganics, and Dioxin/Furans (USEPA 1999, 2004d, 2005a, 2008).

4.6.1 Evaluation of Data Precision

Precision is a measure of the degree of agreement between replicate measurements of the same source or sample. Precision is expressed by RPD between replicate measurements. Replicate measurements can be made on the same sample or on two samples from the same source. Precision is generally assessed using a subset of the measurements made. The precision of the data was evaluated using several laboratory QA/QC procedures. Based on BRC's review of the results of these procedures, the overall level of precision for the Site data and the background data (BRC and ERM 2009b) does not limit the usability of a particular analyte, sample, method, or dataset as a whole.

4.6.2 Evaluation of Data Accuracy

Accuracy measures the level of bias that an analytical method or measurement exhibits. To measure accuracy, a standard or reference material containing a known concentration is analyzed or measured and the result is compared to the known value. Several QC parameters are used to evaluate the accuracy of reported analytical results, including:

- Holding times and sample temperatures;
- Calibration limits;
- LCS percent recovery;
- MS/MSD percent recovery;
- Spike sample recovery (inorganics);
- Surrogate spike recovery (organics); and
- Blank sample results.

Detailed discussions of specific exceedances to precision and accuracy (with tables) are provided in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b) and data qualified as a result of this evaluation are presented with qualifiers in the data usability tables in Appendix E (included on the report CD in Appendix B). As presented in Section 4.5, 28 sample results were rejected in the Site dataset and excluded from the HHRA. The remaining results were considered sufficiently accurate for risk assessment purposes, as discussed below.

4.6.2.1 Holding Time Exceedances/Sample Condition

There is a potential for analyte loss if the holding time for a sample is exceeded. As discussed in Section 4.5.1, holding times were exceeded in 14 soil samples for chromium (VI) analysis (18 percent of the samples analyzed for that constituent), in 15 acetaldehyde samples (19 percent of the acetaldehyde samples), and in three soil samples for mercury (less than 5 percent of mercury samples). All of the samples were qualified as estimated. Holding time violations affect more than one-half of the chromium (VI) samples. Reported results were also significantly less than their respective BCLs. Based on the limited holding time issues for perchlorate, there is not likely to be a significant potential for a low bias to the datasets for Site soils.

As presented in the DVSRs (BRC and ERM 2010a, 2011a,b,c, 2014a,b), all Site samples with temperature requirements were received at the laboratory within the required range of 4°± 2° Celsius. No sample results were qualified based on sample temperatures or due to lack of proper preservation.

4.6.2.2 Calibration Violations Indicating a Low Bias

The instrument calibration checks that resulted in a low bias are summarized in the tables presented in Section 4.5.6. Four SVOCs, 3-nitroaniline, 4-nitroaniline, hydroxymethyl phthalimide, and phthalic acid, had recoveries below 50 percent in some samples. All SVOCs were non-detect in all samples, and has never been detected at BRC Common Areas. Two organochlorine pesticides, gamma-BHC and heptachlor, had recoveries below 50 percent in some samples. There was one TO-15 surface flux analyte, 1,2,4-trichlorobenzene, that had recoveries below 50 percent in some samples. 1,2,4-Trichlorobenzene, 2-methyl-1-propanol, benzyl chloride, dibromochloropropane, and ethanol were qualified in all samples due to calibration violations. However, only heptachlor had recoveries below 50 percent in 30 percent of samples. None of the analytes were detected in any sample. All other named analytes had recoveries below 50 percent in 12 percent or fewer samples. For the other non-detect analytes with SQLs, the maximum SQLs were compared to the soil BCL. It is unlikely, even with a potential for a false negative, that the bias could affect the result to such a degree that the analyte is present at the Site in excess of the BCL. For the TO-15 analyte, the recoveries were below 50 percent in association with seven of nine TO-15 samples.

4.6.2.3 Matrix Spike/Matrix Spike Duplicate or Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries below Acceptance Criteria

During the data usability review, results associated with MS/MSD and/or LCS/LCSD recoveries that were only slightly lower than the lower acceptance limit (i.e., 50 to 75 percent recoveries for inorganics) were accepted as usable without further evaluation. Samples with lower percent recoveries (i.e., recoveries lower than 50 percent for inorganics and one-half the lower limit or 30 percent, whichever is greater, for organics) were reviewed more closely to assess if it was appropriate to use them in the HHRA. Inorganic results with MS/MSD recoveries less than 50 percent [25] were as follows:

- Total Kjeldahl Nitrogen results for seven soil samples in TestAmerica data packages F0E250440 and 280-2103 (all results were detects);

- Mercury results for one soil sample in TestAmerica data package 160-1092-1 (the result was a detect);

[25] Only samples associated with MS/MSD results in which both recoveries were below 50 percent are listed.

- Antimony results for four soil samples in TestAmerica data package F0E280497 (all results were non-detections);
- Radium-228 results for two soil samples in GEL data package 253523 (all results were non-detections);
- Tungsten results for three soil samples in TestAmerica data package 160-1092-1 (one result was detected, two results were non-detected); and
- Barium results for two soil samples in TestAmerica data package F0H310456 (all results were detected).

Given the limited number of samples for the inorganics involved, these data points are not likely to have a significant effect on risk assessment.

Organic results less than 30 percent were as follows:

- A benzyl alcohol result for one sample (STC-AJ18-0) in GEL data package 253523 (the result was non-detect).

Given the small number of samples involved, these data points are not likely to have a significant effect on the HHRA.

As noted in Section 4.5.3, LCS/LCSD recoveries lower than the lower laboratory control limit were observed for the following analytes:

- Benzyl alcohol in seven soil samples from GEL data packages 253523 and 253899 (all non-detected).

Benzyl alcohol was not detected in any of the 73 samples collected. Therefore, there is no concern regarding the usability of the remainder of the benzyl alcohol data.

4.6.2.4 Surrogate Percent Recoveries below Laboratory Control Limit

Surrogate recoveries were below the laboratory control limit in three of 60 VOC samples and seven of the 89 organochlorine samples were detected and all results were qualified as estimated (J-/UJ). Given that low surrogate recoveries affected less than 10 percent of the samples, it is unlikely to bias the dataset for VOCs or organochlorine pesticides.

4.6.2.5 Blank Contamination

As noted in Section 4.5.2, certain detections were flagged during the data review as being non-detections or estimated with a high bias due to laboratory or field blank contamination. If the associated constituent qualified as being a non-detection was, in fact, present in the samples related to the affected blank sample, revising its status to non-detect could result in risk underestimation. In the dataset for the Site, 283 results were censored due to blank contamination. Affected soil analytes are listed in Table 4-17.

TABLE 4-17: SUMMARY OF SOIL ANALYTES CENSORED DURING BLANK SAMPLE EVALUATION

Analyte	# of Censored Results	Analyte	# of Censored Results
Ammonia (as N)	32	Sulfate	1
Orthophosphate as P	34	Arsenic	16
Beryllium	18	Boron	3
Cadmium	8	Chromium (VI)	9
Copper	1	Mercury	23
Molybdenum	12	Selenium	2
Silver	20	Thallium	3
Tin	7	Tungsten	4
Uranium	2	Radium-226	6
1,2,4-Trichlorobenzene	3	1,2,4-Trimethylbenzene	35
Acetone	2	Dichloromethane	15
Nonanal	3	Toluene	3
Total Organic Carbon	5		

In addition, there were several TICs qualified due to blank contamination. See discussion of TICs in Section 4.5.7. Affected surface flux analytes are listed in Table 4-18.

TABLE 4-18: SUMMARY OF SURFACE FLUX ANALYTES CENSORED DURING BLANK SAMPLE EVALUATION

Analyte	# of Censored Results	Analyte	# of Censored Results
Acetone	2	Benzene	2
Chloromethane	2	Carbon tetrachloride	2
Dibromochloropropane	7	Hexachlorobutadiene	1

The constituents for which this potential concern has the most bearing in risk assessment are those in soil samples for which the detections are close to or exceed either (1) background conditions, or (2) relevant human health comparison levels (e.g., NDEP BCLs). As determined during that evaluation, qualification of detections as non-detections based on blank contamination are not likely to have an appreciable effect on the risk estimates, as discussed below.

Censored results that are less than the maximum background concentration and 1/10th the soil BCL have a negligible impact on risk assessment findings. If a portion of the result reflects an actual Site concentration, then the uncertainty related to the censored result is low. However, data censored at values at or above background or greater than 1/10th the soil BCLs, may pose a potential underestimation of human health risks. Therefore, censored results at values in excess of 1/10th the soil BCL (or the maximum background concentration, if higher) were evaluated further. None of the soil data censored due to blank contamination were in excess of 1/10th the soil BCL (and background).

Surface flux data are not comparable with BCLs. Dibromochloropropane is associated with seven censored data points; the remaining censored analytes were associated with two or fewer surface flux samples.

4.6.2.6 Data Usability Summary

As discussed above, because the qualifications with the potential for low bias were small in number, the data usability evaluation determined it was unlikely that they could lead to significant risk underestimation. Furthermore, the small amount of rejected data points does not represent a significant data gap in terms of risk assessment.

4.6.3 Evaluation of Data Representativeness

Representativeness is the degree to which data accurately and precisely represent a characteristic of the population at a sampling point or an environmental condition (USEPA 2002a). There is no standard method or formula for evaluating representativeness, which is a qualitative term. Representativeness is achieved through selection of sampling locations that are appropriate relative to the objective of the specific sampling task, and by collection of an adequate number of samples from the relevant types of locations. The sampling locations at the Site were based on both systematic sampling with random point placement within each grid cell, as well as focused samples collected from specific areas to further investigate potential areas of concern.

The samples were analyzed for a broad spectrum of chemical classes across the Site. Samples were delivered to the laboratory in coolers packed with ice to minimize the loss of analytes. In a few instances, such as samples being analyzed slightly beyond the holding time, the representativeness of the associated data is in question; however, there were few instances of this, as noted in Section 4.5.1. As previously noted, no sample results were qualified based on sample temperatures or preservation. Sample-specific results are discussed in the DVSRs. A discussion of representativeness for the background dataset is provided in each of the background investigation reports.

4.6.4 Evaluation of Data Completeness

Completeness is commonly expressed as a percentage of measurements that are valid and usable relative to the total number of measurements made. Analytical completeness is a measure of the number of overall accepted analytical results, including estimated values, compared to the total number of analytical results requested on samples submitted for analysis after review of the analytical data. Some of the data were eliminated due to data usability concerns. The percent completeness for the Site is 99.9 percent and includes the surface flux chamber data. The percent completeness for the soil only dataset is 99.9 percent. The percent completeness for the background dataset used in the HHRA is 98.8 percent.

4.6.5 Evaluation of Data Comparability

Comparability is a qualitative characteristic expressing the confidence with which one dataset can be compared with another. The desire for comparability is the basis for specifying the analytical methods; these methods are generally consistent with those used in previous investigations of the Site. The comparability goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. The ranges of detected sample results from the current investigation are generally comparable to recent results at the Eastside, as well as to the Site background datasets (Section 5).

One exception may be uranium-235/236, which has reported activities that are slightly elevated compared to background and other reported isotopes of uranium. The laboratory that performed the Site radionuclide analysis has indicated that the activities for uranium-235/236 hover around the noise level of the instrument and secular equilibrium is still achieved. Therefore, activities at the noise level of the instrument may vary between the instruments used.

There are differences in SQLs among datasets that may affect data comparability for datasets comprised primarily of non-detect values. Examples of the differences in SQLs at the Site and in background soil for several analytes with low detection frequency are provided in Table 4-19.

TABLE 4-19: LOW DETECTION ANALYTES EXHIBITING SQL DIFFERENCES BETWEEN BACKGROUND AND SITE SAMPLES

Analyte	Background Min SQL	Background Max SQL	Site Min SQL	Site Max SQL[26]
Antimony	0.3298	0.3298	0.3	0.94
Boron	3.2	3.2	15	58.4
Thallium	0.5428	0.5428	0.29	1.2
Tungsten	0.0175	0.0175	0.4105	2.8

All results in units of mg/kg.

Cumulative probability plots and side-by-side boxplots for the background and Site datasets are included in Appendix G. For these datasets, left-censored data can result in difficulties in differentiating whether datasets are actually different or merely an artifact of detection limits. Note that for constituents with SQLs that meet project limit requirements, comparisons between Site and background may be less important as these left-censored data are likely to indicate conditions that pose an "acceptable" risk and further evaluation is not necessary.

4.7 DATA ANALYSIS

Data validation and usability evaluations tend to look at the data on a result by result basis. The data analysis step is intended to take a step back and look at the dataset as a whole. The intent of this is to identify any anomalies or unusual data trends that may indicate any potential laboratory issues. This is performed by reviewing summary statistics, cumulative probability plots and side-by-side boxplots, or other visual aids. The soil dataset used for the HHRA is summarized in tabular format in Table 3-4. While it is not feasible to present all the detected analytes in a graphical format, cumulative probability plots and side-by-side boxplots are provided in Appendix G for the analytes included in the background comparisons (that is, metals and radionuclides). No anomalies in the dataset were identified.

As discussed in Section 4.5, the data validation process resulted in numerous sample results being qualified as estimated, with only the above-listed results being rejected. Sample results qualified as estimated are likely to be quantitatively biased to some degree; estimated analytical results are used in the HHRA. Data qualified as anomalous, as defined in the DVSRs, refers to data that were qualified ("U") due to blank contamination, and are used in the HHRA. These data

[26] The SQLs reported here may differ from the detection limits reported elsewhere (e.g., background comparisons). Detection limits may be raised due to blank contamination.

usability decisions follow the guidelines provided in the *Guidance for Data Usability in Risk Assessment (Part A)* (USEPA 1992a).

For the HHRA, all soil data associated with post-remediation conditions that were not rejected during data validation, replaced by reanalysis results, or removed during a soil remedial action were included. Some data were qualified as estimated due to recoveries being outside the acceptance criteria. In cases where the recoveries were higher than the acceptance criteria, the results have the potential of being similarly biased high, and using these data in the risk assessment could result in risks being calculated that are higher than would be associated with actual Site conditions. Of more concern for the HHRA is underestimation of risk, which could be associated with the use of data that are biased low. Results associated with the following QA/QC issues could lead to results that are biased low, and were subjected to further scrutiny during the data usability evaluation:

- Results associated with holding time exceedances;
- Detections qualified during the data review as being non-detections due to laboratory or field blank contamination;
- Results associated with calibration violations indicating a low bias;
- Results associated with MS/MSD or LCS/LCSD recoveries below acceptance criteria; and/or
- Results associated with surrogate percent recoveries below laboratory control limits.

Such data, which are listed above in Section 4.5, were evaluated during the data usability process to determine whether it was appropriate to use them in the risk assessment. The data usability evaluation determined that the estimated results listed in Section 4.5 were appropriate for use in the risk assessment and that the rejected data did not constitute significant data gaps and/or were not otherwise likely to lead to an underestimation of risk, as discussed in Section 4.6.2.

5.0 SELECTION OF CHEMICALS OF POTENTIAL CONCERN

The broad suite of analytes sampled for was the initial list of potential COPCs at the Site. However, to ensure that a risk assessment focuses on those substances that contribute the greatest to the overall risk (USEPA 1989), the following procedures were used to eliminate analytes as COPCs for quantitative evaluation in the risk assessment:[27]

- Identification of chemicals with detected levels similar to background concentrations (where applicable) (Section 5.1);
- Chemicals that are considered essential nutrients (Section 5.2); and
- Chemicals with maximum concentrations below risk-based comparison levels (i.e., below one-tenth of the worker soil BCLs)~~[28]~~ (Section 5.3).

Following USEPA guidance (1989), compounds reliably associated with Site activities based on historical information were not eliminated from the risk assessment, even if the results of the procedures given in this section indicate that such elimination is possible. The procedures for evaluating COPCs relative to background conditions and further selection of COPCs based on the other procedures are presented below.

5.1 EVALUATION OF CONCENTRATIONS/ACTIVITIES RELATIVE TO BACKGROUND CONDITIONS

Some chemicals at the Site, particularly metals and radionuclides, are known to be naturally occurring constituents of soils and groundwater. A risk assessment should consider the contribution of background concentrations to overall Site risks, as differentiated from those concentrations associated with historical Site operations or regional anthropogenic conditions. Therefore, it is necessary to establish Site-specific background conditions to support the risk assessment.

[27] Note that these procedures for selection of COPCs deviate somewhat from those presented in the *BRC Closure Plan*, but are consistent with discussions between BRC and NDEP and their consultants in a December 9, 2010, meeting. BRC will use these procedures for all subsequent risk assessments. BRC intends to revise the *BRC Closure Plan* accordingly to make it consistent with these procedures.

~~[28] Although the Site land use will not be residential, per discussions with the NDEP, residential soil BCLs are used for the selection of COPCs.~~

As indicated in the *Background Soil Compilation Report* (BRC and ERM 2010b), the Site is in an area of McCullough lithology (see Figure 12, Qh_1 label).[29] Therefore, comparison of Site-related soil concentrations to background levels was conducted using the shallow Qal McCullough background dataset presented in the *Background Soil Compilation Report* (BRC and ERM 2010b). The background dataset used is included in the dataset file on the enclosed report CD in Appendix B.

Background comparisons were performed using the Quantile test, Slippage test, the *t*-test, and the Wilcoxon Rank Sum (WRS) test with Gehan modification. The Guided Interactive Statistical Decision Tools (GiSdT®) library (Neptune and Company 2009) run from within the R statistical computer software program was used to perform all background comparison statistics. A weight-of-evidence approach is utilized to interpret the results of these analyses. If the detection frequency in both Site and background datasets is greater than 40 percent, then the following rationale is used for evaluation: (1) where one or two results fail one or more of the statistical tests, the remaining testing and statistical information (boxplots, summary statistics) are reviewed to support decision-making regarding whether or not the chemical should be considered consistent with background (as described by the rationale in the table below); and (2) where three or more statistical tests fail, the constituent is considered inconsistent with background. If the detection frequency is less than 40 percent in either the background or Site datasets, then the constituent is evaluated based on boxplots and summary statistics.

For samples with primary and field duplicate results, the Site sample and field duplicate[30] are treated as independent samples and both are included in all subsequent data analyses, regardless of whether one or both are non-detect. This is considered appropriate because field duplicate samples represent a discrete and unique measurement of soil chemical conditions proximal to the primary sample (unlike split samples). The field duplicates were compared to the primary sample during the course of data validation. The variances were not out of the line with the variance in results across the Site. Therefore, as distinct soil chemical measurements, they are treated as unique samples in the analyses.

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[29] As noted in a letter dated September 17, 2012, from Greg Lovato, NDEP, to Mark Paris, BRC, the 2003 soil background dataset collected by Environ for the City of Henderson is not used for background soil comparison purposes.

[30] Field duplicates are shown in Appendix B and indicated with the "FD" qualifier under the column entitled "Sample Type."

The shallow Qal McCullough background dataset was compared to the Site HHRA dataset as a whole. The results of the background comparison evaluation are presented in Table 5-1 (Tables section), summarized in Table 5-2 below.

TABLE 5-2: SUMMARY OF STATISTICAL BACKGROUND COMPARISON EVALUATION

Chemical	Greater than Background?	Basis
Aluminum	**YES**	Multiple tests
Antimony	**YES**	Multiple tests
Arsenic	**YES**	Multiple tests
Barium	**YES**	Multiple tests
Beryllium	**YES**	Multiple tests
Boron	**YES**	Multiple tests
Cadmium	**YES**	Multiple tests
Calcium	NO	Multiple tests
Chromium	**YES**	Multiple tests
Chromium (VI)	**YES**	Multiple tests
Cobalt	**YES**	Multiple tests
Copper	**YES**	Multiple tests
Iron	**YES**	Multiple tests
Lead	**YES**	Multiple tests
Lithium	NO	Multiple tests
Magnesium	**YES**	Multiple tests
Manganese	**YES**	Multiple tests
Mercury	**YES**	Multiple tests
Molybdenum	**YES**	Multiple tests
Nickel	**YES**	Multiple tests
Potassium	**YES**	Multiple tests
Selenium	**YES**	Multiple tests
Silver	**YES**	Multiple tests
Sodium	**YES**	Multiple tests

TABLE 5-2: SUMMARY OF STATISTICAL BACKGROUND COMPARISON EVALUATION

Chemical	Greater than Background?	Basis
Strontium	**YES**	Multiple tests
Thallium	**YES**	Slippage test
Tin	**YES**	Multiple tests
Titanium	**YES**	Multiple tests
Tungsten	**YES**	Multiple tests
Uranium	**YES**	Quantile test
Vanadium	**YES**	Multiple tests
Zinc	**YES**	Multiple tests
Radium-226	NO	Multiple tests
Radium-228	NO	Multiple tests
Thorium-228	NO	Multiple tests
Thorium-230	NO	Multiple tests
Thorium-232	NO	Multiple tests
Uranium-233/234	NO	Multiple tests
Uranium-235/236	NO	All other radionuclides not greater than background; all results near noise level of instrument
Uranium-238	NO	Multiple tests

Cumulative probability plots and side-by-side boxplots[31] were also prepared and are included in Appendix G. These plots give a visual indication of the similarities and differences between the Site and background datasets. The results of this comparison indicate that a number of metals are statistically significant (greater than) with respect to background levels. Due to the large number of sample data in both the Site and background datasets, even small differences between the two are identified as statistically significant. For example, although there were small differences in median concentrations, cobalt, magnesium, and uranium were found to be statistically greater than background, as shown in Table 5-3.

[31] Site and background boxplots were segregated by depth (and all data). This is different than how the data were segregated in the development of exposure point concentrations as presented in Section 6.1.

TABLE 5-3: EXAMPLE DIFFERENCES IN SITE AND BACKGROUND MEDIAN CONCENTRATIONS FOR CHEMICALS STATISTICALLY GREATER THAN BACKGROUND

Metal	Site Median	Background Median	Difference[1]
Cobalt	11	9.0	2.0 mg/kg
Magnesium	11000	10000	1000 mg/kg
Uranium	1.1	0.97	0.13 mg/kg

1 These differences in median concentrations were small relative to both background median concentrations and worker soil BCLs.

It should be noted that statistically significant differences may not represent scientifically and technically relevant differences.

Secular Equilibrium for Radionuclides. For radionuclides, secular equilibrium exists when the quantity of a radioactive isotope remains constant because its production rate (due to the decay of a parent isotope) is equal to its decay rate. In theory, if secular equilibrium exists, the parent isotope activity should be equivalent to the activity of all daughter radionuclides. Pure secular equilibrium is not expected in environmental samples because of the effect of natural chemical and physical processes. However, approximate secular equilibrium is expected under background conditions (NDEP 2009d). Both the thorium-232 and uranium-238 chains were determined to be in approximate secular equilibrium following equivalence testing outlined in the NDEP's *Guidance for Evaluating Secular Equilibrium at the BMI Complex and Common Areas February* (NDEP 2009d). The results of the equivalence testing for secular equilibrium are provided in Table 5-4.

TABLE 5-4: EQUIVALENCE TEST FOR SECULAR EQUILIBRIUM

Chain	Equivalence Test		Secular Equilibrium?	Mean Proportion			
	Delta	*p*-value		Ra-226	Th-230	U-233/234	U-238
U-238	0.1	<0.0001	Yes	0.2302	0.2882	0.2458	0.2359
				Ra-228	Th-228	Th-232	
Th-232	0.1	<0.0001	Yes	0.3649	0.3347	0.3004	

Therefore, since no radionuclides failed any background tests and all are in secular equilibrium, all radionuclides are considered to be similar to background. Radionuclides are therefore not evaluated further in the HHRA.

5.2 ESSENTIAL NUTRIENTS

An essential nutrient is a chemical required for normal body functioning that either cannot be synthesized by the body at all, or cannot be synthesized in amounts adequate for good health, and thus must be obtained from a dietary source. USEPA (1989) states that "Chemicals that are (1) essential human nutrients, (2) present at low concentrations (i.e., only slightly elevated above naturally occurring levels), and (3) toxic only at very high doses (i.e., much higher than those that could be associated with contact at the Site) need not be considered further in the quantitative risk assessment. Examples of such chemicals are calcium, iron, magnesium, potassium, and sodium." As discussed with and approved by the NDEP[32] and consistent with guidance and standard practices, no further quantitative evaluations are required for these essential nutrients.

5.3 COMPARISON TO WORKER SOILS BCLs

Soil BCLs for workers are chemical-specific, risk-based concentrations in soils that are protective of a commercial land use scenario (NDEP 2013). As discussed with and approved by the NDEP (see footnote 27), if the maximum detected concentration for a constituent is less than one-tenth of the worker soil BCL, then no further quantitative evaluation is required for that constituent. For those constituents with 100 percent non-detect values, if the maximum non-detect concentration[33] for a constituent is less than one-tenth of the worker soil BCL, no further evaluation will be conducted. If the maximum non-detect concentration is greater than one-tenth of the worker soil BCL, no further quantitative evaluation will be conducted; however, a discussion is provided in the Uncertainty Analysis (Section 7) for these constituents.

Consistent with the Closure Plan, if the TCDD TEQ concentrations do not exceed the NDEP worker BCL of 1,000 ppt for any sample within the Site,[34] dioxins/furans and PCB congeners are not retained as COPCs. Therefore, because this criterion is met for the Site, dioxins/furans and PCB congeners are not considered COPCs, and are not evaluated further in the HHRA. Lead was also not evaluated further in the HHRA since all concentrations were below its target goal of 400 mg/kg for residential land use.

32 Meeting with NDEP on December 9, 2010.
33 The non-detect value is equal to the SQL.
34 See Section 2.5 for a discussion on future land use for the ~~Sunset North~~Triangle Commercial Sub-Area.

The results of comparisons to one-tenth of the worker soil BCL are presented in Table 5-5 (Tables section). Five organic compounds and four metals were found to exceed their respective one-tenth of the worker soil BCL (asbestos does not have a BCL, but does have relevant and available toxicity criteria).

5.4 SUMMARY OF SELECTION OF COPCS

The procedures for COPC selection were discussed above. Results of the selection of COPCs, including the rationale for excluding chemicals as COPCs are presented in Table 5-6 (Tables section). The resulting COPCs for soil are summarized below.

- Asbestos
- Aluminum
- Arsenic
- Cobalt
- Manganese
- Acetaldehyde
- 4,4-DDE
- 4,4-DDT
- Carcinogenic PAHs
- Hexachlorobenzene

These procedures apply to soil results. Ambient air exposures for VOCs are evaluated on a sample-by-sample basis, per NDEP requirements, using the surface flux data measurements. Because of this, elimination of COPCs from the surface flux data is not done. Instead, every chemical detected in an individual surface flux location is included in the evaluation for that location. Therefore, the maximum surface flux risk estimates are summed with the soil risk estimates to provide an upper-bound risk for each receptor.

6.0 HUMAN HEALTH RISK ASSESSMENT

This section presents the HHRA of all COPCs identified in Section 5 for all receptors of concern via all complete pathways. The methods used in the risk assessment follow standard USEPA guidance. Specifically, the methods used in the risk assessment followed basic procedures outlined in the USEPA's *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual* (USEPA 1989). Other guidance documents consulted include:

- *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual. Supplemental Guidance: Standard Default Exposure Factors* (USEPA 1991b).
- *Guidelines for Exposure Assessment* (USEPA 1992b).
- *Soil Screening Guidance: Technical Background Document* (USEPA 1996).
- *Exposure Factors Handbook, Volumes I-III* (USEPA 1997).
- *Soil Screening Guidance for Radionuclides* (USEPA 2000).
- *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA 2002b).
- *Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Final Draft* (USEPA 2003b).
- *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)* (USEPA 2004e).
- *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)* (USEPA 2009).

Various NDEP guidance documents are also relied on for the HHRA. These include:

- *Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas in Henderson, Nevada* (NDEP 2008a).
- *Guidance for Evaluating Radionuclide Data for the BMI Plant Sites and Common Areas Projects* (NDEP 2009a).

- *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas* (NDEP 2011a) and *Workbook for the Calculation of Asbestos-Related Risk in Soils* (NDEP 2011b).

- *Supplemental Guidance on Data Validation* (NDEP 2009b,c).

- *Guidance for Evaluating Secular Equilibrium at the BMI Complex and Common Areas* (NDEP 2009d).

The risk assessment is a deterministic risk assessment, meaning that single values based on conservative assumptions are used for all modeling, exposure parameters, and toxicity criteria. These conservative estimates compound each other so that the calculated risks likely exceed the true risks at the Site.

The method used in the risk assessment consists of several steps. The first step is the calculation of exposure point concentrations representative of the particular area, for each medium of concern. This step includes fate and transport modeling to predict concentrations that may be present when direct measurements are not available. The second step is the exposure assessment for the various receptors present in the particular areas. The next step is to define the toxicity values for each COPC. The final step is risk characterization where theoretical upper-bound cancer risks and non-cancer HIs are calculated.

6.1 DETERMINATION OF EXPOSURE POINT CONCENTRATIONS

A representative exposure concentration is a COPC-specific and media-specific concentration value. In risk assessment, these exposure concentrations are values incorporated into the exposure assessment equations from which potential baseline human exposures are calculated. As described below, the methods, rationale, and assumptions employed in deriving these concentration values follow USEPA guidance and reflect Site-specific conditions.

Chemical, physical, and biological processes may affect the fate and transport of chemicals in water, soil, and air. Chemical processes include solubilization, hydrolysis, oxidation-reduction, and photolysis. Physical processes include advection and hydrodynamic dispersion; volatilization; dispersion; and sorption/desorption to soil, sediment, and other solid surfaces. Biological processes include biodegradation, bioaccumulation, and bioconcentration. All of these processes are dependent upon the physical and chemical properties of the chemicals; the physical and chemical properties of the soil and water; and other environmental factors such as temperature, humidity, and the conditions of water recharge and movement. The net effect of these environmental factors is a time-dependent reduction of chemical concentrations in water, soil, and air. The determination of exposure point concentrations for media other than soil take into account chemical-specific physical parameters and inter-media transfers as discussed below. All modeling input parameters, calculations, and results are presented in Appendix H (included on the report CD in Appendix B).

6.1.1 Soil

Due to the uncertainty associated with determining the true average concentration at a site, where direct measurements of the site average are infeasible and unavailable, the USEPA recommends using the lower of the maximum detected concentration or the 95 percent UCL as the concentration of a chemical to which an individual could be exposed over time (USEPA 1992b). For the 95 percent UCL concentration approach, the 95 percent UCL was computed to represent the area-wide exposure point concentrations. The 95 percent UCL is a statistic that quantifies the uncertainty associated with the sample mean. If randomly drawn subsets of Site data are collected and the UCL is computed for each subset, the UCL equals or exceeds the true mean roughly 95 percent of the time. The purpose for using the 95 percent UCL is to derive a conservative, upper-bound estimate of the mean concentration, which takes into account the different concentrations to which a person may be exposed at the Site. That is, an individual will be exposed to a range of concentrations that exist at an exposure area, from non-detect to the maximum concentration, over an entire exposure period.

A 95 percent UCL was calculated using the summary.stats() function in the GiSdT® package (Neptune and Company 2009) in R (R Core Team 2012). Section 5.1 outlines the treatment of sample locations with field duplicates prior to the 95 percent UCL statistical calculations described in this section. For these calculations, chemical non-detect results are assigned a value of one-half the SQL. The formulas for calculating the 95 percent UCL COPC concentration (as the representative exposure concentration) are presented in USEPA (1992c, 2002c) and GiSdT® (Neptune and Company 2009). Three UCL methods are employed in the GiSdT® library. They include the Student’s t UCL, the bootstrap percentile UCL, and the bootstrap BCa UCL. The maximum UCL of these three methods was used as the exposure point concentration, unless the maximum UCL of the three methods was greater than the maximum detected concentration. In these cases, the maximum detected concentration was selected as the exposure point concentration.

The representativeness of the 95 percent UCLs for the exposure area, that is, a Site-wide mean concentration is valid for all receptors at the Site, is further supported by the intensity plot figures included in Appendix I. Figures for each of the COPCs are included in Appendix I (in addition to figures developed for all metals). A figure is also presented for TCDD TEQ. Although not a COPC for the Site, TCDD TEQ is a primary chemical of interest for the project. Based on the results of the background comparison tests, a review of the probability plots, boxplots, and distribution and intensity plot figures, data across the Site are assumed to be uncorrelated, that is, there is no discernable spatial correlation.[35] Thus, the assumption is made for statistical testing purposes that the data are not spatially correlated.[36] This results in lower p-values and hence a greater number of statistical differences than would be the case if spatial correlation were accounted for. Ignoring correlation therefore causes conservatism, and the need to further evaluate spatial correlation is not warranted. Therefore consistent with the project *Statistical Methodology Report* (NewFields 2006), each measurement is assumed to be equally representative for that chemical at any point in the Site and calculation of the 95 percent UCL is appropriate. The data were also reviewed for the presence of hot spots, and as discussed in Section 3.5, no potential hot spots were identified at the Site; therefore, separate exposure areas were not evaluated in the HHRA.

Representative exposure concentrations for soil are based on the potential exposure depth for each of the receptors. For all receptors, five different exposure depths are considered, based on the sample depth rules schematic presented in Section 3: all data (surface, subsurface, and fill), data classified as fill material only, data classified as fill material and/or surface soil, data classified as surface soil, and all data excluding data classified as fill material. These different soil exposure classifications are considered to represent all possible exposure potential for all receptors, based on the future grade and use of Site soils. Ninety-five percent UCLs are calculated for each exposure depth scenarios. To be conservative, the higher of these values was used in the risk estimates for each COPC. The 95 percent UCL for each COPC is presented in Table 6-1 (Tables section). For indirect exposures, this concentration was used in fate and transport modeling.

[35] Although the *Statistical Methodology Report* states that confirmation measurements of each chemical in a given soil layer will be used to compute variograms, as noted in the text above, this was not conducted for the Site, which is a deviation from the *BRC Closure Plan* methodology.

[36] Some variability of the data is expected; if there was perfect homogeneity then only one sample would be needed to represent the Site. This natural variability is demonstrated by the background datasets for the project. As shown on the probability and boxplots in Appendix G, the data generally follow a normal distribution, and their variability are similar to the background data.

The exposure point concentrations for asbestos (USEPA 2003b, NDEP 2011a) were based on the pooled analytical sensitivity of the dataset. The asbestos data and analytical sensitivities are presented in Table 6-2 (Tables section). Therefore, asbestos exposure point concentrations are determined differently than those for the other COPCs. The pooled analytical sensitivity is calculated as follows:

$$\textit{Pooled Analytical Sensitivity} = 1/\left[\sum_i \textit{(1/analytical sensitivity for trial i)}\right]$$

Two estimates of the asbestos concentration were evaluated, best estimate and upper bound, as defined in the draft methodology (USEPA 2003b). The best estimate concentration is similar to a central tendency estimate, while the upper bound concentration is comparable to a reasonable maximum exposure estimate. The pooled analytical sensitivity is multiplied by the number of chrysotile or amphibole structures to estimate concentration:

$$\text{Estimated Bulk Concentration } (10^6 \text{ s/gPM10}) = \text{Long fiber count} \times \text{Pooled analytical sensitivity}$$

For the best estimate, the number of fibers measured across all samples is incorporated into the calculation above. The upper bound of the asbestos concentration was also evaluated. It is calculated as the 95 percent UCL of the Poisson distribution mean, where the Poisson mean was estimated as the total number of structures detected across all samples. In Microsoft Excel, the following equation may be employed to calculate this value:

95 percent UCL of Poisson Distribution Mean = CHIINV(1-upper confidence percentile, 2 × (Long fiber count + 1))/2

This value is then multiplied by the pooled analytical sensitivity to estimate the upper bound concentration. The intent of the risk assessment methodology is to predict the risk associated with airborne asbestos. In order to quantify the airborne asbestos concentration, the estimated dust levels or particulate emission factors (PEFs) were used:

$$\text{Estimated Airborne Concentration } (\text{s/cm}^3) = \text{Estimated bulk concentration } (10^6 \text{ s/gPM10}) \times \text{Estimated dust level } (\text{ug/cm}^3)$$

Further explanation of the asbestos risk calculations and estimates are provided in the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a) and *Workbook for the Calculation of Asbestos-Related Risk in Soils* (2011b).

6.1.2 Indoor Air

USEPA's 2002 Vapor Intrusion Guidance

BRC has reviewed USEPA's 2002 Vapor Intrusion Guidance (2002d), and believes that the approach used for the Site conforms to this guidance. The guidance recommends, and BRC has followed, a tiered approach to address vapor intrusion for each of the Eastside sub-areas, including the Triangle Commercial Sub-Area. First, in each of the sub-area SAPs, including that for the Site, BRC has identified each of the chemicals (VOCs and volatile SVOCs) to be evaluated further in each sub-area (that is, a Tier 1 assessment).

Second, BRC explicitly compared the existing groundwater data for wells that are located within (or adjacent to) that sub-area with the USEPA 2002 Tier 2 comparison values (provided in lookup tables in the guidance document). Thus, this Tier 2 assessment was done in the NDEP-approved SAPs for each of the sub-areas. The Tier 2 comparison table for the Site is provided in Appendix J (Table J-1; note that groundwater concentrations have been updated with the most recent groundwater monitoring event for VOCs in August 2012). As shown in this table, with the exception of chloroform (see discussion below), carbon tetrachloride, and tetrachloroethene, all VOCs and volatile SVOCs pass a Tier 2 assessment.

Third, BRC has conducted a site-specific human health risk assessment for vapor intrusion using surface flux data on a sample-by-sample basis, per NDEP recommendations (that is, a Tier 3 assessment; see below). As noted in USEPA's 2002 guidance for a Tier 3 site-specific assessment: "If buildings are not available or not appropriate for sampling, for example in cases where future potential impacts need to be evaluated, other more direct measures of potential impacts, such as emission flux chambers or soil gas surveys, may need to be conducted in areas underlain by subsurface contamination." Thus flux measurements are allowed under USEPA's guidance.

Fourth, BRC has also evaluated the various factors pertaining to vapor intrusion, including depth to groundwater, the nature of the soil column from ground surface to groundwater (see Table 6-3 below), and, water quality (*i.e.*, the constituents likely to be present in groundwater and which might pose any vapor intrusion concerns). BRC has performed a more detailed site-specific evaluation of vapor intrusion potential at a comparison study area within the Eastside property. Based on site-specific conditions, including depth to groundwater, VOC concentrations in groundwater (which are generally less near the Site - for example, chloroform concentration in groundwater of 2.9 to 440 micrograms per liter (µg/L) in the vicinity of the Site versus 180 to 1,200 µg/L at the comparison study area),[37] and expected similar soil physical property, the comparison study area presents a similar potential for vapor intrusion than the Site (and as shown below, in all cases ILCRs and non-cancer HIs are at or below acceptable levels). See the table below for various parameters.

TABLE 6-3: SOIL PROPERTIES RESULTS FOR SITE AND COMPARISON STUDY AREA

Parameter	Comparison Study Area	Triangle Commercial Sub-Area	Units
Particle Density[1]	2.7	2.7	g/cm^3
Gravimetric Soil Moisture[1]	4.46	7.6	percent
Porosity[1]	33.8	35.8	percent
Permeability[1]	0.0019	0.0060	cm/sec
Bulk Density[1]	1.8	1.8	g/cm^3
Organic Carbon Content[1]	1.1	2.8	percent
USCS Soil Types	SM/GM/GW/ML	SM/GM/GW/ML	--
Depth to Groundwater	49 to 60	40 to 47	ft bgs
Chloroform in Groundwater	180 to 1,200	2.9 to 440	µg/L

[1]Values presented are averages for each area. For example, the range of permeabilities in the vicinity of the Site are 0.00066 to 0.0096 centimeters per second (cm/sec), while those for the comparison study area are 0.00029 to 0.0065 cm/sec.
g/cm^3 = grams per cubic centimeter
USCS = Unified Soil Classification System

BRC has performed a detailed evaluation of vapor intrusion risk assessments for chloroform at the comparison study area location, showing that risks were acceptable (residential indoor ILCRs ranged from 1×10^{-8} to 9×10^{-7}, and non-cancer HIs were well below 1.0).[38] The comparison study area risk estimate calculations are provided electronically in Appendix J (included on the report CD in Appendix B). Input parameters and results for the indoor air calculations for the comparison study area location are also provided in Appendix J (Tables J-2 through J-6).

[37] Note that the comparison study area is in the northernmost portion of the Site; therefore, wells identified for the comparison study area lie within the Phase 1 Development sub-area. These are distinguished from other wells within the Site.
[38] For comparison, chloroform residential indoor ILCRs for the Site were 1×10^{-8} to 3×10^{-6} and non-cancer HIs were well below 1.0; and vapor intrusion ILCRs for the Mohawk sub-area were 4×10^{-8} to 9×10^{-7} and non-cancer HIs were well below 1.0.

Finally, BRC is aware of USEPA's recent *Review of the Draft 2002 Subsurface Vapor Intrusion Guidance*. Issues and recommendations identified in this document, as well as the USEPA Office of Inspector General's *Evaluation Report—Lack of Final Guidance on Vapor Intrusion Impedes Efforts to Address Indoor Air Risks* (December 14, 2009), focus primarily on Tier 1 and Tier 2 assessments, and ultimately will not affect how indoor air exposures have been evaluated for the Site.

Site-Specific Tier 3 Assessment

Concentrations of volatile constituents (VOCs and certain SVOCs) in soil and groundwater that may infiltrate buildings to be constructed at the Site through cracks in the foundations are estimated using USEPA surface emission isolation flux chamber (flux chamber) measurements collected at the Site in accordance with USEPA (1986) guidance and the Flux Chamber SOP-16 (BRC, ERM, and MWH 2009). The flux chamber is used to measure the emission rates from surfaces emitting gas species. Use of the flux chamber reduces the need for modeling surface flux rates, which potentially reduces the uncertainty in the air representative exposure concentrations and the risk characterization. Because the flux chamber measurements were conducted outdoors on open soil, an "infiltration factor" is applied to the outdoor surface flux data to generate data supporting the inhalation of indoor air exposure pathway. The infiltration factor is based on the factors found in the American Society for Testing and Materials (ASTM) *Standard Guide for Risk-Based Corrective Action* (2000). The indoor air concentrations are determined from the surface flux measurements using the following mixing equation:

$$C_a = \frac{J \times \eta}{L \times ER}$$

where:

C_a	=	indoor air concentration (milligram per cubic meter [mg/m^3])
J	=	measured flux of chemical (milligram per square meter per minute [mg/m^2-min])
η	=	foundation crack fraction (unitless)
L	=	enclosed space volume/infiltration area ratio (meter [m])
ER	=	enclosed space air exchange rate (1/min)

Default parameter values from ASTM (2000) for commercial buildings were used (as presented in Section 9 of the NDEP-approved *BRC Closure Plan* [BRC, ERM, and DBS&A 2007; Section 9 revised March 2010]). These default parameters are presented in the electronic indoor air calculation files in Appendix J (included on the report CD in Appendix B). As noted in Section 5.4, indoor air exposures are evaluated on a sample by sample basis, per NDEP requirements, using the surface flux data measurements.

Those VOCs and volatile SVOCs that did not pass the Tier 2 assessment (see above) are evaluated at each individual surface flux location. However, to be consistent with the selection of COPCs for soil; one-tenth of the groundwater Tier 2 comparison values were used. Based on this, 1,1-dichloroethane, 1,2-dichloropropane, bromodichloromethane, carbon tetrachloride, chloroform, dichloromethane, tetrachloroethene, and trichloroethene were evaluated further in the vapor intrusion Tier 3 assessment.

Indoor air concentrations based on the surface flux data measurements are shown in the electronic indoor air calculation files in Appendix H (included on the report CD in Appendix B) and are summarized in Table 6-4 (Tables section). In all cases the maximum of the two flux chamber measurements (TO-15 full scan and TO-15 SIM) is used.

6.1.3 Outdoor Air

Long–term exposure to COPCs bound to dust particles is evaluated using the USEPA's PEF approach (USEPA 2002b). The PEF relates concentrations of a chemical in soil to the concentration of dust particles in the air. The Q/C (Site-Specific Dispersion Factor) values in this equation are for Las Vegas, Nevada (Appendix D of USEPA 2002b). The equation used is:

$$\mathrm{PEF} = \mathrm{Q/C_{wind}} \ \mathrm{x} \ \frac{3{,}600 \ \mathrm{sec/hr}}{0.036 \ \mathrm{x} \ (1 - \mathrm{V}) \ \mathrm{x} \ (\mathrm{U_m} / \mathrm{U_t})^3 \ \mathrm{x} \ \mathrm{F(x)}}$$

where:

PEF	=	Particulate emission factor (cubic meter per kilogram [m^3/kg])
Q/C_{wind}	=	Inverse of the ratio of the geometric mean air concentration to the emission flux at the center of a square source (g/m^2 -s per kg/m^3)
V	=	Fraction of vegetative cover (unitless)
U_m	=	Mean annual windspeed (m/s)
U_t	=	Equivalent threshold value of windspeed at 7m (m/s)
F(x)	=	Function dependent on U_m/U_t derived using USEPA (1985) (unitless)

and

$$Q/C_{wind} = A \times \exp\frac{(\ln A_{site} - B)^2}{C}$$

where

A_{site}	=	Source Area (acre)
A, B, C	=	Air Dispersion Constants for LV (unitless)

The dust model and parameters utilized to generate the PEF are presented in Table 6-5 (Tables section).

The USEPA guidance for dust generated by construction activities (USEPA 2002b) was used for assessing short-term construction worker exposures:

$$PEF = \frac{1}{\left(\left(\frac{1}{PEF_{sc}}\right) + \left(\frac{1}{PEF_{sc\_road}}\right)\right)}$$

where:

PEF_{sc}	=	Subchronic particulate emission factor for construction activities (m^3/kg)
PEF_{sc_road}	=	Subchronic particulate emission factor for unpaved road traffic (m^3/kg)

Input soil concentrations for the model are the exposure point concentrations as described above. The construction dust model and all relevant equations and parameters utilized to generate the construction worker PEF from this guidance are provided in Table 6-6 (Tables section). Site-specific surface soil moisture data were collected in December-January and May-July. The average of the surface soil data is 7.6 percent. This is considered an adequate representation of the annual average; therefore, this value is used for the percent moisture in dry road surface parameter instead of the NDEP model default value.

In addition, for receptors with indoor exposures (i.e., indoor commercial workers), a dilution factor is applied to obtain an indoor air concentration of dust particles, based on USEPA (2000).

The flux chamber measurements as described in Section 6.1.2 above are used for exposures to VOCs and volatile SVOCs in outdoor air if the chemical was present in the TO-15 analyte list. If the VOC or volatile SVOC was measured in soil, but not on the TO-15 analyte list, then the exposure point concentration was estimated using USEPA's volatilization factor. Outdoor surface flux data are divided by the dispersion factor for volatiles (Q/C_{vol} for Las Vegas; from USEPA 2002b) for use in the outdoor air exposure pathway. The same dispersion factor is used for all scenarios. The dispersion factor for the construction worker is not adjusted to account for soil intrusion activities. Outdoor air concentrations based on soil data for all receptors are shown in Table 6-7 (Tables section). Outdoor air concentrations based on the surface flux data measurements are shown in the electronic indoor air calculation files in Appendix H (included on the report CD in Appendix B) and are summarized in Table 6-4.

6.2 EXPOSURE ASSESSMENT

In a risk assessment, the possible exposures of populations are examined to determine if the chemicals at a site could pose a threat to the health of identified receptors. The risks associated with exposure to chemicals depend not only on the concentration of the chemicals in the media, but also on the duration and frequency of exposure to those media. For example, the risks associated with exposure to chemicals for 1 hour a day are less than those associated with exposure to the same chemicals at the same concentrations for 2 hours a day. Potential health impacts from chemicals in a medium can occur via one or more exposure pathways. The exposure assessment step of a risk assessment combines information regarding impacted media at a site with assumptions about the people who could come into contact with these media. The result is an estimation of a person's potential rate of contact with impacted media from the Site. The intake rates are evaluated in the risk characterization step to estimate the risks they could pose.

In this section, assumptions regarding people's activities, such as the frequency with which a person could come into contact with impacted media, are discussed. Finally, the daily doses at the points of potential human contact were estimated using these assumptions, the models described in Section 6.1, and the chemical concentrations reported for soil and surface flux samples collected from the Site.

6.2.1 Exposure Parameters

In this section, the assumptions regarding the extent of exposure are presented for each of the exposure pathways for each medium of concern at the Site. Table 6-8 (Tables section) presents each of the exposure parameters used in the risk assessment for each receptor and each pathway. Many of the assumptions regarding the extent of exposure are default factors developed by USEPA's Superfund program. Default values were modified to reflect Site-specific conditions, where possible. The exposure parameters used in the risk assessment were those defined in Tables 9-2 through 9-5 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010).

6.2.2 Quantification of Exposure

In this section, the concentrations of COPCs at the points of potential human exposure are combined with assumptions about the behavior of the populations potentially at risk to estimate the dose of COPCs that may be taken in by the exposed individuals. Later, in the risk characterization step of the assessment, the doses are combined with toxicity parameters for COPCs to estimate whether the calculated intake levels pose a threat to human health.

The method used to estimate the average daily dose (ADD) for non-carcinogens COPCs via each of the complete exposure pathways is based on USEPA (1989, 1992b) guidance. For carcinogens, lifetime ADD (LADD) estimates are based on chronic lifetime exposure, extrapolated over the estimated average lifetime (assumed to be 70 years). This establishes consistency with cancer slope factors (CSFs), which are based on chronic lifetime exposures. For non-carcinogens, ADD estimates are averaged over the estimated exposure period. ADDs and LADDs were calculated for each exposure scenario using the following generic equation:

$$Dose = \frac{C \times IR \times ED \times EF}{BW \times AT \times 365\ d/yr}$$

where:

Dose	=	ADD for non-carcinogens and LADD for carcinogens (in mg/kg-day)
C	=	chemical concentration in the contact medium (e.g., mg/kg soil)
IR	=	intake rate (e.g., mg/day soil ingestion and dermal contact [requires a conversion factor of 10^{-6} kilograms per milligram [kg/mg]);
ED	=	exposure duration (years of exposure)
EF	=	exposure frequency (number of days per year)
BW	=	average body weight over the exposure period (kilograms)
BIO	=	relative bioavailability (unitless)
AF	=	absorption fraction (percent)
AT	=	averaging time; same as the ED for non-carcinogens and 70 years (average lifetime) for carcinogens

Risk estimates for inhalation exposures follow USEPA's *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)* (USEPA 2009). That is, the concentration of a chemical in air is used as the exposure metric (e.g., mg/m^3), rather than inhalation intake of a chemical in air based on inhalation rate and body weight (e.g., mg/kg-day). The generic equation for calculating inhalation exposures is:

$$EC = \frac{C_{air} \times ET \times ED \times EF}{AT}$$

where:

EC	=	exposure concentration (in mg/m^3)
C_{air}	=	chemical concentration in air (in mg/m^3)
ET	=	exposure time (hours per day)
ED	=	exposure duration (years of exposure)
EF	=	exposure frequency (number of days per year)
AT	=	averaging time; same as the ED for non-carcinogens and 613,200 hours (i.e., 70 years; average lifetime) for carcinogens

Pathway-specific equations for calculating ADDs and LADDs are provided in Table 9-6 of the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010). For conservatism, the relative oral bioavailability (BIO) of all COPCs was assumed to be 100 percent, except for arsenic. Consistent with the *BRC Closure Plan* (BRC, ERM, and DBS&A 2007; Section 9 revised March 2010), an arsenic oral bioavailability of 30 percent is used.

Chemical-specific dermal absorption values from USEPA guidance (USEPA 2004e [Part E RAGS]) were used in the risk assessment. USEPA does not recommend absorption factors for VOCs based on the rationale that VOCs from the soil are volatilized on skin and exposure is accounted for via inhalation routes. In addition, RAGS Part E (USEPA 2004e) states “For inorganics, the speciation of the compound is critical to the dermal absorption and there are too little data to extrapolate a reasonable default value.” Therefore, dermal absorption factors are also not used for inorganics. The NDEP and its consultants have concurred with this decision.

Exposure levels of potentially carcinogenic and non-carcinogenic chemicals are calculated separately because different exposure assumptions apply (i.e., ADD for non-carcinogens and LADD for carcinogens). Exposure levels are estimated for each relevant exposure pathway (i.e., soil, air, and water), and for each exposure route (i.e., oral, inhalation, and dermal). Daily doses for the same route of exposure are summed. The total dose of each chemical is the sum of doses across all applicable exposure routes.

6.2.3 Asbestos

Although final USEPA guidance is unavailable at this time, USEPA recommends that site-specific risk assessments be performed for asbestos (USEPA 2004f). Risks associated with asbestos in soil are evaluated using the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a) and *Workbook for the Calculation of Asbestos-Related Risk in Soils* (2011b), and the draft methodology proposed by USEPA (2003b). This methodology is an update of the method described in *Methodology for Conducting Risk Assessments at Asbestos Superfund Sites-Part 1: Protocol* and *Part 2: Technical Background Document* (Berman and Crump 1999a,b). Because the risk assessment methodology for asbestos is unlike that for other COPCs, asbestos risks are evaluated separately from other chemical risks.

The intent of the risk assessment methodology is to predict the amount of airborne asbestos, which causes an unacceptable risk to a human receptor. Asbestos concentrations are measured in soil, and are then used to predict airborne asbestos concentrations using a dust emissions model. Asbestos data are collected from the top 2 inches of soil. While asbestos might exist below the top 2 inches of soil due to soil turnover, the concentrations in the surface soil are likely to be greater than concentrations beneath the surface, and exposure to the top 2 inches of soil is the most likely point of contact for asbestos . Therefore, the "shallow" surface soils asbestos concentration estimate is used to represent the potential exposure to asbestos.

To interpret measurements of asbestos in soils, it is necessary to establish the relationship between the asbestos concentrations observed in soils and concentrations that will occur in air when such soil is disturbed by natural or anthropogenic forces. This is because asbestos is a hazard when inhaled (see, for example, Berman and Crump 2001; USEPA 2003b). Indeed, the Modified Elutriator Method (Berman and Kolk 2000), which was the method employed to perform the analyses presented in this report, was designed specifically to facilitate prediction of airborne asbestos exposures based on bulk measurements (see, for example, Berman and Chatfield 1990).

Briefly, the Modified Elutriator Method incorporates a procedure for isolating and concentrating asbestos structures as part of the respirable dust fraction of a sample, and analytical measurements are reported as the number of asbestos structures per mass of respirable dust in the sample. This turns out to be precisely the dimensions required to combine such measurements with published dust emission and dispersion models to convert them to asbestos emission and dispersion models. These models can be combined with measurements from the Modified Elutriator Method to predict airborne exposures and assess the attendant risks.

6.3 TOXICITY ASSESSMENT

This section describes the toxicity of the COPCs at the Site. Numerical toxicity values were developed for use in the calculation of the hazard quotients (HQs; for non-carcinogens) and risks (for carcinogens).

6.3.1 Toxicity Values

Toxicity values, when available, are published by the USEPA in the on-line Integrated Risk Information System [IRIS]; USEPA 2013). CSFs (in units of milligrams per kilogram per day $[mg/kg\text{-}d]^{-1}$) are chemical-specific and experimentally derived potency values that are used to calculate the risk of cancer resulting from exposure to potentially carcinogenic chemicals. Inhalation unit risks (IURs) represent the upper-bound excess lifetime cancer risk from continuous exposure to a chemical at a concentration of 1 microgram per cubic meter ($\mu g/m^3$). A higher value implies a more potent carcinogenic potential. Reference dosages (RfDs) are experimentally derived “no-effect” levels used to quantify the extent of toxic effects other than cancer due to exposure to chemicals (in units of mg/kg-d). Similarly, a reference concentration (RfC) is the derived “no-effect” concentration for a lifetime of continuous inhalation exposure (in units of mg/m^3). With RfDs or RfCs, a lower value implies a more potent toxicant. These criteria are generally developed by USEPA risk assessment work groups and listed in the USEPA risk assessment guidance documents and databases. Available toxicity values for all Site COPCs used in the risk assessment were obtained using the following hierarchy for selecting toxicity criteria (based on USEPA 2003c):

1. IRIS;
2. USEPA’s Provisional Peer Reviewed Toxicity Values (PPRTVs);
3. National Center for Environmental Assessment (or other current USEPA sources);
4. Health Effects Assessment Summary Tables (HEAST);
5. USEPA Criteria Documents (e.g., drinking water criteria documents, drinking water Health Advisory summaries, ambient water quality criteria documents, and air quality criteria documents);

6. ATSDR toxicological profiles;

7. USEPA's Environmental Criteria and Assessment Office; and

8. Peer-reviewed scientific literature.

In addition, toxicity criteria and toxicological surrogates recommended by the NDEP are used in the risk assessment. Toxicity criteria are consistent with those used in the development of the NDEP's BCLs (NDEP 2013), unless newer values are available from USEPA. Toxicity criteria have not been developed by BRC for elements or compounds that do not have criteria published in the above sources.

Although USEPA has developed toxicity criteria for the oral and inhalation routes of exposure, it has not developed toxicity criteria for the dermal route of exposure. USEPA has proposed a method for extrapolating oral toxicity criteria to the dermal route in the *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment)* (USEPA 2004e). USEPA states that the adjustment of the oral toxicity factor for dermal exposures is necessary only when the oral-gastrointestinal absorption efficiency of the chemical of interest is less than 50 percent (due to the variability inherent in absorption studies). For COPCs to which dermal exposure might occur at the Site, the oral-gastrointestinal absorption efficiencies are greater than 50 percent, except for manganese. Therefore, the USEPA-indicated adjustment of the oral toxicity criteria to generate dermal criteria was performed for this COPC.

6.3.2 Non-Carcinogenic Health Effects

For non-carcinogenic health effects, USEPA assumes that a dose threshold exists, below which adverse effects are not expected to occur. A chronic RfD or RfC of a chemical is an estimate of a lifetime daily dose to humans that is likely to be without appreciable deleterious non-carcinogenic health effects. To derive an RfD or RfC, a series of professional judgments is made to assess the quality and relevance of the human or animal data and to identify the critical study and the most critical toxic effect. Data typically used in developing the RfD or RfC are the highest no-observable-adverse-effect-levels (NOAELs) for the critical studies and effects of the non-carcinogen. For each factor representing a specific area of uncertainty inherent in the extrapolation from the available data, an uncertainty factor is applied. Uncertainty factors generally consist of multiples of 10, although values less than 10 are sometimes used.

Four major types of uncertainty factors are typically applied to NOAELs in the derivation of RfDs or RfCs. Uncertainty factors of 10 are used to (1) account for the variability between humans, (2) extrapolate from animals to humans, (3) account for a NOAEL based on a subchronic study instead of a chronic study, and (4) extrapolate from a lowest-observed-adverse-effect-level (LOAEL) to a NOAEL, if necessary. In addition, a modifying factor can be used to account for adequacy of the database. Typically, the modifying factor is set equal to one.

To obtain the RfD or RfC, all uncertainty factors associated with the NOAEL are multiplied together, and the NOAEL is divided by the total uncertainty factor. Therefore, each uncertainty factor adds a degree of conservatism (usually one order of magnitude) to the RfD or RfC. An understanding of the uncertainties associated with RfDs or RfCs is important in evaluating the significance of the HIs calculated in the risk characterization portion of the risk assessment. When available, sub-chronic RfDs or RfCs were used to evaluate construction worker exposures. The COPCs in this assessment with USEPA-established oral/dermal and inhalation RfDs or RfCs are presented in Tables 6-9 and 6-10 (Tables section), for surface flux and soil COPCs, respectively.

6.3.3 Carcinogenic Health Effects

USEPA develops CSFs and IURs from chronic animal studies or, where possible, epidemiological data. Because animal studies use much higher doses over shorter periods of time than the exposures generally expected for humans, the data from these studies are adjusted, typically using a linearized multi-stage (LMS) mathematical model. To ensure protectiveness, CSFs/IURs are typically derived from the 95th percentile UCL of the slope, and thus the actual risks are unlikely to be higher than those predicted using the CSF/IUR, and may be considerably lower. The COPCs in this assessment with USEPA-established oral/dermal and inhalation CSFs/IURs are presented in Tables 6-9 and 6-11 (Tables section), for surface flux and soil COPCs, respectively.

6.3.4 Asbestos

Asbestos toxicity criteria were obtained from Table 8-1 of Berman and Crump’s (2001) document and Tables 8-2 and 8-3 in the USEPA (2003b) guidance. The toxicity criteria vary based on fiber type, endpoint (lung cancer, mesothelioma, or combined) and percent of fibers longer than 10 micrometers (µm) and less than 0.4 µm in width. For this risk assessment the toxicity criteria were based on a combined endpoint of lung cancer and mesothelioma averaged over the smokers and non-smokers of the population, with the assumption that 50 percent of fibers are greater than 10 µm in length (Berman and Crump 2001). The resulting unit risk factors (structures/cubic centimeter) are presented in Appendix H (included on the report CD in Appendix B). A complete discussion on issues associated with risk estimates for asbestos is presented in the NDEP's *Technical Guidance for the Calculation of Asbestos-Related Risk in Soils* (2011a).

6.4 RISK CHARACTERIZATION

In the last step of a risk assessment, the estimated rate at which a receptor intakes a chemical is compared with information about the toxicity of that COPC to estimate the potential risks posed by exposure to the COPC. This step is known as risk characterization. The methods used for assessing cancer risks and non-cancer adverse health effects are discussed below.

6.4.1 Methods for Assessing Cancer Risks

In the risk characterization, carcinogenic risk is estimated separately as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to chemicals and asbestos. Carcinogenic risks for chemicals were evaluated by multiplying the estimated average exposure rate (i.e., LADD calculated in the exposure assessment) by the chemical's CSF or IUR. The CSF converts estimated daily doses averaged over a lifetime to incremental risk of an individual developing cancer. Because cancer risks are averaged over a person's lifetime, longer-term exposure to a carcinogen results in higher risks than shorter-term exposure to the same carcinogen, if all other exposure assumptions are constant. Theoretical risks associated with low levels of exposure in humans are assumed to be directly related to an observed cancer incidence in animals associated with high levels of exposure while the IUR converts estimated exposure concentrations averaged over a lifetime to incremental risk of an individual developing cancer. According to USEPA (1989), this approach is appropriate for theoretical upper-bound ILCRs of less than 1×10^{-2}. The following equations were used to calculate COPC-specific risks and total risks:

$$Risk = EC \times IUR \quad or \quad LADD \times CSF$$

where:

LADD	=	lifetime average daily dose (mg/kg-d)
EC	=	exposure concentration (mg/m^3)
IUR	=	inhalation unit risk (mg/m^3)$^{-1}$
CSF	=	cancer slope factor (mg/kg-d)$^{-1}$

and:

$$\textit{Total Carcinogenic Risk} = \Sigma \textit{Individual Risk}$$

It is assumed that cancer risks for different chemicals and from multiple exposure routes are additive, which introduces a protective bias in the result of the cancer risk assessment.

Carcinogenic risk estimates were compared to the USEPA acceptable, incremental risk range of 1 in 10,000 (10^{-4}) and 1 in 1 million (10^{-6}) and the NDEP's acceptable, incremental level of 10^{-6}. If the estimated incremental risk falls within or below this risk range, the chemical is considered unlikely to pose an unacceptable carcinogenic risk to individuals under the given exposure conditions. A risk level of 1×10^{-5} (1 E-5) represents an incremental probability of one in 100,000 that an individual could develop cancer from exposure to the potential carcinogen under a defined set of exposure assumptions.

6.4.2 Methods for Assessing Non-Cancer Health Effects

Non-cancer adverse health effects are estimated by comparing the estimated average exposure rate (i.e., ADDs estimated in the exposure assessment) with an exposure level at which no adverse health effects are expected to occur for a long period of exposure (e.g., the RfDs or RfCs). ADDs (or exposure concentrations [ECs]) and RfDs (or RfCs) are compared by dividing the ADD by the RfD (or EC by the RfC) to obtain the ADD:RfD (EC:RfC) ratio, as follows:

$$HQ = \frac{EC}{RfC} \; or \; \frac{ADD}{RfD}$$

where:

HQ	=	hazard quotient
ADD	=	average daily dose (mg/kg-d)
EC	=	exposure concentration (mg/m^3)
RfD	=	reference dose (mg/kg-d)
RfC	=	reference concentration (mg/m^3)

The ADD-to-RfD (EC-to-RfC) ratio is known as an HQ. If a person's average exposure is less than the RfD or RfC (i.e., if the HQ is less than 1), the chemical is considered unlikely to pose a significant non-carcinogenic health hazard to individuals under the given exposure conditions. Unlike carcinogenic risk estimates, an HQ is not expressed as a probability. Therefore, while both cancer and non-cancer risk characterizations indicate a relative potential for adverse effects to occur from exposure to a chemical, a non-cancer adverse health effect estimate is not directly comparable with a cancer risk estimate.

If more than one pathway is evaluated, the HQs for each pathway are summed to determine whether exposure to a combination of pathways poses a health concern. This sum of the HQs is known as an HI.

$$\textit{Hazard Index} = \Sigma\, \textit{Hazard Quotients}$$

Any HI less than or equal to 1.0 indicates the exposure is unlikely to be associated with a potential health concern. If the HI is greater than 1.0, then the HQs are summed by the specific target organs affected by a particular chemical or chemicals. This is also summed across pathways and chemicals. Target organs are identified primarily by the source of the toxicity criteria (e.g., IRIS). Since a chemical may affect more than one organ, in addition to the source of the toxicity criteria Oak Ridge National Laboratory's (ORNL) Risk Assessment Information System's toxicity profiles were also searched for target organ information (ORNL 2013).

6.4.3 Methods for Assessing Asbestos Risks

For assessing asbestos risks, Table 8-2 (Based on Optimum Risk Coefficients) of USEPA (2003b) was used. Table 8-2 presents best estimate risks optimized based upon separation of fiber type, size and endpoint (mesothelioma/lung cancer), thereby reducing apparent variation between the studies utilized. The values in Table 8-2 are used because they are the authors' "best" estimates of potency based upon all the available data (whereas the "conservative values" presented in Table 8-3 present only the most conservative, and best "behaved" data). As described in USEPA (2003b), because the asbestos risks to male and female smokers/non-smokers are different, population averaged risks are evaluated based on Eqn. 8-1 of USEPA (2003b):

$$URF = 0.5 \times ((0.786 \times (NSM + NSF)) + ((0.214 \times (SM + SF)) \times CF$$

where:

URF	=	Population Averaged Unit Risk Factor (risk per fibers/cubic centimeter [cm^3])
NSM	=	risk for male non-smokers
NSF	=	risk for male non-smokers
SM	=	risk for male smokers

SF = risk for female smokers
CF = factor to convert risk from risk per 100,000 to risk per 1,000,000

This equation considers male smokers, male non-smokers, female smokers, and female non-smokers. In addition, because both chrysotile and amphibole have been detected at the BMI Common Areas, both amphibole and chrysotile fibers are evaluated in the risk assessments, regardless of if either was detected within an exposure area (as calculated using the 95 percent UCL of the mean of the assumed underlying Poisson distribution).

The basic equation for assessing inhalation cancer risk for asbestos is analogous to that recommended by USEPA for other inhalation carcinogens. As shown in Equation 11 of *Risk Assessment Guidance for Superfund, Part F* (USEPA, 2009) inhalation cancer risk is the product of an IUR factor and an exposure concentration. The exposure concentration is a function of the asbestos air concentration, the length of time an individual is exposed, and the averaging time for which carcinogenic effects are evaluated for the unit risk factor. This calculation of asbestos related risk (ARR) is also consistent with application of Berman and Crump (2003) to risk calculations described in Berman (2003a,b; 2005). The risk equation used in performing an asbestos inhalation risk assessment is:

$$ARR = \frac{C_{air} \times URF \times ET \times EF \times ED}{AT}$$

where:

C_{air} = air concentration of asbestos (fibers per centimeter cubed)
ET = exposure time (hours/day)
EF = exposure frequency (days/year)
ED = exposure duration (years)
AT = averaging time (hours)
URF = unit risk factor (fibers per centimeter cubed)

Asbestos risk estimates are compared to the USEPA acceptable, incremental risk range for carcinogens of 1 in 10,000 (10^{-4}) and 1 in 1 million (10^{-6}) and the NDEP's acceptable, incremental level of 10^{-6}, although the risk estimates represent the probability of death from mesothelioma or lung cancer rather than the probability of contracting cancer. If the estimated asbestos risk falls within or below this risk range, asbestos is considered unlikely to pose an unacceptable risk to individuals under the given exposure conditions. A risk level of 1×10^{-5} (1 E-5) represents a probability of one in 100,000 that an individual could die from contracting mesothelioma or lung cancer from exposure to asbestos under a defined set of exposure assumptions.

6.4.4 Risk Assessment Results

The calculation of theoretical upper-bound ILCRs and non-cancer health effects are presented by receptor in Tables 6-12 through 6-14 (Tables section) and are discussed in Section 8. These tables present the theoretical upper-bound ILCRs and non-cancer health effects calculations for construction worker, commercial (indoor) worker, and maintenance (outdoor) worker receptors. The risk of death from lung cancer or mesothelioma as a consequence of exposure to asbestos on a Site-wide basis is presented in Table 6-15 (Tables section). All calculation spreadsheets are provided in Appendix H (included on the report CD in Appendix B).

7.0 UNCERTAINTY ANALYSIS

Risk estimates are values that have uncertainties associated with them. These uncertainties, which arise at every step of a risk assessment, are evaluated to provide an indication of the uncertainty associated with a risk estimate. Risk assessments are not intended to estimate the true risk to a receptor associated with exposure to chemicals in the environment. In fact, estimating the true risk is impossible because of the variability in the exposed or potentially exposed populations. There are always gaps in knowledge because a true exposure for every individual human being cannot be measured. Therefore, risk assessment is a means of estimating the probability that an adverse health effect (e.g., cancer, impaired reproduction) will occur in a receptor to assist in decision-making regarding the protection of human health. The use of conservative values for a majority of the assumptions in risk assessments helps guard against the underestimation of risks.

Risk estimates are calculated by combining Site data, assumptions about individual receptor's exposures to impacted media, and toxicity data. The uncertainties in this HHRA can be grouped into four main categories that correspond to these steps:

- Uncertainties in environmental sampling and analysis;
- Uncertainties in fate and transport modeling (discussed in Section 9);
- Uncertainties in assumptions concerning exposure scenarios; and
- Uncertainties in toxicity data and dose-response extrapolations.

General uncertainties associated with the HHRA for the Site are summarized in Table 7-1. In this table, "Low," "Moderate," and "High" are qualitative indicators as to whether the source of uncertainty will likely have a small, medium, or large effect on the risk calculations, respectively. In general, the scenarios and parameters evaluated and used in this HHRA are considered conservative based on how the Site will be developed. This is a large source of potential conservative bias in this HHRA. Additional discussion on the uncertainties associated with the HHRA is provided below.

7.1 ENVIRONMENTAL SAMPLING

The HHRA for the Site was based on the sampling results obtained from investigations conducted in 2010 through 2014. Errors in sampling results can arise from the field sampling, laboratory analyses, and data analyses.

The environmental sampling at the Site is one source of uncertainty in the evaluation. However, the number of sampling locations and events is large, widespread and spatially distributed, with consistent analytical results (i.e., no hot spots), and sampling was performed using approved procedures; therefore, the sampling and analytical data are sufficient to characterize the impacts and the associated potential risks.

Because of the surface soil removal undertaken for certain chemicals, the new surface layer of the Site could have different chemical concentrations than those measured prior to soil removal. Because only the trigger constituents were reanalyzed for in the post-scrape samples, the original measured surface soil data at the Site for all other chemicals was retained for further evaluation. However, it is reasonable to assume that the concentrations are now lower for some chemicals (e.g., metals, if due to contamination), because of the removal of some soil.

The laboratory data are another potential source of uncertainty. Maximum SQLs for dichloromethyl ether and n-nitrosodi-n-propylamine exceeded one-tenth their worker soil BCLs. These chemicals were not evaluated quantitatively in the HHRA as they were not detected in any Site samples. This may result in an underestimation of risk.

The types of analyses were chosen based on historical knowledge of the Site and BMI Common Areas. The data validation and data usability evaluations provided documentation that the HHRA database is adequate to support HHRA conclusions (Section 4 and Appendix E). Based on the data validation and data usability, the risk estimates are likely to be overestimated rather than underestimated.

NDEP has issued recent guidance regarding qualifying data due to blank contamination (NDEP 2011c). As noted in the guidance, NDEP requires that data validated before June 2011 and impacted by blank contamination be discussed in any report that uses such data. In so doing, a semi-quantitative comparison of the potential differences between approaches taken previously and the requirements specified in the guidance will be described and explained. The discussion below provides this semi-quantitative comparison for data impacted by blank contamination for the Site.

The initial data for the Site were collected and validated prior to June 2011; therefore, data were qualified using existing USEPA and NDEP guidance. The issue of blank contamination is not one that affects the typical primary risk drivers for the project, including those for the Site. The primary risk drivers for the Site are aluminum, arsenic, cobalt, and manganese; only one of which, arsenic, had blank contamination issues. There were only 16 arsenic results, out of 77 for the Site, affected by blank contamination, with initial reported values slightly less than the qualified values used in the HHRA. Therefore, the impact of these samples on the background comparison statistics for arsenic is unlikely to be significant. The following other metals had samples qualified non-detect due to blank contamination: beryllium (18 samples), boron (three samples), cadmium (eight samples), chromium (VI) (nine samples), copper (one sample), mercury (23 samples), molybdenum (12 samples), selenium (two samples), silver (18 samples), thallium (three samples), tin (seven samples), tungsten (four samples), and uranium (two samples). Given the number of samples qualified due to blank contamination for several of these, this may have an impact on the background comparison statistics. However, in all cases, the maximum detected concentrations for these metals are less than one-tenth their respective BCLs (and their maximum non-detect concentrations are also less than one-tenth their BCLs). Therefore, this issue has no material effect on the selection of COPCs and the results of the HHRA for the Site.

Uncertainties are also introduced into the risk assessment by assumptions that are made regarding the grading plan. As described in Section 3.1, the grading plan affects the interpretation of the data in terms of assigning samples to the surface or the subsurface. This was done to avoid the situation in which current surface samples might not be included in the evaluation of exposures to future surface soils. The data were subdivided by depth intervals as described in Section 3.1, and the maximum of the UCLs for the two subsets of data was used as the exposure point concentration. There is some uncertainty in the choice of subsetting on the concentrations of interest, and there is a potential small overestimation of risk by choosing the maximum of the two UCLs as the exposure point concentration. The effects are likely to be small given the data, since there is not much variation in the different UCLs.

7.2 ESTIMATES OF EXPOSURE

The selection of exposure pathways is a process, often based on best professional judgment, which attempts to identify the most probable potentially harmful exposure scenarios. In a risk assessment, it is possible that risks are not calculated for all of the exposure pathways that may occur, possibly causing some underestimation of risk.

7.2.1 Aggregation of Exposure Areas

Although land use is not residential, default residential exposure areas are one-eighth-acre in size. However, sampling has not been performed at the frequency of guaranteeing at least one sample per every one-eighth-acre exposure area. Instead, sampling has been performed at the scale of approximately once every 3 acres. This is considered sufficient if the concentration distribution for COPCs appears similar across the Site. To the extent that this assumption is not valid the risk assessment might underestimate risks. However, considering the sampling protocols employed and the physical remediation activities performed, the risk estimates are considered both reasonable from this perspective and unlikely to have resulted in an underestimation of risk at the Site.

7.2.2 Types of Exposures Examined

In an evaluation, risks are sometimes not calculated for all of the exposure pathways that may occur, possibly causing some underestimation of risk. However, in this case, all principal potential exposure pathways were evaluated. In this assessment, risks were estimated for future worker receptors. Risks for the most likely routes of exposure to these receptors were estimated. For example, risks to workers were estimated for soil ingestion, skin contact with soil, and inhalation of outdoor air (including dust generation). Although it is possible that other exposure routes could exist (e.g., downwind off-site residents), these exposures are expected to be lower than the risks associated with the pathways considered.

7.2.3 Intake Assumptions Used

The risks calculated depend largely on the assumptions used to calculate the rate of COPC intake. For this assessment, standard default values developed by USEPA are used for reasonable maximum exposures frequency and exposure duration for all receptors. These estimates are conservative values, and the possibility that they underestimate the risk is low. The uncertainties associated with particular parameters used in this risk assessment are described below.

The amount of COPCs the human body absorbs may be different from the amount of a COPC contacted, and the percentage absorbed may vary from one person to another. In this HHRA, with the exception of arsenic, absorption of ingested and inhaled COPCs is conservatively assumed to be 100 percent.

Current USEPA guidance (USEPA 2004e) states that "There are no default dermal absorption values presented for volatile organic compounds nor inorganic classes of compounds. The rationale for this is that in the considered soil exposure scenarios, volatile organic compounds would tend to be volatilized from the soil on skin and should be accounted for via inhalation routes in the combined exposure pathway analysis. For inorganics, the speciation of the compound is critical to the dermal absorption and there are too little data to extrapolate a reasonable default value." While USEPA guidance does not specifically state that this pathway should be dismissed, consistent with the approach utilized in current USEPA guidance, the risk estimates in this HHRA do not include a dermal absorption value for VOCs or inorganics (unless a specific value has been identified). Thus, the risks presented in this assessment could be underestimated as a result.

The construction activity dust emissions did not take into account dust control measures that would reduce the amount of dust generated to below those levels used in the HHRA. The Clark County Department of Air Quality and Environmental Management has dust control permitting requirements, and an inhalable particulate matter action level of 50 $\mu g/m^3$. The construction activity dust emissions predicted and used in the HHRA exceeded this level. Therefore, dust suppression activities would need to be implemented, thus reducing dust levels and exposures.

The dispersion factor for the construction worker is not adjusted to account for soil intrusion activities. Because these activities may cause increased air concentrations than that evaluated, risks to VOCs in soil may be underestimated for this receptor. However, because VOCs are primarily associated with groundwater, this potential underestimation is considered low.

Using a process similar to the selection of COPCs for soil, only those VOCs and volatile SVOCs that did not pass the Tier 2 assessment in Section 6.1.2 were evaluated at each individual surface flux location. Based on this, only eight of the 67 chemicals analyzed for in surface flux samples were included in the cumulative risks associated with the inhalation of VOCs~~.~~ (note that only four of these eight chemicals were detected in surface flux data). Therefore, the cumulative risks associated with the inhalation of VOCs for all exposure scenarios are underestimated in the HHRA; however, this underestimation is considered low.

7.3 TOXICITY ASSESSMENT

The availability and quality of toxicological data is another source of uncertainty in the risk assessment. Uncertainties associated with animal and human studies may have influenced the toxicity criteria. Carcinogenic criteria are classified according to the amount of evidence available that suggests human carcinogenicity. In the establishment of the non-carcinogenic criteria, conservative safety factors, known as uncertainty and modifying factors, are used.

7.3.1 Chemicals of Potential Concern Lacking Toxicological Data

Toxicity criteria have not been established for some of the chemicals detected at the Site. These chemicals were not quantitatively evaluated in the HHRA. For example, potassium is an analyte for which no USEPA toxicity criteria have been established. The health effects and levels of concern for potassium in soil are not known. While not including potassium may have resulted in a low degree of underestimation of quantitative Site risk estimates, the available toxicological information suggests that this underestimation will not likely affect the decisions made relative to Site risks.

Because of the inconclusive nature of TICs as potentially SRCs, non-cancer surrogate toxicity criteria were not applied. Non-cancer surrogate toxicity criteria were not applied to the inorganic chemicals because of the complexity of ion and metal toxicity. A quantitative estimation of risk was not conducted for these COPCs. Thus, the risks presented in this assessment could be underestimated as a result.

7.3.2 Uncertainties in Animal and Human Studies

Extrapolation of toxicological data from animal tests is one of the largest sources of uncertainty in a risk assessment. There may be important, but unidentified, differences in uptake, metabolism, and distribution of chemicals in the body between the test species and humans. For the most part, these uncertainties are addressed through use of conservative assumptions in establishing values for RfDs, RfCs, CSFs, and IURs, which results in the likelihood that the risk is overstated.

Typically, test animals are administered high doses (e.g., maximum tolerated dose) of a chemical in a standard diet or in air. Humans are generally exposed to much lower doses in the environment, which may affect the toxicity of the chemical. In these studies, test animals, often laboratory rodents, are exposed daily to the chemical agent for various periods of time up to their 2-year lifetimes. Humans have an average 70-year lifetime and may be exposed either intermittently or regularly for an exposure period ranging from weeks to a full lifetime. Because of these differences, it is not surprising that extrapolation error is a large source of uncertainty in a risk assessment.

7.3.3 Non-Carcinogenic Toxicity Criteria

In the establishment of the non-carcinogenic criteria, conservative safety factors, known as uncertainty factors, are used. Most of the chronic non-carcinogenic toxicity criteria that were located in the IRIS database have uncertainty factors of 1,000. This means that the dose corresponding to a toxicological effect level (e.g., LOAEL) is divided by 1,000 to deem a safe, or "reference," dose. The purpose of the uncertainty factor is to account for the extrapolation of toxicity data from animals to humans and to ensure the protection of sensitive individuals.

7.3.4 Sub-Chronic Non-Carcinogenic Toxicity Criteria

Construction worker exposures are evaluated for an exposure duration of 1 year, which is more representative of a sub-chronic exposure rather than a chronic exposure. As such, where available, sub-chronic RfDs were used to characterize non-cancer effects for the construction worker. However, for many COPCs, a sub-chronic RfD was not available and the chronic RfD was used. This likely presented an overestimation of non-cancer health risks to the construction worker.

7.3.5 Carcinogenic Toxicity Criteria

Uncertainty due to extrapolation of toxicological data for potential carcinogens tested in animals to human response is commonly the case for potentially carcinogenic chemicals. USEPA frequently uses the LMS model, or other non-threshold low-dose extrapolation models, to extrapolate the toxicological data to estimate human response. These low-dose extrapolation models assume that there is no threshold for carcinogenic substances; that is, exposure to even one molecule, fiber, or picocurie of a carcinogen is sufficient to cause cancer. This is a highly conservative assumption, because the body has several mechanisms to protect against cancer.

The use of the LMS model to extrapolate is a well-recognized source of significant uncertainty in the development of carcinogenic toxicity criteria and, subsequently, theoretical carcinogenic risk estimates. At high levels of exposure, there may indeed be a risk of cancer regardless of whether or not the effect occurs via a threshold mechanism. An animal bioassay cannot determine what happens at low levels of exposure, however, which are generally typical of human exposure levels.

At low levels of exposure, the probability of cancer cannot be measured, but must be extrapolated from higher dosages. To do this, test animals are typically exposed to carcinogens at levels that are orders of magnitude greater than those likely to be encountered by humans in the environment. It would be difficult, if not impossible, to perform animal experiments with a large enough number of animals to directly estimate the level of risk at the low exposure levels typically encountered by humans. Thus, to estimate the risk to humans exposed at low levels, dose-response data derived from animals given high dosages are extrapolated downward using mathematical models such as the LMS model, which assumes that there is no threshold of response. The dose-response curve generated by the model is known as the maximum likelihood estimate. The slope of the 95 percent lower confidence interval (i.e., upper-bound limit) curve, which is a function of the variability in the input animal data, is taken as the CSF. CSFs are then used directly in cancer risk assessment.

The U.S. federal government, including USEPA itself, has acknowledged the limitations of the high-to-low dose extrapolation models, particularly the LMS model (USEPA 1991c). In fact, this aspect of cancer risk assessment has been criticized by many scientists (including regulatory scientists) in recent years. USEPA has recently released revised cancer risk assessment guidelines (USEPA 2005b).

Even for genotoxic (i.e., non-threshold) substances, there are two major sources of bias embedded in the LMS model: (1) its inherent conservatism at low doses and (2) the routine use of the linearized form in which the 95 percent upper confidence interval is used instead of the unbiased maximum likelihood estimate. The inherent conservatism at low doses is due in part to the fact that the LMS model ignores all of the numerous biological factors that argue against a linear dose-response relationship for genotoxic effects (e.g., DNA repair, immunosurveillance, toxicokinetic factors).

Several other factors inherent in the LMS model result in overestimated carcinogenic potency: (1) any exaggerations in the extrapolation that can be produced by some high dose responses (if they occur) are generally neglected; (2) UCLs on the actual response observed in the animal study are used rather than the actual response, resulting in upper-bound low dose extrapolations, which can greatly overestimate risk; and (3) non-genotoxic chemicals (i.e., threshold carcinogens) are modeled in the same manner as highly genotoxic chemicals.

7.3.6 Uncertainties with the Asbestos Risk Assessment

For the risk assessment, asbestos concentrations were presented two ways, as a best estimate and upper bound based upon the UCL of the mean of the Poisson distribution. Asbestos risk estimates are highly dependent on the number of samples to increase or decrease the pooled analytical sensitivity. That is, a larger number of non-detect samples with similar individual analytical sensitivity results in a lower pooled analytical sensitivity and subsequently a lower estimated ARR, whereas a smaller number of non-detect samples results in a higher ARR. Uncertainty is, thus, reduced as more samples are collected.

7.4 CUMULATIVE EFFECT OF UNCERTAINTIES

Uncertainties from different sources are compounded in the HHRA. For example, if a person's daily intake rate for a chemical is compared to an RfD to determine potential health risks, the uncertainties in the concentration measurements, exposure assumptions, and toxicities are all expressed in the result. Because the exposure assumptions and toxicity criteria are considered conservative, the risk estimates calculated in this HHRA are likely to overestimate rather than underestimate potential risks.

8.0 SUMMARY OF RESULTS

This HHRA has evaluated potential risks to human health associated with chemicals and asbestos detected in soil at the Triangle Commercial Sub-Area located within the BMI Common Areas in Clark County, Nevada. All calculation spreadsheets for this HHRA are presented in Appendix H (on the report CD in Appendix B), including calculations of chemical theoretical upper-bound ILCRs and non-cancer health effects and asbestos risk calculations.

The risk estimates are based on reasonable maximum exposure scenarios, which results in estimates of the potential reasonable maximum, or high-end, risks associated with the Site. The calculated chemical theoretical upper-bound ILCRs and HIs are presented in Tables 6-12 through 6-14 for construction worker, commercial (indoor) worker, and maintenance (outdoor) worker receptors, respectively. Asbestos estimated risk of death from lung cancer or mesothelioma on a Site-wide basis is presented in Table 6-15.

8.1 CONSTRUCTION WORKERS

For chemical exposures, the total cumulative non-cancer HI for construction worker receptors at the Site is 1 (including the surface flux air risk estimates) (Table 6-12), with metals soil exposures via the oral ingestion pathway being the primary contributors. The HI does not exceed the target HI of 1.0. As a result, BRC did not evaluate target organ or background non-cancer HI values.

The maximum theoretical upper-bound ILCR for construction worker receptors at the Site is 2×10^{-7} (including the surface flux air risk estimates see Table 6-12) with arsenic soil exposures via the oral ingestion pathway the primary contributor. The theoretical upper-bound ILCRs are all below the low end of the risk goal of 1×10^{-6}.

The estimated risks for death from lung cancer or mesothelioma for asbestos exposures to construction workers were below 1×10^{-6}. For construction workers receptors, the best estimate and upper bound concentrations for chrysotile fibers are 4×10^{-8} and 6×10^{-8}; and 0 and 6×10^{-7} for amphibole fibers (Table 6-15). These estimated risks are below the low end of the risk goal of 1×10^{-6}.

8.2 COMMERCIAL (INDOOR) WORKERS

For chemical exposures, the total cumulative non-cancer HI for commercial (indoor) worker receptors at the Site is 0.05 (including the surface flux air risk estimates) (Table 6-13), with metals soil exposures via the oral ingestion pathway being the primary contributors. The HI does not exceed the target HI of 1.0. As a result, BRC did not evaluate background non-cancer HI values.

The maximum theoretical upper-bound ILCR for commercial (indoor) worker receptors at the Site is 6×10^{-7} (including the surface flux air risk estimates see Table 6-13) with the soil theoretical upper-bound ILCRs for arsenic via the oral ingestion and dermal contact pathways the primary contributor. The theoretical upper-bound ILCRs are all below the low end of the risk goal of 1×10^{-6}.

The estimated risks for death from lung cancer or mesothelioma for asbestos exposures to commercial (indoor) workers were below 1×10^{-6}. For commercial (indoor) worker receptors, the best estimate and upper bound concentrations for chrysotile fibers are 6×10^{-9} and 8×10^{-9}; and 0 and 7×10^{-8} for amphibole fibers (Table 6-15). These estimated risks are below the low end of the risk goal of 1×10^{-6}.

8.3 MAINTENANCE (OUTDOOR) WORKERS

For chemical exposures, the total cumulative non-cancer HI for maintenance (outdoor) worker receptors at the Site is 0.1 (including the surface flux air risk estimates) (Table 6-14), with metals soil exposures via the oral ingestion pathway being the primary contributors. The HI does not exceed the target HI of 1.0. As a result, BRC did not evaluate background non-cancer HI values.

The maximum theoretical upper-bound ILCR for maintenance (outdoor) worker receptors at the Site is 1×10^{-6} (including the surface flux air risk estimates see Table 6-14) with the soil theoretical upper-bound ILCRs for arsenic via the oral ingestion and dermal contact pathways the primary contributor. The theoretical upper-bound ILCRs are at the low end of the risk goal of 1×10^{-6}.

The estimated risks for death from lung cancer or mesothelioma for asbestos exposures to maintenance (outdoor) workers were below 1×10^{-6}. For maintenance (outdoor) worker receptors, the best estimate and upper bound concentrations for chrysotile fibers are 1×10^{-8} and 2×10^{-8}; and 0 and 2×10^{-7} for amphibole fibers (Table 6-15). These estimated risks are below the low end of the risk goal of 1×10^{-6}.

9.0 DATA QUALITY ASSESSMENT

Sample size calculations were conducted for the nine selected COPCs for the Site,[39] as well as TCDD TEQ. TCDD TEQ was included because it is a COPC for the overall project.

The formula used here for calculation of sample size is based on a non-parametric test (the Wilcoxon signed rank test), and on simulation studies performed by Pacific Northwest National Laboratories (PNNL 2009) that formed the basis for an approximate formula that is based on the normal distribution. Essentially, the formula is the one that would be used if a normal-based test were being performed, but an adjustment is made (multiply by 1.16) to account for the intent to perform a non-parametric test. The formula is as follows:

$$n = 1.16\left[\frac{s^2}{\Delta^2}(z_{1-\alpha} + z_{1-\beta(\mu)})^2 + 0.5z_{1-\alpha}^2\right]$$

where:

n	=	number of samples
s	=	estimated standard deviation of concentrations/fibers
Δ	=	width of the gray region (the difference between the threshold value stated in the null hypothesis and the point at which β is specified)
α	=	significance level or Type I error tolerance
β (μ)	=	Type II error tolerance; and
z	=	quantile from the standard normal distribution

For each chemical, inputs for the calculations include an estimate of the variance from the measured data, a desired significance level, and desired power of the test that must be specified at a concentration of interest (which determines the tolerable difference from the threshold value). For arsenic, the Site mean concentration exceeds its BCL based on the target cancer risk level of 10^{-6}. It is not appropriate to apply this calculation where the threshold value is less than the mean concentration. Therefore, an adjustment of the threshold value was used based on a 10^{-5} target cancer risk level. The calculations provided here cover a range of Type I and Type II error tolerances, and the point at which the Type II error is specified. Results are presented in

[39] Note that benzo(a)pyrene was selected as a COPC based on exceeding the one-tenth BCL criteria. Other carcinogenic PAHs were also selected as COPCs because of benzo(a)pyrene. Therefore, sample size calculations were only performed for benzo(a)pyrene, as representative of PAHs.

Table 9-1. In this table, various combinations of input values are used, including values of α of 5, 10, and 15 percent; values of β of 15, 20, and 25 percent; and a gray region of width 10, 20, and 30 percent of the threshold level. It is clear from Table 9-1 that the number of samples collected is adequate for the Site. That is, calculated adequate sample numbers are generally less than those actually collected at the Site for use in the HHRA.

Note also that there are 31 samples collected for asbestos analysis. Amphibole was not detected in any of these samples; however, because of the number of samples collected, the ARRs are all less than 1×10^{-6}. Consequently, sufficient samples have been collected to address ARRs.

10.0 SUMMARY

BRC has prepared this HHRA and Closure Report for the Site. The purpose of this report is to request an NFAD by the NDEP. The NDEP acknowledges that discrete portions of the Eastside may be issued an NFAD as remedial actions are completed for selected environmental media (NDEP 2006). The portion of the Eastside for which the NFAD is being requested based on this HHRA and Closure Report is shown in red on Figure 1. The legal description of the Site is provided in Appendix K.

The HHRA evaluated the potential for adverse human health impacts that may occur as a result of potential exposures to residual concentrations of chemicals in soil, groundwater, and air following remediation, and assessed whether any additional remedial actions are necessary in order to obtain an NFAD from the NDEP to allow redevelopment of the Site to proceed. The results of the risk assessment provide risk managers with an understanding of the potential human health risks associated with background conditions and additional risks associated with past Site activities.

For human health protection, and given the proposed land use for the Site, BRC's goal is to remediate the Site soils such that they are suitable for retail/commercial land use. Human health risks are represented by estimated theoretical upper-bound cancer risks and non-cancer hazards derived in accordance with standard USEPA and NDEP methods. If the carcinogenic risks or non-cancer hazards exceed USEPA-acceptable levels or NDEP risk goals, then remedial action alternatives must be considered. Findings of the HHRA are intended to support the Site closure process. The major findings of this report are the following:

- Data collected for use in the HHRA are adequate and usable for their intended purpose;
- All relevant and reasonable exposure scenarios and pathway have been evaluated; and
- Construction worker, commercial (indoor) worker, and maintenance (outdoor) worker cancer and non-cancer risk estimates are within or below the risk goals for the project.

Therefore, based on the results of the HHRA, and the conclusions in this report, exposures to residual levels of chemicals in soil at the Triangle Commercial Sub-Area do not result in adverse health effects to all future receptors. Therefore, BRC concludes that an NFAD for the Triangle Commercial Sub-Area is warranted and requests that the NDEP issue the NFAD (see Appendix K for the legal description of the Site).

11.0 REFERENCES

Agency for Toxic Substances and Disease Registry (ATSDR). 2008. Update to the ATSDR Policy Guideline for Dioxins and Dioxin-Like Compounds in Residential Soil. U.S. Department of Health and Human Services, Public Health Service. November.

American Society for Testing and Materials (ASTM). 2000. Standard Guide for Risk-Based Corrective Action. E2081-00.

Basic Remediation Company (BRC). 2007. Remedial Action Plan, BMI Common Areas (Eastside), Clark County, Nevada.

BRC. 2010a. Sampling and Analysis Plan for the TIMET Ponds Sub-Area, BMI Common Areas (Eastside), Clark County, Nevada. January.

BRC. 2010b. Sampling and Analysis Plan for the Staging Sub-Area, BMI Common Areas (Eastside), Clark County, Nevada. April.

BRC. 2010c.Technical Memorandum – Correlation of Radon Activities in Indoor Air and Shallow Zone Groundwater, BMI Common Areas (Eastside) Site, Clark County, Nevada.August 30.

BRC. 2011. BRC Comments on NDEP Blank Contamination Guidance. Technical Memorandum. Draft. August 15.

BRC and Environmental Resources Management (ERM). 2009a. BRC Quality Assurance Project Plan. BMI Common Areas, Clark County, Nevada. May.

BRC and ERM. 2009b. 2008 Supplemental Shallow Soil Background Report. BMI Common Areas (Eastside), Clark County, Nevada. September.

BRC and ERM. 2010a. Data Validation Summary Report, Staging Sub-Area Soil Investigation – May-June 2010 (Dataset 66). BMI Common Areas (Eastside), Clark County, Nevada. October.

BRC and ERM. 2010b. Background Soil Compilation Report. BMI Complex and Common Areas, Clark County, Nevada. April.

BRC and ERM. 2011a. Data Validation Summary Report, TIMET Ponds Sub-Area Soil Investigation – March, April and July 2010 (Dataset 65). BMI Common Areas (Eastside), Clark County, Nevada. December.

BRC and ERM. 2011b. Data Validation Summary Report, Eastside North Surface Flux Investigations (Remaining Sub-Areas) – July through August 2010 (Dataset 71). BMI Common Areas (Eastside), Clark County, Nevada. July.

BRC and ERM. 2011c. Data Validation Summary Report, Eastside North Confirmation Soil Investigations – December 2008 through October 2010 – Part II (Dataset 72b). BMI Common Areas (Eastside), Clark County, Nevada. May.

BRC and ERM. 2014a. Eastside Confirmation/Supplemental Sampling Events – July 2012 Through February 2014 (Dataset 72f). BMI Common Areas (Eastside), Clark County, Nevada. June.

BRC and ERM. 2014b. Eastside Confirmation/Supplemental Sampling Events – March 2014 Through August 2014 (Dataset 72g). BMI Common Areas (Eastside), Clark County, Nevada. December. [pending approval by the NDEP]

BRC, ERM, and Daniel B. Stephens & Associates, Inc. (DBS&A). 2007. BRC Closure Plan, BMI Common Areas, Clark County, Nevada. May. [Section 9 revised March 2010]

BRC, ERM, and MWH. 2009. BRC Field Sampling and Standard Operating Procedures, BMI Common Areas, Clark County, Nevada. December.

Berman D.W. 2003a. Analysis and Interpretation of Measurements for the Determination of Asbestos in Core Samples Collected at the Southdown Quarry in Sparta, New Jersey, November 12.

Berman D.W. 2003b. Evaluation of Asbestos Measurements and Assessment of Risks Attendant to Excavation and Use of Soils Within the Proposed Borrow Area of the BRC Corrective Action Management Unit, Henderson, NV, November 25.

Berman D.W. 2005. Draft Preliminary Evaluation of the Implications of Airborne Asbestos Exposure Concentrations Observed During Simulation of a Selected Set of Common, Outdoor Residential Activities Conducted at the North Ridge Estates Site, Klamath Falls, Oregon, February 18.

Berman, D.W., and E.J. Chatfield. 1990. Interim Superfund Method for the Determination of Asbestos in Ambient Air. Part 2: Technical Background Document, Office of Solid Waste and Remedial Response, U.S. EPA, Washington, D.C., EPA/540/2-90/005b, May.

Berman, D.W., and K. Crump. 1999a. Methodology for Conducting Risk Assessments at Asbestos Superfund Sites—Part 1: Protocol. Interim Version. Prepared for USEPA Region 9, February 15.

Berman, D.W., and K. Crump. 1999b. Methodology for Conducting Risk Assessments at Asbestos Superfund Sites—Part 2: Technical Background Document. Interim Version. Prepared for USEPA Region 9, February 15.

Berman, D.W., and K.S. Crump. 2001. Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Prepared for Mark Raney, Volpe Center, U.S. Department of Transportation, 55 Broadway, Kendall Square, Cambridge, MA 02142. Under EPA Review.

Berman D.W., and K.S. Crump. 2003. Final draft: Technical support document for a protocol to assess asbestos-related risk. Prepared for Mark Follensbee, Syracuse Research Corporation, Syracuse, NY, and the Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, DC. USEPA #9345.4-06. Limited revision draft.

Berman, D.W., and A. Kolk. 2000. Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material. May (Revision 1).

Carlsen, C.L., R.C. Lunnis, and D.E. Prudie. 1991. Changes in water levels and water quality in shallow groundwater, Pittman-Henderson Area, Clark County, Nevada, Resulting from diversion of industrial cooling water from ditch to pipeline in 1985. U.S. Geological Survey Water-Resources Investigation Report 89-4093. Carson City, Nevada.

Clark County GIS Management Office. 2003. 5 Foot Contours for the Las Vegas Valley, Mesquite and Laughlin. Fall 2003 Flight of Clark County.

Daniel B. Stephens & Associates, Inc. (DBS&A). 2009. Revised Technical Memorandum: Sources/Sinks and Input Parameters for Groundwater Flow Model, BMI Common Areas, Eastside Area.

Environmental Resources Management (ERM). 1996a. Environmental Conditions Investigation Work Plan, BMI Common Areas, Henderson, Nevada. February.

ERM. 1996b. Draft Environmental Conditions Investigation Report, BMI Common Areas, Henderson, Nevada. August.

ERM. 1998. Warm Springs/Pabco Road Right-of-Way Characterization Activities Report. May.

ERM. 2000. Remedial Alternatives Study for Soils and Sediments in the Upper and Lower Ponds at the BMI Complex. Henderson, Nevada. March 1.

ERM. 2006a. Data Validation Summary Report Common Areas Sampling Event #1a - 1996 Environmental Conditions Investigation. August.

ERM. 2006b. Data Validation Summary Report Common Areas Sampling Event #2 - 1998 Warm Springs Road Investigation. October.

Las Vegas Wash Coordination Committee. 2000. The Las Vegas Wash Comprehensive Adaptive Management Plan. http://www.lvwash.org/resources/docs/lvwcamp.html.

Law Engineering Inc. 1993. Final Report of Phase I Environmental Condition Assessment, Titanium Metals Corporation (TIMET) - Henderson, Nevada.

MWH. 2006a. Data Validation Summary Report, 2000 “College Site” Investigation (Dataset 14), BMI Common Areas (Eastside), Clark County, Nevada. October.

MWH. 2006b. Data Validation Summary Report – 2006 Waste Characterization Investigation (Dataset 39), BMI Common Areas (Eastside), Clark County, Nevada. October.

Neptune and Company. 2009. Guided Interactive Statistical Decision Tools (GiSdT). www.gisdt.org.

Nevada Division of Environmental Protection (NDEP). 2001. Record of Decision, Remediation of Soils and Sediments in the Upper and Lower Ponds at the BMI Complex. Henderson, Nevada. November 2.

NDEP. 2006. Settlement Agreement and Administrative Order on Consent: BMI Common Areas, Phase 3 (AOC3).

NDEP. 2008a. Supplemental Guidance for Assessing Data Usability for Environmental Investigations at the BMI Complex and Common Areas in Henderson, Nevada. Bureau of Corrective Actions, Special Projects Branch. October 22.

NDEP. 2008b. Detection Limits and Data Reporting. Bureau of Corrective Actions, Special Projects Branch. December 3.

NDEP. 2009a. Guidance for Evaluating Radionuclide Data for the BMI Plant Sites and Common Areas Projects. February 6.

NDEP. 2009b. Supplemental Guidance on Data Validation. March 19.

NDEP. 2009c. Supplemental Guidance on Data Validation. April 13.

NDEP. 2009d. Guidance for Evaluating Secular Equilibrium at the BMI Complex and Common Areas. BMI Plant Sites and Common Areas Projects, Henderson, Nevada. February 6.

NDEP. 2011a. Technical Guidance for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas. February.

NDEP. 2011b. Workbook for the Calculation of Asbestos-Related Risk in Soils for the Basic Management Incorporated (BMI) Complex and Common Areas.

NDEP. 2011c. July 2011 Guidance on Qualifying Data due to Blank Contamination. BMI Plant Sites and Common Areas Projects, Henderson, Nevada.

NDEP. 2012. Guidance on Data Validation for Asbestos Data in Soils. BMI Plant Sites and Common Areas Projects, Henderson, Nevada. July.

NDEP. 2013. User's Guide and Background Technical Document for Nevada Division of Environmental Protection (NDEP) Basic Comparison Levels (BCLs) for Human Health for the BMI Complex and Common Areas. August.

NewFields Companies, LLC (NewFields). 2006. Statistical Methodology Report, BMI Common Areas (Eastside), Henderson, Nevada. August.

Oak Ridge National Laboratory (ORNL). 2013. Risk Assessment Information System (RAIS) Toxicity Profiles. http://rais.ornl.gov/tools/tox_profiles.html

Pacific Northwest National Laboratory (PNNL). 2009. Visual Sample Plan. http://vsp.pnl.gov.

Scanlon, B.R., K.E. Keese, A.L. Flint, L.E. Flint, C.B. Gaye, W.M. Edmunds, and I. Simmers. 2006. Global synthesis of groundwater recharge in semiarid and arid regions. Hydrological Processes Hydrol. Process. 20(15):3335–3370.

Southern Nevada Water Authority. 1996. Extent and Potential Use of the Shallow Aquifer and Wash Flow in Las Vegas Valley, Nevada.

Umhoefer, P.J., L.S. Beard, and M.A. Lamb. eds. 2010. Miocene Tectonics of the Lake Mead Region, Central Basin and Range. Geological Society of America. Special Paper 463.

U.S. Environmental Protection Agency (USEPA). 1985. Rapid Assessment of Exposure to Particulate Emissions From Surface Contamination Sites. EPA/600/8-85/002. Office of Health and Environmental Assessment. Washington, DC.

USEPA. 1986. Measurement of Gaseous Emission Rates From Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, EPA Contract No. 68-02-3889, Radian Corporation, February.

USEPA. 1989. Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual (Part A). Interim Final. Office of Emergency and Remedial Response, Washington, DC. USEPA/540/1-89/002. December.

USEPA. 1991a. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions. Memorandum from D.R. Clay, Assistant Administrator, USEPA. OSWER Directive 9355.0-30, April.

USEPA. 1991b. Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual. Supplemental Guidance ‘Standard Default Exposure Factors’. Office of Emergency and Remedial Response, Washington, DC. OSWER Directive 9285.3-03. March.

USEPA. 1991c. Current Regulatory Issues in Risk Assessment and Risk Management. Executive Office of the President. Government Printing Office, Washington, DC. S/N 041 001 00354 1.

USEPA. 1992a. Guidance for Data Usability in Risk Assessment. Part A. Office of Emergency and Remedial Response, Washington DC. Publication 9285.7-09A. PB92-963356. April.

USEPA. 1992b. Guidelines for Exposure Assessment. Federal Register, 57(104):22888-22938. May 29.

USEPA. 1992c. Supplemental Guidance to RAGS: Calculating the Concentration Term. Office of Emergency and Remedial Response, Washington, DC. Publication 9285.7-08I. May.

USEPA. 1996. Soil Screening Guidance: Technical Background Document. Office of Emergency and Remedial Response, Washington, DC. USEPA/540/R-96/018. April.

USEPA. 1997. Exposure Factors Handbook. Office of Research and Development, Washington DC. USEPA/600/P-95/002Fa-c. August.

USEPA. 1999. National Functional Guidelines for Organic Data Review. EPA 540/R-99-008. OSWER 9240.1-05A-P. October.

USEPA. 2000. Soil Screening Guidance for Radionuclides. Office of Radiation and Indoor Air, Washington, DC. USEPA/540-R-00-007 and USEPA/540-R-00-006.

USEPA. 2002a. Guidance for Quality Assurance Project Plans. EPA QA/G-5. Office of Environmental Information, Washington, DC. December.

USEPA. 2002b. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response, Washington, DC. OSWER 9355.4-24. December.

USEPA. 2002c. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. Office of Emergency and Remedial Response, Washington, DC. OSWER 9285.6-10. December.

USEPA. 2002d. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) EPA 530-f-02-052. November.

USEPA. 2003a. Contract Laboratory Program Statement of Work for Organic Analysis: Multi-media, Multi-concentration. OLM04.3. Office of Emergency and Remedial Response. March.

USEPA. 2003b. Technical Support Document for a Protocol to Assess Asbestos-Related Risk. Final Draft. Office of Solid Waste and Emergency Response, Washington, DC.

USEPA. 2003c. Memorandum on Human Health Toxicity Values in Superfund Risk Assessments, from Michael B. Cook, Director, Office of Superfund Remediation and

Technology Innovation to Superfund Remediation Policy Managers, Regions 1 - 10, dated December 5. OSWER Directive 9285.7-53.

USEPA. 2004a. Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK). Office of Solid Waste and Emergency Response.

USEPA. 2004b. Contract Laboratory Program Statement of Work for Organic Analysis: Multi-media, Multi-concentration. SOM01.0. Office of Emergency and Remedial Response. October.

USEPA. 2004c. Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-media, Multi-concentration. ILM05.3. Office of Emergency and Remedial Response. March.

USEPA. 2004d. National Functional Guidelines for Inorganic Data Review. EPA 540-R-04-004. OSWER 9240.1-45. October.

USEPA. 2004e. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Office of Emergency and Remedial Response, Washington, DC. EPA/540/R/99/005. July.

USEPA. 2004f. Memorandum on Clarifying Cleanup Goals and Identification of New Assessment Tools for Evaluating Asbestos at Superfund Cleanups, from Michael B. Cook, Director, Office of Superfund Remediation and Technology Innovation to Superfund Remediation Policy Managers, Regions 1-10, August. OSWER Directive 9345.4-05.

USEPA. 2005a. National Functional Guidelines for Chlorinated Dioxin/Furan Data Review. EPA 540-R-05-001. OSWER 9240.1-51. September.

USEPA. 2005b. Guidelines for Carcinogen Risk Assessment. Risk Assessment Forum, Washington, DC. March.

USEPA. 2008. National Functional Guidelines for Superfund Organic Methods Data Review. EPA 540-R-08-01. OSWER 9240.1-48. June.

USEPA. 2009. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment). EPA-540-R-070-002. http://www.epa.gov/oswer/ riskassessment/ ragsf/.

USEPA. 2010. Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds. Risk Assessment Forum, Washington, DC. EPA/600/R-10/005.

USEPA. 2013. Integrated Risk Information System. USEPA on-line database: http://www.epa.gov/iris/index.html.

Western Regional Climate Center. 2008. Monthly average precipitation for Las Vegas. Desert Research Institute. <http://www.wrcc.dri.edu/summary/Climsmnv.html>.

Weston. 1993. Site Conceptual Model, Stauffer/Pioneer/Montrose Site, Henderson, Nevada, September.

APPENDIX B

TRIANGLE COMMERCIAL SUB-AREA INVESTIGATION DATA TABLES

(Note that all report files, including the database, are on the report CD included in this appendix)

LIST OF TABLES (APPENDIX B)

TABLE B-1
ASBESTOS RESULTS AND ANALYTICAL SENSITIVITIES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 1)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Analytical Sensitivity (10^6 s/gPM$_{10}$)	Concentration Protocol Structures[1] Chrysotile (10^6 s/gPM$_{10}$)	Concentration Protocol Structures[1] Amphibole (10^6 s/gPM$_{10}$)	Number of Protocol Structures[2] Chrysotile Total	Chrysotile Long	Chrysotile Qualifier	Amphibole Total	Amphibole Long	Amphibole Qualifier
STC1-AI15	0	NORM	06/11/10	2.960	< 8.850 E+6	< 8.850 E+6	0	0		0	0	
STC1-AI15	0	FD	06/11/10	2.960	< 8.850 E+6	< 8.850 E+6	0	0		0	0	
STC1-AI16	0	NORM	06/11/10	3.000	2.700 E+7	< 8.970 E+6	12	9		0	0	
STC1-AJ15	0	NORM	06/11/10	2.980	< 8.900 E+6	< 8.900 E+6	0	0		0	0	
STC1-AJ16	0	NORM	06/11/10	2.950	8.820 E+6	< 8.820 E+6	2	2		1	0	
STC1-AJ18	0	NORM	05/28/10	2.970	< 8.880 E+6	< 8.880 E+6	0	0		0	0	
STC1-AJ18	0	FD	05/28/10	2.990	< 8.930 E+6	< 8.930 E+6	0	0		0	0	
STC1-AK15	0	NORM	06/11/10	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	
STC1-AK20	0	NORM	06/10/10	17.200	< 5.130 E+7	< 5.130 E+7	0	0	J	0	0	J
STC1-JB12	0	NORM	10/15/10	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	
STC1-JD02	0	NORM	06/11/10	2.990	8.930 E+6	< 8.930 E+6	2	1		0	0	
STC1-JD03	0	NORM	06/11/10	2.970	< 8.870 E+6	< 8.870 E+6	5	0		0	0	
STC1-JD04	0	NORM	06/11/10	2.990	< 8.930 E+6	< 8.930 E+6	0	0		0	0	
STC1-JD05	0	NORM	06/11/10	2.990	< 8.950 E+6	< 8.950 E+6	0	0		1	0	
STC1-JD06	0	NORM	06/11/10	3.000	< 8.970 E+6	< 8.970 E+6	0	0		0	0	
STC1-JD07	0	NORM	06/11/10	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	
STC1-JD08	0	NORM	06/11/10	2.960	8.880 E+6	< 8.850 E+6	3	3	J	0	0	
STC1-JD08	0	FD	06/11/10	2.990	8.950 E+6	< 8.950 E+6	2	1	J	0	0	
STC1-JD09	0	NORM	06/11/10	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	
STC1-JD10	0	NORM	06/10/10	2.980	7.150 E+7	< 8.910 E+6	39	24		0	0	
STC1-JD11	0	NORM	06/10/10	2.980	2.380 E+7	< 8.900 E+6	13	8		0	0	
STC1-JD12	0	NORM	06/10/10	2.960	1.780 E+7	< 8.850 E+6	15	6		0	0	
STC1-JD13	0	NORM	06/10/10	3.000	9.000 E+6	< 8.970 E+6	3	3		0	0	
STC1-JD14	0	NORM	06/10/10	2.990	1.500 E+7	< 8.940 E+6	8	5	J	0	0	
STC1-JD14	0	FD	06/10/10	2.970	8.870 E+6	< 8.870 E+6	4	1	J	0	0	
STC1-JD15	0	NORM	06/10/10	2.980	< 8.900 E+6	< 8.900 E+6	0	0		0	0	
STC6-AI16	0	NORM	07/20/12	2.960	8.860 E+6	< 8.860 E+6	8	1		0	0	
STC6-ES01	0	NORM	07/20/12	2.980	8.940 E+6	< 8.910 E+6	11	3		0	0	
STC6-JD10	0	NORM	07/20/12	6.400	1.410 E+8	< 1.910 E+7	61	22		0	0	
STC6-JD11	0	NORM	07/23/12	20.600	5.760 E+8	< 6.150 E+7	46	28		0	0	
STC7-JD10	0	NORM	12/11/12	2.990	< 8.930 E+6	< 8.930 E+6	0	0		0	0	
STC7-JD11	0	NORM	12/11/12	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	
TMC1-JD01	0	NORM	03/30/10	2.990	< 8.940 E+6	< 8.940 E+6	0	0		0	0	
TMC1-JD01	0	FD	03/30/10	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	
TMC1-JD02	0	NORM	03/30/10	3.000	< 8.960 E+6	< 8.960 E+6	0	0		0	0	

(1) Fiber dimensions are presented in the respective analytical reports for each sample. Protocol structure concentrations are presented for informational purposes only.

(2) Protocol structures are > 5 µm in length and < 0.4 µm in width. Only long protocol structures (>10µm) present a potential risk and are used for estimating asbestos risks.

= Data not included in risk assessment. Sample location excavated and data replaced with post-excavation data.

TABLE B-2
SOIL DIOXINS/FURANS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Dioxins/Furans								
				1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDD	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HCDF	1,2,3,7,8,9-HxCDD
BDW-F High	0	NORM	2/6/2013	3.6 J	0.69 J	2.4 J	1.5 J	< 0.051 U	0.91 J	0.24 J	0.19 J	0.15 J
BDW-F Low	0	NORM	2/6/2013	12	2.4 J	4.5 J	4.6 J	< 0.18 U	2.8 J	0.59 J	0.58 J	0.44 J
BDW-S S Wall	0	NORM	2/6/2013	3.8 J	0.8 J	1.1 J	1.5 J	0.086 J	1 J	0.31 J	0.19 J	0.28 J
GES-JWT-1	0	NORM	3/4/2013	1 J	0.41 J	0.34 J	0.6 J	< 0.15 U	0.4 J	< 0.12 U	< 0.34 U	< 0.11 U
GES-JWT-10	0	NORM	3/4/2013	200	52	91	92	3.4 J	51	5.5	< 6.4 U	4.6 J
GES-JWT-11	0	NORM	3/4/2013	30000	2200	11000	14000	320	7900	610	< 950 U	700
GES-JWT-12	0	NORM	3/4/2013	1900	300	690	910	27	440	53	< 57 U	52
GES-JWT-13	0	NORM	3/4/2013	4200	1800	2600	6200	110	1300	340	< 170 U	270
GES-JWT-14	0	NORM	3/4/2013	580	65	220	300	8.8	140	17	< 15 U	18
GES-JWT-15	0	NORM	3/4/2013	220	23	85	98	3.4 J	50	6.3	6.1	6.6
GES-JWT-16	0	NORM	3/4/2013	28	2.9 J	12	15	0.45 J	8.3	0.98 J	0.94 J	0.93 J
GES-JWT-17	0	NORM	3/4/2013	46000 J	5000	17000	24000	760	13000	1500	1300	1700
GES-JWT-18	0	NORM	3/4/2013	560	88 J	170	220	8.8	120	14	< 13 U	15
GES-JWT-18	0	FD	3/4/2013	690	230 J	200	260	8.4	140	19	< 13 U	17
GES-JWT-19	0	NORM	3/4/2013	17000	1300	6900	7600	260	3700	450	510	470
GES-JWT-2	0	NORM	3/4/2013	29	2.7 J	12	12	0.24 J	7.2	0.69 J	0.66 J	0.56 J
GES-JWT-3	0	NORM	3/4/2013	12 J	2.2 J	4.3 J	5.7 J	< 0.26 U	3.2 J	0.37 J	< 0.43 UJ	0.52 J
GES-JWT-4	0	NORM	3/4/2013	1800	630	1200	3400	39 J	660	73 J	< 55 U	69 J
GES-JWT-5	0	NORM	3/4/2013	610	330	260	300	7.2	160	15	23	18
GES-JWT-6	0	NORM	3/4/2013	1100	130	430	480	11	270	24	30	25
GES-JWT-7	0	NORM	3/4/2013	760	690	600	1700	22 J	280	35 J	< 30 U	37 J
GES-JWT-8	0	NORM	3/4/2013	1600	520	1100	3100	17 J	520	42 J	< 46 U	32 J
GES-JWT-9	0	NORM	3/4/2013	970	600 J	700	2600	< 86 U	1000 J	83 J	< 66 U	69 J
GES-JWT-9	0	FD	3/4/2013	1200	230 J	930	3200	52 J	670 J	34 J	< 43 U	66 J
STC10-JW02	0	NORM	5/12/2014	6800	720	3000	3300	95	1700	200	250	210
STC11-JW02	0	NORM	8/7/2014	1200	110	470	580	14	330	33	45	31
STC1-AI15	0	NORM	6/4/2010	< 0.94 U	< 0.94 U	< 1.1 U	< 0.33 U	< 0.57 U	< 0.26 U	< 0.45 U	< 0.35 U	< 0.44 U
STC1-AI15	0	FD	6/4/2010	5.1 J	< 1.8 UJ	< 1.7 UJ	< 1.2 U	< 0.98 U	< 0.51 U	< 0.77 U	< 0.66 U	< 0.76 U
STC1-AI16	0	NORM	6/7/2010	4.2 J	< 1 U	< 1.5 U	< 1.9 U	< 0.56 U	< 0.94 U	< 0.44 U	< 0.5 U	< 0.44 U
STC1-AJ15	0	NORM	6/7/2010	1100 J	300 J	750 J	2200 J	< 24 U	290 J	< 36 U	< 31 U	< 22 U
STC1-AJ15	0	FD	6/7/2010	15 J	2.9 J	7 J	5.9 J	< 0.77 U	4 J	< 0.61 U	< 0.59 U	< 0.6 U
STC1-AJ16	0	NORM	6/7/2010	93	16	33	38	< 1.1 U	22	< 2.1 U	3.5 J	< 1.6 U
STC1-AJ18	0	NORM	5/24/2010	14	< 1.9 U	6.2	6.8	< 0.38 U	4.1 J	< 0.54 U	< 0.84 U	< 0.56 U
STC1-AK15	0	NORM	6/3/2010	45	5.5 J	19	17	< 0.59 U	14	< 1.3 U	3 J	< 1.4 U
STC1-AK15	0	FD	6/3/2010	34 J	4.5 J	17 J	13	< 0.51 U	11	< 0.87 U	2.6 J	< 1 U
STC1-AK20	0	NORM	5/27/2010	< 0.43 U	< 0.2 U	< 0.19 U	< 0.083 U	< 0.057 U	< 0.088 U	< 0.049 U	< 0.096 U	< 0.048 U
STC1-AK20	0	FD	5/27/2010	< 0.65 U	< 0.29 U	< 0.29 U	< 0.33 U	< 0.034 U	< 0.23 U	< 0.064 U	< 0.086 U	< 0.065 U
STC1-JB12	0	NORM	8/30/2010	7.6	< 2.2 U	3 J	3.4 J	< 0.16 U	< 2.3 U	< 0.26 U	< 0.48 U	< 0.31 U

TABLE B-2
SOIL DIOXINS/FURANS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Dioxins/Furans								
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDD	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HCDF	1,2,3,7,8,9-HxCDD
STC1-JD02	0	NORM	6/4/2010	38	8.8	15	14	< 0.84 U	8.1	< 1.3 U	< 1.3 U	< 1.1 U
STC1-JD03	0	NORM	6/4/2010	84	56	24	27 J+	< 1.2 U	16 J+	3.2 J	2.5 J+	< 1.4 U
STC1-JD04	0	NORM	6/4/2010	420	74	160	190 J+	6.2	110 J+	12	21 J+	11
STC1-JD05	0	NORM	6/4/2010	68	12	23	31 J+	< 1.1 U	18 J+	< 2.2 U	3 J+	< 1.6 U
STC1-JD06	0	NORM	6/3/2010	810	84	400	340	10	210	20	51	21
STC1-JD07	0	NORM	6/7/2010	96	10	43	45	< 1.3 U	24	3.1 J	3.7 J	< 1.8 U
STC1-JD08	0	NORM	5/20/2010	< 1.8 UJ	< 0.66 UJ	< 0.96 UJ	< 1.1 UJ	< 0.29 UJ	< 0.62 UJ	< 0.25 UJ	< 0.27 UJ	< 0.24 UJ
STC1-JD08	0	FD	5/20/2010	1300 J	99 J	800 J	670 J	14 J	330 J	28 J	71 J	25 J
STC1-JD09	0	NORM	5/20/2010	< 1.3 UJ	< 0.93 UJ	< 0.61 UJ	< 0.5 U	< 0.31 U	< 0.22 U	< 0.27 U	< 0.21 U	< 0.26 U
STC1-JD10	0	NORM	5/21/2010	2900 J	320	1300	1700	59	910	110	120	87
STC1-JD11	0	NORM	5/21/2010	2800	330	910	1400	64	620	78	81	64
STC1-JD12	0	NORM	5/21/2010	< 2.2 U	4.5 J	< 0.71 U	< 0.55 U	< 0.1 U	< 0.46 U	< 0.18 U	< 0.11 U	< 0.18 U
STC1-JD12	0	FD	5/21/2010	< 1.7 U	3.3 J	< 0.47 U	< 0.59 U	< 0.23 U	< 0.29 U	< 0.16 U	< 0.26 U	< 0.13 U
STC1-JD13	0	NORM	5/21/2010	< 1.2 UJ	< 0.37 UJ	< 0.74 UJ	< 1.6 U	< 0.25 U	< 0.56 U	< 0.18 U	< 0.2 U	< 0.16 U
STC1-JD14	0	NORM	6/1/2010	200 J	23 J	94 J	88 J	< 2.6 U	58 J	6.2	9.2	4.8 J
STC1-JD14	0	FD	6/1/2010	2.9 J	< 0.44 UJ	< 1.4 UJ	< 1.7 UJ	< 0.11 U	< 1.4 UJ	< 0.16 U	< 0.16 U	< 0.14 U
STC1-JD15	0	NORM	6/1/2010	< 0.16 U	< 0.19 U	< 0.12 U	< 0.053 U	< 0.059 U	< 0.065 U	< 0.13 U	< 0.051 U	< 0.092 U
STC6-AJ15	0	NORM	7/20/2012	320	56	160	220	5.7	110	11	14	10
STC6-ES01	0	NORM	7/20/2012	1500	150	710	630	25	390	54	75	43
STC6-JD04	0	NORM	7/20/2012	380	44	150	150	6.5	96	13	12	12
STC6-JD06	0	NORM	7/20/2012	88	14	37	38	1.3 J	29	2.7 J	3.2 J	2.7 J
STC6-JD08	0	NORM	7/20/2012	740	79	360	320	11	210	24	40	22
STC6-JD10	10	NORM	7/20/2012	980	140	370	410	25	250	39	38	26
STC6-JD11	10	NORM	7/23/2012	540	88	250	270	12	150	24	36 J	19 J
STC6-JD14	0	NORM	7/23/2012	88 J	10 J	44 J	43	1.4 J	27	3.9 J	5.2 J	2.6 J
STC6-JD14	0	FD	7/23/2012	80 J	9.7 J	45 J	42	1.4 J	24	3.3 J	6.6 J	2.6 J
STC7-AJ15	0	NORM	12/13/2012	410	410	210	520	10	120	26	15	14
STC7-AJ15	0	FD	12/13/2012	400	410	220	540	10	130	28	15	14
STC7-ES01	0	NORM	12/11/2012	26	2.4 J	13	11	0.45 J	7.6	0.89 J	1.3 J	0.78 J
STC7-JD04	0	NORM	12/19/2012	420	46	160	180	5.9	96	9.8	13	9.5
STC7-JD08	0	NORM	12/11/2012	28	3.4 J	16	15	0.44 J	10	1.2 J	1.6 J	1.3 J
STC7-JD10	10	NORM	12/11/2012	46	6.8	22	18	0.66 J	13	3.7 J	3.7 J	3.7 J
STC7-JD11	10	NORM	12/11/2012	6.2	2.7 J	2.8 J	2.8 J	< 0.16 U	1.6 J	0.76 J	0.31 J	0.63 J
STC8-AJ15	0	NORM	2/5/2013	88	7.9	32	37	< 0.71 U	28	2.5 J	4 J	1.5 J
STC8-JD10	10	NORM	2/5/2013	0.49 J	0.72 J	0.24 J	< 0.27 U	< 0.025 U	0.24 J	0.19 J	0.16 J	0.1 J
STC8-Prov3	0	NORM	2/6/2013	2.6 J	1.2 J	2.1 J	2.5 J	< 0.037 U	0.8 J	0.33 J	< 0.081 U	0.24 J
STC8-Prov4	0	NORM	2/6/2013	240	21	93	90	3.4 J	65	7	10	5.4
STC8-Prov4	0	FD	2/6/2013	190	18	74	80	2.5 J	51	6.5	6.7	4.6 J

TABLE B-2
SOIL DIOXINS/FURANS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Dioxins/Furans								
				1,2,3,4,6,7,8-HpCDF	1,2,3,4,6,7,8-HpCDD	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HCDF	1,2,3,7,8,9-HxCDD
STC8-Prov5	0	NORM	2/6/2013	110	10	41	38	1.7 J	29	3.4 J	4.7 J	2.5 J
STC8-Prov6	0	NORM	2/6/2013	43	9.4	15	21	1 J	12	2.5 J	1.8 J	2.1 J
STC8-Prov7	0	NORM	2/6/2013	8.1	2 J	3.2 J	4 J	< 0.041 U	2.4 J	0.59 J	0.39 J	0.53 J
STC9-JW01	0	NORM	12/19/2013	1300	120	530	650	17	330	31	42	35
STC9-JW02	0	NORM	12/19/2013	6900	750	2900	3300	89	1800	190	280	180
STC9-JW03	0	NORM	12/19/2013	180	21	63	76	1.7 J	40	4.1 J	5.4	3.6 J
STC9-JW04	0	NORM	12/19/2013	3200	490	1400	1700	40	840	170	120	110
STC9-JW05	0	NORM	12/19/2013	210 J	26 J	69 J	99 J	3 J	52 J	9.9 J	6.8 J	6.3 J
STC9-JW05	0	FD	12/19/2013	420 J	39 J	140 J	260 J	6.3	160 J	16 J	16 J	12 J
STC9-JW06	0	NORM	12/19/2013	78	13	28	34	1.2 J	21	2.6 J	2.3 J	1.5 J
STC9-JW07	0	NORM	12/19/2013	970	94	370	490	13	270	28	43	26
STC9-JW08	0	NORM	12/19/2013	48	13	16	29	0.72 J	14	1.6 J	1.6 J	1.1 J
STC9-JW09	0	NORM	12/19/2013	1800	230	760	960	25	500	55	67	50
STC9-JW10	0	NORM	12/19/2013	2200 J	280	750	1200	32	610	75	67	66
STC9-JW11	0	NORM	12/19/2013	660	270	330	380	6.1	240	28	97	22
STC9-JW12	0	NORM	12/19/2013	560	70	210	300	8.9	170	19	19	18
STC9-JW13	0	NORM	12/20/2013	42	13	14	19	0.48 J	11	0.97 J	1.1 J	1.3 J
STC9-JW14	0	NORM	12/20/2013	160	24	59	85	2.3 J	42	4.9 J	4.1 J	4.6 J
STC9-JW15	0	NORM	12/20/2013	950 J	170 J	370 J	880 J	18 J	280 J	25	29	17
STC9-JW15	0	FD	12/20/2013	1700 J	360 J	790 J	1500 J	32 J	480 J	50 J	49	20 J
STC9-JW16	0	NORM	12/20/2013	430	140	200	420	9.6 J	120	13	8.1 J	10
STC9-JW17	0	NORM	12/20/2013	570	210	240	490	9.5 J	140	18	11	12
STC9-JW18	0	NORM	12/20/2013	2700	250	1100	1200	33	640	58	83	57
STC9-JW19	0	NORM	12/20/2013	1100	450	390	590	16	270	30	31	29
STC9-JW20	0	NORM	12/20/2013	920	170	340	530	13	230	23	26	19
STC9-JW21	0	NORM	12/20/2013	780	360	380	1100	16	230	29	6.2 J	16
STC9-JW22	0	NORM	12/20/2013	47	19	19	39	0.76 J	13	1.4 J	0.62 J	1.2 J
STC9-JW23	0	NORM	12/20/2013	100	47	56	140	1.9 J	33	2.9 J	1.6 J	3 J
STC9-JW24	0	NORM	12/20/2013	970	340	410	870	12	260	28	20	17
STC9-JW25	0	NORM	12/20/2013	760	830	270	290	11	170	25	28 J	21
STC9-JW25	0	FD	12/20/2013	520	730	170	230	6.8 J	120	17	14 J	12
TMC1-JD01	0	NORM	3/30/2010	12 J	< 1.9 U	5.3 J	4.9 J	< 0.21 U	< 2.8 U	< 0.32 U	< 0.48 U	< 0.39 U
TMC1-JD02	0	NORM	3/30/2010	180 J	33 J	78 J	65 J	2.8 J	37 J	5.2 J	6.4	4.7 J
TMC1-JD02	0	FD	3/30/2010	< 1.8 UJ	< 1 UJ	< 0.84 UJ	< 0.71 UJ	< 0.22 U	< 0.4 UJ	< 0.24 U	< 0.15 U	< 0.29 U

All units in pg/g.

-- = no sample data.

(shaded) = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-2
SOIL DIOXINS/FURANS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 4 of 6)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Dioxins/Furans								
				1,2,3,7,8-PeCDF	1,2,3,7,8-PeCDD	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF	2,3,7,8-TCDF	2,3,7,8-TCDD	OCDD	OCDF	TCDD TEQ
BDW-F High	0	NORM	2/6/2013	0.9 J	< 0.12 U	0.28 J	0.61 J	1.5	0.18 J	1.8 J	54 J	1.2
BDW-F Low	0	NORM	2/6/2013	2.2 J	< 0.1 U	0.78 J	1.5 J	9.4	< 0.084 U	5.5 J	60	3.4
BDW-S S Wall	0	NORM	2/6/2013	0.69 J	< 0.099 U	0.22 J	0.62 J	1.1	< 0.079 U	1.8 J	52	1
GES-JWT-1	0	NORM	3/4/2013	< 0.19 U	< 0.16 U	< 0.3 U	< 0.19 U	0.49 J	< 0.19 U	1.8 J	4.5 J	0.45
GES-JWT-10	0	NORM	3/4/2013	35	2.3 J	12	36	36	< 0.58 U	490	700	43
GES-JWT-11	0	NORM	3/4/2013	5700	300	2100	2900	1900	97 J	2500	81000	4800
GES-JWT-12	0	NORM	3/4/2013	310	20	140	240	280	8.3	1600	9900 J	350
GES-JWT-13	0	NORM	3/4/2013	600	80 J	310	1600	720	30 J	2700	62000	1700
GES-JWT-14	0	NORM	3/4/2013	99	6.3	31	70	72	2.3	100	2500	110
GES-JWT-15	0	NORM	3/4/2013	41	2.9 J	13	25	280	1.5	39	730	65
GES-JWT-16	0	NORM	3/4/2013	7	0.62 J	2.2 J	4.1 J	6.5	0.3 J	4.3 J	66	6.5
GES-JWT-17	0	NORM	3/4/2013	10000	850	4600	5400	7700	420 J	4500	120000 J	9500
GES-JWT-18	0	NORM	3/4/2013	92	6.2	35	54	67	2.3	610 J	4900 J	95
GES-JWT-18	0	FD	3/4/2013	110	6.8	46	56	81	2.5	2500 J	5900 J	110
GES-JWT-19	0	NORM	3/4/2013	3900	340	1100	2200	4800	180	1500	150000 J	3700
GES-JWT-2	0	NORM	3/4/2013	4 J	0.35 J	2.1 J	2.1 J	1.9	< 0.22 U	5.3 J	90	4.2
GES-JWT-3	0	NORM	3/4/2013	2 J	< 0.36 UJ	0.96 J	0.89 J	1.1 J	< 0.46 UJ	33 J	29 J	2.2
GES-JWT-4	0	NORM	3/4/2013	620	35 J	170	1700	4500	< 15 U	1400	11000	2400
GES-JWT-5	0	NORM	3/4/2013	110	7.8	48	60	64	2.7	2900	3300	110
GES-JWT-6	0	NORM	3/4/2013	190	13	67	100	110	4.2	530	4400 J	180
GES-JWT-7	0	NORM	3/4/2013	200	< 9.1 U	55 J	660	1800	< 9.2 U	2000	6200	1700
GES-JWT-8	0	NORM	3/4/2013	490	< 10 U	100 J	1200	3400	< 9.4 U	1400	11000	1900
GES-JWT-9	0	NORM	3/4/2013	< 100 U	< 160 U	97 J	2300 J	--	< 190 U	1300	7600	1500
GES-JWT-9	0	FD	3/4/2013	160	< 15 U	140	3300	9400 J	< 19 U	790 J	5000 J	2700
STC10-JW02	0	NORM	5/12/2014	1400	140 J+	500	830	990 J	49	750	23000	1300
STC11-JW02	0	NORM	8/7/2014	220	17	63	120	120	4.5	240	4200	210
STC1-AI15	0	NORM	6/4/2010	< 0.4 U	< 0.71 U	< 0.32 U	< 0.43 U	< 0.2 U	< 0.39 U	< 1.9 UJ	< 3.1 UJ	0.79
STC1-AI15	0	FD	6/4/2010	< 0.45 U	< 0.99 U	< 0.6 U	< 0.5 U	< 0.47 U	< 0.35 U	< 3.9 UJ	18 J	1.1
STC1-AI16	0	NORM	6/7/2010	< 0.88 U	< 0.69 U	< 0.51 U	< 0.55 U	1 J	< 0.33 U	< 1.3 UJ	17 J	1
STC1-AJ15	0	NORM	6/7/2010	260 J	< 47 U	< 75 U	2300 J	370 J	< 35 U	1200 J	6800 J	1200
STC1-AJ15	0	FD	6/7/2010	2.8 J	< 0.82 U	< 1.1 U	< 1.9 UJ	1.7 J	< 0.57 U	14 J	51 J	2.7
STC1-AJ16	0	NORM	6/7/2010	23	< 1.8 U	5 J+	12	15	0.61 J	120	290	18
STC1-AJ18	0	NORM	5/24/2010	3.3 J	< 0.47 U	< 1.3 U	< 1.9 U	3	< 0.21 U	< 4.5 U	45	2.5
STC1-AK15	0	NORM	6/3/2010	11	< 0.98 U	< 2.6 U	5.7	5.9 J	< 0.22 U	21	140	7.9
STC1-AK15	0	FD	6/3/2010	8.1	< 0.72 U	2.6 J	4.3 J	4.3 J	< 0.17 U	22 J	110 J	6.3
STC1-AK20	0	NORM	5/27/2010	< 0.08 U	< 0.039 U	< 0.05 U	< 0.04 U	< 0.098 U	< 0.0085 U	< 2 UJ	< 1.7 UJ	0.068
STC1-AK20	0	FD	5/27/2010	< 0.13 U	< 0.06 U	< 0.11 U	< 0.092 U	< 0.26 U	< 0.042 U	< 1.6 UJ	< 2.9 UJ	0.14
STC1-JB12	0	NORM	8/30/2010	< 2 U	< 0.18 U	< 0.52 U	< 1 U	1.6	< 0.082 U	< 1.3 U	21	1.1

TABLE B-2
SOIL DIOXINS/FURANS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Dioxins/Furans								
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	1,2,3,7,8-PeCDF	1,2,3,7,8-PeCDD	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF	2,3,7,8-TCDF	2,3,7,8-TCDD	OCDD	OCDF	TCDD TEQ
STC1-JD02	0	NORM	6/4/2010	7.4	< 0.98 U	< 2.2 U	4 J	5.1	< 0.44 U	60 J	400 J	7
STC1-JD03	0	NORM	6/4/2010	13	< 0.89 U	3.8 J+	7.7	8.7	< 0.37 U	680	770	18
STC1-JD04	0	NORM	6/4/2010	110	7.2	26 J+	64	66	2.5	480	1700	92
STC1-JD05	0	NORM	6/4/2010	66	< 2.2 U	4.1 J+	34	40	0.9 J	89	470	27
STC1-JD06	0	NORM	6/3/2010	150	12	55	73	75	2.8	230 J	4700 J	170
STC1-JD07	0	NORM	6/7/2010	28	< 2.3 U	6.6 J+	16	36	0.86 J	15	840	22
STC1-JD08	0	NORM	5/20/2010	< 0.65 UJ	< 0.41 UJ	< 0.24 UJ	< 0.29 UJ	0.66 J	< 0.17 UJ	< 1.8 UJ	30 J	0.6
STC1-JD08	0	FD	5/20/2010	320 J	21 J	91 J	160 J	320 J	9.1 J	110 J	21000 J	280
STC1-JD09	0	NORM	5/20/2010	< 0.16 U	< 0.32 U	< 0.22 U	< 0.17 U	< 0.32 U	< 0.12 U	< 4.9 UJ	< 5.6 UJ	0.4
STC1-JD10	0	NORM	5/21/2010	1000	88	270	560	850 J	35	500	17000 J	810
STC1-JD11	0	NORM	5/21/2010	440	41	150	810	360	16	720	23000 J	730
STC1-JD12	0	NORM	5/21/2010	< 0.39 U	< 0.072 U	< 0.3 U	< 0.18 U	0.55 J	< 0.056 U	41 J	6.4 J	1.2
STC1-JD12	0	FD	5/21/2010	< 0.22 U	< 0.23 U	< 0.21 U	< 0.23 U	0.56 J	< 0.19 U	27 J	9.7 J	0.77
STC1-JD13	0	NORM	5/21/2010	< 0.61 U	< 0.23 U	< 0.16 U	< 0.34 U	4.4	< 0.17 U	< 0.77 UJ	6.3 J	1.4
STC1-JD14	0	NORM	6/1/2010	52 J	4.8 J	16 J	34 J	67 J	2.1 J	55 J	1300 J	50
STC1-JD14	0	FD	6/1/2010	< 1 UJ	< 0.11 U	< 0.28 UJ	< 0.62 UJ	1.2 J	< 0.095 UJ	< 2.8 UJ	15 J	0.59
STC1-JD15	0	NORM	6/1/2010	< 0.079 U	< 0.072 U	< 0.06 U	< 0.047 U	< 0.096 U	< 0.044 U	< 0.54 UJ	< 0.57 UJ	0.11
STC6-AJ15	0	NORM	7/20/2012	100	7.1	30	150	84	2.2	210	1200	120
STC6-ES01	0	NORM	7/20/2012	610	40	110	290	550 J	14	220	16000 J	390
STC6-JD04	0	NORM	7/20/2012	64	5.9	24	32	29	1.4	93	1900	62
STC6-JD06	0	NORM	7/20/2012	19	< 0.14 U	6.4	10	12	0.47 J	73	580	17
STC6-JD08	0	NORM	7/20/2012	180	14	58	100	190	6.5	94	5100 J	160
STC6-JD10	10	NORM	7/20/2012	260	27	71	200	270	13	350	7900 J	250
STC6-JD11	10	NORM	7/23/2012	200	17	60	200	3000 J	47	220	4200 J	510
STC6-JD14	0	NORM	7/23/2012	28	2.4 J	8.2 J	16	36	0.98 J	35 J	510 J	24
STC6-JD14	0	FD	7/23/2012	27	2.5 J	11 J	16	31	0.94 J	53 J	510 J	23
STC7-AJ15	0	NORM	12/13/2012	85	4 J	32	290	79	0.77 J	910	2300	240
STC7-AJ15	0	FD	12/13/2012	84	4.1 J	23	310	80	1.4	1000	2600	250
STC7-ES01	0	NORM	12/11/2012	6.2	0.58 J	3.2 J	4.1 J	7.8	0.22 J	3.2 J	470	6.2
STC7-JD04	0	NORM	12/19/2012	76	5.4 J	22	43	44	2	200	4700 J	69
STC7-JD08	0	NORM	12/11/2012	12	1.1 J	3.2 J	6.6	15	0.45 J	3.6 J	160	9.3
STC7-JD10	10	NORM	12/11/2012	73	10	5.6	100	7700 J	140	17	240	960
STC7-JD11	10	NORM	12/11/2012	2.9 J	0.15 J	0.51 J	2.2 J	140	0.6 J	7.6 J	90	17
STC8-AJ15	0	NORM	2/5/2013	24	1.6 J	8.2	19	38	1.1	6.4 J	380	23
STC8-JD10	10	NORM	2/5/2013	< 0.22 U	< 0.053 U	0.14 J	< 0.2 U	0.96 J	< 0.05 U	2.1 J	1.8 J	1.1
STC8-Prov3	0	NORM	2/6/2013	0.99 J	< 0.053 U	0.19 J	0.95 J	97	< 0.079 U	3.1 J	15	14
STC8-Prov4	0	NORM	2/6/2013	57	4.9 J	17	32	53	2.1	21	1900	48
STC8-Prov4	0	FD	2/6/2013	53	3.7 J	15	30	57	2.4	18	2000	43

TABLE B-2
SOIL DIOXINS/FURANS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Dioxins/Furans								
				1,2,3,7,8-PeCDF	1,2,3,7,8-PeCDD	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF	2,3,7,8-TCDF	2,3,7,8-TCDD	OCDD	OCDF	TCDD TEQ
STC8-Prov5	0	NORM	2/6/2013	27	2.1 J	8.4	20	53	1.2	13	1200	27
STC8-Prov6	0	NORM	2/6/2013	83	13	3.7 J	69	810 J	15	18	300	140
STC8-Prov7	0	NORM	2/6/2013	3.9 J	0.29 J	0.55 J	3.4 J	270	3.3	5 J	53	33
STC9-JW01	0	NORM	12/19/2013	280	26	120	150	300	10	160	18000	270
STC9-JW02	0	NORM	12/19/2013	1500	130	740	950	940 J	45	810	24000	1400
STC9-JW03	0	NORM	12/19/2013	34	2.8 J	14	21	34	1.2	88	900	35
STC9-JW04	0	NORM	12/19/2013	830	72	280	420	1000 J	29	640	29000	770
STC9-JW05	0	NORM	12/19/2013	49 J	4.1 J	20 J	26 J	56 J	1.5 J	37	1400	47
STC9-JW05	0	FD	12/19/2013	93 J	9.3	40 J	53 J	34	1.6	38	1800	92
STC9-JW06	0	NORM	12/19/2013	17	1.4 J	5.9	16	17	0.43 J	44	520	25
STC9-JW07	0	NORM	12/19/2013	260	20	62	150	370	8.9	170	8800 J	240
STC9-JW08	0	NORM	12/19/2013	11	0.72 J	3.9 J	9	8.4	0.36 J	120	260	13
STC9-JW09	0	NORM	12/19/2013	370	30	120	250	370	12	750	5300 J	380
STC9-JW10	0	NORM	12/19/2013	400	35	130	250	210	8.2	510	8400 J	420
STC9-JW11	0	NORM	12/19/2013	100	9.7 J	14	170	88	< 2.9 U	2000	2600	220
STC9-JW12	0	NORM	12/19/2013	120	10	37	71	59	2.4	210	2200	120
STC9-JW13	0	NORM	12/20/2013	6.3	0.5 J	3.6 J	3.9 J	4	0.15 J	120	130	7.4
STC9-JW14	0	NORM	12/20/2013	29	2.7 J	15	18	25	0.9 J	130	640	33
STC9-JW15	0	NORM	12/20/2013	170 J	13 J	75	490 J	130	4.3 J	610 J	4000 J	430
STC9-JW15	0	FD	12/20/2013	290 J	22 J	87	1300 J	190	7.6 J	1100 J	7000 J	910
STC9-JW16	0	NORM	12/20/2013	66	5.5 J	40	380	54 J	< 1.5 U	1100	2200	330
STC9-JW17	0	NORM	12/20/2013	91	7.3 J	44	340	100 J	< 1.4 U	1600	2600	350
STC9-JW18	0	NORM	12/20/2013	450	33 J	200	300	220 J	9.5	540	9500 J	460
STC9-JW19	0	NORM	12/20/2013	140	12 J	79	200	61 J	2.7	5100	3400	290
STC9-JW20	0	NORM	12/20/2013	150	12 J	72	230	100 J	2.7	480	3300	330
STC9-JW21	0	NORM	12/20/2013	160	9.8 J	73	630	210 J	< 2.4 U	1300	4500	850
STC9-JW22	0	NORM	12/20/2013	7.9 J	0.54 J	3.9 J	24	7 J	< 0.13 U	150	230	25
STC9-JW23	0	NORM	12/20/2013	24	1.3 J	11	81	37 J	0.41 J	160	680	110
STC9-JW24	0	NORM	12/20/2013	190	11 J	83	350	300	4.3	2400 J	3700 J	470
STC9-JW25	0	NORM	12/20/2013	110	9.6 J	43	83	65	2.6	8900 J	2800 J	130
STC9-JW25	0	FD	12/20/2013	76	6.7 J	42	62	49 J	1.9 J	8000	2400	100
TMC1-JD01	0	NORM	3/30/2010	< 2.5 U	< 0.2 U	< 0.71 U	< 1.5 U	1.6	< 0.096 U	9.5 J	52 J	1.5
TMC1-JD02	0	NORM	3/30/2010	28 J	< 2.7 U	8.9	17 J	19 J	0.81 J	210 J	1600 J	30
TMC1-JD02	0	FD	3/30/2010	< 0.27 UJ	< 0.16 U	< 0.14 U	< 0.14 UJ	0.78 J	< 0.067 U	< 5.2 UJ	9.6 J	0.36

All units in pg/g.
-- = no sample data.
= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-3
SOIL GENERAL CHEMISTRY/IONS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 2)

				General Chemistry/Ions												
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Ammonia	Bromide	Chlorate	Chloride	Cyanide (Total)	Fluoride	Nitrate (as N)	Nitrite (as N)	Orthophosphate as P	Perchlorate	Sulfate	Sulfide	Total Kjeldahl Nitrogen (TKN)
STC1-AI15	0	NORM	6/4/2010	< 0.52 U	< 0.26 U	< 0.37 U	49.9 J	< 0.12 U	1.2	1.3 J	< 0.034 U	< 5.2 U	0.251	247 J	< 0.86 U	84.1
STC1-AI15	0	FD	6/4/2010	< 0.52 U	< 0.26 U	< 0.37 U	92.6 J	< 0.12 U	0.86 J	24.4 J	< 0.034 U	< 5.2 U	0.205	513 J	< 0.86 U	97.1
STC1-AI15	10	NORM	6/4/2010	< 0.52 U	< 0.26 U	0.45 J	174	< 0.12 U	0.91 J	0.97	< 0.035 U	< 5.2 U	1.99	165	< 0.87 U	48.1
STC1-AI16	0	NORM	6/7/2010	< 0.54 U	< 0.27 U	< 0.39 U	23.4	< 0.12 U	0.96 J	5	< 0.035 U	< 5.4 U	0.164	52.6	< 0.89 U	81.4 J
STC1-AI16	10	NORM	6/7/2010	< 0.57 U	< 0.29 U	0.56 J	18	< 0.13 U	0.94 J	0.91	< 0.038 U	< 5.7 U	4.58	11.7	< 0.95 U	48.2 J
STC1-AJ15	0	NORM	6/7/2010	< 0.53 U	< 0.26 U	< 0.38 U	231 J	< 0.12 U	0.48 J	26.2 J	< 0.035 U	< 5.3 U	0.495 J	117 J	< 0.88 U	129 J
STC1-AJ15	0	FD	6/7/2010	< 0.57 U	< 0.29 U	< 0.41 U	3.2 J	< 0.13 U	0.78 J	0.51 J	< 0.038 U	< 5.7 U	1.71 J	20.9 J	< 0.95 U	113 J
STC1-AJ15	10	NORM	6/7/2010	< 0.57 U	< 0.28 U	< 0.41 U	10.3	< 0.13 U	1 J	1.3	< 0.037 U	< 0.62 U	0.863	21.6	< 0.94 U	53.6 J
STC1-AJ16	0	NORM	6/7/2010	< 0.53 U	< 0.27 U	< 0.38 U	216	< 0.12 U	0.49 J	40.2	< 0.035 U	< 5.3 U	2.45	150	< 0.88 U	84.3 J
STC1-AJ16	10	NORM	6/7/2010	< 0.54 U	< 0.27 U	< 0.39 U	274	< 0.12 U	3.9	15.2	< 0.036 U	< 0.59 U	0.455	247	< 0.89 U	51.1 J
STC1-AJ18	0	NORM	5/24/2010	< 0.58 U	< 0.29 U	3 J	167	< 0.13 U	1.2	17.4	0.096 J	< 0.64 U	0.0303 J	1820	< 0.97 U	98.4 J-
STC1-AJ18	12	NORM	5/24/2010	< 0.099 U	0.53 J	6.7	202	< 0.12 U	0.97 J	3.8	< 0.035 U	< 5.4 U	3.32	71.8	< 0.89 U	40.7 J-
STC1-AK15	0	NORM	6/3/2010	< 0.57 U	< 0.28 U	< 0.41 U	6.5 J	< 0.13 U	0.5 J	1 J	< 0.037 U	< 5.7 U	0.644 J	22.4 J	< 0.94 U	80.1
STC1-AK15	0	FD	6/3/2010	< 0.53 U	0.66 J	< 0.38 U	252 J	< 0.12 U	0.45 J	18.2 J	< 0.035 U	< 5.3 U	3.94 J	138 J	< 0.87 U	107
STC1-AK15	3	NORM	6/3/2010	< 0.52 U	2.4 J	< 0.38 U	578	< 0.12 U	0.74 J	1.3	< 0.035 U	< 0.57 U	3.87	145	< 0.87 U	69
STC1-AK15	13	NORM	6/3/2010	< 0.56 U	< 0.28 U	0.42 J	42.3	< 0.12 U	1.2	0.23	< 0.037 U	< 0.61 U	2.65	58.3	< 0.93 U	56.9
STC1-AK20	0	NORM	5/27/2010	< 0.53 U	< 0.26 U	< 0.38 U	74.2 J	< 0.12 U	0.93 J	5.4 J	< 0.035 U	< 5.3 U	0.237 J	45.2 J	< 0.88 U	68.6
STC1-AK20	0	FD	5/27/2010	< 0.56 U	< 0.28 U	0.59 J	201 J	< 0.12 U	0.98 J	14.4 J	< 0.037 U	< 0.61 U	1.39 J	1800 J	< 0.92 U	102
STC1-AK20	6	NORM	5/27/2010	< 0.54 U	1.9 J	1.8 J	482	< 0.12 U	0.51 J	53.7	< 0.036 U	< 0.59 U	3.16	400	< 0.9 U	80.7
STC1-AK20	16	NORM	5/27/2010	< 0.52 U	< 0.26 U	1.1 J	72.3	< 0.12 U	1.7	5	< 0.035 U	< 0.57 U	2.89	31.8	< 0.87 U	92.4
STC1-JB12	0	NORM	8/30/2010	< 0.54 U	< 0.27 U	0.94 J	21	< 0.12 U	0.82 J	0.49	< 0.036 U	8.2	< 0.0108 U	23.5	< 0.89 U	35.6
STC1-JB12	10	NORM	8/30/2010	< 0.55 U	< 0.27 U	0.66 J	67.7	< 0.12 U	1.4	0.67	< 0.036 U	4.7 J	< 0.0111 U	35.3	< 0.91 U	61.9
STC1-JD02	0	NORM	6/4/2010	< 0.53 U	< 0.27 U	< 0.38 U	0.61 J	< 0.12 U	0.53 J	0.25	< 0.035 U	< 5.3 U	< 0.0109 U	3.3 J	< 0.88 U	65.1
STC1-JD02	10	NORM	6/4/2010	< 0.55 U	< 0.27 U	< 0.39 U	1.1 J	< 0.12 U	1.5	0.065 J	< 0.036 U	< 5.5 U	< 0.0109 U	7.8	< 0.91 U	41.2
STC1-JD03	0	NORM	6/4/2010	< 0.53 U	0.66 J	< 0.38 U	608	< 0.12 U	0.82 J	32.8	< 0.035 U	< 5.3 U	0.0758	235	< 0.87 U	168
STC1-JD03	10	NORM	6/4/2010	< 0.52 U	< 0.26 U	< 0.37 U	4.9	< 0.12 U	2	2.3	< 0.034 U	< 0.56 U	< 0.0106 U	32.9	< 0.86 U	96.9
STC1-JD04	0	NORM	6/4/2010	1.2	< 0.26 U	< 0.37 U	62.5	< 0.12 U	0.66 J	55.4	0.1 J	6.5	0.0658	366	< 0.85 U	386
STC1-JD04	10	NORM	6/4/2010	< 0.55 U	< 0.28 U	< 0.4 U	2.7	< 0.12 U	2.2	1.4	< 0.037 U	< 5.5 U	< 0.011 U	34.9	< 0.92 U	66.3
STC1-JD05	0	NORM	6/4/2010	0.62	< 0.26 U	< 0.37 U	28.9	< 0.12 U	1.9	0.17 J	< 0.034 U	< 5.2 U	< 0.0111 U	265	< 0.86 U	236
STC1-JD05	10	NORM	6/4/2010	< 0.55 U	< 0.27 U	< 0.39 U	30.7	< 0.12 U	1.4	5.2	< 0.036 U	< 5.5 U	0.039 J	35	< 0.91 U	56.9
STC1-JD06	0	NORM	6/3/2010	1.3	< 0.26 U	< 0.38 U	3.1	< 0.12 U	1.5	1.4	< 0.035 U	< 5.3 U	< 0.0108 U	16.7	< 0.88 U	412
STC1-JD06	10	NORM	6/3/2010	< 0.55 U	< 0.27 U	< 0.39 U	0.6 J	< 0.12 U	1.7	0.37	< 0.036 U	< 5.5 U	< 0.0109 U	17	< 0.91 U	77
STC1-JD07	0	NORM	6/7/2010	< 0.53 U	< 0.27 U	< 0.38 U	19.6	< 0.12 U	0.93 J	2.1	< 0.035 U	< 5.3 U	1.66	50.9	< 0.88 U	57.8 J
STC1-JD07	4	NORM	6/7/2010	0.57	0.31 J	< 0.39 U	203	< 0.12 U	1.4	12.1	< 0.036 U	< 5.5 U	6	615	< 0.91 U	62.6 J
STC1-JD07	14	NORM	6/7/2010	0.69	< 0.28 U	< 0.4 U	1.3 J	< 0.13 U	0.85 J	0.11 J	< 0.037 U	< 5.6 U	0.279	8.4	< 0.93 U	65 J

TABLE B-3
SOIL GENERAL CHEMISTRY/IONS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 2 of 2)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	General Chemistry/Ions												
				Ammonia	Bromide	Chlorate	Chloride	Cyanide (Total)	Fluoride	Nitrate (as N)	Nitrite (as N)	Orthophosphate as P	Perchlorate	Sulfate	Sulfide	Total Kjeldahl Nitrogen (TKN)
STC1-JD08	0	NORM	5/20/2010	1.5 J	< 0.27 U	< 0.39 U	54.6 J	0.7 J	1.4	4.7 J	0.57 J	< 0.59 U	0.0652 J	790 J	< 0.9 U	80.1
STC1-JD08	0	FD	5/20/2010	< 0.098 UJ	< 0.27 U	0.86 J	228 J	< 0.12 UJ	1 J	12.1 J	< 0.035 UJ	< 0.58 U	4.28 J	260 J	< 0.88 U	58.2
STC1-JD08	10	NORM	5/20/2010	< 0.1 U	< 0.27 U	0.63 J	134	< 0.12 U	1.2	1.6	< 0.036 U	< 0.6 U	2.97	53.2	< 0.91 U	48.6
STC1-JD09	0	NORM	5/20/2010	< 0.11 U	< 0.29 U	< 0.42 U	122	< 0.13 U	1.4	6.3	< 0.038 U	< 0.63 U	3.49	1620	< 0.97 U	61.2
STC1-JD09	10	NORM	5/20/2010	< 0.098 U	< 0.27 U	3.6 J	331	< 0.12 U	3.7	3	< 0.035 U	< 0.58 U	6.04	624	< 0.88 U	56.7
STC1-JD10	0	NORM	5/21/2010	1	0.62 J	< 0.43 U	748	0.46 J+	0.54 J	31.4	< 0.039 U	< 5.9 U	--	216	< 0.99 U	438 J+
STC1-JD10	0	NORM	5/21/2010	--	--	--	--	--	--	--	--	--	27.8	--	--	--
STC1-JD10	10	NORM	5/21/2010	< 0.11 U	< 0.29 U	14.3	74.6	< 0.13 U	3.5	12.4	< 0.039 U	< 5.9 U	--	129	< 0.97 U	51.4 J+
STC1-JD10	10	NORM	5/21/2010	--	--	--	--	--	--	--	--	--	3.12	--	--	--
STC1-JD11	0	NORM	5/21/2010	1.3	0.45 J	< 0.39 U	317	0.12 J	0.51 J	97.8	< 0.036 U	< 5.4 U	0.702	608	< 0.89 U	170
STC1-JD11	10	NORM	5/21/2010	0.61	< 0.29 U	< 0.42 U	11.7	0.23 J+	6.3	3.6	< 0.038 U	< 5.8 U	0.253	39.6	< 0.96 U	51.4 J+
STC1-JD12	0	NORM	5/21/2010	0.42 J	< 0.26 U	0.66 J	12.7 J	0.4 J+	3.2	4.3 J	< 0.034 U	< 5.2 U	0.371	42.2 J	< 0.86 U	82 J+
STC1-JD12	0	FD	5/21/2010	0.39 J	< 0.28 U	0.85 J	23.1 J	0.24 J+	3.2	8.4 J	< 0.037 U	< 0.6 U	0.592	115 J	< 0.92 U	86.7 J+
STC1-JD12	10	NORM	5/21/2010	0.37 J	< 0.27 U	7.8	20.8	0.18 J+	3.9	3.7	< 0.035 U	< 5.4 U	1.43	53	< 0.89 U	71.4 J+
STC1-JD13	0	NORM	5/21/2010	0.18 J	< 0.26 U	< 0.37 U	1.1 J	1.4	3.7	0.6	< 0.034 U	5.5	< 0.0108 U	< 5.1 U	< 0.85 U	53.1
STC1-JD13	10	NORM	5/21/2010	0.11 J	< 0.28 U	< 0.4 U	1.2 J	0.15 J	9.9	0.62	< 0.037 U	< 0.61 U	< 0.0107 U	10.3	< 0.94 U	44.5
STC1-JD14	0	NORM	6/1/2010	1.3 J	< 0.32 U	< 0.46 U	167 J	0.24 J	0.91 J	0.66	0.18 J	7.3	< 0.0108 U	26.2 J	< 1.1 U	327 J
STC1-JD14	0	FD	6/1/2010	< 0.52 UJ	< 0.26 U	< 0.37 U	10.7 J	< 0.12 U	1.4	0.64	< 0.034 U	< 5.2 U	< 0.0107 U	15.6 J	< 0.87 U	150 J
STC1-JD14	10	NORM	6/1/2010	< 0.53 U	< 0.26 U	< 0.38 U	0.63 J	< 0.12 U	2.5	0.25	< 0.035 U	< 0.58 U	< 0.0109 U	13.6	< 0.88 U	32.9
STC1-JD15	0	NORM	6/1/2010	0.62	< 0.27 U	< 0.39 U	19.9	0.19 J	1.9	1.4	< 0.036 U	< 5.4 U	1.25	21.1	< 0.9 U	55.5
STC1-JD15	6	NORM	6/1/2010	0.91	0.55 J	6.2	324	< 0.12 U	3.3	4.6	< 0.035 U	< 5.3 U	8.92	91.4	< 0.88 U	57.7
STC1-JD15	16	NORM	6/1/2010	< 0.54 U	0.87 J	4.2 J	329	< 0.12 U	2.8	3.7	< 0.035 U	< 5.4 U	5.6	289	< 0.89 U	52.5
STC6-JD10	10	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	2.06	--	--	--
TMC1-JD01	0	NORM	3/30/2010	< 0.09 U	< 0.28 U	< 0.4 U	1.1 J	< 0.13 U	2.1	< 0.045 U	< 0.037 U	< 0.61 U	0.0603	16.4	< 0.93 U	260 J-
TMC1-JD01	11	NORM	4/5/2010	< 0.094 U	< 0.29 U	< 0.42 U	0.97 J	< 0.13 U	1.6	0.091 J	< 0.038 U	< 0.63 U	< 0.011 U	13.4	< 0.97 U	26 J-
TMC1-JD02	0	NORM	3/30/2010	< 0.09 U	< 0.28 U	< 0.4 U	2.7	0.14 J	0.89 J	0.11 J	< 0.037 U	< 5.6 U	< 0.0109 U	144 J	< 0.92 U	99 J-
TMC1-JD02	0	FD	3/30/2010	< 0.088 U	< 0.27 U	< 0.39 U	1.1 J	< 0.12 U	1.7	< 0.043 U	< 0.036 U	< 0.59 U	< 0.011 U	34.9 J	< 0.9 U	72 J-
TMC1-JD02	10	NORM	4/5/2010	< 0.089 U	< 0.28 U	< 0.4 U	118	< 0.12 U	1.7	4.7	< 0.037 U	< 0.6 U	0.0442	25.7	< 0.92 U	34 J-

All units in mg/kg.

-- = no sample data.

[shaded box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium
BDE-Floor	0	NORM	2/6/2013	11000	2.8 J-	140	390 J	1.2	< 18 UJ	0.18 J	7900
BDW-F High	0	NORM	2/6/2013	13000	1.4 J	15	480 J	0.96	< 18 UJ	0.24 J	9800
BDW-F Low	0	NORM	2/6/2013	12000	0.6 J	5.5	220 J	1.1	< 18 UJ	0.13 J	10000
BDW-S S Wall	0	NORM	2/6/2013	11000	< 0.33 UJ	3.4 J	290 J	0.63	< 17 UJ	0.11 J	15000
BDW-S S Wall	0	FD	2/6/2013	12000	0.49 J	3.8 J	230 J	0.71	< 18 UJ	0.13 J	12000
GES Prov-3	0	NORM	12/10/2012	8300 J+	3.3 J-	21	980	0.44 J	< 19 U	0.83	4800
GES Prov-4	0	NORM	12/10/2012	5300 J+	22 J-	460	4700	2.7	< 19 U	3.6	40000
GES Prov-5	0	NORM	12/10/2012	5600 J+	23 J-	330	4200	2.3	< 18 U	2.7	96000
GES Prov-6	0	NORM	12/10/2012	11000 J+	2.7 J-	49	1100	0.82	< 19 U	0.94	34000
GES Prov-7	0	NORM	12/10/2012	3100 J+	20 J-	110	4300	3.1	< 19 U	0.72	270000
GES-JWT-1	0	NORM	3/4/2013	11000	< 0.35 U	4.6 J+	210 J+	0.83 J+	< 18 U	0.17 J	19000
GES-JWT-10	0	NORM	3/4/2013	11000	< 0.34 U	12 J+	320 J+	0.59 J+	< 17 U	0.5	75000
GES-JWT-11	0	NORM	3/4/2013	12000	< 0.35 U	10	710	0.85 J+	< 18 U	0.58	38000
GES-JWT-12	0	NORM	3/4/2013	12000	1.3 J	15	860	1.1 J+	< 18 U	0.43	36000
GES-JWT-13	0	NORM	3/4/2013	13000	14	40	4100	1.2 J+	< 18 U	1.3	27000
GES-JWT-14	0	NORM	3/4/2013	14000	< 0.35 U	9.2	450	0.82 J+	< 18 U	0.22 J	35000
GES-JWT-15	0	NORM	3/4/2013	18000	0.57 J	14	330	2 J+	< 18 U	0.21 J	14000
GES-JWT-16	0	NORM	3/4/2013	14000	< 0.33 U	4.6 J	250	0.88 J+	< 17 U	0.22 J	28000
GES-JWT-17	0	NORM	3/4/2013	11000	0.88 J	42	780	0.67 J+	< 17 U	0.1 J	6200
GES-JWT-18	0	NORM	3/4/2013	13000	< 0.33 U	5.8	300	0.92 J+	< 17 U	0.41	18000
GES-JWT-18	0	FD	3/4/2013	13000	< 0.34 U	5.9	310	0.96	< 18 U	0.44	20000
GES-JWT-19	0	NORM	3/4/2013	5100	9.3	1300	3600	2.4 J+	< 19 U	3.1	6900
GES-JWT-2	0	NORM	3/4/2013	14000	< 0.35 U	4.6 J+	280 J+	0.8 J+	< 18 U	0.11 J	28000
GES-JWT-3	0	NORM	3/4/2013	15000	< 0.34 U	4.3 J+	260 J+	0.8 J+	< 18 U	0.11 J	21000
GES-JWT-4	0	NORM	3/4/2013	11000	9.2 J-	7.5 J+	270 J+	0.62 J+	< 18 U	0.37	22000
GES-JWT-5	0	NORM	3/4/2013	13000	< 0.36 U	6 J+	360 J+	0.73 J+	< 18 U	0.3	34000
GES-JWT-6	0	NORM	3/4/2013	12000	< 0.35 U	6 J+	350 J+	0.69 J+	< 18 U	0.34	27000
GES-JWT-7	0	NORM	3/4/2013	11000	6.2 J-	6.1 J+	230 J+	0.61 J+	< 19 U	0.33	24000
GES-JWT-8	0	NORM	3/4/2013	11000	6.2 J-	8.9 J+	290 J+	0.59 J+	< 18 U	0.48	34000
GES-JWT-9	0	NORM	3/4/2013	9700	8.4 J-	5.1 J+	280 J+	0.55 J+	< 18 U	0.47	28000 J
GES-JWT-9	0	FD	3/4/2013	9700	6	5.2 J	210	0.53 J	< 18 U	0.46	51000 J
STC10-JD11	0	NORM	5/12/2014	12000	1 J-	11	330 J-	0.95	40 J	0.18 J	18000
STC1-AI15	0	NORM	6/4/2010	8460 J	< 0.85 UJ	3.3 J	169 J+	< 0.52 U	< 17.3 U	< 0.057 U	25400 J
STC1-AI15	0	FD	6/4/2010	9080 J	< 0.85 UJ	4 J	175 J+	0.55	< 17.4 U	< 0.057 U	17500 J
STC1-AI15	10	NORM	6/4/2010	10400 J	< 0.86 UJ	2.9 J	176 J+	< 0.52 U	< 17.5 U	< 0.058 U	15000 J

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Metals							
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium
STC1-AI16	0	NORM	6/7/2010	9590 J	< 0.88 UJ	< 5.4 U	129 J+	< 0.54 U	< 17.9 U	< 0.059 U	23400 J
STC1-AI16	10	NORM	6/7/2010	11600 J	< 0.94 UJ	< 5.7 U	348 J+	0.6	< 19.2 U	< 0.063 U	18600 J
STC1-AJ15	0	NORM	6/7/2010	9010 J	< 0.87 UJ	< 5.3 U	190 J+	0.56	< 17.6 U	< 0.26 U	16600 J
STC1-AJ15	0	FD	6/7/2010	12200 J	< 0.94 UJ	< 5.7 U	238 J+	< 0.57 U	< 19.1 U	< 0.063 U	14900 J
STC1-AJ15	10	NORM	6/7/2010	10100 J	< 0.93 UJ	< 5.7 U	212 J+	0.69	< 18.9 U	< 0.062 U	30800 J
STC1-AJ16	0	NORM	6/7/2010	10300 J	< 0.87 UJ	< 5.3 U	205 J+	0.54	< 17.8 U	< 0.27 U	15700 J
STC1-AJ16	10	NORM	6/7/2010	9720 J	< 0.88 UJ	< 5.4 U	192 J+	< 0.54 U	< 18 U	< 0.059 U	20100 J
STC1-AJ18	0	NORM	5/24/2010	14500	R	4.1 J	223 J+	0.87	< 58.4 U	< 0.29 U	18400
STC1-AJ18	12	NORM	5/24/2010	12800	R	4.5 J	145 J+	0.72	< 17.9 U	< 0.27 U	32600
STC1-AK15	0	NORM	6/3/2010	10500 J	< 0.93 UJ	< 5.7 U	237 J+	0.57	< 19 UJ	< 0.062 U	15300 J
STC1-AK15	0	FD	6/3/2010	9050 J	< 0.86 UJ	< 5.3 U	207 J+	< 0.53 U	< 17.6 UJ	< 0.058 U	13800 J
STC1-AK15	3	NORM	6/3/2010	9390 J	< 0.86 UJ	< 5.2 U	185 J+	< 0.52 U	< 17.5 UJ	< 0.058 U	16900 J
STC1-AK15	13	NORM	6/3/2010	8730 J	< 0.91 UJ	< 5.6 U	213 J+	< 0.56 U	< 18.6 UJ	< 0.061 U	27200 J
STC1-AK20	0	NORM	5/27/2010	9690	< 0.87 UJ	3.3 J	209 J+	0.62	< 17.6 U	0.099 J	32100 J
STC1-AK20	0	FD	5/27/2010	9630	< 0.91 UJ	4.2 J	213 J+	0.6	< 18.6 U	0.11 J	61500 J
STC1-AK20	6	NORM	5/27/2010	10700	< 0.89 UJ	4.3 J	242 J+	0.72	< 18.1 U	0.087 J	43100
STC1-AK20	16	NORM	5/27/2010	10100	< 0.86 UJ	4.4 J	178 J+	0.57	< 17.5 U	0.06 J	25100
STC1-JB12	0	NORM	8/30/2010	11100	< 0.88 UJ	3.8 J	270 J-	0.79	< 53.8 U	< 0.27 U	16400
STC1-JB12	10	NORM	8/30/2010	10800	< 0.9 UJ	4.8 J	222 J-	0.66	< 54.8 U	< 0.27 U	24500
STC1-JD02	0	NORM	6/4/2010	10000 J	< 0.87 UJ	3.5 J	179 J+	0.55	< 17.8 U	< 0.058 U	16700 J
STC1-JD02	10	NORM	6/4/2010	9580 J	< 0.9 UJ	3.7 J	239 J+	0.58	< 18.3 U	< 0.06 U	14700 J
STC1-JD03	0	NORM	6/4/2010	4950 J	< 0.86 UJ	5 J	149 J+	< 0.53 U	< 17.5 U	< 0.26 U	14000 J
STC1-JD03	10	NORM	6/4/2010	8790 J	< 0.85 UJ	4.2 J	166 J+	0.54	< 17.3 U	< 0.057 U	16600 J
STC1-JD04	0	NORM	6/4/2010	7800 J	< 0.84 UJ	5.4	199 J+	< 0.51 U	< 17.2 U	< 0.26 U	16400 J
STC1-JD04	10	NORM	6/4/2010	9280 J	< 0.91 UJ	3.1 J	327 J+	< 0.55 U	< 18.5 U	< 0.061 U	15500 J
STC1-JD05	0	NORM	6/4/2010	7680 J	< 0.85 UJ	6.9	245 J+	0.79	< 17.4 U	1	16700 J
STC1-JD05	10	NORM	6/4/2010	9960 J	< 0.9 UJ	3.5 J	175 J+	0.57	< 18.3 U	< 0.06 U	14600 J
STC1-JD06	0	NORM	6/3/2010	8620 J	< 0.87 UJ	< 5.3 U	186 J+	< 0.53 U	< 17.7 UJ	< 0.058 U	14600 J
STC1-JD06	10	NORM	6/3/2010	8620 J	< 0.89 UJ	< 5.5 U	274 J+	< 0.55 U	< 18.2 UJ	< 0.06 U	25600 J
STC1-JD07	0	NORM	6/7/2010	11400 J	< 0.87 UJ	< 5.3 U	199 J+	0.85	< 17.8 U	< 0.27 U	19400 J
STC1-JD07	4	NORM	6/7/2010	9430 J	< 0.9 UJ	< 5.5 U	185 J+	0.57	< 18.3 U	< 0.27 U	28400 J
STC1-JD07	14	NORM	6/7/2010	10300 J	< 0.92 UJ	5.9	187 J+	< 0.56 U	< 18.7 U	< 0.062 U	27800 J
STC1-JD08	0	NORM	5/20/2010	12600 J	0.95 J-	19.1	577 J	0.82	< 18.1 U	0.3	54400 J
STC1-JD08	0	FD	5/20/2010	10400 J	1 J-	32	938 J	0.77	< 17.8 U	0.3	31500 J
STC1-JD08	10	NORM	5/20/2010	13200 J	< 0.9 UJ	5.5 J	190 J	0.75	< 18.3 U	< 0.27 U	29900 J

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium
STC1-JD09	0	NORM	5/20/2010	9210 J	< 0.96 UJ	2.7 J	155 J	0.46 J	< 19.5 U	< 0.29 U	27100 J
STC1-JD09	10	NORM	5/20/2010	12700 J	< 0.87 UJ	11.7	487 J	0.8	< 17.7 U	< 0.27 U	32800 J
STC1-JD10	0	NORM	5/21/2010	10200 J	5.8 J-	62.6	1010 J	0.61	< 19.9 U	0.33	2860 J
STC1-JD10	10	NORM	5/21/2010	11600 J	2.3 J-	13.3	277 J	0.68	< 19.6 U	0.36	30400 J
STC1-JD11	0	NORM	5/21/2010	7240 J	2.9 J-	12	1990 J	0.49 J	< 18 U	0.99	2140 J
STC1-JD11	10	NORM	5/21/2010	13000 J	1.3 J-	14.8	269 J	0.81	< 19.4 U	0.3	28500 J
STC1-JD12	0	NORM	5/21/2010	11800 J	3.3 J-	10.6	286 J	1.2	< 17.2 U	0.34	22800 J
STC1-JD12	0	FD	5/21/2010	9700 J	1.6 J-	9	197 J	1.2	< 18.6 U	0.32	42300 J
STC1-JD12	10	NORM	5/21/2010	9820 J	1.6 J-	9.1	203 J	1.1	< 17.9 U	0.31	24300 J
STC1-JD13	0	NORM	5/21/2010	11900 J	< 0.84 UJ	11.3	239 J	0.71	< 17.2 U	0.36	19800 J
STC1-JD13	10	NORM	5/21/2010	14400 J	< 0.92 UJ	14.3	331 J	0.91	< 18.8 U	0.42	34200 J
STC1-JD14	0	NORM	6/1/2010	10500 J	< 1 UJ	14.6 J	637	0.97	< 21.3 U	0.7 J	29100 J
STC1-JD14	0	FD	6/1/2010	12700 J	< 0.85 UJ	3.8 J	416	0.77	< 17.4 U	< 0.26 UJ	18400 J
STC1-JD14	10	NORM	6/1/2010	10100 J	< 0.87 UJ	4.9 J	201	< 0.53 U	< 17.7 U	< 0.058 U	12100 J
STC1-JD15	0	NORM	6/1/2010	9540 J	< 0.89 UJ	7.3	225	< 0.54 U	< 18 U	< 0.27 U	23500 J
STC1-JD15	6	NORM	6/1/2010	12300 J	< 0.87 UJ	10.5	288	0.59	< 17.7 U	0.3 J+	26500 J
STC1-JD15	16	NORM	6/1/2010	10300 J	< 0.88 UJ	6.5	169	< 0.54 U	< 17.9 U	< 0.059 U	17900 J
STC6-ES01	0	NORM	7/20/2012	2800	27 J-	160 J+	6000 J+	3.2	< 17 U	2	260000
STC6-ES01	0	FD	7/20/2012	2900	28 J-	180 J+	5700 J+	3.3	< 17 U	2.1	250000
STC6-JD02	0	NORM	7/20/2012	15000	< 0.84 UJ	4.4 J+	310 J+	0.79	< 17 U	0.16 J	26000
STC6-JD05	0	NORM	7/20/2012	10000	< 0.84 UJ	4.6 J+	260 J+	0.65	< 17 U	0.15 J	18000
STC6-JD08	0	NORM	7/20/2012	11000	1.5 J-	15 J+	690 J+	0.73	< 17 U	0.2 J	30000
STC6-JD09	0	NORM	7/20/2012	7200	23 J-	220 J+	6100 J+	2.6	< 17 U	2.1	97000
STC6-JD10	10	NORM	7/20/2012	4100	17 J-	130 J+	5800 J+	3.7	< 17 U	0.73	260000
STC6-JD11	10	NORM	7/23/2012	15000	7.8 J-	160	2200	2.5	< 17 U	0.43	34000
STC6-JD12	10	NORM	7/23/2012	16000	0.84 J-	12	390	0.91 J	< 17 U	0.24 J	25000
STC6-JD13	10	NORM	7/23/2012	15000	2.1 J-	21	510	0.94	< 17 U	0.23 J	21000
STC6-JD14	0	NORM	7/23/2012	13000	< 0.84 UJ	6.8	370	0.71	< 17 U	0.11 J	24000
STC6-JD15	0	NORM	7/23/2012	15000	< 0.83 UJ	7.1	370	0.74	< 17 U	0.094 J	25000
STC7-ES01	0	NORM	12/11/2012	11000 J+	< 0.33 UJ	3.6 J	200	0.6	< 17 U	0.12 J	19000
STC7-JD08	0	NORM	12/11/2012	9500 J+	< 0.35 UJ	3.8 J	200	0.54	< 18 U	0.085 J	25000
STC7-JD09	0	NORM	12/11/2012	9100 J+	29 J-	95	3500	1.7	< 18 U	0.54	62000
STC7-JD10	10	NORM	12/11/2012	13000 J+	3 J-	340	230	2.4	< 18 U	0.14 J	6600
STC7-JD11	10	NORM	12/11/2012	17000 J+	2.1 J-	52	350	1.6	< 19 U	0.1 J	5500
STC7-JD12	10	NORM	12/11/2012	12000 J+	1.7 J-	7	210	0.85	< 18 U	0.26 J	22000

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium
STC7-JD13	10	NORM	12/11/2012	12000 J+	< 0.35 UJ	5.6	310	0.65	< 18 U	0.099 J	18000
STC8-JD09	0	NORM	2/5/2013	14000	4.6 J-	16	350 J	1.3	24 J-	0.25 J	10000
STC8-JD10	10	NORM	2/5/2013	13000	1.2 J	10	160 J	1.3	< 18 UJ	0.17 J	11000
STC8-JD11	10	NORM	2/5/2013	11000	4.3 J-	18	260 J	0.68	< 18 UJ	0.27	20000
STC8-JD12	10	NORM	2/5/2013	13000	4 J-	6.6	190 J	0.76	< 17 UJ	0.14 J	16000
STC8-Prov3	0	NORM	2/6/2013	14000	0.6 J	28	290 J	1.1	< 17 UJ	0.29	10000
STC8-Prov4	0	NORM	2/6/2013	12000	0.48 J	10	380 J	0.67	< 18 UJ	0.15 J	20000
STC8-Prov4	0	FD	2/6/2013	9800	< 0.35 UJ	7.2	310 J	0.66	< 18 UJ	0.11 J	18000
STC8-Prov5	0	NORM	2/6/2013	10000	< 0.35 UJ	6.5	230 J	0.58	< 18 UJ	0.12 J	14000
STC8-Prov6	0	NORM	2/6/2013	14000	0.5 J	93	160 J	0.74	< 17 UJ	< 0.083 U	4700
STC8-Prov7	0	NORM	2/6/2013	14000	1.9 J	23	220 J	1	< 18 UJ	0.2 J	12000
STC9DP-JW01	1	NORM	1/29/2014	14000	< 0.33 UJ	5.2	270	0.86	18 J	0.1 J	19000
STC9DP-JW01	2	NORM	1/29/2014	12000	< 0.31 UJ	4.9	230	0.94	< 16 U	0.14 J	21000
STC9DP-JW01	3	NORM	1/29/2014	15000	< 0.3 UJ	5.8	280	0.9	< 15 U	0.18 J	30000
STC9DP-JW04	1	NORM	1/29/2014	9800	5.5 J-	65	2100	1.6	47 J	0.9	28000
STC9DP-JW04	2	NORM	1/29/2014	15000	1.5 J-	19	790	1.1	31 J	0.31	33000
STC9DP-JW04	3	NORM	1/29/2014	10000	0.62 J-	12	540	0.88	< 17 U	0.15 J	21000
STC9DP-JW07	1	NORM	1/29/2014	15000	< 0.29 UJ	5.3	280	0.85	< 15 U	0.11 J	24000
STC9DP-JW07	2	NORM	1/29/2014	16000	< 0.32 UJ	5.9	280	0.98	< 16 U	0.15 J	22000
STC9DP-JW07	3	NORM	1/29/2014	18000	< 0.3 UJ	5.7	300	1.1	< 15 U	0.13 J	18000
STC9-FALL01-	1	NORM	11/25/2013	13000	2.5 J-	34	170 J+	0.97	49	0.18 J	6900
STC9-FALL01-	2	NORM	11/25/2013	12000	1.9 J	11	220 J-	1.4	41 J	0.4	16000
STC9-FALL01-	3	NORM	11/25/2013	11000	0.5 J-	7	210 J+	1.2	40 J	0.4	16000
STC9-FALL02-	1	NORM	11/25/2013	17000	0.32 J-	17	200 J+	1	25 J	0.13 J	7100
STC9-FALL02-	2	NORM	11/25/2013	16000	1.3 J	9.4	240 J-	1.3	20 J	0.18 J	7700
STC9-FALL02-	3	NORM	11/25/2013	19000	1.3 J-	11	330 J+	2.2	21 J	0.28	26000
STC9-FALL03-	1	NORM	11/25/2013	13000	3.7 J-	17	290 J+	0.84	22 J	0.32	19000
STC9-FALL03-	2	NORM	11/25/2013	13000	2.9 J-	13	270 J-	0.89	17 J	0.24 J	28000
STC9-FALL03-	3	NORM	11/25/2013	15000	2.5 J-	15	300 J+	0.91	< 17 U	0.42	37000
STC9-FALL04-	1	NORM	11/25/2013	13000	2.9 J-	9.2	300 J+	1.1	< 18 U	0.2 J	19000
STC9-FALL04-	2	NORM	11/25/2013	18000	2.7 J-	12	350 J-	0.99	< 17 U	0.35	23000
STC9-FALL04-	3	NORM	11/25/2013	20000	2.2 J-	11	330 J+	1.2	< 15 U	0.28	30000
STC9-JW01	0	NORM	12/19/2013	12000	2.6 J-	110	1600 J+	1.3	< 15 U	1.2	26000
STC9-JW02	0	NORM	12/19/2013	13000	0.63 J	12	380 J+	0.81	< 15 U	0.24	33000
STC9-JW03	0	NORM	12/19/2013	14000	1.2 J	6.5	300 J+	0.84	< 17 U	0.16 J	25000

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium
STC9-JW04	0	NORM	12/19/2013	7800	85 J-	320	8200 J+	5	< 15 U	2.4	140000
STC9-JW05	0	NORM	12/19/2013	14000	1.8 J	8	360 J+	0.88	< 16 U	0.26	33000
STC9-JW05	0	FD	12/19/2013	9100	1.6 J	7.1	330 J+	0.76	< 16 U	0.23 J	26000
STC9-JW06	0	NORM	12/19/2013	16000	1.4 J	9.3	480 J+	1	< 17 U	0.18 J	23000
STC9-JW07	0	NORM	12/19/2013	12000	1.7 J	56	730 J+	0.96	< 17 U	0.63	29000
STC9-JW08	0	NORM	12/19/2013	14000	1.8 J	6	270 J+	0.96	< 16 U	0.16 J	28000
STC9-JW09	0	NORM	12/19/2013	16000	1.4 J	6.3	350 J+	1	< 17 U	0.23 J	29000
STC9-JW10	0	NORM	12/19/2013	14000	2.2 J	11	590 J+	0.95	< 17 U	0.26	30000
STC9-JW11	0	NORM	12/19/2013	14000	1.3 J	7.1	340 J+	0.86	< 16 U	0.39	46000
STC9-JW12	0	NORM	12/19/2013	13000	1.5 J	8.6	460 J+	0.87	< 16 U	0.3	27000
STC9-JW13	0	NORM	12/20/2013	14000	0.36 J-	6.3	270 J+	0.88	< 16 U	0.12 J	31000
STC9-JW14	0	NORM	12/20/2013	11000	0.94 J-	4.8	230 J+	0.73	< 15 U	0.13 J	30000
STC9-JW15	0	NORM	12/20/2013	15000	1.8 J-	6.1	300 J+	0.83	< 17 U	0.18 J	36000 J
STC9-JW15	0	FD	12/20/2013	14000	2.1 J-	6.6	270 J+	0.82	< 17 U	0.31	86000 J
STC9-JW16	0	NORM	12/20/2013	15000	2.3 J-	6.9	330 J+	0.85	< 16 U	0.24	35000
STC9-JW17	0	NORM	12/20/2013	15000	3.2 J-	7.6	350 J+	0.91	< 16 U	0.25	40000
STC9-JW18	0	NORM	12/20/2013	15000	1.1 J-	13	720 J+	0.96	< 16 U	1.7	38000
STC9-JW19	0	NORM	12/20/2013	16000	1.9 J-	9.7	500 J+	0.94	< 15 U	0.65	55000
STC9-JW20	0	NORM	12/20/2013	15000	1.1 J-	7.6	370 J+	0.81	< 16 U	0.17 J	29000
STC9-JW21	0	NORM	12/20/2013	13000	3 J-	6.7	310 J+	0.94	< 17 U	0.28	33000
STC9-JW22	0	NORM	12/20/2013	18000	< 0.3 UJ	7	350 J+	1.2	< 16 U	0.1 J	20000
STC9-JW23	0	NORM	12/20/2013	15000	< 0.32 UJ	5.3	290 J+	0.81	< 16 U	0.17 J	26000
STC9-JW24	0	NORM	12/20/2013	10000	2.3 J-	5.9	270 J+	0.63	< 17 U	0.35	29000
STC9-JW25	0	NORM	12/20/2013	12000	< 0.32 UJ	6.4	290 J+	0.78	< 17 U	0.24 J	46000
STC9-JW25	0	FD	12/20/2013	13000	< 0.32 UJ	5.9	310 J+	0.81	< 17 U	0.23 J	32000
TMC1-JD01	0	NORM	3/30/2010	9940 J	< 0.82 UJ	< 5.6 U	221 J+	< 0.56 U	< 16.7 U	< 0.055 U	16900 J
TMC1-JD01	11	NORM	4/5/2010	10100 J	< 0.82 UJ	< 5.8 U	285 J+	< 0.58 U	< 16.7 U	< 0.055 U	23400 J
TMC1-JD02	0	NORM	3/30/2010	9480 J	< 0.82 UJ	< 5.6 U	248 J+	< 0.56 U	< 16.7 U	< 0.055 U	20100 J
TMC1-JD02	0	FD	3/30/2010	9790 J	< 0.82 UJ	< 5.4 U	190 J+	< 0.54 U	< 16.7 U	< 0.055 U	16700 J
TMC1-JD02	10	NORM	4/5/2010	8710 J	< 0.82 UJ	< 5.5 U	149 J+	< 0.55 U	< 16.7 U	< 0.055 U	20300 J

All units in mg/kg.
-- = no sample data.
[shaded] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Chromium	Chromium (VI)	Cobalt	Copper	Iron	Lead	Lithium	Magnesium
BDE-Floor	0	NORM	2/6/2013	490	12	15	76	27000	270	17	9900
BDW-F High	0	NORM	2/6/2013	210	12	23	130	17000	200	23	9900
BDW-F Low	0	NORM	2/6/2013	61	4.4	13	61	18000	8.7	15	10000
BDW-S S Wall	0	NORM	2/6/2013	23	0.52	17 J	20	18000	8.8	13	12000
BDW-S S Wall	0	FD	2/6/2013	23	0.47	10 J	22	18000	9.7	13	9700
GES Prov-3	0	NORM	12/10/2012	320 J+	160	97	68 J+	35000	1500	13	2800 J-
GES Prov-4	0	NORM	12/10/2012	490 J+	43	20	110 J+	31000	3700	14	34000 J-
GES Prov-5	0	NORM	12/10/2012	390 J+	23	30	180 J+	27000	2400	17	23000 J-
GES Prov-6	0	NORM	12/10/2012	120 J+	11	43	54 J+	27000	740	15	20000 J-
GES Prov-7	0	NORM	12/10/2012	330 J+	24	32	62 J+	11000	460	5.3 J	6800 J-
GES-JWT-1	0	NORM	3/4/2013	11 J+	0.13 J	10 J+	18 J+	16000	9.6 J+	15 J+	11000
GES-JWT-10	0	NORM	3/4/2013	21 J+	0.37 J	7.6 J+	31 J+	15000	24 J+	17 J+	21000
GES-JWT-11	0	NORM	3/4/2013	31	0.33 J	65 J+	77 J+	21000	79	18	12000
GES-JWT-12	0	NORM	3/4/2013	86	1.9	23 J+	87 J+	24000	160	15	12000
GES-JWT-13	0	NORM	3/4/2013	420	9.7	110 J+	110 J+	31000	1100	18	7600
GES-JWT-14	0	NORM	3/4/2013	78	1.9	16 J+	32 J+	23000	56	14	15000
GES-JWT-15	0	NORM	3/4/2013	95	3.3	25 J+	99 J+	23000	22	27	15000
GES-JWT-16	0	NORM	3/4/2013	26	1.2	12 J+	23 J+	21000	10	20	13000
GES-JWT-17	0	NORM	3/4/2013	430	22	11 J+	56 J+	29000	180	12	8900
GES-JWT-18	0	NORM	3/4/2013	170	4.1	17 J+	95 J+	20000	66	14	13000
GES-JWT-18	0	FD	3/4/2013	170	4.1	18	92	22000	70	15	12000
GES-JWT-19	0	NORM	3/4/2013	610	20	11 J+	120 J+	50000	4200	17	5100
GES-JWT-2	0	NORM	3/4/2013	12 J+	< 0.1 U	11 J+	22 J+	20000	10 J+	15 J+	14000
GES-JWT-3	0	NORM	3/4/2013	14 J+	0.18 J	13 J+	23 J+	22000	11 J+	15 J+	15000
GES-JWT-4	0	NORM	3/4/2013	47 J+	5.5	10 J+	66 J+	30000	210 J+	12 J+	9500
GES-JWT-5	0	NORM	3/4/2013	17 J+	0.73	18 J+	33 J+	20000	32 J+	16 J+	13000
GES-JWT-6	0	NORM	3/4/2013	21 J+	0.38 J	19 J+	40 J+	20000	50 J+	13 J+	12000
GES-JWT-7	0	NORM	3/4/2013	44 J+	0.75	10 J+	62 J+	25000	240 J+	13 J+	11000
GES-JWT-8	0	NORM	3/4/2013	86 J+	0.9	9.9 J+	89 J+	30000	380 J+	14 J+	14000
GES-JWT-9	0	NORM	3/4/2013	42 J+	0.63	8.9 J+	68 J+	24000	85 J+	12 J+	11000
GES-JWT-9	0	FD	3/4/2013	58	0.43	8.1	65	22000	73	12	9400
STC10-JD11	0	NORM	5/12/2014	34	3	13	23	23000	10	15	8500
STC1-AI15	0	NORM	6/4/2010	7.1	< 0.41 U	9.3	17.4	15100 J	7.8 J	11.9	9970 J
STC1-AI15	0	FD	6/4/2010	5.8	< 0.42 U	10	19	15600 J	28.4 J	8	11900 J
STC1-AI15	10	NORM	6/4/2010	10.2	< 0.42 U	9.8	20.1	17800 J	9.3	12.4	10000 J

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Metals							
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Chromium	Chromium (VI)	Cobalt	Copper	Iron	Lead	Lithium	Magnesium
STC1-AI16	0	NORM	6/7/2010	7.7	< 0.11 UJ	10	19.5	15700 J	8.5	11.5	9430 J
STC1-AI16	10	NORM	6/7/2010	7.7	< 0.11 UJ	9.1	19.8	16300 J	9	16.8	9570 J
STC1-AJ15	0	NORM	6/7/2010	10.5	< 0.42 UJ	10.4	21.2	17000 J	17.6	10.5	9690 J
STC1-AJ15	0	FD	6/7/2010	11.3	< 0.11 UJ	11.3	22	19400 J	20.6	12	11500 J
STC1-AJ15	10	NORM	6/7/2010	12.1	< 0.45 UJ	9.4	25.9	16100 J	18.8	14.5	13400 J
STC1-AJ16	0	NORM	6/7/2010	10.3	< 0.43 UJ	11.3	20.4	17700 J	14.4	13.6	11200 J
STC1-AJ16	10	NORM	6/7/2010	6.9	< 0.43 UJ	10	18.6	15500 J	7.9	15.1	10100 J
STC1-AJ18	0	NORM	5/24/2010	12.6	< 0.12 U	13.4	20.5	19800	11	15.3	16000
STC1-AJ18	12	NORM	5/24/2010	24.7	0.18 J	12.4	25	16700	8	20.6	16600
STC1-AK15	0	NORM	6/3/2010	9.8	0.18 J	10.9	19.8	18700 J	10.4	10.6	9320 J
STC1-AK15	0	FD	6/3/2010	6.6	< 0.11 U	10.5	17.4	16400 J	8.2	7.4	8660 J
STC1-AK15	3	NORM	6/3/2010	8.4	< 0.1 U	9.5	16.7	17300 J	8.3	8.5	9940 J
STC1-AK15	13	NORM	6/3/2010	8.9	0.12 J	9.1	15.8	15000 J	6.4	12.7	10300 J
STC1-AK20	0	NORM	5/27/2010	8	< 0.11 U	8.7	15.4	15100	8	9.6	8590
STC1-AK20	0	FD	5/27/2010	10.4	< 0.11 U	13.1	18.1	17500	8.6	10.9	10100
STC1-AK20	6	NORM	5/27/2010	12.1	< 0.11 U	10.6	18.2	17900	10.6	14.3	10700
STC1-AK20	16	NORM	5/27/2010	9.5	< 0.1 U	8.5	13.7	16300	7.6	14.4	9470
STC1-JB12	0	NORM	8/30/2010	12.5	0.24 J-	10.2	22.2	20700	12.5	10.2	9660
STC1-JB12	10	NORM	8/30/2010	13.4	0.29 J-	10.8	17.8	19300	9	16.9	10200
STC1-JD02	0	NORM	6/4/2010	17.4	< 0.43 U	11.3	32.2	17500 J	9.6	11.5	9500 J
STC1-JD02	10	NORM	6/4/2010	9.2	< 0.11 U	19.2	18.5	17100 J	8.4	14.8	9840 J
STC1-JD03	0	NORM	6/4/2010	7.8	< 0.42 U	7.1	31.3	9250 J	25.3	6.8	7290 J
STC1-JD03	10	NORM	6/4/2010	15	< 0.41 U	11.4	28.4	16600 J	8.1	15	9600 J
STC1-JD04	0	NORM	6/4/2010	22.1	0.46	9.6	38.4	15500 J	28.6	7.8	8920 J
STC1-JD04	10	NORM	6/4/2010	8.7	< 0.44 U	9.9	20.1	17100 J	8.8	13.8	9970 J
STC1-JD05	0	NORM	6/4/2010	174	1.6	10.3	367	15200 J	41.2	9.9	7540 J
STC1-JD05	10	NORM	6/4/2010	9	< 0.11 U	9.5	18.5	16600 J	8.2	14.9	10200 J
STC1-JD06	0	NORM	6/3/2010	32.7	0.32 J	8.9	28.1	16500 J	7.5	10.3	8840 J
STC1-JD06	10	NORM	6/3/2010	18.2	0.43 J	6.8	14.5	14500 J	6.4	13.3	9550 J
STC1-JD07	0	NORM	6/7/2010	11.1	< 0.43 UJ	10.8	21.4	17700 J	11.9	12.6	9980 J
STC1-JD07	4	NORM	6/7/2010	8.8	0.82 J-	9.4	17.2	15900 J	9.7	14.4	11900 J
STC1-JD07	14	NORM	6/7/2010	5.4 J	< 0.45 UJ	10.2	18	14500 J	41.3	15.5	10500 J
STC1-JD08	0	NORM	5/20/2010	25.6 J	6.6	11.5	28.5	16500 J	118 J	15	14200 J
STC1-JD08	0	FD	5/20/2010	58.6 J	4	10.9	26.3	18300 J	248 J	11.4	11900 J
STC1-JD08	10	NORM	5/20/2010	13.7	0.13 J	11.4	22.5	18100 J	9.6	20.5	14200 J

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Metals							
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Chromium	Chromium (VI)	Cobalt	Copper	Iron	Lead	Lithium	Magnesium
STC1-JD09	0	NORM	5/20/2010	8.4	< 0.12 U	8.5	13.6	12200 J	5.7	10.5	10900 J
STC1-JD09	10	NORM	5/20/2010	25.5	1.5	12.7	24.4	18400 J	61.3	16	13000 J
STC1-JD10	0	NORM	5/21/2010	592	8.5	196	71.2	105000 J	3700	17.3	2880 J
STC1-JD10	10	NORM	5/21/2010	29.5	1.7	11.7	17.8	15700 J	10.6	17.8	10800 J
STC1-JD11	0	NORM	5/21/2010	279	63.1	111	59	64600 J	357	6.4	2340 J
STC1-JD11	10	NORM	5/21/2010	51	5.7	16.3	29	18500 J	11.4	18.9	11600 J
STC1-JD12	0	NORM	5/21/2010	60.1	2.7 J	55.6 J	20.9	16800 J	9.4	15.7	12300 J
STC1-JD12	0	FD	5/21/2010	41.3	4.9 J	31.2 J	19.5	15900 J	8.1	15	11200 J
STC1-JD12	10	NORM	5/21/2010	34.9	1.6	27	18	14800 J	7.5	14.8	11700 J
STC1-JD13	0	NORM	5/21/2010	19.3	0.39 J	11.1	17.5	16500 J	8.2	15.2	10700 J
STC1-JD13	10	NORM	5/21/2010	33.4	0.43 J	14.4	25.2	21800 J	13.5	19.8	13900 J
STC1-JD14	0	NORM	6/1/2010	35.6 J	4.4 J	13.7	27.5 J	19200 J	63.1 J	12.3	11100 J
STC1-JD14	0	FD	6/1/2010	7.9 J	1.4 J	8.8	14.3 J	15200 J	7.5 J	10	8810 J
STC1-JD14	10	NORM	6/1/2010	6.5	0.22 J	10.7	21.3	16400 J	8.2	10.8	10300 J
STC1-JD15	0	NORM	6/1/2010	16.5	0.87	10.3	16.3	17500 J	7.2	9.2	8970 J
STC1-JD15	6	NORM	6/1/2010	14.3	0.16 J	11	20.3	18900 J	9.2	12.8	9730 J
STC1-JD15	16	NORM	6/1/2010	9.7	0.22 J	10.5	16.7	18100 J	7.8	13.4	11400 J
STC6-ES01	0	NORM	7/20/2012	330 J+	23	12 J+	86 J+	15000	580	10	8400
STC6-ES01	0	FD	7/20/2012	360 J+	17	12 J+	94 J+	17000	570	6.3	9300
STC6-JD02	0	NORM	7/20/2012	14 J+	< 0.1 U	13 J+	34 J+	22000	16	14	14000
STC6-JD05	0	NORM	7/20/2012	46 J+	0.19 J	8.4 J+	40 J+	20000	33	8.5	8500
STC6-JD08	0	NORM	7/20/2012	30 J+	1.4	11 J+	22 J+	19000	97	11	12000
STC6-JD09	0	NORM	7/20/2012	240 J+	13	16 J+	76 J+	24000	1700	11	21000
STC6-JD10	10	NORM	7/20/2012	390 J+	49	33 J+	63 J+	12000	400	6.3	6800
STC6-JD11	10	NORM	7/23/2012	450	15	39	110 J+	25000	410	20	12000
STC6-JD12	10	NORM	7/23/2012	30	1.8	15	23 J+	22000	24	18 J	14000
STC6-JD13	10	NORM	7/23/2012	86	3.7	13	46 J+	19000	57	16	12000
STC6-JD14	0	NORM	7/23/2012	23	13	11	22 J+	19000	29	14	12000
STC6-JD15	0	NORM	7/23/2012	19	8	9.7	20 J+	22000	12	19	12000
STC7-ES01	0	NORM	12/11/2012	8.4 J+	0.32 J	11	19 J+	17000	13	9.9	12000 J-
STC7-JD08	0	NORM	12/11/2012	11 J+	1.4	10	19 J+	17000	11	9.8	9500 J-
STC7-JD09	0	NORM	12/11/2012	110 J+	9.5	15	49 J+	17000	610	9.7	14000 J-
STC7-JD10	10	NORM	12/11/2012	520 J+	11	9.8	87 J+	26000	190	19	11000 J-
STC7-JD11	10	NORM	12/11/2012	140 J+	7.1	19	120 J+	19000	24	20	12000 J-
STC7-JD12	10	NORM	12/11/2012	44 J+	11	15	18 J+	20000	9.5	15	11000 J-

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Chromium	Chromium (VI)	Cobalt	Copper	Iron	Lead	Lithium	Magnesium
STC7-JD13	10	NORM	12/11/2012	14 J+	0.43	11	20 J+	19000	19	11	10000 J-
STC8-JD09	0	NORM	2/5/2013	94	2.1	16	52	21000	12	18	12000
STC8-JD10	10	NORM	2/5/2013	34	5.1	13	54	17000	7.4	17	11000
STC8-JD11	10	NORM	2/5/2013	55	8	18	25	19000	8.3	14	10000
STC8-JD12	10	NORM	2/5/2013	25	0.38 J	11	20	20000	9.4	15	10000
STC8-Prov3	0	NORM	2/6/2013	49	5	16	95	19000	20	17	10000
STC8-Prov4	0	NORM	2/6/2013	20	3	10	22	19000	42	9.1	12000
STC8-Prov4	0	FD	2/6/2013	17	3.1	10	22	19000	31	7.7	10000
STC8-Prov5	0	NORM	2/6/2013	24	1	10	19	17000	22	10	9500
STC8-Prov6	0	NORM	2/6/2013	700	18	12	140	16000	280	23	11000
STC8-Prov7	0	NORM	2/6/2013	71	4.6	14	64	19000	16	19	13000
STC9DP-JW01	1	NORM	1/29/2014	14 J-	< 0.11 U	14	29	26000	13	11	13000
STC9DP-JW01	2	NORM	1/29/2014	13 J-	< 0.11 U	18	27	27000	12	14	12000
STC9DP-JW01	3	NORM	1/29/2014	18 J-	< 0.1 U	17	55	29000	21	18	16000
STC9DP-JW04	1	NORM	1/29/2014	87 J-	1.5	14	40	21000	610	12	12000
STC9DP-JW04	2	NORM	1/29/2014	36 J-	< 0.11 U	14	31	26000	100	14	16000
STC9DP-JW04	3	NORM	1/29/2014	23 J-	< 0.11 U	15	34	24000	59	13	12000
STC9DP-JW07	1	NORM	1/29/2014	16 J-	< 0.11 U	16	31	26000	18	15	19000
STC9DP-JW07	2	NORM	1/29/2014	16 J-	< 0.11 U	14	32	26000	18	17	15000
STC9DP-JW07	3	NORM	1/29/2014	20 J-	< 0.11 U	14	29	28000	15	17	14000
STC9-FALL01-	1	NORM	11/25/2013	330 J+	9.8	13	180	21000	330 J	27	13000
STC9-FALL01-	2	NORM	11/25/2013	90	4.3 J-	12	120	20000	41	17	11000
STC9-FALL01-	3	NORM	11/25/2013	66	5.8 J-	13	81	21000	15	17	10000
STC9-FALL02-	1	NORM	11/25/2013	260 J+	8.3	16	190	22000	210 J	33	13000
STC9-FALL02-	2	NORM	11/25/2013	78	3.9 J-	17	140	26000	14	18	15000
STC9-FALL02-	3	NORM	11/25/2013	77	4.6 J-	20	130	32000	13	21	16000
STC9-FALL03-	1	NORM	11/25/2013	87 J+	14	16	30	24000	10 J	17	14000
STC9-FALL03-	2	NORM	11/25/2013	60	4.2 J-	17	34	28000	9.7	18	13000
STC9-FALL03-	3	NORM	11/25/2013	77	9.6 J-	18	33	32000	11	20	17000
STC9-FALL04-	1	NORM	11/25/2013	41 J+	5	19	25	24000	9.5 J	16	13000
STC9-FALL04-	2	NORM	11/25/2013	46	6.4 J-	19	27	29000	13	22	15000
STC9-FALL04-	3	NORM	11/25/2013	46	4.3 J-	17	32	37000	14	25	17000
STC9-JW01	0	NORM	12/19/2013	71	10	16	64	34000	1000	16	14000
STC9-JW02	0	NORM	12/19/2013	31	0.33 J	13	41	25000	71	15	14000
STC9-JW03	0	NORM	12/19/2013	36	< 0.11 U	15	35	29000	22	18	15000

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Chromium	Chromium (VI)	Cobalt	Copper	Iron	Lead	Lithium	Magnesium
STC9-JW04	0	NORM	12/19/2013	330	9.4	34	150	32000	2100	13	16000
STC9-JW05	0	NORM	12/19/2013	28 J	0.34 J	30	34	29000 J	32	18 J	15000
STC9-JW05	0	FD	12/19/2013	18 J	0.49	20	23	17000 J	28	13 J	10000
STC9-JW06	0	NORM	12/19/2013	28	0.58	14	31	27000	37	19	16000
STC9-JW07	0	NORM	12/19/2013	48	0.99	16	42	26000	340	16	14000
STC9-JW08	0	NORM	12/19/2013	44	< 0.1 U	14	36	33000	41	15	13000
STC9-JW09	0	NORM	12/19/2013	43	< 0.1 U	16	38	31000	29	18	15000
STC9-JW10	0	NORM	12/19/2013	56	1.7	26	63	31000	94	18	14000
STC9-JW11	0	NORM	12/19/2013	29	0.28 J	14	43	30000	47	16	16000
STC9-JW12	0	NORM	12/19/2013	32	< 0.1 U	15	40	28000	75	14	13000
STC9-JW13	0	NORM	12/20/2013	34	< 0.1 U	12	26 J+	25000	12	20	15000
STC9-JW14	0	NORM	12/20/2013	19	< 0.1 U	13	26 J+	23000	18	16	14000
STC9-JW15	0	NORM	12/20/2013	32	< 0.11 U	15	41 J+	29000	28	17	17000
STC9-JW15	0	FD	12/20/2013	24	< 0.1 U	13	36 J+	25000	29	16	15000
STC9-JW16	0	NORM	12/20/2013	30	< 0.1 U	15	38 J+	27000	38	18	15000
STC9-JW17	0	NORM	12/20/2013	37	< 0.1 U	17	46 J+	32000	54	18	15000
STC9-JW18	0	NORM	12/20/2013	40	0.72	36	58 J+	28000	100	18	18000
STC9-JW19	0	NORM	12/20/2013	36	0.18 J	21	55 J+	33000	89	19	17000
STC9-JW20	0	NORM	12/20/2013	55	0.53	15	32 J+	30000	53	14	13000
STC9-JW21	0	NORM	12/20/2013	29	0.48	16	37 J+	30000	79	14	12000
STC9-JW22	0	NORM	12/20/2013	23	< 0.11 U	14	29 J+	30000	16	21	16000
STC9-JW23	0	NORM	12/20/2013	25	< 0.1 U	14	30 J+	30000	31	15	14000
STC9-JW24	0	NORM	12/20/2013	34	0.48	12	36 J+	21000	57	12	11000
STC9-JW25	0	NORM	12/20/2013	33	0.13 J	14	34 J+	25000	30	13	14000
STC9-JW25	0	FD	12/20/2013	31	0.13 J	14	40 J+	26000	32	13	14000
TMC1-JD01	0	NORM	3/30/2010	26.3	0.16 J	9.4	32.1	17900 J	20.5	10.6	9790 J
TMC1-JD01	11	NORM	4/5/2010	8.8	0.17 J	8.2	18.6 J+	16800 J	8.1	15.7	10100 J
TMC1-JD02	0	NORM	3/30/2010	22.1 J	0.38 J	11.2	186 J	21000 J	26.4 J	8.8	8630 J
TMC1-JD02	0	FD	3/30/2010	12.6 J	0.16 J	7.6	< 18.6 UJ	16600 J	9.1 J	12.8	9580 J
TMC1-JD02	10	NORM	4/5/2010	6.4	< 0.11 U	9.5	16.9 J+	15000 J	9.2	13.9	8990 J

All units in mg/kg.

-- = no sample data.

= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium
BDE-Floor	0	NORM	2/6/2013	1800	0.088	13	37	1900 J+	3.5 J+	< 0.13 UJ	1600
BDW-F High	0	NORM	2/6/2013	4300	0.2	2.1 J	53	2200 J+	2.5 J+	< 0.13 UJ	470
BDW-F Low	0	NORM	2/6/2013	2000	0.21	0.85 J	28	2800 J+	3.2 J+	< 0.13 UJ	680
BDW-S S Wall	0	NORM	2/6/2013	2800	0.03 J	1 J	29	2600 J+	3 J+	< 0.12 UJ	400
BDW-S S Wall	0	FD	2/6/2013	2500	0.021 J	0.85 J	29	3000 J+	2.6 J+	< 0.13 UJ	460
GES Prov-3	0	NORM	12/10/2012	35000	0.56 J-	8.5 J+	78	1400	1.3 J	0.39 J	1300
GES Prov-4	0	NORM	12/10/2012	31000	0.98 J-	44 J+	21	1800	< 0.89 U	1.4	770
GES Prov-5	0	NORM	12/10/2012	25000	0.41 J-	37 J+	28	1700	< 0.87 U	1.3	1100
GES Prov-6	0	NORM	12/10/2012	16000	0.19 J-	6.3 J+	43	1700	1.3 J	0.34 J	1700
GES Prov-7	0	NORM	12/10/2012	18000	0.22 J-	11 J+	62	620	< 0.9 U	0.29 J	680
GES-JWT-1	0	NORM	3/4/2013	440	< 0.012 U	0.81 J	18 J+	2000 J+	3.5	< 0.13 UJ	700 J+
GES-JWT-10	0	NORM	3/4/2013	9000	0.086	6.4	18 J+	2800 J+	1.6 J	< 0.13 UJ	880 J+
GES-JWT-11	0	NORM	3/4/2013	14000 J	0.019 J	2.7	51 J+	3600 J+	2.6 J	0.19 J	790 J+
GES-JWT-12	0	NORM	3/4/2013	4400 J	0.078	5.1	37 J+	2500 J+	2.1 J	0.21 J	720 J+
GES-JWT-13	0	NORM	3/4/2013	34000 J	0.27	16	110 J+	2100 J+	1.2 J	0.84 J	1300 J+
GES-JWT-14	0	NORM	3/4/2013	1900 J	< 0.012 U	1.6 J	29 J+	2400 J+	3.5	< 0.13 U	1100 J+
GES-JWT-15	0	NORM	3/4/2013	3000 J	1	1.1 J	53 J+	3400 J+	4.2	0.23 J	590 J+
GES-JWT-16	0	NORM	3/4/2013	920 J	< 0.011 U	< 0.64 U	29 J+	2200 J+	2.2 J	< 0.12 U	480 J+
GES-JWT-17	0	NORM	3/4/2013	8300 J	0.2	10	24 J+	2900 J+	< 0.83 U	< 0.13 U	490 J+
GES-JWT-18	0	NORM	3/4/2013	11000 J	0.086	2.3 J	57 J+	2300 J+	3.1	< 0.12 U	620 J+
GES-JWT-18	0	FD	3/4/2013	12000	0.1	2.4 J	58	2400	3.2	< 0.13 U	630
GES-JWT-19	0	NORM	3/4/2013	33000 J	0.51	61	22 J+	2200 J+	1.1 J	1.2	1100 J+
GES-JWT-2	0	NORM	3/4/2013	630	< 0.012 U	0.79 J	20 J+	2400 J+	3.4	0.14 J	830 J+
GES-JWT-3	0	NORM	3/4/2013	630	< 0.011 U	< 0.65 U	22 J+	2300 J+	3.2	< 0.13 UJ	710 J+
GES-JWT-4	0	NORM	3/4/2013	510	6.7	2.5 J	32 J+	3100 J+	2.4 J	< 0.13 UJ	1100 J+
GES-JWT-5	0	NORM	3/4/2013	2300	0.024 J	1.1 J	24 J+	2900 J+	3.4	< 0.13 UJ	980 J+
GES-JWT-6	0	NORM	3/4/2013	2400	0.026 J	1.5 J	24 J+	2900 J+	2.8	< 0.13 UJ	1100 J+
GES-JWT-7	0	NORM	3/4/2013	410	8.7	2 J	34 J+	2600 J+	1.9 J	< 0.14 UJ	880 J+
GES-JWT-8	0	NORM	3/4/2013	650	6.2	2.6 J	51 J+	2300 J+	2.5 J	< 0.13 UJ	1000 J+
GES-JWT-9	0	NORM	3/4/2013	530	6	1.2 J	29 J+	2600 J+	2.2 J	< 0.13 UJ	1300 J+
GES-JWT-9	0	FD	3/4/2013	430	5.2	1.2 J	25	2600	2.4 J	< 0.13 U	1300
STC10-JD11	0	NORM	5/12/2014	1200	0.47	0.94 J	24	1800 J+	2.3	1.6	3300 J+
STC1-AI15	0	NORM	6/4/2010	367 J	< 0.0346 U	< 0.4 U	17.3	1520 J	< 0.23 U	< 1 U	506 J+
STC1-AI15	0	FD	6/4/2010	623 J	< 0.0347 U	< 2.6 U	17.8	1690 J	< 0.23 U	< 1 U	510 J+
STC1-AI15	10	NORM	6/4/2010	364 J	< 0.035 U	< 0.4 U	19.8	1890 J	< 0.24 U	< 1 U	599 J+

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
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Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium
STC1-AI16	0	NORM	6/7/2010	445 J	< 0.0358 U	< 0.41 U	17.3	1420 J	< 0.24 U	0.095 J	559
STC1-AI16	10	NORM	6/7/2010	759 J	< 0.0383 U	< 0.44 U	17.1	1890 J	< 0.26 U	0.11 J	1630
STC1-AJ15	0	NORM	6/7/2010	411 J	0.559 J	< 2.6 U	16.5	2020 J	< 0.24 U	0.083 J	559
STC1-AJ15	0	FD	6/7/2010	432 J	0.113 J	< 0.44 U	18.3	2440 J	< 0.26 U	0.11 J	850
STC1-AJ15	10	NORM	6/7/2010	382 J	< 0.0377 U	< 0.44 U	17.5	1930 J	< 0.25 U	0.092 J	536
STC1-AJ16	0	NORM	6/7/2010	598 J	< 0.0354 U	< 0.41 U	18.7	2150 J	< 0.24 U	0.1 J	562
STC1-AJ16	10	NORM	6/7/2010	337 J	< 0.0359 U	< 0.41 U	15.8	1580 J	< 0.24 U	0.092 J	868
STC1-AJ18	0	NORM	5/24/2010	884	< 0.0389 U	< 2.9 U	20.6	1820 J+	3.9	< 0.047 U	1200 J+
STC1-AJ18	12	NORM	5/24/2010	470	< 0.0358 U	< 2.7 U	25.8	1650 J+	2.8	< 0.043 U	929 J+
STC1-AK15	0	NORM	6/3/2010	533 J	0.0403	< 0.44 U	19	2500 J	< 0.26 U	< 1.1 U	541
STC1-AK15	0	FD	6/3/2010	440 J	< 0.0351 U	< 0.4 U	17.2	2390 J	< 0.24 U	< 1.1 U	771
STC1-AK15	3	NORM	6/3/2010	423 J	< 0.035 U	< 0.4 U	17.3	2230 J	< 0.24 U	< 1 U	617
STC1-AK15	13	NORM	6/3/2010	299 J	< 0.0372 U	< 0.43 U	18.5	1340 J	< 0.25 U	< 1.1 U	504
STC1-AK20	0	NORM	5/27/2010	409	0.0116 J	< 0.41 U	14.9	1710 J+	1.5 J	< 0.042 U	850
STC1-AK20	0	FD	5/27/2010	473	0.0152 J	< 0.43 U	15	1890 J+	1.3 J	< 0.045 U	626
STC1-AK20	6	NORM	5/27/2010	486	0.0094 J	< 0.42 U	17.2	1670 J+	1.5 J	< 0.043 U	955
STC1-AK20	16	NORM	5/27/2010	398	0.0177 J	< 0.4 U	13.3	1330 J+	1.1 J	< 0.042 U	796
STC1-JB12	0	NORM	8/30/2010	619	< 0.0065 U	< 2.7 U	16.8	2630 J-	3.8	< 0.043 U	3360
STC1-JB12	10	NORM	8/30/2010	469	< 0.0066 U	< 2.7 U	18.5	1700 J-	2.9	< 0.044 U	3800
STC1-JD02	0	NORM	6/4/2010	313 J	< 0.0354 U	< 0.41 U	30.1	1950 J	< 0.24 U	< 1.1 U	302 J+
STC1-JD02	10	NORM	6/4/2010	386 J	< 0.0364 U	< 2.7 U	43	1590 J	< 0.25 U	< 1.1 U	338 J+
STC1-JD03	0	NORM	6/4/2010	362 J	0.051	< 2.6 U	17.6	883 J	< 0.24 U	< 1.1 U	262 J+
STC1-JD03	10	NORM	6/4/2010	255 J	< 0.0346 U	< 0.4 U	18.6	1500 J	< 0.23 U	< 1 U	492 J+
STC1-JD04	0	NORM	6/4/2010	637 J	0.0761	< 2.6 U	19.6	2210 J	< 0.23 U	< 1 U	608 J+
STC1-JD04	10	NORM	6/4/2010	443 J	< 0.0369 U	< 0.43 U	19.3	1630 J	< 0.25 U	< 1.1 U	462 J+
STC1-JD05	0	NORM	6/4/2010	658 J	0.284	18.3	36.2	1310 J	< 2.6 U	< 1 U	345 J+
STC1-JD05	10	NORM	6/4/2010	407 J	< 0.0365 U	< 0.42 U	18.5	1520 J	< 0.25 U	< 1.1 U	926 J+
STC1-JD06	0	NORM	6/3/2010	196 J	0.136	< 0.41 U	19.1	1740 J	< 0.24 U	< 1.1 U	303
STC1-JD06	10	NORM	6/3/2010	242 J	< 0.0364 U	< 2.7 U	15.9	1390 J	< 0.25 U	< 1.1 U	428
STC1-JD07	0	NORM	6/7/2010	498 J	< 0.0354 U	< 2.7 U	18.2	2160 J	< 0.24 U	0.081 J	710
STC1-JD07	4	NORM	6/7/2010	409 J	< 0.0366 U	< 2.7 U	16.1	1840 J	< 2.7 U	0.073 J	664
STC1-JD07	14	NORM	6/7/2010	500 J	< 0.0373 U	< 2.8 U	15.7	1700 J	< 0.25 U	0.07 J	654
STC1-JD08	0	NORM	5/20/2010	2390 J	0.0444	< 2.7 U	19.4	2350 J	< 2.7 U	0.18 J	1040
STC1-JD08	0	FD	5/20/2010	2460 J	0.0513	2.8	20.2	2940 J	< 2.7 U	0.33 J	895
STC1-JD08	10	NORM	5/20/2010	509 J	0.0119 J	< 2.7 U	20.5	1900 J	< 2.7 U	0.05 J	1390

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium
STC1-JD09	0	NORM	5/20/2010	348 J	0.015 J	< 0.45 U	12.7	1940 J	< 2.9 U	< 0.047 U	683
STC1-JD09	10	NORM	5/20/2010	1440 J	< 0.0064 U	< 2.7 U	21.6	3150 J	< 2.7 U	0.099 J	1120
STC1-JD10	0	NORM	5/21/2010	84800 J	0.222	40.4	87.1	1350 J	< 3 U	0.24 J	1980 J+
STC1-JD10	10	NORM	5/21/2010	5720 J	0.234	< 2.9 U	30.8	2080 J	< 2.9 U	0.18 J	3340 J+
STC1-JD11	0	NORM	5/21/2010	40400 J	0.0262 J	7.6	99.6	942 J	< 2.7 U	1.5	474 J+
STC1-JD11	10	NORM	5/21/2010	1940 J	0.175	< 2.9 U	29	2520 J	< 2.9 U	0.23 J	3770 J+
STC1-JD12	0	NORM	5/21/2010	4780 J	0.0747	3.7	107	1900 J	< 2.6 U	0.18 J	1720 J+
STC1-JD12	0	FD	5/21/2010	2430 J	0.0995	2.8	74.8	1540 J	< 2.8 U	0.12 J	1280 J+
STC1-JD12	10	NORM	5/21/2010	3290 J	0.0118 J	< 2.7 U	54.4	1460 J	< 2.7 U	0.1 J	2060 J+
STC1-JD13	0	NORM	5/21/2010	3880 J	0.0637	4.2	29	1850 J	< 2.6 U	0.043 J	2630 J+
STC1-JD13	10	NORM	5/21/2010	4910 J	0.0372 J	10.9	32.5	2470 J	< 2.8 U	0.11 J	2420 J+
STC1-JD14	0	NORM	6/1/2010	1560 J	0.059 J	< 3.2 U	23.5	2180 J	< 3.2 U	< 1.3 U	815 J
STC1-JD14	0	FD	6/1/2010	495 J	0.118 J	< 0.4 U	16.2	2730 J	< 0.23 U	< 1 U	4180 J
STC1-JD14	10	NORM	6/1/2010	518 J	0.0781	< 0.41 U	18.5	1780 J	< 0.24 U	< 1.1 U	855
STC1-JD15	0	NORM	6/1/2010	2450 J	0.0196 J	< 2.7 U	20.3	1530 J	< 0.24 U	< 1.1 U	1680
STC1-JD15	6	NORM	6/1/2010	642 J	0.032 J	< 2.7 U	18.6	2090 J	< 0.24 U	< 1.1 U	1110
STC1-JD15	16	NORM	6/1/2010	372 J	0.0138 J	< 0.41 U	18.6	1810 J	< 0.24 U	< 1.1 U	910
STC6-ES01	0	NORM	7/20/2012	24000	0.14	16	21 J+	1100 J+	< 0.8 U	3.5 J	260 J+
STC6-ES01	0	FD	7/20/2012	23000	0.17	16	21 J+	1100 J+	< 0.79 U	2.2 J	260 J+
STC6-JD02	0	NORM	7/20/2012	840	0.014 J	0.95 J	22 J+	2900 J+	2.5 J	0.12 J	580 J+
STC6-JD05	0	NORM	7/20/2012	790	0.018 J	0.98 J	20 J+	1600 J+	2.3 J	< 0.071 UJ	340 J+
STC6-JD08	0	NORM	7/20/2012	2200	0.021 J	2.3 J	18 J+	2000 J+	2.8	0.072 J	790 J+
STC6-JD09	0	NORM	7/20/2012	23000	0.22	23	22 J+	2000 J+	1.7 J	1.2 J-	590 J+
STC6-JD10	10	NORM	7/20/2012	18000	0.31	12	59 J+	710 J+	1.2 J	0.6 J	750 J+
STC6-JD11	10	NORM	7/23/2012	7700	0.19	16	73	2100 J+	2.7	0.31 J	2400 J+
STC6-JD12	10	NORM	7/23/2012	2100	0.051	4.1	35	2300 J+	2.1 J	0.16 J	1600 J+
STC6-JD13	10	NORM	7/23/2012	3800	0.09	5.2	46	2100 J+	1.8 J	0.077 J	2500 J+
STC6-JD14	0	NORM	7/23/2012	1200	0.024 J	1.3 J	19	2100 J+	2.4 J	< 0.071 UJ	1100 J+
STC6-JD15	0	NORM	7/23/2012	680	0.021 J	1.4 J	20	2600 J+	1.8 J	< 0.07 UJ	2200 J+
STC7-ES01	0	NORM	12/11/2012	590	R	< 0.64 U	19	2200	2.3 J	< 0.12 U	390
STC7-JD08	0	NORM	12/11/2012	550	R	< 0.66 U	17	1600	0.86 J	< 0.13 U	990
STC7-JD09	0	NORM	12/11/2012	11000	0.14 J-	12 J+	21	1800	1.5 J	0.23 J	460
STC7-JD10	10	NORM	12/11/2012	1700	0.18 J-	8.2 J+	54	1600	2.3 J	< 0.13 U	2200
STC7-JD11	10	NORM	12/11/2012	2700	0.32 J-	2.6 J+	56	2300	4.8	< 0.13 U	4600
STC7-JD12	10	NORM	12/11/2012	3500	0.042 J-	1.1 J+	51	1700	2.8	< 0.13 U	1500

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium
STC7-JD13	10	NORM	12/11/2012	1000	0.023 J-	0.88 J+	20	2000	1.8 J	< 0.13 U	800
STC8-JD09	0	NORM	2/5/2013	7500	0.13	4.2	60	2000 J+	4.8 J+	0.13 J	1800
STC8-JD10	10	NORM	2/5/2013	2400	0.38	1.4 J	42	1700 J+	5.9 J+	0.17 J	3300
STC8-JD11	10	NORM	2/5/2013	5100	0.74	9.2	48	1700 J+	4.4 J+	0.26 J	3600
STC8-JD12	10	NORM	2/5/2013	3600	0.017 J	1.6 J	33	2200 J+	4.8 J+	< 0.12 UJ	2700
STC8-Prov3	0	NORM	2/6/2013	2000	0.056	2.7	31	2100 J+	4.2 J+	< 0.12 UJ	3000
STC8-Prov4	0	NORM	2/6/2013	1300	< 0.011 U	0.96 J	18	2300 J+	2.9 J+	< 0.13 UJ	880
STC8-Prov4	0	FD	2/6/2013	990	< 0.011 U	0.91 J	17	2000 J+	3.5 J+	< 0.13 UJ	740
STC8-Prov5	0	NORM	2/6/2013	740	< 0.011 U	0.68 J	17	1900 J+	2.6 J+	< 0.13 UJ	740
STC8-Prov6	0	NORM	2/6/2013	790	0.14	1.9 J	45	1700 J+	2.4 J+	< 0.12 UJ	3000
STC8-Prov7	0	NORM	2/6/2013	3500	0.26	3.2	53	1900 J+	4.3 J+	< 0.13 UJ	2700
STC9DP-JW01	1	NORM	1/29/2014	730	0.013 J	< 0.62 U	25	3000 J+	3.9	0.13 J	1100
STC9DP-JW01	2	NORM	1/29/2014	990	0.013 J	< 0.59 U	24	1900 J+	5.1	0.18 J	530
STC9DP-JW01	3	NORM	1/29/2014	960	0.011 J	< 0.58 U	30	2400 J+	3.8	< 0.11 U	550
STC9DP-JW04	1	NORM	1/29/2014	8800	0.11	9.5	19	2100 J+	2.7	1.7	1000
STC9DP-JW04	2	NORM	1/29/2014	2400	0.038	2.9	25	3300 J+	3.4	0.65 J	1000
STC9DP-JW04	3	NORM	1/29/2014	1600	0.023 J	1.3 J	27	2100 J+	3.4	0.23 J	660
STC9DP-JW07	1	NORM	1/29/2014	880	0.015 J	0.7 J	30	3700 J+	4.2	< 0.11 U	990
STC9DP-JW07	2	NORM	1/29/2014	840	0.017 J	< 0.61 U	29	3000 J+	3.6	< 0.12 U	1400
STC9DP-JW07	3	NORM	1/29/2014	880	0.019 J	< 0.57 U	26	4200 J+	3	< 0.11 U	1100
STC9-FALL01-	1	NORM	11/25/2013	2600	0.6	5.8	53	1800 J+	3.7	0.76 J	2400 J+
STC9-FALL01-	2	NORM	11/25/2013	2300	0.13	1.6 J	35	2000	2.4	1.1 J+	2400 J-
STC9-FALL01-	3	NORM	11/25/2013	2200	0.06 J-	1.3 J	29	2000 J+	2.8	0.54 J	1200 J+
STC9-FALL02-	1	NORM	11/25/2013	1000	0.11	1.4 J	76	1900 J+	2.3 J	0.35 J	2300 J+
STC9-FALL02-	2	NORM	11/25/2013	2100	0.061	2.6	48	2500	1.3 J	0.73 J	3000 J-
STC9-FALL02-	3	NORM	11/25/2013	2900	0.09 J-	3.7	58	3400 J+	4.8	0.22 J	2700 J+
STC9-FALL03-	1	NORM	11/25/2013	4500	0.71	2.5	50	2000 J+	2.4	0.67 J	2000 J+
STC9-FALL03-	2	NORM	11/25/2013	4400	0.54	2.3 J	39	2200	1.4 J	0.62 J	1900 J-
STC9-FALL03-	3	NORM	11/25/2013	6300	0.41 J-	2.7	45	2500 J+	4.6	0.56 J	1800 J+
STC9-FALL04-	1	NORM	11/25/2013	4600	0.042	1.5 J	50	1900 J+	2 J	< 0.13 U	1700 J+
STC9-FALL04-	2	NORM	11/25/2013	6800	0.045	2.3 J	52	2600	1 J	0.22 J	3100 J-
STC9-FALL04-	3	NORM	11/25/2013	4600	0.033 J-	1.6 J	47	3300 J+	3.8	0.15 J	5200 J+
STC9-JW01	0	NORM	12/19/2013	8000	0.074	9.8	27	2900 J+	1.9 J	0.42 J	630
STC9-JW02	0	NORM	12/19/2013	1400	0.038	2 J	25	3300 J+	3.3	0.21 J	1000
STC9-JW03	0	NORM	12/19/2013	830	0.02 J	1.1 J	29	2800 J+	3.6	0.18 J	540

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium
STC9-JW04	0	NORM	12/19/2013	31000	0.25	48	40	2400 J+	2.1 J	2.9	640
STC9-JW05	0	NORM	12/19/2013	2300	0.044	1.7 J	77	3300 J+	2.7	0.23 J	700
STC9-JW05	0	FD	12/19/2013	1900	0.031 J	1.4 J	51	2200 J+	2.4	0.49 J	490
STC9-JW06	0	NORM	12/19/2013	2800	0.029 J	1.7 J	34	3200 J+	3.2	0.41 J	590
STC9-JW07	0	NORM	12/19/2013	4600	0.074	5.9	24	3600 J+	1.7 J	0.5 J	1300
STC9-JW08	0	NORM	12/19/2013	910	0.023 J	0.93 J	29	2600 J+	3	0.16 J	550
STC9-JW09	0	NORM	12/19/2013	1100	0.15	1.3 J	31	3600 J+	3.7	0.27 J	1100
STC9-JW10	0	NORM	12/19/2013	4300	0.1	2.3 J	35	2800 J+	1.7 J	0.24 J	1000
STC9-JW11	0	NORM	12/19/2013	1000	0.7	1.5 J	32	2900 J+	2.4	0.14 J	830
STC9-JW12	0	NORM	12/19/2013	1700	0.055	1.7 J	25	3700 J+	2.5	0.13 J	660
STC9-JW13	0	NORM	12/20/2013	490	0.019 J	0.63 J	24	2200 J+	3.1	0.49 J	910 J+
STC9-JW14	0	NORM	12/20/2013	720	0.016 J	0.85 J	24	2300 J+	2.9	0.22 J	1100 J+
STC9-JW15	0	NORM	12/20/2013	850	3.1	0.82 J	28	2700 J+	3.4	0.12 J	1300 J+
STC9-JW15	0	FD	12/20/2013	790	3	0.87 J	24	2800 J+	2.7	0.16 J	1300 J+
STC9-JW16	0	NORM	12/20/2013	1100	0.96	1.7 J	27	2700 J+	3.1	0.14 J	1300 J+
STC9-JW17	0	NORM	12/20/2013	1100	2.6	1.9 J	31	3200 J+	3.3	0.13 J	1000 J+
STC9-JW18	0	NORM	12/20/2013	7000	0.14	3.5	38	3300 J+	3.9	0.18 J	1200 J+
STC9-JW19	0	NORM	12/20/2013	3800	2.2	2.9	33	3600 J+	2.4	0.16 J	1300 J+
STC9-JW20	0	NORM	12/20/2013	650	1.6	2 J	28	3200 J+	3.2	< 0.11 U	1000 J+
STC9-JW21	0	NORM	12/20/2013	800	6.1	2.3 J	30	3200 J+	2.4 J	< 0.12 U	780 J+
STC9-JW22	0	NORM	12/20/2013	610	0.16	0.81 J	26	3300 J+	2.7	< 0.11 U	1000 J+
STC9-JW23	0	NORM	12/20/2013	720	0.53	0.89 J	26	3300 J+	2.2 J	< 0.12 U	790 J+
STC9-JW24	0	NORM	12/20/2013	970	2.6	2.2 J	23	2500 J+	1.1 J	< 0.12 U	940 J+
STC9-JW25	0	NORM	12/20/2013	860	0.084	1.4 J	26	2800 J+	1.6 J	0.58 J	890 J+
STC9-JW25	0	FD	12/20/2013	1100	0.072	1.6 J	24	3000 J+	1.3 J	0.18 J	880 J+
TMC1-JD01	0	NORM	3/30/2010	553 J	< 0.0373 U	< 0.385 U	17	2710 J	< 0.225 U	< 1.1 U	465
TMC1-JD01	11	NORM	4/5/2010	357 J	< 0.0388 U	< 0.385 U	15.7	1460 J	< 0.225 U	< 0.04 U	526
TMC1-JD02	0	NORM	3/30/2010	460 J	0.0559	< 0.385 U	29.6 J	1750 J	< 0.225 U	< 1.1 U	709
TMC1-JD02	0	FD	3/30/2010	331 J	< 0.0362 U	< 0.385 U	14.8 J	1690 J	< 0.225 U	< 1.1 U	553
TMC1-JD02	10	NORM	4/5/2010	342 J	< 0.0369 U	< 0.385 U	15.3	1270 J	< 0.225 U	< 0.04 U	388

All units in mg/kg.

-- = no sample data.

= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Strontium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc
BDE-Floor	0	NORM	2/6/2013	170 J+	5.9	0.73 J	850	110	1.8	400	210
BDW-F High	0	NORM	2/6/2013	150 J+	1.5 J	6.3	1100	14	2.1	84	170
BDW-F Low	0	NORM	2/6/2013	140 J+	0.9 J	< 0.54 U	700	5.5	1.1	43	170
BDW-S S Wall	0	NORM	2/6/2013	120 J+	< 0.77 U	< 0.51 U	570	5.2	0.85	58	49
BDW-S S Wall	0	FD	2/6/2013	170 J+	< 0.81 U	1 J	800	5.5	1.1	57	52
GES Prov-3	0	NORM	12/10/2012	110	1.6 J	25	5400	20 J-	5.8	410 J	140
GES Prov-4	0	NORM	12/10/2012	2000	16	14	4800	190 J-	3.7	240 J	990
GES Prov-5	0	NORM	12/10/2012	1000	17	23	5000	150 J-	4.9	430 J	710
GES Prov-6	0	NORM	12/10/2012	280	2.3 J	12	3400	29 J-	3.6	290 J	170
GES Prov-7	0	NORM	12/10/2012	350	21	9	2200	80 J-	4.8	400 J	270
GES-JWT-1	0	NORM	3/4/2013	310 J+	< 0.83 U	0.84 J	570	3.9 J+	1.3 J+	35 J+	45 J+
GES-JWT-10	0	NORM	3/4/2013	380 J+	< 0.79 U	2.6	600	< 1.3 U	1.5 J+	40 J+	90 J+
GES-JWT-11	0	NORM	3/4/2013	370	2 J+	2.2 J+	800	8.2	1.9	47 J+	120
GES-JWT-12	0	NORM	3/4/2013	300	1.9 J+	16 J+	1900	15	2.5	140 J+	150
GES-JWT-13	0	NORM	3/4/2013	340	7.1 J+	69 J+	9800	37	12	570 J+	210
GES-JWT-14	0	NORM	3/4/2013	290	< 0.81 U	3.5 J+	1200	8.2	1.6	86 J+	71
GES-JWT-15	0	NORM	3/4/2013	190	4 J+	1.5 J+	830	16	1.9	60 J+	280
GES-JWT-16	0	NORM	3/4/2013	270	< 0.78 U	0.76 J	790	< 1.3 U	1.3	46 J+	49
GES-JWT-17	0	NORM	3/4/2013	110	1.9 J+	13 J+	1100	18	1.5	180 J+	75
GES-JWT-18	0	NORM	3/4/2013	190	< 0.77 U	6.6 J+	2000	11	5.5	280 J+	100
GES-JWT-18	0	FD	3/4/2013	210	< 0.8 U	7.7	2300	12	6	280	99
GES-JWT-19	0	NORM	3/4/2013	3800	26 J+	5.1 J+	3600	130	5.2	180 J+	920
GES-JWT-2	0	NORM	3/4/2013	340 J+	< 0.83 U	1.3	700	3.1 J+	1.2 J+	43 J+	48 J+
GES-JWT-3	0	NORM	3/4/2013	300 J+	< 0.8 U	0.72 J	710	1.3 J	1.2 J+	50 J+	55 J+
GES-JWT-4	0	NORM	3/4/2013	200 J+	< 0.8 U	2.9	690	2.8 J+	1.8 J+	53 J+	110 J+
GES-JWT-5	0	NORM	3/4/2013	290 J+	0.85 J	0.87 J	870	2.3 J	1.4 J+	46 J+	89 J+
GES-JWT-6	0	NORM	3/4/2013	250 J+	< 0.81 U	2.6	840	4.7 J+	1.4 J+	46 J+	110 J+
GES-JWT-7	0	NORM	3/4/2013	180 J+	< 0.87 U	3.2	730	< 1.4 U	1.2 J+	40 J+	100 J+
GES-JWT-8	0	NORM	3/4/2013	230 J+	< 0.83 U	2.5	640	2.9 J+	2.4 J+	52 J+	120 J+
GES-JWT-9	0	NORM	3/4/2013	220 J+	< 0.82 U	1.9	600	< 1.3 U	1.2 J+	36 J+	110 J+
GES-JWT-9	0	FD	3/4/2013	200	< 0.82 U	1.8	570	< 1.3 U	1.2	32	120
STC10-JD11	0	NORM	5/12/2014	210 J+	1.6 J	0.84 J	1200	12	1.1	89	120
STC1-AI15	0	NORM	6/4/2010	235 J	< 0.3 U	< 0.39 U	666 J	< 0.43 UJ	0.76	42.6	39.7
STC1-AI15	0	FD	6/4/2010	273 J	< 0.3 U	< 0.4 U	487 J	2.9 J	< 0.52 U	39.6	49.1
STC1-AI15	10	NORM	6/4/2010	288 J	< 0.3 U	< 0.4 U	783 J	< 0.43 UJ	0.8	47.7	45.2

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Strontium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc
STC1-AI16	0	NORM	6/7/2010	166 J	< 0.31 U	< 1.1 U	733 J	< 0.44 UJ	0.85	58.1	44.5
STC1-AI16	10	NORM	6/7/2010	486 J	< 0.33 U	< 0.44 U	800 J	< 0.47 UJ	0.99	80.9	40.3
STC1-AJ15	0	NORM	6/7/2010	184 J	< 0.31 U	< 0.4 U	773 J	< 2.6 UJ	0.74	68.4	47.8
STC1-AJ15	0	FD	6/7/2010	238 J	< 0.33 U	< 1.1 U	893 J	< 0.47 UJ	1.1	68	53.8
STC1-AJ15	10	NORM	6/7/2010	239 J	< 0.33 U	< 0.43 U	808 J	< 0.46 UJ	1.2	63	47
STC1-AJ16	0	NORM	6/7/2010	222 J	< 0.31 U	< 0.4 U	751 J	< 0.44 UJ	0.74	68.1	49.9
STC1-AJ16	10	NORM	6/7/2010	255 J	< 0.31 U	< 0.41 U	739 J	< 0.44 UJ	0.96	58.8	40.6
STC1-AJ18	0	NORM	5/24/2010	245 J+	< 1.2 U	< 1.2 U	797	2.9 J-	0.73	47	64.7
STC1-AJ18	12	NORM	5/24/2010	311 J+	< 1.1 U	1.3	848	2.7 J-	1.3	44.4	50.7
STC1-AK15	0	NORM	6/3/2010	261 J	< 0.33 U	< 0.43 U	873 J	< 0.47 UJ	0.85	48.6 J-	50.6
STC1-AK15	0	FD	6/3/2010	287 J	< 0.31 U	< 0.4 U	819 J	< 0.43 UJ	0.63	43.7 J-	39.1
STC1-AK15	3	NORM	6/3/2010	249 J	< 0.3 U	< 0.4 U	715 J	< 0.43 UJ	< 0.52 U	45.4 J-	43
STC1-AK15	13	NORM	6/3/2010	369 J	< 0.32 U	< 0.42 U	649 J	< 0.46 UJ	0.79	43 J-	34.7
STC1-AK20	0	NORM	5/27/2010	336 J+	< 0.31 U	< 0.4 U	838	< 0.43 UJ	0.79	37.9	38.6
STC1-AK20	0	FD	5/27/2010	264 J+	< 0.32 U	0.44 J	783	< 0.46 UJ	0.9	42.7	38.8
STC1-AK20	6	NORM	5/27/2010	422 J+	< 0.31 U	< 0.41 U	796	< 0.45 UJ	1	42.6	44.5
STC1-AK20	16	NORM	5/27/2010	303 J+	< 0.3 U	< 0.4 U	682	< 0.43 UJ	1.3	43.5	38.1
STC1-JB12	0	NORM	8/30/2010	212 J+	1.2	< 1.1 U	935	6.9 J	0.96	53.7	47.3
STC1-JB12	10	NORM	8/30/2010	232 J+	< 1.1 U	1.9	809	7.5 J	1.2	52	43.5
STC1-JD02	0	NORM	6/4/2010	231 J	< 0.31 U	< 0.4 U	754 J	< 2.7 UJ	0.75	80.6	51.8
STC1-JD02	10	NORM	6/4/2010	234 J	< 0.32 U	< 0.42 U	673 J	< 0.45 UJ	0.86	47.7	43.2
STC1-JD03	0	NORM	6/4/2010	107 J	< 0.3 U	< 1.1 U	510 J	< 2.6 UJ	0.77	30.5	37.2
STC1-JD03	10	NORM	6/4/2010	196 J	< 0.3 U	< 0.39 U	784 J	< 0.43 UJ	1.1	52.8	48.9
STC1-JD04	0	NORM	6/4/2010	219 J	< 0.3 U	1.8	777 J	< 2.6 UJ	0.92	61.6	69.9
STC1-JD04	10	NORM	6/4/2010	322 J	< 0.32 U	< 0.42 U	817 J	< 0.45 UJ	0.81	49.1	44.5
STC1-JD05	0	NORM	6/4/2010	161 J	1.1 J+	45.4	3660 J	14.3 J-	4.9	303	220
STC1-JD05	10	NORM	6/4/2010	333 J	< 0.32 U	< 1.1 U	737 J	< 0.45 UJ	0.91	47.4	43.8
STC1-JD06	0	NORM	6/3/2010	185 J	< 0.31 U	< 0.4 U	697 J	< 0.43 UJ	0.53	56.8 J-	39.1
STC1-JD06	10	NORM	6/3/2010	314 J	< 0.32 U	< 1.1 U	643 J	< 2.7 UJ	0.72	40.1 J-	33.8
STC1-JD07	0	NORM	6/7/2010	197 J	< 1.1 U	< 1.1 U	810 J	< 2.7 UJ	1.5	66.9	52.3
STC1-JD07	4	NORM	6/7/2010	242 J	< 0.32 U	2	668 J	< 2.7 UJ	1	60.1	37.8
STC1-JD07	14	NORM	6/7/2010	294 J	< 0.32 U	< 1.1 U	619 J	< 0.46 UJ	1.4	54.9	39.9
STC1-JD08	0	NORM	5/20/2010	411 J	2.7 J	1.1	829 J	5.4 J-	1.1	52.6	94.8
STC1-JD08	0	FD	5/20/2010	323 J	1.5 J	< 1.1 U	914 J	6.1 J-	0.97	52.5	105
STC1-JD08	10	NORM	5/20/2010	399 J	< 0.32 U	< 1.1 U	830 J	< 0.45 UJ	1.6	46.5	50.4

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Strontium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc
STC1-JD09	0	NORM	5/20/2010	143 J	< 0.34 U	< 0.44 U	492 J	< 0.48 UJ	0.62	21.6	44.4
STC1-JD09	10	NORM	5/20/2010	305 J	< 1.1 U	< 1.1 U	928 J	3.1 J-	1.1	52.2	63.1
STC1-JD10	0	NORM	5/21/2010	86.6 J	1.9	26.2	6650 J	77.8 J-	10.3	4640	292
STC1-JD10	10	NORM	5/21/2010	248 J	2.3	< 1.2 U	825 J	20.3 J-	1.1	105	165
STC1-JD11	0	NORM	5/21/2010	128 J	2.3	67.5	6840 J	5.5 J-	5.3	357	146
STC1-JD11	10	NORM	5/21/2010	224 J	2.2	< 1.2 U	793 J	12.2 J-	1.3	81	273
STC1-JD12	0	NORM	5/21/2010	200 J	9.8	< 1 U	678 J	12.6 J	1.1	90.4	189 J
STC1-JD12	0	FD	5/21/2010	202 J	7.9	< 1.1 U	605 J	6.8 J	1	65.4	108 J
STC1-JD12	10	NORM	5/21/2010	158 J	5.2	< 0.41 U	633 J	6.5 J-	1	71.7	160
STC1-JD13	0	NORM	5/21/2010	335 J	1.1	< 1 U	636 J	6.3 J-	0.79	50.9	155
STC1-JD13	10	NORM	5/21/2010	288 J	1.3	< 1.1 U	978 J	6.9 J-	1.2	60	129
STC1-JD14	0	NORM	6/1/2010	303 J	1.8 J	2.5 J	983 J	6.5 J	1.5 J	81.8 J-	72.1 J
STC1-JD14	0	FD	6/1/2010	571 J	< 0.3 UJ	< 0.4 UJ	523 J	< 0.43 UJ	0.71 J	56.8 J-	34.2 J
STC1-JD14	10	NORM	6/1/2010	210 J	< 0.31 U	< 0.4 U	790 J	< 0.43 UJ	0.84	44.7 J-	45.2
STC1-JD15	0	NORM	6/1/2010	249 J	< 0.31 U	< 0.41 U	618 J	3.2 J	0.74	86.4 J-	40.9
STC1-JD15	6	NORM	6/1/2010	457 J	< 0.31 U	< 1.1 U	781 J	3.1 J	1.2	53.9 J-	47.1
STC1-JD15	16	NORM	6/1/2010	300 J	< 0.31 U	< 0.41 U	804 J	< 0.44 UJ	2.1	47.4 J-	38.3
STC6-ES01	0	NORM	7/20/2012	550 J+	18	8.5	2200	84 J-	3.4	340 J+	520 J+
STC6-ES01	0	FD	7/20/2012	570 J+	19	9.2	2300	87 J-	3.6	370 J+	570 J+
STC6-JD02	0	NORM	7/20/2012	350 J+	< 0.51 U	1.3	970	2.1 J	1.1	54 J+	63 J+
STC6-JD05	0	NORM	7/20/2012	220 J+	< 0.51 U	1.4	940	3.6 J	1.3	100 J+	60 J+
STC6-JD08	0	NORM	7/20/2012	350 J+	1.4	1.3	1000	7.9 J-	1.2	71 J+	72 J+
STC6-JD09	0	NORM	7/20/2012	1200 J+	16	9.6	2900	95 J-	3.4	290 J+	580 J+
STC6-JD10	10	NORM	7/20/2012	400 J+	14	12	2300	87 J-	5.1	600 J+	250 J+
STC6-JD11	10	NORM	7/23/2012	270	8.1	7	1700	67 J-	4.3	410	250 J+
STC6-JD12	10	NORM	7/23/2012	340	1.4	1	880	7.4 J-	1.3	68	76 J+
STC6-JD13	10	NORM	7/23/2012	240	1.7	1.3	930	17 J-	1.5	110	180 J+
STC6-JD14	0	NORM	7/23/2012	340	< 0.51 U	0.76 J	870	3.6 J-	0.91	54	64 J+
STC6-JD15	0	NORM	7/23/2012	340	< 0.51 U	0.62 J	810	2 J	1.1	50	52 J+
STC7-ES01	0	NORM	12/11/2012	200	< 0.78 U	< 0.51 U	680	< 1.3 UJ	0.73	35 J	44
STC7-JD08	0	NORM	12/11/2012	200	< 0.81 U	< 0.53 U	600	< 1.3 UJ	0.87	39 J	43
STC7-JD09	0	NORM	12/11/2012	490	8.2	4.8	1400	75 J-	2.3	210 J	190
STC7-JD10	10	NORM	12/11/2012	160	1.3 J	< 0.53 U	550	100 J-	2.8	520 J	150
STC7-JD11	10	NORM	12/11/2012	380	7.3	< 0.56 U	760	39 J-	2.7	240 J	230
STC7-JD12	10	NORM	12/11/2012	210	2 J	< 0.53 U	790	7.1 J-	1	75 J	51

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Strontium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc
STC7-JD13	10	NORM	12/11/2012	330	< 0.82 U	0.58 J	900	1.9 J-	1.1	51 J	61
STC8-JD09	0	NORM	2/5/2013	170 J+	4	0.57 J	850	28	3.8	140	230
STC8-JD10	10	NORM	2/5/2013	180 J+	1.7 J	0.75 J	700	15	0.94	75	250
STC8-JD11	10	NORM	2/5/2013	190 J+	4.9	< 0.54 U	730	44	2	120	200
STC8-JD12	10	NORM	2/5/2013	170 J+	2.4 J	< 0.51 U	700	9.1	1.2	83	49
STC8-Prov3	0	NORM	2/6/2013	250 J+	1.2 J	< 0.5 U	700	36	1.5	170	210
STC8-Prov4	0	NORM	2/6/2013	300 J+	< 0.82 U	< 0.54 U	820	3.6	0.73	46	63
STC8-Prov4	0	FD	2/6/2013	240 J+	< 0.81 U	< 0.53 U	820	3.6	0.78	43	50
STC8-Prov5	0	NORM	2/6/2013	200 J+	< 0.82 U	< 0.54 U	630	1.8 J	0.76	44	49
STC8-Prov6	0	NORM	2/6/2013	120 J+	1.6 J	< 0.52 U	500	13	1.2	250	100
STC8-Prov7	0	NORM	2/6/2013	190 J+	1.9 J	< 0.53 U	700	18	1.6	200	210
STC9DP-JW01	1	NORM	1/29/2014	310	< 0.77 U	0.71 J	810	< 1.3 UJ	0.92	57	56
STC9DP-JW01	2	NORM	1/29/2014	230	< 0.72 U	0.55 J	930	< 1.2 UJ	0.93	57	55
STC9DP-JW01	3	NORM	1/29/2014	290	< 0.71 U	0.79 J	930	< 1.2 UJ	1.1	68	68
STC9DP-JW04	1	NORM	1/29/2014	530	6.4	2.7	1600	44 J-	1.5	100	250
STC9DP-JW04	2	NORM	1/29/2014	330	2 J	1.9	1100	7.4 J-	1.8	78	94
STC9DP-JW04	3	NORM	1/29/2014	180	0.89 J	1.5	1000	4.2 J-	1	67	64
STC9DP-JW07	1	NORM	1/29/2014	260	< 0.68 U	0.97 J	770	< 1.1 UJ	1.1	56	60
STC9DP-JW07	2	NORM	1/29/2014	320	< 0.75 U	0.75 J	870	< 1.2 UJ	1.2	58	70
STC9DP-JW07	3	NORM	1/29/2014	280	< 0.7 U	0.58 J	930	< 1.1 UJ	1.2	61	68
STC9-FALL01-	1	NORM	11/25/2013	130 J+	14 J+	2	650	65	2	160 J+	130
STC9-FALL01-	2	NORM	11/25/2013	240 J	3.6	1.8	930	10	1.3	110	180 J-
STC9-FALL01-	3	NORM	11/25/2013	150 J+	2.3 J	2.2	860	8.1 J-	1.1	75	220
STC9-FALL02-	1	NORM	11/25/2013	170 J+	2 J+	0.85 J	770	11	1.8	94 J+	220
STC9-FALL02-	2	NORM	11/25/2013	190 J	2.3 J	0.89 J	1100	13	1.3	110	210 J-
STC9-FALL02-	3	NORM	11/25/2013	280 J+	3.1	1.5	1400	18 J-	1.7	120	320
STC9-FALL03-	1	NORM	11/25/2013	340 J+	2.7 J+	0.88 J	920	26	2	210 J+	230
STC9-FALL03-	2	NORM	11/25/2013	220 J	3.3	0.89 J	1300	25	1.1	140	140 J-
STC9-FALL03-	3	NORM	11/25/2013	220 J+	3.4	1	1300	29 J-	1.9	170	210
STC9-FALL04-	1	NORM	11/25/2013	250 J+	2.3 J+	0.66 J	1000	20	1.1	110 J+	66
STC9-FALL04-	2	NORM	11/25/2013	230 J	2.8	0.87 J	1100	19	0.85	130	66 J-
STC9-FALL04-	3	NORM	11/25/2013	280 J+	1.9 J	1.1	1700	8.9 J-	1.4	170	73
STC9-JW01	0	NORM	12/19/2013	930 J	5.4	2	1400	40	1.7	86	410
STC9-JW02	0	NORM	12/19/2013	370 J	< 0.68 U	2	1000	4.2	1.3	72	81
STC9-JW03	0	NORM	12/19/2013	280 J	< 0.78 U	1.3	1300	3.1	1.6	120	68

TABLE B-4
SOIL METALS DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 20 of 20)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Metals							
				Strontium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc
STC9-JW04	0	NORM	12/19/2013	1300 J	36	23	3200	290	6.8	640	650
STC9-JW05	0	NORM	12/19/2013	250 J	1.6 J	0.86 J	930	11	1.2	100	72
STC9-JW05	0	FD	12/19/2013	160 J	1.2 J	1.1	600	10	1	70	52
STC9-JW06	0	NORM	12/19/2013	280 J	< 0.76 U	1.4	990	6.4	1.3	88	76
STC9-JW07	0	NORM	12/19/2013	630 J	2.2 J	2.8	1600	21	1.5	80	160
STC9-JW08	0	NORM	12/19/2013	290 J	< 0.75 U	1.3	1400	3	1.6	130	74
STC9-JW09	0	NORM	12/19/2013	360 J	< 0.76 U	2.1	1400	3.4	1.8	110	78
STC9-JW10	0	NORM	12/19/2013	340 J	0.86 J	8.7	2000	9.7	2	120	100
STC9-JW11	0	NORM	12/19/2013	360 J	< 0.73 U	2.1	1100	2.3 J	1.3	72	170
STC9-JW12	0	NORM	12/19/2013	320 J	0.83 J	2.2	1300	4.4	1.3	84	80
STC9-JW13	0	NORM	12/20/2013	340 J	< 0.74 U	1.1	1000	1.5 J	1.4	65	55 J-
STC9-JW14	0	NORM	12/20/2013	260 J	< 0.7 U	1.2	1000	1.5 J	1.2	59	85 J-
STC9-JW15	0	NORM	12/20/2013	390 J	< 0.77 U	1.2	1000	< 1.3 U	1.2	68	77 J-
STC9-JW15	0	FD	12/20/2013	420 J	< 0.78 U	1.1	990	< 1.3 U	1.3	62	87 J-
STC9-JW16	0	NORM	12/20/2013	360 J	< 0.72 U	1.5	970	2 J	2.1	73	89 J-
STC9-JW17	0	NORM	12/20/2013	360 J	< 0.71 U	2.1	1300	1.9 J	2	84	100 J-
STC9-JW18	0	NORM	12/20/2013	420 J	1.4 J	33	1300	8.4	2.1	92	130 J-
STC9-JW19	0	NORM	12/20/2013	440 J	< 0.7 U	5.1	1400	3.9	1.8	92	200 J-
STC9-JW20	0	NORM	12/20/2013	410 J	< 0.71 U	1.1	1300	3.6	2	86	73 J-
STC9-JW21	0	NORM	12/20/2013	350 J	< 0.75 U	1.5	1000	2.3 J	1.5	70	79 J-
STC9-JW22	0	NORM	12/20/2013	430 J	< 0.71 U	0.92 J	1200	< 1.2 U	1.7	73	64 J-
STC9-JW23	0	NORM	12/20/2013	310 J	< 0.74 U	0.9 J	1100	< 1.2 U	1.2	76	66 J-
STC9-JW24	0	NORM	12/20/2013	270 J	< 0.79 U	2	960	2.2 J	1.3	60	100 J-
STC9-JW25	0	NORM	12/20/2013	310 J	< 0.75 U	2.3	1000	3.2	1.5	73	73 J-
STC9-JW25	0	FD	12/20/2013	320 J	< 0.75 U	2.7	1200	2.7	1.4	77	77 J-
TMC1-JD01	0	NORM	3/30/2010	199 J	< 0.29 U	1.7	884 J	< 0.4105 UJ	0.81 J+	77.2	57.2
TMC1-JD01	11	NORM	4/5/2010	287 J	< 0.29 U	< 0.38 U	758 J	< 0.4105 UJ	0.78 J+	55.6	43.9
TMC1-JD02	0	NORM	3/30/2010	214 J	< 0.29 U	2.5 J	1040 J	< 2.8 UJ	0.66 J+	99.2 J	65.6
TMC1-JD02	0	FD	3/30/2010	194 J	< 0.29 U	< 0.38 UJ	746 J	< 0.4105 UJ	0.66 J+	55.6 J	40.3
TMC1-JD02	10	NORM	4/5/2010	164 J	< 0.29 U	< 0.38 U	578 J	< 0.4105 UJ	0.73 J+	49.3	35.8

All units in mg/kg.

-- = no sample data.

[shaded box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				2,4-DDD	2,4-DDE	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin	alpha-BHC	alpha-Chlordane
BDW-F High	0	NORM	2/6/2013	--	--	0.27	5	9.7	< 0.00033 U	0.021	< 0.00061 U
BDW-F Low	0	NORM	2/6/2013	--	--	0.00086 J	0.012	0.0094	< 0.00032 U	0.0013 J	< 0.00059 U
BDW-S S Wall	0	NORM	2/6/2013	--	--	< 0.00023 U	0.0086	0.0033	< 0.00032 U	< 0.00019 U	< 0.00059 U
GES Prov-3	0	NORM	12/10/2012	< 0.025 U	15	1.6	23	21	< 0.034 U	1.8	< 0.064 U
GES Prov-4	0	NORM	12/10/2012	< 0.00024 U	0.12	< 0.00024 U	0.061	0.12	0.022	0.0042	< 0.00061 U
GES Prov-5	0	NORM	12/10/2012	< 0.00025 U	0.075	< 0.00025 U	0.035	< 0.0007 U	< 0.00034 U	0.0013	< 0.00063 U
GES Prov-6	0	NORM	12/10/2012	1.3	2.1	< 0.00024 UJ	3.9	5.9	< 0.00033 UJ	0.025	< 0.00061 UJ
GES Prov-7	0	NORM	12/10/2012	0.48	3.5	< 0.00024 UJ	4.9	3.5	< 0.00033 UJ	0.012	< 0.00061 UJ
GES-JWT-1	0	NORM	3/4/2013	--	--	< 0.00023 U	0.0026	0.005	< 0.00032 U	< 0.0002 U	< 0.0006 U
GES-JWT-10	0	NORM	3/4/2013	--	--	< 0.00023 UJ	0.12	0.2	< 0.00032 UJ	0.00019 J	3.4
GES-JWT-11	0	NORM	3/4/2013	--	--	< 0.00023 U	0.045	0.069	< 0.00032 U	0.0078	< 0.00059 U
GES-JWT-12	0	NORM	3/4/2013	--	--	0.081	1.8	1.5	< 0.00032 U	0.0035	0.015
GES-JWT-13	0	NORM	3/4/2013	--	--	0.81	22	20	< 0.033 U	0.14 J	< 0.061 U
GES-JWT-14	0	NORM	3/4/2013	--	--	0.022	0.38	0.33	< 0.00033 UJ	0.0014 J	< 0.0006 UJ
GES-JWT-15	0	NORM	3/4/2013	--	--	0.012 J+	0.21	0.11	< 0.00032 U	0.00055 J	< 0.00059 U
GES-JWT-16	0	NORM	3/4/2013	--	--	< 0.00023 U	0.0034	0.0028	< 0.00032 U	0.00062 J	< 0.00059 U
GES-JWT-17	0	NORM	3/4/2013	--	--	< 0.00023 UJ	0.041	< 0.00064 UJ	< 0.00031 UJ	0.032	< 0.00058 UJ
GES-JWT-18	0	NORM	3/4/2013	--	--	0.0083	0.23	0.18	< 0.00031 U	0.00069 J	0.0032
GES-JWT-18	0	FD	3/4/2013	--	--	0.0065	0.2	0.16	< 0.00031 U	0.00078 J	0.003
GES-JWT-19	0	NORM	3/4/2013	--	--	< 0.00024 UJ	0.069	< 0.00068 UJ	< 0.00033 UJ	0.017	< 0.00061 UJ
GES-JWT-2	0	NORM	3/4/2013	--	--	< 0.00023 U	0.002	0.0033	< 0.00032 U	< 0.00019 U	< 0.0006 U
GES-JWT-3	0	NORM	3/4/2013	--	--	< 0.00023 U	0.0012 J	0.0022	< 0.00032 U	< 0.00019 U	< 0.00059 U
GES-JWT-4	0	NORM	3/4/2013	--	--	7.6	170	260	< 0.033 U	0.89	< 0.061 U
GES-JWT-5	0	NORM	3/4/2013	--	--	< 0.00023 U	0.088	0.15	< 0.00032 U	0.00063 J	0.03
GES-JWT-6	0	NORM	3/4/2013	--	--	< 0.00023 U	0.19	0.15	< 0.00032 U	0.00034 J	0.0092
GES-JWT-7	0	NORM	3/4/2013	--	--	9	210	170	< 0.033 U	0.72	< 0.061 U
GES-JWT-8	0	NORM	3/4/2013	--	--	570	2800	3700	< 0.033 U	3.3	< 0.062 U
GES-JWT-9	0	NORM	3/4/2013	--	--	6.4	49	120 J	< 0.032 U	0.85	< 0.059 U
GES-JWT-9	0	FD	3/4/2013	--	--	5	40	99 J	< 0.032 U	0.69	< 0.059 U
STC1-AI15	0	NORM	6/4/2010	< 0.00023 U	< 0.00033 UJ	< 0.000085 U	< 0.0004 UJ	< 0.00065 UJ	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-AI15	0	FD	6/4/2010	< 0.00023 U	0.0052 J	< 0.000085 U	0.019 J	0.014 J	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-AI15	10	NORM	6/4/2010	< 0.00023 U	< 0.00033 U	< 0.000086 U	< 0.00041 U	< 0.00066 U	< 0.00032 U	< 0.00014 U	< 0.0006 U
STC1-AI16	0	NORM	6/7/2010	< 0.00024 U	< 0.00034 U	< 0.000088 U	0.002	< 0.00067 U	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-AI16	10	NORM	6/7/2010	< 0.00026 U	< 0.00036 U	< 0.000094 U	< 0.00045 U	< 0.00072 U	< 0.00035 U	< 0.00015 U	< 0.00065 U
STC1-AJ15	0	NORM	6/7/2010	0.011 J	1.2 J	0.016 J	3.4 J	2.5 J	< 0.00032 U	0.0045 J	< 0.0006 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				2,4-DDD	2,4-DDE	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin	alpha-BHC	alpha-Chlordane
STC1-AJ15	0	FD	6/7/2010	< 0.00025 UJ	0.0031 J	< 0.000094 UJ	0.0057 J	0.0041 J	< 0.00035 U	< 0.00015 UJ	< 0.00065 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00025 U	< 0.00036 U	< 0.000093 U	0.0029	0.0039	< 0.00035 U	< 0.00015 U	< 0.00064 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00024 U	< 0.00033 U	< 0.000087 U	0.0037	0.0026	< 0.00033 U	< 0.00014 U	< 0.0006 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00024 U	< 0.00034 U	< 0.000088 U	< 0.00042 U	< 0.00068 U	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00026 UJ	< 0.00037 UJ	< 0.000096 UJ	< 0.00046 UJ	< 0.00073 UJ	< 0.00036 UJ	< 0.00016 UJ	< 0.00066 UJ
STC1-AJ18	12	NORM	5/24/2010	< 0.00024 U	< 0.00034 U	< 0.000088 U	< 0.00042 U	< 0.00067 U	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-AK15	0	NORM	6/3/2010	< 0.00025 U	< 0.00036 U	< 0.000093 U	< 0.00044 U	< 0.00071 U	< 0.00035 U	< 0.00015 U	< 0.00064 U
STC1-AK15	0	FD	6/3/2010	< 0.00023 U	< 0.00033 U	< 0.000086 U	< 0.00041 U	< 0.00066 U	< 0.00032 U	< 0.00014 U	< 0.0006 U
STC1-AK15	3	NORM	6/3/2010	< 0.00023 UJ	< 0.00033 UJ	< 0.000086 UJ	< 0.00041 UJ	< 0.00066 UJ	< 0.00032 UJ	< 0.00014 UJ	< 0.00059 UJ
STC1-AK15	13	NORM	6/3/2010	< 0.00025 U	< 0.00035 U	< 0.000091 U	< 0.00043 U	< 0.0007 U	< 0.00034 U	< 0.00015 U	< 0.00063 U
STC1-AK20	0	NORM	5/27/2010	< 0.00024 U	< 0.00033 U	< 0.000087 U	< 0.00041 U	< 0.00066 U	< 0.00032 U	< 0.00014 U	< 0.0006 U
STC1-AK20	0	FD	5/27/2010	< 0.00025 U	< 0.00035 U	< 0.000091 U	< 0.00043 U	< 0.0007 U	< 0.00034 U	< 0.00015 U	< 0.00063 U
STC1-AK20	6	NORM	5/27/2010	< 0.00024 U	< 0.00034 U	< 0.000089 U	< 0.00042 U	< 0.00068 U	< 0.00033 U	< 0.00014 U	< 0.00062 U
STC1-AK20	16	NORM	5/27/2010	< 0.00023 U	< 0.00033 U	< 0.000086 U	< 0.00041 U	< 0.00066 U	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-JB12	0	NORM	8/30/2010	< 0.00024 U	0.0026	< 0.000088 U	0.004	0.0051	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-JB12	10	NORM	8/30/2010	< 0.00024 U	< 0.00034 U	< 0.00009 U	< 0.00043 U	0.0028	< 0.00034 U	< 0.00015 U	< 0.00062 U
STC1-JD02	0	NORM	6/4/2010	< 0.00024 U	< 0.00033 U	< 0.000087 U	< 0.00041 U	< 0.00067 U	< 0.00033 U	< 0.00014 U	< 0.0006 U
STC1-JD02	10	NORM	6/4/2010	< 0.00024 U	< 0.00034 U	< 0.00009 U	< 0.00043 U	< 0.00069 U	< 0.00033 U	< 0.00015 U	< 0.00062 U
STC1-JD03	0	NORM	6/4/2010	< 0.00023 U	0.0046 J+	< 0.000086 U	0.019 J+	0.013 J+	< 0.00032 U	< 0.00014 U	< 0.0006 U
STC1-JD03	10	NORM	6/4/2010	< 0.00023 U	< 0.00033 U	< 0.000085 U	< 0.0004 U	< 0.00065 U	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-JD04	0	NORM	6/4/2010	< 0.00023 U	0.0089 J+	< 0.000084 U	0.027 J+	0.021 J+	< 0.00031 U	< 0.00014 U	< 0.00058 U
STC1-JD04	10	NORM	6/4/2010	< 0.00025 U	< 0.00035 U	< 0.000091 U	< 0.00043 U	< 0.00069 U	< 0.00034 U	< 0.00015 U	< 0.00063 U
STC1-JD05	0	NORM	6/4/2010	< 0.00023 U	< 0.00033 U	< 0.000085 U	0.0033	0.0029	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-JD05	10	NORM	6/4/2010	< 0.00024 U	< 0.00034 U	< 0.00009 U	< 0.00043 U	< 0.00069 U	< 0.00033 U	< 0.00015 U	< 0.00062 U
STC1-JD06	0	NORM	6/3/2010	< 0.00047 U	0.031 J	< 0.00017 U	0.15	0.25 J	< 0.00065 U	< 0.00028 U	0.0041 J
STC1-JD06	10	NORM	6/3/2010	< 0.00024 U	< 0.00034 U	< 0.000089 U	< 0.00043 U	< 0.00068 U	< 0.00033 U	< 0.00015 U	< 0.00062 U
STC1-JD07	0	NORM	6/7/2010	< 0.00024 U	< 0.00033 U	< 0.000087 U	< 0.00041 U	< 0.00067 U	< 0.00033 U	< 0.00014 U	< 0.0006 U
STC1-JD07	4	NORM	6/7/2010	< 0.00024 U	0.07	< 0.00009 U	0.031	0.015	< 0.00034 U	< 0.00015 U	< 0.00062 U
STC1-JD07	14	NORM	6/7/2010	< 0.00025 U	< 0.00035 U	< 0.000092 U	< 0.00044 U	< 0.0007 U	< 0.00034 U	< 0.00015 U	< 0.00064 U
STC1-JD08	0	NORM	5/20/2010	< 0.00024 U	0.0068 J+	< 0.000089 U	0.0052 J	< 0.00068 U	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-JD08	0	FD	5/20/2010	< 0.00024 U	0.0051 J+	< 0.000087 U	0.0033 J	< 0.00067 U	< 0.00033 U	< 0.00014 U	< 0.0006 U
STC1-JD08	10	NORM	5/20/2010	< 0.00024 U	< 0.00034 U	< 0.00009 U	< 0.00043 U	< 0.00069 U	< 0.00034 U	< 0.00015 U	< 0.00062 U
STC1-JD09	0	NORM	5/20/2010	< 0.00026 U	< 0.00037 U	< 0.000096 U	< 0.00045 U	< 0.00073 U	< 0.00036 U	< 0.00015 U	< 0.00066 U
STC1-JD09	10	NORM	5/20/2010	< 0.00024 U	0.006 J+	< 0.000087 U	0.0035 J+	0.0022 J+	< 0.00033 U	< 0.00014 U	< 0.0006 U
STC1-JD10	0	NORM	5/21/2010	< 0.027 U	30	0.27	41	29	< 0.036 U	< 0.016 U	< 0.067 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				2,4-DDD	2,4-DDE	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin	alpha-BHC	alpha-Chlordane
STC1-JD10	10	NORM	5/21/2010	< 0.00026 U	0.0041	< 0.000096 U	0.0053	0.0079	< 0.00036 U	< 0.00016 U	< 0.00066 U
STC1-JD11	0	NORM	5/21/2010	< 0.12 U	41	< 0.044 U	58	48	< 0.16 U	< 0.072 U	< 0.31 U
STC1-JD11	10	NORM	5/21/2010	< 0.00026 U	0.04	< 0.000095 U	0.078	0.13 J+	< 0.00036 U	< 0.00015 U	< 0.00066 U
STC1-JD12	0	NORM	5/21/2010	< 0.00023 U	0.0047 J	< 0.000085 U	0.01 J	0.0064 J	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-JD12	0	FD	5/21/2010	< 0.00025 U	0.0027 J	< 0.000091 U	0.0038 J	0.0033 J	< 0.00034 U	< 0.00015 U	< 0.00063 U
STC1-JD12	10	NORM	5/21/2010	< 0.00024 U	0.0018	< 0.000088 U	0.002	0.0025 J+	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-JD13	0	NORM	5/21/2010	< 0.00023 U	< 0.00032 U	< 0.000084 U	< 0.0004 U	< 0.00065 U	< 0.00032 U	< 0.00014 U	< 0.00058 U
STC1-JD13	10	NORM	5/21/2010	< 0.00025 U	< 0.00035 U	< 0.000092 U	< 0.00044 U	< 0.00071 U	< 0.00035 U	< 0.00015 U	< 0.00064 U
STC1-JD14	0	NORM	6/1/2010	0.0066 J	0.27 J	< 0.0001 U	0.35 J	0.15 J	< 0.00039 U	< 0.00017 U	< 0.00072 U
STC1-JD14	0	FD	6/1/2010	< 0.00023 UJ	< 0.00033 UJ	< 0.000085 U	< 0.00041 UJ	< 0.00065 UJ	< 0.00032 U	< 0.00014 U	< 0.00059 U
STC1-JD14	10	NORM	6/1/2010	< 0.00024 U	< 0.00033 U	< 0.000087 U	< 0.00041 U	< 0.00067 U	< 0.00032 U	< 0.00014 U	< 0.0006 U
STC1-JD15	0	NORM	6/1/2010	< 0.00024 U	< 0.00034 U	< 0.000089 U	< 0.00042 U	< 0.00068 U	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC1-JD15	6	NORM	6/1/2010	< 0.00024 U	< 0.00033 U	< 0.000087 U	< 0.00041 U	< 0.00067 U	< 0.00032 U	< 0.00014 U	< 0.0006 U
STC1-JD15	16	NORM	6/1/2010	< 0.00024 U	< 0.00034 U	< 0.000088 U	< 0.00042 U	< 0.00067 U	< 0.00033 U	< 0.00014 U	< 0.00061 U
STC6-AJ15	0	NORM	7/20/2012	--	--	0.036	2.1	1.9	< 0.0031 U	0.017 J	< 0.0058 U
STC6-ES01	0	NORM	7/20/2012	--	--	< 0.0011 U	0.21	0.17	< 0.0015 U	0.0013 J	< 0.0029 U
STC6-JD10	10	NORM	7/20/2012	--	--	< 0.0023 U	4.1	3	< 0.0031 U	0.0097 J	< 0.0058 U
STC6-JD11	10	NORM	7/23/2012	--	--	< 0.0022 U	2.3	1.7	< 0.0031 U	0.0094 J	< 0.0057 U
STC7-AJ15	0	NORM	12/13/2012	--	--	0.49	16	22 J	< 0.0031 U	0.07	< 0.0058 U
STC7-AJ15	0	FD	12/13/2012	--	--	0.23	9	12 J	< 0.00031 UJ	0.033	< 0.00058 UJ
STC7-ES01	0	NORM	12/11/2012	< 0.00023 U	0.0055	< 0.00023 U	0.0067	0.006	< 0.00032 U	< 0.00019 U	< 0.00059 U
STC7-JD10	10	NORM	12/11/2012	0.002	0.015	0.004	0.012	0.013	< 0.00033 U	< 0.0002 U	< 0.00061 U
STC7-JD11	10	NORM	12/11/2012	< 0.00024 U	0.027	< 0.00024 U	0.0057	0.0082	< 0.00033 U	< 0.0002 U	< 0.00061 U
STC8-AJ15	0	NORM	2/5/2013	--	--	3.2	220	170	< 0.00032 UJ	0.99	< 0.0006 UJ
STC8-Prov3	0	NORM	2/6/2013	--	--	< 0.00023 U	0.0021	0.0024	< 0.00032 U	< 0.00019 U	< 0.00059 U
STC8-Prov4	0	NORM	2/6/2013	--	--	< 0.00023 U	0.0045	0.004 J	< 0.00032 U	< 0.0002 U	< 0.0006 U
STC8-Prov4	0	FD	2/6/2013	--	--	< 0.00023 U	0.0026	0.0034	< 0.00032 U	< 0.0002 U	< 0.0006 U
STC8-Prov5	0	NORM	2/6/2013	--	--	< 0.00024 U	0.011	0.007	< 0.00033 U	< 0.0002 U	< 0.0006 U
STC8-Prov6	0	NORM	2/6/2013	--	--	0.0045	0.042	0.15	< 0.00033 U	< 0.0002 U	< 0.00061 U
STC8-Prov7	0	NORM	2/6/2013	--	--	< 0.00023 U	0.014	0.02	< 0.00032 U	0.00036 J	< 0.00059 U
STC9DP-JW15	1	NORM	1/29/2014	--	--	0.00098 J	0.017	0.036	< 0.00033 U	< 0.0002 U	< 0.0006 U
STC9DP-JW15	2	NORM	1/29/2014	--	--	< 0.00024 U	0.0037	0.0035	< 0.00033 U	< 0.0002 U	< 0.00061 U
STC9DP-JW15	3	NORM	1/29/2014	--	--	0.00063 J	0.016	0.027	< 0.00032 U	< 0.00019 U	< 0.00059 U
STC9DP-JW16	1	NORM	1/29/2014	--	--	0.12	1.3	2.9 J	< 0.00033 UJ	0.017	< 0.00061 UJ
STC9DP-JW16	2	NORM	1/29/2014	--	--	0.019	0.22	0.47	< 0.00033 U	0.0024	< 0.00062 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				2,4-DDD	2,4-DDE	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin	alpha-BHC	alpha-Chlordane
STC9DP-JW16	3	NORM	1/29/2014	--	--	0.032	0.36	0.91	< 0.00033 U	0.0033	< 0.00061 U
STC9DP-JW17	1	NORM	1/29/2014	--	--	< 0.00024 U	0.003	0.0033	< 0.00034 U	< 0.0002 U	< 0.00062 U
STC9DP-JW17	2	NORM	1/29/2014	--	--	0.00055 J	0.0067	0.01	< 0.00033 U	< 0.0002 U	< 0.00061 U
STC9DP-JW17	3	NORM	1/29/2014	--	--	0.00088 J	0.011	0.019	< 0.00033 U	< 0.0002 U	< 0.00062 U
STC9DP-JW19	1	NORM	1/29/2014	--	--	0.17	5.3	8.2	< 0.00033 UJ	0.026	0.17
STC9DP-JW19	2	NORM	1/29/2014	--	--	< 0.00023 U	0.06	0.093	< 0.00032 U	0.00085 J	0.007
STC9DP-JW19	3	NORM	1/29/2014	--	--	< 0.00023 U	0.02	0.027	< 0.00032 U	0.0006 J	0.0024
STC9DP-JW20	1	NORM	1/29/2014	--	--	0.3	8	14	< 0.0033 U	< 0.002 U	< 0.0061 U
STC9DP-JW20	2	NORM	1/29/2014	--	--	0.031	0.38	0.57	< 0.00032 U	0.00042 J	< 0.0006 U
STC9DP-JW20	3	NORM	1/29/2014	--	--	0.015	0.078	0.11	< 0.00033 U	< 0.0002 U	< 0.0006 U
STC9DP-JW21	1	NORM	1/29/2014	--	--	0.012	0.33	0.29	< 0.00034 U	0.0009 J	< 0.00062 U
STC9DP-JW21	2	NORM	1/29/2014	--	--	0.015	0.37	0.32	< 0.00034 U	0.00067 J	< 0.00064 U
STC9DP-JW21	3	NORM	1/29/2014	--	--	0.00094 J	0.032	0.04	< 0.00033 U	< 0.0002 U	< 0.00062 U
STC9DP-JW24	1	NORM	1/29/2014	--	--	< 0.00025 U	0.0032	0.004	< 0.00034 U	< 0.00021 U	< 0.00063 U
STC9DP-JW24	2	NORM	1/29/2014	--	--	< 0.00025 U	0.003	0.0042	< 0.00034 U	< 0.00021 U	< 0.00063 U
STC9DP-JW24	3	NORM	1/29/2014	--	--	< 0.00024 U	0.0014 J	0.0012 J	< 0.00033 U	< 0.0002 U	< 0.00061 U
STC9-JW01	0	NORM	12/19/2013	--	--	< 0.00023 U	0.033	0.061	< 0.00032 U	< 0.00019 U	< 0.00058 U
STC9-JW02	0	NORM	12/19/2013	--	--	< 0.00023 U	0.028	0.029	< 0.00032 U	0.0022	0.0046
STC9-JW03	0	NORM	12/19/2013	--	--	0.0026	0.057	0.092	< 0.00032 U	< 0.00019 U	< 0.0006 U
STC9-JW04	0	NORM	12/19/2013	--	--	< 0.00023 UJ	0.79	0.67	< 0.00032 UJ	0.0008 J	< 0.00059 UJ
STC9-JW05	0	NORM	12/19/2013	--	--	< 0.00024 U	0.046	0.024	< 0.00033 U	< 0.0002 U	< 0.0006 U
STC9-JW05	0	FD	12/19/2013	--	--	< 0.00024 U	0.036	0.02	< 0.00033 U	< 0.0002 U	< 0.0006 U
STC9-JW06	0	NORM	12/19/2013	--	--	< 0.00023 U	0.017	0.024	< 0.00031 U	< 0.00019 U	< 0.00058 U
STC9-JW07	0	NORM	12/19/2013	--	--	< 0.00023 U	0.14	0.094	0.0014 J	< 0.00019 U	< 0.00059 U
STC9-JW08	0	NORM	12/19/2013	--	--	0.0012 J	0.039	0.1	< 0.00032 U	< 0.00019 U	< 0.00059 U
STC9-JW09	0	NORM	12/19/2013	--	--	0.023	0.33	0.47	< 0.00032 U	0.0027 J+	< 0.00059 U
STC9-JW10	0	NORM	12/19/2013	--	--	0.14	5.4	3.3	< 0.00032 UJ	0.0049	< 0.00059 UJ
STC9-JW11	0	NORM	12/19/2013	--	--	0.068	1.5	2.9	< 0.00032 U	0.027	0.016
STC9-JW12	0	NORM	12/19/2013	--	--	0.0049	0.12	0.093	< 0.00031 U	< 0.00019 U	< 0.00058 U
STC9-JW13	0	NORM	12/20/2013	--	--	0.0021	0.026	0.036	< 0.00032 U	< 0.00019 U	< 0.00059 U
STC9-JW14	0	NORM	12/20/2013	--	--	0.0074	0.14	0.15	< 0.00032 U	0.0004 J	0.00063 J
STC9-JW15	0	NORM	12/20/2013	--	--	0.8	7.5	15	< 0.0032 U	0.11	< 0.006 U
STC9-JW15	0	FD	12/20/2013	--	--	0.75	5.9	11	< 0.0032 U	0.091	< 0.006 U
STC9-JW16	0	NORM	12/20/2013	--	--	1	5	15	< 0.0032 U	0.042	< 0.0059 U
STC9-JW17	0	NORM	12/20/2013	--	--	1.5	12	27	< 0.0031 U	0.072	< 0.0058 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				2,4-DDD	2,4-DDE	4,4-DDD	4,4-DDE	4,4-DDT	Aldrin	alpha-BHC	alpha-Chlordane
STC9-JW18	0	NORM	12/20/2013	--	--	0.1	1.2	1.8	< 0.00032 U	0.0069 J+	0.011 J+
STC9-JW19	0	NORM	12/20/2013	--	--	0.3	5.7	11	< 0.0032 U	0.044	0.059
STC9-JW20	0	NORM	12/20/2013	--	--	1.5	10	13	< 0.00032 UJ	0.029 J	< 0.00059 UJ
STC9-JW21	0	NORM	12/20/2013	--	--	3.4	43	43	< 0.0032 U	0.18	< 0.0059 U
STC9-JW22	0	NORM	12/20/2013	--	--	0.032	0.72	1.1	< 0.00032 U	0.004	0.0048
STC9-JW23	0	NORM	12/20/2013	--	--	0.19	4.1	5.1	< 0.00032 UJ	0.019	< 0.00059 UJ
STC9-JW24	0	NORM	12/20/2013	--	--	1.2	19	30	< 0.00032 UJ	0.096	0.11
STC9-JW25	0	NORM	12/20/2013	--	--	0.031	0.44	1	< 0.00032 U	0.0028	< 0.00059 U
STC9-JW25	0	FD	12/20/2013	--	--	0.019	0.29	0.57	< 0.00032 U	0.0026	< 0.00059 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00025 U	0.017 J+	0.007 J+	0.067 J	0.029 J+	< 0.00034 U	< 0.00015 U	< 0.00063 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00026 UJ	< 0.00037 UJ	< 0.000095 UJ	< 0.00045 UJ	< 0.00073 UJ	< 0.00036 UJ	< 0.00015 UJ	< 0.00066 UJ
TMC1-JD02	0	NORM	3/30/2010	< 0.00025 UJ	< 0.00035 UJ	< 0.000091 UJ	0.0063 J	0.044 J	< 0.00034 UJ	< 0.00015 UJ	< 0.00063 UJ
TMC1-JD02	0	FD	3/30/2010	< 0.00024 UJ	< 0.00034 UJ	< 0.000089 UJ	< 0.00042 UJ	< 0.00068 UJ	< 0.00033 UJ	< 0.00014 UJ	< 0.00062 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.00025 UJ	< 0.00035 UJ	< 0.000091 UJ	< 0.00043 UJ	< 0.0007 UJ	< 0.00034 UJ	< 0.00015 UJ	< 0.00063 UJ

All units in mg/kg.

-- = no sample data.

[shaded] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin
BDW-F High	0	NORM	2/6/2013	0.081	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
BDW-F Low	0	NORM	2/6/2013	0.0067	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
BDW-S S Wall	0	NORM	2/6/2013	0.0013 J	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
GES Prov-3	0	NORM	12/10/2012	1.6	< 0.42 U	< 0.027 U	< 0.024 U	< 0.064 U	< 0.026 U	< 0.038 U	< 0.018 U
GES Prov-4	0	NORM	12/10/2012	0.083	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
GES Prov-5	0	NORM	12/10/2012	0.036	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00038 U	< 0.00018 U
GES Prov-6	0	NORM	12/10/2012	0.17	< 0.004 UJ	< 0.00026 UJ	< 0.00023 UJ	< 0.00062 UJ	< 0.00025 UJ	< 0.00037 UJ	< 0.00017 UJ
GES Prov-7	0	NORM	12/10/2012	0.053	< 0.004 UJ	< 0.00026 UJ	< 0.00023 UJ	< 0.00061 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00017 UJ
GES-JWT-1	0	NORM	3/4/2013	0.0013 J	< 0.0039 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-10	0	NORM	3/4/2013	0.0051	14	< 0.00025 UJ	< 0.00023 UJ	< 0.0006 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00017 UJ
GES-JWT-11	0	NORM	3/4/2013	0.11	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
GES-JWT-12	0	NORM	3/4/2013	0.015 J+	0.19 J+	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-13	0	NORM	3/4/2013	0.48	< 0.4 U	< 0.026 U	< 0.023 U	< 0.061 U	< 0.025 U	< 0.036 U	< 0.017 U
GES-JWT-14	0	NORM	3/4/2013	0.012 J	< 0.004 UJ	< 0.00026 UJ	< 0.00023 UJ	< 0.00061 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00017 UJ
GES-JWT-15	0	NORM	3/4/2013	0.0076	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-16	0	NORM	3/4/2013	0.001 J	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-17	0	NORM	3/4/2013	0.43	< 0.0038 UJ	< 0.00025 UJ	< 0.00022 UJ	< 0.00059 UJ	< 0.00024 UJ	< 0.00035 UJ	< 0.00016 UJ
GES-JWT-18	0	NORM	3/4/2013	0.0049 J	0.049	< 0.00024 U	< 0.00022 U	< 0.00058 U	< 0.00024 U	< 0.00034 U	< 0.00016 U
GES-JWT-18	0	FD	3/4/2013	0.0075 J	0.044	< 0.00025 U	< 0.00022 U	< 0.00058 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
GES-JWT-19	0	NORM	3/4/2013	0.08	< 0.004 UJ	< 0.00026 UJ	< 0.00023 UJ	0.077	< 0.00025 UJ	< 0.00037 UJ	< 0.00017 UJ
GES-JWT-2	0	NORM	3/4/2013	0.00039 J	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-3	0	NORM	3/4/2013	0.00063 J	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00025 U	< 0.00035 U	< 0.00016 U
GES-JWT-4	0	NORM	3/4/2013	0.63	< 0.4 U	< 0.026 U	< 0.023 U	< 0.062 U	< 0.025 U	< 0.037 U	< 0.017 U
GES-JWT-5	0	NORM	3/4/2013	0.0029 J+	0.14	< 0.00026 U	0.0076 J+	0.0084 J+	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-6	0	NORM	3/4/2013	0.0063 J+	0.091	< 0.00026 U	0.011	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
GES-JWT-7	0	NORM	3/4/2013	0.79	< 0.4 U	< 0.026 U	< 0.023 U	< 0.062 U	< 0.025 U	< 0.037 U	< 0.017 U
GES-JWT-8	0	NORM	3/4/2013	6.9 J	< 0.41 U	< 0.026 U	< 0.023 U	< 0.062 U	< 0.026 U	< 0.037 U	< 0.017 U
GES-JWT-9	0	NORM	3/4/2013	0.73	< 0.39 U	< 0.025 U	< 0.023 U	< 0.06 U	< 0.025 U	< 0.036 U	< 0.017 U
GES-JWT-9	0	FD	3/4/2013	0.66	< 0.39 U	< 0.025 U	< 0.022 U	< 0.059 U	< 0.024 U	< 0.035 U	< 0.016 U
STC1-AI15	0	NORM	6/4/2010	< 0.00031 UJ	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-AI15	0	FD	6/4/2010	0.028 J	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-AI15	10	NORM	6/4/2010	< 0.00031 U	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-AI16	0	NORM	6/7/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-AI16	10	NORM	6/7/2010	< 0.00034 U	< 0.0043 U	< 0.00028 U	< 0.00025 U	< 0.00066 U	< 0.00027 U	< 0.00029 U	< 0.00016 U
STC1-AJ15	0	NORM	6/7/2010	0.026 J	< 0.0039 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin
STC1-AJ15	0	FD	6/7/2010	0.0028 J	< 0.0043 U	< 0.00028 U	< 0.00025 U	< 0.00065 U	< 0.00027 U	< 0.00028 U	< 0.00016 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00034 U	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00064 U	< 0.00027 U	< 0.00028 U	< 0.00015 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00035 UJ	< 0.0044 UJ	< 0.00028 UJ	< 0.00025 UJ	< 0.00067 UJ	< 0.00027 UJ	< 0.00029 UJ	< 0.00016 UJ
STC1-AJ18	12	NORM	5/24/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-AK15	0	NORM	6/3/2010	0.0033	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00065 U	< 0.00027 U	< 0.00028 U	< 0.00015 U
STC1-AK15	0	FD	6/3/2010	< 0.00032 U	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-AK15	3	NORM	6/3/2010	< 0.00031 UJ	< 0.0039 UJ	< 0.00025 UJ	< 0.00023 UJ	< 0.0006 UJ	< 0.00025 UJ	< 0.00026 UJ	< 0.00014 UJ
STC1-AK15	13	NORM	6/3/2010	< 0.00033 U	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00064 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
STC1-AK20	0	NORM	5/27/2010	< 0.00032 U	< 0.0039 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-AK20	0	FD	5/27/2010	< 0.00033 U	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
STC1-AK20	6	NORM	5/27/2010	< 0.00033 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-AK20	16	NORM	5/27/2010	< 0.00031 U	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JB12	0	NORM	8/30/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-JB12	10	NORM	8/30/2010	< 0.00033 U	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00062 U	< 0.00026 U	< 0.00027 U	< 0.00015 U
STC1-JD02	0	NORM	6/4/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JD02	10	NORM	6/4/2010	< 0.00033 U	< 0.0041 U	< 0.00026 U	< 0.00024 U	< 0.00062 U	< 0.00026 U	< 0.00027 U	< 0.00015 U
STC1-JD03	0	NORM	6/4/2010	< 0.00032 U	0.03 J+	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JD03	10	NORM	6/4/2010	< 0.00031 U	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-JD04	0	NORM	6/4/2010	0.0048 J+	< 0.0038 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-JD04	10	NORM	6/4/2010	< 0.00033 U	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
STC1-JD05	0	NORM	6/4/2010	< 0.00031 U	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-JD05	10	NORM	6/4/2010	< 0.00033 U	< 0.0041 U	< 0.00026 U	< 0.00024 U	< 0.00062 U	< 0.00026 U	< 0.00027 U	< 0.00015 U
STC1-JD06	0	NORM	6/3/2010	0.0067	0.17	< 0.00051 U	< 0.00045 U	< 0.0012 U	< 0.0005 U	< 0.00053 U	< 0.00029 U
STC1-JD06	10	NORM	6/3/2010	< 0.00033 U	< 0.0041 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00026 U	< 0.00027 U	< 0.00015 U
STC1-JD07	0	NORM	6/7/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JD07	4	NORM	6/7/2010	0.0027	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00027 U	< 0.00015 U
STC1-JD07	14	NORM	6/7/2010	< 0.00034 U	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00064 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
STC1-JD08	0	NORM	5/20/2010	0.0078 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-JD08	0	FD	5/20/2010	0.0038 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00014 U
STC1-JD08	10	NORM	5/20/2010	< 0.00033 U	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00027 U	< 0.00015 U
STC1-JD09	0	NORM	5/20/2010	< 0.00035 U	< 0.0043 U	< 0.00028 U	< 0.00025 U	< 0.00066 U	< 0.00027 U	< 0.00029 U	< 0.00016 U
STC1-JD09	10	NORM	5/20/2010	0.0025 J+	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JD10	0	NORM	5/21/2010	0.12 J	< 0.44 U	< 0.029 U	< 0.026 U	< 0.068 U	< 0.028 U	< 0.03 U	< 0.016 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 8 of 15)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin
STC1-JD10	10	NORM	5/21/2010	< 0.00035 U	< 0.0044 U	< 0.00028 U	< 0.00025 U	< 0.00067 U	< 0.00028 U	< 0.00029 U	< 0.00016 U
STC1-JD11	0	NORM	5/21/2010	0.82 J	< 2 U	< 0.13 U	< 0.12 U	< 0.31 U	< 0.13 U	< 0.13 U	< 0.073 U
STC1-JD11	10	NORM	5/21/2010	< 0.00035 U	< 0.0043 U	< 0.00028 U	< 0.00025 U	< 0.00066 U	< 0.00027 U	< 0.00029 U	< 0.00016 U
STC1-JD12	0	NORM	5/21/2010	< 0.00031 U	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-JD12	0	FD	5/21/2010	< 0.00033 U	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
STC1-JD12	10	NORM	5/21/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-JD13	0	NORM	5/21/2010	0.011	< 0.0038 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-JD13	10	NORM	5/21/2010	0.0033	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00064 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
STC1-JD14	0	NORM	6/1/2010	0.0087 J	< 0.0047 U	< 0.00031 U	< 0.00027 U	< 0.00073 U	< 0.0003 U	< 0.00032 U	< 0.00017 U
STC1-JD14	0	FD	6/1/2010	0.0042 J	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00026 U	< 0.00014 U
STC1-JD14	10	NORM	6/1/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JD15	0	NORM	6/1/2010	0.0024	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC1-JD15	6	NORM	6/1/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00026 U	< 0.00014 U
STC1-JD15	16	NORM	6/1/2010	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00027 U	< 0.00015 U
STC6-AJ15	0	NORM	7/20/2012	0.054	< 0.038 U	< 0.0025 U	< 0.0022 U	< 0.0058 U	< 0.0024 U	< 0.0035 U	< 0.0016 U
STC6-ES01	0	NORM	7/20/2012	0.013	< 0.019 U	< 0.0012 U	< 0.0011 U	< 0.0029 U	< 0.0012 U	< 0.0017 U	< 0.0008 U
STC6-JD10	10	NORM	7/20/2012	0.042	< 0.038 U	< 0.0025 U	< 0.0022 U	< 0.0059 U	< 0.0024 U	< 0.0035 U	< 0.0016 U
STC6-JD11	10	NORM	7/23/2012	0.026	< 0.038 U	< 0.0025 U	< 0.0022 U	< 0.0058 U	< 0.0024 U	< 0.0034 U	< 0.0016 U
STC7-AJ15	0	NORM	12/13/2012	0.23	< 0.038 U	< 0.0025 U	< 0.0022 U	0.58	< 0.0024 U	< 0.0035 U	< 0.0016 U
STC7-AJ15	0	FD	12/13/2012	0.14	< 0.0038 UJ	< 0.00025 UJ	< 0.00022 UJ	0.27	< 0.00024 UJ	< 0.00035 UJ	< 0.00016 UJ
STC7-ES01	0	NORM	12/11/2012	0.003	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC7-JD10	10	NORM	12/11/2012	0.0061	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
STC7-JD11	10	NORM	12/11/2012	0.0078	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
STC8-AJ15	0	NORM	2/5/2013	0.56	< 0.0039 UJ	< 0.00025 UJ	< 0.00023 UJ	< 0.0006 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00017 UJ
STC8-Prov3	0	NORM	2/6/2013	0.0055	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC8-Prov4	0	NORM	2/6/2013	0.0029	< 0.0039 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC8-Prov4	0	FD	2/6/2013	0.0033 J+	< 0.0039 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC8-Prov5	0	NORM	2/6/2013	0.00058 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC8-Prov6	0	NORM	2/6/2013	0.0085	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC8-Prov7	0	NORM	2/6/2013	0.0078	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW15	1	NORM	1/29/2014	< 0.00032 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW15	2	NORM	1/29/2014	0.0014 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
STC9DP-JW15	3	NORM	1/29/2014	0.0013 J	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW16	1	NORM	1/29/2014	0.018	< 0.004 UJ	< 0.00026 UJ	< 0.00023 UJ	< 0.00061 UJ	< 0.00025 UJ	< 0.00037 UJ	< 0.00017 UJ
STC9DP-JW16	2	NORM	1/29/2014	0.0027	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00026 U	< 0.00037 U	< 0.00017 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
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Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin
STC9DP-JW16	3	NORM	1/29/2014	0.0053	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
STC9DP-JW17	1	NORM	1/29/2014	< 0.00033 U	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00037 U	< 0.00017 U
STC9DP-JW17	2	NORM	1/29/2014	< 0.00033 U	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
STC9DP-JW17	3	NORM	1/29/2014	< 0.00033 U	< 0.0041 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00026 U	< 0.00037 U	< 0.00017 U
STC9DP-JW19	1	NORM	1/29/2014	0.061	1.2	< 0.00026 UJ	< 0.00023 UJ	< 0.00061 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00017 UJ
STC9DP-JW19	2	NORM	1/29/2014	0.0032	0.051	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW19	3	NORM	1/29/2014	< 0.00032 U	0.016 J	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW20	1	NORM	1/29/2014	0.03	< 0.04 U	< 0.0026 U	< 0.0023 U	< 0.0061 U	< 0.0025 U	< 0.0037 U	< 0.0017 U
STC9DP-JW20	2	NORM	1/29/2014	0.0024	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW20	3	NORM	1/29/2014	0.00058 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9DP-JW21	1	NORM	1/29/2014	0.0039	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00037 U	< 0.00017 U
STC9DP-JW21	2	NORM	1/29/2014	0.0025	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00064 U	< 0.00026 U	< 0.00038 U	< 0.00018 U
STC9DP-JW21	3	NORM	1/29/2014	0.0026	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00026 U	< 0.00037 U	< 0.00017 U
STC9DP-JW24	1	NORM	1/29/2014	0.002	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00038 U	< 0.00018 U
STC9DP-JW24	2	NORM	1/29/2014	0.0042	< 0.0041 U	< 0.00027 U	< 0.00024 U	< 0.00063 U	< 0.00026 U	< 0.00038 U	< 0.00018 U
STC9DP-JW24	3	NORM	1/29/2014	0.0032	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00062 U	< 0.00025 U	< 0.00037 U	< 0.00017 U
STC9-JW01	0	NORM	12/19/2013	0.012	< 0.0038 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW02	0	NORM	12/19/2013	0.033	< 0.0038 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW03	0	NORM	12/19/2013	0.0019	< 0.0039 U	< 0.00025 U	< 0.00023 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9-JW04	0	NORM	12/19/2013	0.017	< 0.0039 UJ	< 0.00025 UJ	< 0.00022 UJ	< 0.00059 UJ	< 0.00024 UJ	< 0.00035 UJ	< 0.00016 UJ
STC9-JW05	0	NORM	12/19/2013	0.0017 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9-JW05	0	FD	12/19/2013	0.0014 J	< 0.004 U	< 0.00026 U	< 0.00023 U	< 0.00061 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9-JW06	0	NORM	12/19/2013	0.0005 J	< 0.0038 U	< 0.00025 U	< 0.00022 U	< 0.00058 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW07	0	NORM	12/19/2013	0.019	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW08	0	NORM	12/19/2013	0.0016 J	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW09	0	NORM	12/19/2013	0.0089	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00025 U	< 0.00035 U	< 0.00016 U
STC9-JW10	0	NORM	12/19/2013	0.064	< 0.0039 UJ	< 0.00025 UJ	< 0.00022 UJ	< 0.00059 UJ	< 0.00024 UJ	< 0.00035 UJ	< 0.00016 UJ
STC9-JW11	0	NORM	12/19/2013	0.24	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW12	0	NORM	12/19/2013	0.005	< 0.0038 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW13	0	NORM	12/20/2013	0.00083 J	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW14	0	NORM	12/20/2013	0.0033	0.017 J	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW15	0	NORM	12/20/2013	0.14	< 0.039 U	< 0.0026 U	< 0.0023 U	< 0.006 U	< 0.0025 U	< 0.0036 U	< 0.0017 U
STC9-JW15	0	FD	12/20/2013	0.091	< 0.039 U	< 0.0026 U	< 0.0023 U	< 0.006 U	< 0.0025 U	< 0.0036 U	< 0.0017 U
STC9-JW16	0	NORM	12/20/2013	0.082	< 0.039 U	< 0.0025 U	< 0.0022 U	< 0.0059 U	< 0.0025 U	< 0.0035 U	< 0.0016 U
STC9-JW17	0	NORM	12/20/2013	0.11	< 0.038 U	< 0.0025 U	< 0.0022 U	< 0.0058 U	< 0.0024 U	< 0.0035 U	< 0.0016 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 10 of 15)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin
STC9-JW18	0	NORM	12/20/2013	0.026 J+	0.23 J+	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW19	0	NORM	12/20/2013	0.074	0.64	< 0.0025 U	< 0.0022 U	< 0.0059 U	< 0.0024 U	< 0.0035 U	< 0.0016 U
STC9-JW20	0	NORM	12/20/2013	0.079	< 0.0039 UJ	< 0.00025 UJ	< 0.00022 UJ	< 0.00059 UJ	< 0.00025 UJ	< 0.00035 UJ	< 0.00016 UJ
STC9-JW21	0	NORM	12/20/2013	0.29	< 0.039 U	< 0.0025 U	< 0.0022 U	< 0.0059 U	< 0.0024 U	< 0.0035 U	< 0.0016 U
STC9-JW22	0	NORM	12/20/2013	0.0075	0.044	< 0.00025 U	< 0.00022 U	< 0.0006 U	< 0.00025 U	< 0.00036 U	< 0.00017 U
STC9-JW23	0	NORM	12/20/2013	0.028	< 0.0038 UJ	< 0.00025 UJ	< 0.00022 UJ	< 0.00059 UJ	< 0.00024 UJ	< 0.00035 UJ	< 0.00016 UJ
STC9-JW24	0	NORM	12/20/2013	0.16	1.3	< 0.00025 UJ	< 0.00023 UJ	< 0.0006 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00017 UJ
STC9-JW25	0	NORM	12/20/2013	0.019	< 0.0039 U	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
STC9-JW25	0	FD	12/20/2013	0.02	0.024	< 0.00025 U	< 0.00022 U	< 0.00059 U	< 0.00024 U	< 0.00035 U	< 0.00016 U
TMC1-JD01	0	NORM	3/30/2010	0.01 J+	< 0.0042 U	< 0.00027 U	< 0.00024 U	< 0.00064 U	< 0.00026 U	< 0.00028 U	< 0.00015 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00035 UJ	< 0.0043 UJ	< 0.00028 UJ	< 0.00025 UJ	< 0.00066 UJ	< 0.00027 UJ	< 0.00029 UJ	< 0.00016 UJ
TMC1-JD02	0	NORM	3/30/2010	< 0.00033 UJ	< 0.0042 UJ	< 0.00027 UJ	< 0.00024 UJ	< 0.00063 UJ	< 0.00026 UJ	< 0.00028 UJ	< 0.00015 UJ
TMC1-JD02	0	FD	3/30/2010	< 0.00033 UJ	< 0.0041 UJ	< 0.00026 UJ	< 0.00023 UJ	< 0.00062 UJ	< 0.00026 UJ	< 0.00027 UJ	< 0.00015 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.00033 UJ	< 0.0041 UJ	< 0.00027 UJ	< 0.00024 UJ	< 0.00063 UJ	< 0.00026 UJ	< 0.00028 UJ	< 0.00015 UJ

All units in mg/kg.
-- = no sample data.
(grey box) = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
BDW-F High	0	NORM	2/6/2013	< 0.00042 U	0.051	< 0.00018 U	0.16	< 0.00022 U	< 0.00046 U	< 0.00078 U	< 0.016 U
BDW-F Low	0	NORM	2/6/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	< 0.00016 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
GES Prov-3	0	NORM	12/10/2012	< 0.044 U	0.98	< 0.019 U	< 0.018 U	< 0.023 U	1.9	< 0.081 U	< 1.7 U
GES Prov-4	0	NORM	12/10/2012	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00078 U	< 0.016 U
GES Prov-5	0	NORM	12/10/2012	< 0.00043 U	< 0.00046 U	< 0.00019 U	< 0.00018 U	< 0.00023 U	0.0091	< 0.0008 U	< 0.017 U
GES Prov-6	0	NORM	12/10/2012	< 0.00042 UJ	0.24	< 0.00018 UJ	0.088	< 0.00022 UJ	< 0.00047 UJ	< 0.00078 UJ	< 0.016 UJ
GES Prov-7	0	NORM	12/10/2012	< 0.00042 UJ	0.12	< 0.00018 UJ	< 0.00017 UJ	< 0.00022 UJ	< 0.00046 UJ	< 0.00077 UJ	< 0.016 UJ
GES-JWT-1	0	NORM	3/4/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
GES-JWT-10	0	NORM	3/4/2013	0.13	0.023	< 0.00018 UJ	1.8	0.0075 J	< 0.00045 UJ	< 0.00075 UJ	< 0.016 UJ
GES-JWT-11	0	NORM	3/4/2013	< 0.00041 U	< 0.00043 U	< 0.00018 U	< 0.00016 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
GES-JWT-12	0	NORM	3/4/2013	< 0.00041 U	0.04	< 0.00018 U	0.071	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
GES-JWT-13	0	NORM	3/4/2013	< 0.042 U	0.3	< 0.018 U	< 0.017 U	< 0.022 U	< 0.046 U	< 0.077 U	< 1.6 U
GES-JWT-14	0	NORM	3/4/2013	< 0.00041 UJ	0.011	< 0.00018 UJ	0.02	< 0.00022 UJ	< 0.00046 UJ	< 0.00077 UJ	< 0.016 UJ
GES-JWT-15	0	NORM	3/4/2013	< 0.00041 U	0.0031	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
GES-JWT-16	0	NORM	3/4/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
GES-JWT-17	0	NORM	3/4/2013	< 0.0004 UJ	< 0.00043 UJ	< 0.00017 UJ	< 0.00016 UJ	< 0.00021 UJ	< 0.00044 UJ	< 0.00074 UJ	< 0.016 UJ
GES-JWT-18	0	NORM	3/4/2013	< 0.00039 U	0.0083	< 0.00017 U	0.011 J+	< 0.00021 U	< 0.00043 U	< 0.00073 U	< 0.015 U
GES-JWT-18	0	FD	3/4/2013	< 0.0004 U	0.0073	< 0.00017 U	0.0099 J+	< 0.00021 U	< 0.00044 U	< 0.00073 U	< 0.015 U
GES-JWT-19	0	NORM	3/4/2013	< 0.00042 UJ	< 0.00045 UJ	< 0.00018 UJ	< 0.00017 UJ	< 0.00022 UJ	0.028 J	< 0.00078 UJ	< 0.016 UJ
GES-JWT-2	0	NORM	3/4/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
GES-JWT-3	0	NORM	3/4/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00016 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
GES-JWT-4	0	NORM	3/4/2013	< 0.042 U	< 0.045 U	< 0.018 U	< 0.017 U	< 0.022 U	< 0.046 U	< 0.078 U	< 1.6 U
GES-JWT-5	0	NORM	3/4/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.018	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
GES-JWT-6	0	NORM	3/4/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.012 J	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
GES-JWT-7	0	NORM	3/4/2013	< 0.042 U	< 0.045 U	< 0.018 U	< 0.017 U	< 0.022 U	< 0.046 U	< 0.078 U	< 1.6 U
GES-JWT-8	0	NORM	3/4/2013	< 0.042 U	< 0.045 U	< 0.018 U	< 0.017 U	< 0.022 U	< 0.047 U	< 0.078 U	< 1.6 U
GES-JWT-9	0	NORM	3/4/2013	< 0.041 U	0.6 J	< 0.018 U	0.92	< 0.021 U	< 0.045 U	< 0.075 U	< 1.6 U
GES-JWT-9	0	FD	3/4/2013	< 0.041 U	0.53	< 0.017 U	0.6 J	< 0.021 U	< 0.045 U	< 0.075 U	< 1.6 U
STC1-AI15	0	NORM	6/4/2010	< 0.0004 U	< 0.00031 U	< 0.00017 U	< 0.00016 U	< 0.000099 UJ	< 0.00044 U	< 0.00075 U	< 0.016 U
STC1-AI15	0	FD	6/4/2010	< 0.0004 U	< 0.00031 U	< 0.00017 U	< 0.00016 U	< 0.000099 UJ	< 0.00045 U	< 0.00075 U	< 0.016 U
STC1-AI15	10	NORM	6/4/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00045 U	< 0.00075 U	< 0.016 U
STC1-AI16	0	NORM	6/7/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00077 U	< 0.016 U
STC1-AI16	10	NORM	6/7/2010	< 0.00045 U	< 0.00034 U	< 0.00019 U	< 0.00018 U	R	< 0.00049 U	< 0.00083 U	< 0.017 U
STC1-AJ15	0	NORM	6/7/2010	< 0.00041 U	0.0046 J	< 0.00018 U	< 0.00017 U	R	< 0.00045 U	< 0.00076 U	< 0.016 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
STC1-AJ15	0	FD	6/7/2010	< 0.00044 U	< 0.00034 UJ	< 0.00019 U	< 0.00018 U	R	< 0.00049 U	< 0.00082 U	< 0.017 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00044 U	< 0.00034 U	< 0.00019 U	< 0.00018 U	R	< 0.00049 U	< 0.00081 U	< 0.017 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00041 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00076 U	< 0.016 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00077 U	< 0.016 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00045 UJ	< 0.00035 UJ	< 0.0002 UJ	< 0.00018 UJ	< 0.00011 UJ	< 0.0005 UJ	< 0.00084 UJ	< 0.018 UJ
STC1-AJ18	12	NORM	5/24/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00046 U	< 0.00077 U	< 0.016 U
STC1-AK15	0	NORM	6/3/2010	< 0.00044 U	< 0.00034 U	< 0.00019 U	< 0.00018 U	< 0.00011 UJ	< 0.00049 U	< 0.00082 U	< 0.017 U
STC1-AK15	0	FD	6/3/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00045 U	< 0.00076 U	< 0.016 U
STC1-AK15	3	NORM	6/3/2010	< 0.00041 UJ	< 0.00031 UJ	< 0.00018 UJ	< 0.00017 UJ	< 0.0001 UJ	< 0.00045 UJ	< 0.00075 UJ	< 0.016 UJ
STC1-AK15	13	NORM	6/3/2010	< 0.00043 U	< 0.00033 U	< 0.00019 U	< 0.00018 U	< 0.00011 UJ	< 0.00048 U	< 0.0008 U	< 0.017 U
STC1-AK20	0	NORM	5/27/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00045 U	< 0.00076 U	< 0.016 U
STC1-AK20	0	FD	5/27/2010	< 0.00043 U	< 0.00033 U	< 0.00019 U	< 0.00018 U	< 0.00011 UJ	< 0.00048 U	< 0.0008 U	< 0.017 U
STC1-AK20	6	NORM	5/27/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00047 U	< 0.00078 U	< 0.016 U
STC1-AK20	16	NORM	5/27/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00045 U	< 0.00075 U	< 0.016 U
STC1-JB12	0	NORM	8/30/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	< 0.0001 U	< 0.00046 U	< 0.00077 U	< 0.016 U
STC1-JB12	10	NORM	8/30/2010	< 0.00043 U	< 0.00033 U	< 0.00018 U	< 0.00017 U	< 0.0001 U	< 0.00047 U	< 0.00079 U	< 0.017 U
STC1-JD02	0	NORM	6/4/2010	< 0.00041 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00046 U	< 0.00076 U	< 0.016 U
STC1-JD02	10	NORM	6/4/2010	< 0.00043 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00047 U	< 0.00079 U	< 0.017 U
STC1-JD03	0	NORM	6/4/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	0.0021 J+	< 0.0001 UJ	< 0.00045 U	< 0.00076 U	< 0.016 U
STC1-JD03	10	NORM	6/4/2010	< 0.0004 U	< 0.00031 U	< 0.00017 U	< 0.00016 U	< 0.000099 UJ	< 0.00045 U	< 0.00075 U	< 0.016 U
STC1-JD04	0	NORM	6/4/2010	< 0.0004 U	< 0.00031 U	< 0.00017 U	< 0.00016 U	< 0.000098 UJ	< 0.00044 U	< 0.00074 U	< 0.016 U
STC1-JD04	10	NORM	6/4/2010	< 0.00043 U	< 0.00033 U	< 0.00019 U	< 0.00017 U	< 0.00011 UJ	< 0.00047 U	< 0.0008 U	< 0.017 U
STC1-JD05	0	NORM	6/4/2010	< 0.0004 U	< 0.00031 U	< 0.00017 U	< 0.00016 U	< 0.000099 UJ	< 0.00045 U	< 0.00075 U	< 0.016 U
STC1-JD05	10	NORM	6/4/2010	< 0.00043 U	< 0.00033 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00047 U	< 0.00079 U	< 0.017 U
STC1-JD06	0	NORM	6/3/2010	< 0.00082 U	< 0.00063 U	< 0.00036 U	0.01 J	< 0.0002 UJ	< 0.00091 U	< 0.0015 U	< 0.032 U
STC1-JD06	10	NORM	6/3/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	< 0.0001 UJ	< 0.00047 U	< 0.00078 U	< 0.017 U
STC1-JD07	0	NORM	6/7/2010	< 0.00041 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00076 U	< 0.016 U
STC1-JD07	4	NORM	6/7/2010	< 0.00043 U	< 0.00033 U	< 0.00018 U	< 0.00017 U	R	< 0.00047 U	< 0.00079 U	< 0.017 U
STC1-JD07	14	NORM	6/7/2010	< 0.00044 U	< 0.00033 U	< 0.00019 U	< 0.00018 U	R	< 0.00048 U	< 0.00081 U	< 0.017 U
STC1-JD08	0	NORM	5/20/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00078 U	< 0.016 U
STC1-JD08	0	FD	5/20/2010	< 0.00041 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00077 U	< 0.016 U
STC1-JD08	10	NORM	5/20/2010	< 0.00043 U	< 0.00033 U	< 0.00018 U	< 0.00017 U	R	< 0.00047 U	< 0.00079 U	< 0.017 U
STC1-JD09	0	NORM	5/20/2010	< 0.00045 U	< 0.00035 U	< 0.0002 U	< 0.00018 U	R	< 0.0005 U	< 0.00084 U	< 0.018 U
STC1-JD09	10	NORM	5/20/2010	< 0.00041 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00076 U	< 0.016 U
STC1-JD10	0	NORM	5/21/2010	< 0.046 U	0.64	< 0.02 UJ	< 0.019 U	< 0.011 UJ	< 0.051 U	< 0.085 U	< 1.8 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
STC1-JD10	10	NORM	5/21/2010	< 0.00046 U	< 0.00035 U	< 0.0002 UJ	< 0.00019 U	< 0.00011 UJ	< 0.0005 U	< 0.00084 U	< 0.018 U
STC1-JD11	0	NORM	5/21/2010	< 0.21 U	< 0.16 U	< 0.09 UJ	< 0.085 U	< 0.051 UJ	< 0.23 U	< 0.39 U	< 8.2 U
STC1-JD11	10	NORM	5/21/2010	< 0.00045 U	< 0.00034 U	< 0.0002 UJ	< 0.00018 U	< 0.00011 UJ	< 0.0005 U	< 0.00083 U	< 0.018 U
STC1-JD12	0	NORM	5/21/2010	< 0.0004 U	< 0.00031 U	< 0.00017 UJ	< 0.00016 U	< 0.000098 UJ	< 0.00044 U	< 0.00074 U	< 0.016 U
STC1-JD12	0	FD	5/21/2010	< 0.00043 U	< 0.00033 U	< 0.00019 UJ	< 0.00018 U	< 0.00011 UJ	< 0.00048 U	< 0.0008 U	< 0.017 U
STC1-JD12	10	NORM	5/21/2010	< 0.00042 U	< 0.00032 U	< 0.00018 UJ	< 0.00017 U	< 0.0001 UJ	< 0.00046 U	< 0.00077 U	< 0.016 U
STC1-JD13	0	NORM	5/21/2010	< 0.0004 U	< 0.00031 U	< 0.00017 UJ	< 0.00016 U	< 0.000098 UJ	< 0.00044 U	< 0.00074 U	< 0.016 U
STC1-JD13	10	NORM	5/21/2010	< 0.00044 U	< 0.00033 U	< 0.00019 UJ	< 0.00018 U	< 0.00011 UJ	< 0.00048 U	< 0.00081 U	< 0.017 U
STC1-JD14	0	NORM	6/1/2010	< 0.0005 U	< 0.00038 U	< 0.00021 U	0.0032 J+	R	< 0.00055 U	< 0.00092 U	< 0.019 U
STC1-JD14	0	FD	6/1/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	< 0.00016 U	R	< 0.00045 U	< 0.00075 U	< 0.016 U
STC1-JD14	10	NORM	6/1/2010	< 0.00041 U	< 0.00031 U	< 0.00018 U	< 0.00017 U	R	< 0.00045 U	< 0.00076 U	< 0.016 U
STC1-JD15	0	NORM	6/1/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00078 U	< 0.016 U
STC1-JD15	6	NORM	6/1/2010	< 0.00041 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00076 U	< 0.016 U
STC1-JD15	16	NORM	6/1/2010	< 0.00042 U	< 0.00032 U	< 0.00018 U	< 0.00017 U	R	< 0.00046 U	< 0.00077 U	< 0.016 U
STC6-AJ15	0	NORM	7/20/2012	< 0.004 U	< 0.0042 U	< 0.0017 U	< 0.0016 U	< 0.0021 U	< 0.0044 U	< 0.0073 U	< 0.15 U
STC6-ES01	0	NORM	7/20/2012	< 0.002 U	< 0.0021 U	< 0.00085 U	< 0.0008 U	< 0.001 U	< 0.0022 U	< 0.0036 U	< 0.076 U
STC6-JD10	10	NORM	7/20/2012	< 0.004 U	< 0.0043 U	< 0.0017 U	< 0.0016 U	< 0.0021 U	< 0.0044 U	< 0.0074 U	< 0.16 U
STC6-JD11	10	NORM	7/23/2012	< 0.0039 U	< 0.0042 U	< 0.0017 U	0.12	< 0.0021 U	< 0.0044 U	< 0.0073 U	< 0.15 U
STC7-AJ15	0	NORM	12/13/2012	< 0.004 U	< 0.0043 U	< 0.0017 U	0.24	< 0.0021 U	< 0.0044 U	< 0.0074 U	< 0.16 U
STC7-AJ15	0	FD	12/13/2012	< 0.0004 UJ	< 0.00042 UJ	< 0.00017 UJ	0.11	< 0.00021 UJ	< 0.00044 UJ	< 0.00073 UJ	< 0.015 UJ
STC7-ES01	0	NORM	12/11/2012	< 0.0004 U	< 0.00043 U	< 0.00017 U	< 0.00016 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC7-JD10	10	NORM	12/11/2012	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00078 U	< 0.016 U
STC7-JD11	10	NORM	12/11/2012	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00078 U	< 0.016 U
STC8-AJ15	0	NORM	2/5/2013	< 0.00041 UJ	< 0.00044 UJ	< 0.00018 UJ	< 0.00017 UJ	0.011	< 0.00045 UJ	< 0.00076 UJ	< 0.016 UJ
STC8-Prov3	0	NORM	2/6/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC8-Prov4	0	NORM	2/6/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.00039 J	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
STC8-Prov4	0	FD	2/6/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
STC8-Prov5	0	NORM	2/6/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00076 U	< 0.016 U
STC8-Prov6	0	NORM	2/6/2013	< 0.00042 U	0.0015 J+	< 0.00018 U	0.0029 J+	< 0.00022 U	< 0.00046 U	< 0.00077 U	< 0.016 U
STC8-Prov7	0	NORM	2/6/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9DP-JW15	1	NORM	1/29/2014	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00076 U	< 0.016 U
STC9DP-JW15	2	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00077 U	< 0.016 U
STC9DP-JW15	3	NORM	1/29/2014	< 0.00041 U	< 0.00044 U	< 0.00018 U	< 0.00017 U	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9DP-JW16	1	NORM	1/29/2014	< 0.00042 UJ	< 0.00045 UJ	< 0.00018 UJ	0.02	< 0.00022 UJ	< 0.00046 UJ	< 0.00077 UJ	< 0.016 UJ
STC9DP-JW16	2	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	0.0028	< 0.00022 U	< 0.00047 U	< 0.00078 U	< 0.016 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
STC9DP-JW16	3	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	0.0046	< 0.00022 U	< 0.00046 U	< 0.00078 U	< 0.016 U
STC9DP-JW17	1	NORM	1/29/2014	< 0.00043 U	< 0.00046 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00047 U	< 0.00079 U	< 0.017 U
STC9DP-JW17	2	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00047 U	< 0.00078 U	< 0.016 U
STC9DP-JW17	3	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00047 U	< 0.00078 U	< 0.016 U
STC9DP-JW19	1	NORM	1/29/2014	< 0.00041 UJ	< 0.00044 UJ	< 0.00018 UJ	0.15	< 0.00022 UJ	< 0.00046 UJ	< 0.00077 UJ	< 0.016 UJ
STC9DP-JW19	2	NORM	1/29/2014	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.0051	< 0.00022 U	< 0.00045 U	< 0.00076 U	< 0.016 U
STC9DP-JW19	3	NORM	1/29/2014	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.0016 J	< 0.00022 U	< 0.00046 U	< 0.00076 U	< 0.016 U
STC9DP-JW20	1	NORM	1/29/2014	< 0.0042 U	< 0.0045 U	< 0.0018 U	0.084	< 0.0022 U	< 0.0046 U	< 0.0077 U	< 0.16 U
STC9DP-JW20	2	NORM	1/29/2014	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.0037	< 0.00022 U	< 0.00046 U	< 0.00076 U	< 0.016 U
STC9DP-JW20	3	NORM	1/29/2014	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.00094 J	< 0.00022 U	< 0.00046 U	< 0.00076 U	< 0.016 U
STC9DP-JW21	1	NORM	1/29/2014	< 0.00043 U	< 0.00046 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00047 U	< 0.00079 U	< 0.017 U
STC9DP-JW21	2	NORM	1/29/2014	< 0.00044 U	< 0.00047 U	< 0.00019 U	< 0.00018 U	< 0.00023 U	< 0.00048 U	< 0.00081 U	< 0.017 U
STC9DP-JW21	3	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00047 U	< 0.00078 U	< 0.016 U
STC9DP-JW24	1	NORM	1/29/2014	< 0.00043 U	< 0.00046 U	< 0.00019 U	< 0.00018 U	< 0.00023 U	< 0.00048 U	< 0.0008 U	< 0.017 U
STC9DP-JW24	2	NORM	1/29/2014	< 0.00043 U	< 0.00046 U	< 0.00019 U	< 0.00018 U	< 0.00023 U	< 0.00048 U	< 0.0008 U	< 0.017 U
STC9DP-JW24	3	NORM	1/29/2014	< 0.00042 U	< 0.00045 U	< 0.00018 U	< 0.00017 U	< 0.00022 U	< 0.00046 U	< 0.00078 U	< 0.016 U
STC9-JW01	0	NORM	12/19/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	< 0.00016 U	< 0.00021 U	< 0.00044 U	< 0.00074 U	< 0.016 U
STC9-JW02	0	NORM	12/19/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	< 0.00016 U	< 0.00021 U	< 0.00044 U	< 0.00074 U	< 0.016 U
STC9-JW03	0	NORM	12/19/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.00074 J	< 0.00021 U	< 0.00045 U	< 0.00076 U	< 0.016 U
STC9-JW04	0	NORM	12/19/2013	< 0.0004 UJ	0.023	< 0.00017 UJ	0.1	< 0.00021 UJ	< 0.00044 UJ	< 0.00074 UJ	< 0.016 UJ
STC9-JW05	0	NORM	12/19/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.0045	< 0.00022 U	< 0.00046 U	< 0.00077 U	< 0.016 U
STC9-JW05	0	FD	12/19/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.0033	< 0.00022 U	< 0.00046 U	< 0.00077 U	< 0.016 U
STC9-JW06	0	NORM	12/19/2013	< 0.0004 U	< 0.00042 U	< 0.00017 U	< 0.00016 U	< 0.00021 U	< 0.00044 U	< 0.00073 U	< 0.015 U
STC9-JW07	0	NORM	12/19/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.0053	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9-JW08	0	NORM	12/19/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.00056 J	< 0.00021 U	< 0.00044 U	< 0.00074 U	< 0.016 U
STC9-JW09	0	NORM	12/19/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.0069	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9-JW10	0	NORM	12/19/2013	< 0.0004 UJ	0.017	< 0.00017 UJ	0.19	< 0.00021 UJ	< 0.00045 UJ	< 0.00075 UJ	< 0.016 UJ
STC9-JW11	0	NORM	12/19/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.025	< 0.00021 U	< 0.00044 U	< 0.00074 U	< 0.016 U
STC9-JW12	0	NORM	12/19/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.0021	< 0.00021 U	< 0.00044 U	< 0.00074 U	< 0.016 U
STC9-JW13	0	NORM	12/20/2013	< 0.00041 U	< 0.00043 U	< 0.00018 U	0.0005 J	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9-JW14	0	NORM	12/20/2013	< 0.0004 U	0.0022	< 0.00017 U	0.0042	< 0.00021 U	< 0.00044 U	< 0.00074 U	< 0.016 U
STC9-JW15	0	NORM	12/20/2013	< 0.0041 U	< 0.0044 U	< 0.0018 U	0.16	< 0.0022 U	< 0.0045 U	< 0.0076 U	< 0.16 U
STC9-JW15	0	FD	12/20/2013	< 0.0041 U	< 0.0044 U	< 0.0018 U	0.089	< 0.0022 U	< 0.0045 U	< 0.0076 U	< 0.16 U
STC9-JW16	0	NORM	12/20/2013	< 0.0041 U	< 0.0043 U	< 0.0018 U	0.079	< 0.0021 U	< 0.0045 U	< 0.0075 U	< 0.16 U
STC9-JW17	0	NORM	12/20/2013	< 0.004 U	< 0.0043 U	< 0.0017 U	0.18	< 0.0021 U	< 0.0044 U	< 0.0074 U	< 0.15 U

TABLE B-5
SOIL ORGANOCHLORINE PESTICIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Organochlorine Pesticides							
				Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
STC9-JW18	0	NORM	12/20/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.026 J+	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9-JW19	0	NORM	12/20/2013	< 0.004 U	< 0.0043 U	< 0.0017 U	0.11	< 0.0021 U	< 0.0045 U	< 0.0075 U	< 0.16 U
STC9-JW20	0	NORM	12/20/2013	< 0.00041 UJ	< 0.00044 UJ	< 0.00018 UJ	0.12	< 0.00021 UJ	< 0.00045 UJ	< 0.00075 UJ	< 0.016 UJ
STC9-JW21	0	NORM	12/20/2013	< 0.0041 U	< 0.0043 U	< 0.0018 U	0.61	< 0.0021 U	< 0.0045 U	< 0.0075 U	< 0.16 U
STC9-JW22	0	NORM	12/20/2013	< 0.00041 U	< 0.00044 U	< 0.00018 U	0.011	< 0.00021 U	< 0.00045 U	< 0.00075 U	< 0.016 U
STC9-JW23	0	NORM	12/20/2013	< 0.0004 UJ	< 0.00043 UJ	< 0.00017 UJ	0.045	< 0.00021 UJ	< 0.00044 UJ	< 0.00074 UJ	< 0.016 UJ
STC9-JW24	0	NORM	12/20/2013	< 0.00041 UJ	< 0.00044 UJ	< 0.00018 UJ	0.29	< 0.00021 UJ	< 0.00045 UJ	< 0.00076 UJ	< 0.016 UJ
STC9-JW25	0	NORM	12/20/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.0094	< 0.00021 U	< 0.00044 U	< 0.00075 U	< 0.016 U
STC9-JW25	0	FD	12/20/2013	< 0.0004 U	< 0.00043 U	< 0.00017 U	0.0058	< 0.00021 U	< 0.00044 U	< 0.00075 U	< 0.016 U
TMC1-JD01	0	NORM	3/30/2010	0.0027 J+	< 0.00033 U	< 0.00019 U	< 0.00018 U	< 0.00011 U	< 0.00048 U	< 0.00081 U	< 0.017 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00045 UJ	< 0.00035 UJ	< 0.0002 UJ	< 0.00018 UJ	< 0.00011 UJ	< 0.0005 UJ	< 0.00084 UJ	< 0.018 UJ
TMC1-JD02	0	NORM	3/30/2010	< 0.00043 UJ	< 0.00033 UJ	< 0.00019 UJ	< 0.00018 UJ	< 0.00011 UJ	< 0.00048 UJ	< 0.0008 UJ	< 0.017 UJ
TMC1-JD02	0	FD	3/30/2010	< 0.00042 UJ	< 0.00032 UJ	< 0.00018 UJ	< 0.00017 UJ	< 0.0001 UJ	< 0.00047 UJ	< 0.00078 UJ	< 0.016 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.00043 UJ	< 0.00033 UJ	< 0.00019 UJ	< 0.00017 UJ	< 0.00011 UJ	< 0.00048 UJ	< 0.0008 UJ	< 0.017 UJ

All units in mg/kg.
-- = no sample data.
[shaded box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-6
SOIL POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Polynuclear Aromatic Hydrocarbons (PAHs)												
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
BDW-F High	0	NORM	2/6/2013	< 0.00182 U	< 0.00182 U	< 0.00182 U	0.0102	0.00981	0.0164	0.00654 J	0.012	0.0145	0.00182 J	0.00763	0.00327 J	0.00763
BDW-F Low	0	NORM	2/6/2013	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
GES-JWT-1	0	NORM	3/4/2013	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U
GES-JWT-10	0	NORM	3/4/2013	< 0.00174 U	< 0.00174 U	0.00244 J	0.0328	0.0509	0.0663	0.0359	0.0216	0.0373	0.0122	0.0391	0.00872	0.0366
GES-JWT-11	0	NORM	3/4/2013	< 0.00178 U	0.00356 J	0.00285 J	0.0381	0.0527	0.0915	0.0331	0.0289	0.0506	0.0103	0.0399	0.0139	0.0574
GES-JWT-12	0	NORM	3/4/2013	< 0.00176 U	0.00317 J	0.00352 J	0.0691	0.0874	0.135	0.0395	0.0444	0.0736	0.018	0.0521	0.018	0.0698
GES-JWT-13	0	NORM	3/4/2013	< 0.00711 U	< 0.00711 U	0.0114 J	0.0626	0.0469	0.114	0.0327	0.0668	0.0697	< 0.00711 U	0.0412	0.0611	0.0682
GES-JWT-14	0	NORM	3/4/2013	< 0.00177 U	< 0.00177 U	< 0.00177 U	0.00636 J	0.00353 J	0.00707	0.00389 J	0.00424 J	0.00424 J	< 0.00177 U	0.00424 J	0.00283 J	0.00318 J
GES-JWT-15	0	NORM	3/4/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U
GES-JWT-16	0	NORM	3/4/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U
GES-JWT-17	0	NORM	3/4/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.00868	< 0.00174 U	0.0115	< 0.00174 U	0.00174 J	0.00729	< 0.00174 U	0.00208 J	< 0.00174 U	0.00382 J
GES-JWT-18	0	NORM	3/4/2013	< 0.00171 U	< 0.00171 U	< 0.00171 U	0.00751	0.00546 J	0.00956	0.00546 J	0.00478 J	0.00444 J	< 0.00171 U	0.00478 J	< 0.00171 U	0.00615 J
GES-JWT-18	0	FD	3/4/2013	< 0.00171 U	< 0.00171 U	< 0.00171 U	0.00784	0.00546 J	0.00989	0.00409 J	0.00375 J	0.00512 J	< 0.00171 U	0.00477 J	0.00239 J	0.00682
GES-JWT-19	0	NORM	3/4/2013	< 0.00183 U	< 0.00183 U	< 0.00183 U	0.022	0.0066 J	0.0755	0.0169	0.0147	0.0542	0.00916	0.0267	0.0117	0.015
GES-JWT-2	0	NORM	3/4/2013	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
GES-JWT-3	0	NORM	3/4/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U
GES-JWT-4	0	NORM	3/4/2013	< 0.00721 U	< 0.00721 U	0.0101 J	0.0519	0.0332	0.183	0.0591	0.113	0.0894	0.0202 J	0.0779	0.0678	0.13
GES-JWT-5	0	NORM	3/4/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	0.0218	0.0215	0.0341	0.0151	0.0113	0.0176	0.00457 J	0.0158	0.00633 J	0.0211
GES-JWT-6	0	NORM	3/4/2013	< 0.00176 U	< 0.00176 U	0.00211 J	0.0366	0.0478	0.0735	0.0239	0.0243	0.0436	0.0116	0.0274	0.0105	0.0489
GES-JWT-7	0	NORM	3/4/2013	< 0.00182 UJ	< 0.00182 UJ	< 0.00182 UJ	< 0.00182 UJ	< 0.00182 UJ	0.00471 J-	< 0.00182 UJ	0.00218 J	< 0.00182 UJ	< 0.00182 UJ	0.00217 J-	< 0.00182 UJ	0.00254 J-
GES-JWT-8	0	NORM	3/4/2013	< 0.00733 U	< 0.00733 U	0.00733 J	0.041	0.0337	0.192	0.0704	0.117	0.0733	0.022 J	0.0879	0.0249 J	0.0674
GES-JWT-9	0	NORM	3/4/2013	< 0.0177 U	< 0.0177 U	0.0601 J	0.134	0.325 J	0.552 J	0.301 J	0.226 J	0.131	0.113 J	0.357 J	0.0425 J	0.17
GES-JWT-9	0	FD	3/4/2013	< 0.0177 U	< 0.0177 U	0.053 J	0.0955	0.0566 J	0.251 J	0.0778 J	0.099 J	0.124	0.0283 J	0.099 J	0.0601 J	0.187
STC10-JW11	0	NORM	5/12/2014	< 0.00169 U	< 0.00169 U	0.00472 J	0.0843	0.0812	0.137	0.0438	0.0502	0.0961	0.0175	0.0546	0.028	0.112
STC1-AI15	0	NORM	6/4/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 UJ	< 0.00175 U
STC1-AI15	0	FD	6/4/2010	0.0076	< 0.00173 U	0.00204 J	< 0.00173 U	0.00173 J	0.00536 J	0.00447 J	< 0.00173 U	0.00203 J	< 0.00173 U	0.00243 J	0.0392 J	0.0135
STC1-AI15	10	NORM	6/4/2010	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC1-AI16	0	NORM	6/7/2010	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
STC1-AI16	10	NORM	6/7/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-AJ15	0	NORM	6/7/2010	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 UJ	< 0.00174 UJ	< 0.00174 U	< 0.00174 UJ	< 0.00174 U	< 0.00174 UJ	< 0.00174 U	< 0.00174 UJ
STC1-AJ15	0	FD	6/7/2010	< 0.00178 U	< 0.00178 U	0.00205 J	0.0101	0.00868	0.13 J	0.0311 J	< 0.00178 U	0.0412 J	0.0116	0.0354 J	0.00794	0.025 J
STC1-AJ15	10	NORM	6/7/2010	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	0.00217 J	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
STC1-AJ16	10	NORM	6/7/2010	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U

TABLE B-6
SOIL POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 2 of 4)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Polynuclear Aromatic Hydrocarbons (PAHs)												
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
STC1-AJ18	0	NORM	5/24/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U
STC1-AK15	0	NORM	6/3/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC1-AK15	0	FD	6/3/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC1-AK15	3	NORM	6/3/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC1-AK15	13	NORM	6/3/2010	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U
STC1-AK20	0	NORM	5/27/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U
STC1-AK20	0	FD	5/27/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U
STC1-AK20	6	NORM	5/27/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-AK20	16	NORM	5/27/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JB12	0	NORM	8/30/2010	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U
STC1-JB12	10	NORM	8/30/2010	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U	< 0.00185 U
STC1-JD02	0	NORM	6/4/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JD02	10	NORM	6/4/2010	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U	< 0.00182 U
STC1-JD03	0	NORM	6/4/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC1-JD03	10	NORM	6/4/2010	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U
STC1-JD04	0	NORM	6/4/2010	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.00376 J	0.00573 J	0.00328 J	0.00218 J	0.00334 J	< 0.00174 U	0.00261 J	0.00183 J	0.00412 J
STC1-JD04	10	NORM	6/4/2010	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U	< 0.00184 U
STC1-JD05	0	NORM	6/4/2010	< 0.00186 U	< 0.00186 U	< 0.00186 U	0.00798	0.00919	0.0155	0.00814	0.00565 J	0.011	< 0.00186 U	0.00667 J	0.00293 J	0.0104
STC1-JD05	10	NORM	6/4/2010	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U	< 0.00196 U
STC1-JD06	0	NORM	6/3/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	0.00642 J	0.00859	0.0169	0.00858	< 0.00179 U	0.0111	< 0.00179 U	0.00619 J	0.00475 J	0.00904
STC1-JD06	10	NORM	6/3/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JD07	0	NORM	6/7/2010	< 0.00176 U	< 0.00176 U	< 0.00176 U	0.00729	0.00612 J	0.0158	0.00733	0.00404 J	0.0129	0.00204 J	0.00622 J	0.00442 J	0.00784
STC1-JD07	4	NORM	6/7/2010	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC1-JD07	14	NORM	6/7/2010	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U
STC1-JD08	0	NORM	5/20/2010	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC1-JD08	0	FD	5/20/2010	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U
STC1-JD08	10	NORM	5/20/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JD09	0	NORM	5/20/2010	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U
STC1-JD09	10	NORM	5/20/2010	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
STC1-JD10	0	NORM	5/21/2010	< 0.00797 U	< 0.00797 U	< 0.00797 U	< 0.00797 U	< 0.00797 U	0.141	< 0.00797 U	< 0.00797 U	0.115	< 0.00797 U	< 0.00797 U	0.157	0.101
STC1-JD10	10	NORM	5/21/2010	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	0.0171	< 0.00178 U	< 0.00178 U	0.0215	< 0.00178 U	< 0.00178 U	0.0181	0.00974
STC1-JD11	0	NORM	5/21/2010	< 0.00182 U	< 0.00182 U	< 0.00182 U	0.00203 J	0.00317 J	0.0378	0.00287 J	< 0.00182 U	0.0176	< 0.00182 U	0.00266 J	0.0169	0.00706 J
STC1-JD11	10	NORM	5/21/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JD12	0	NORM	5/21/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U

TABLE B-6
SOIL POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Polynuclear Aromatic Hydrocarbons (PAHs)												
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
STC1-JD12	0	FD	5/21/2010	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U
STC1-JD12	10	NORM	5/21/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U
STC1-JD13	0	NORM	5/21/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	0.002 J	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	0.00188 J	< 0.00179 U	< 0.00179 U	0.00294 J	0.00291 J
STC1-JD13	10	NORM	5/21/2010	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U
STC1-JD14	0	NORM	6/1/2010	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U	< 0.0018 U
STC1-JD14	0	FD	6/1/2010	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC1-JD14	10	NORM	6/1/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JD15	0	NORM	6/1/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U
STC1-JD15	6	NORM	6/1/2010	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC1-JD15	16	NORM	6/1/2010	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC6-AJ15	0	NORM	7/20/2012	< 0.0017 U	< 0.0017 U	< 0.0017 U	0.0142	0.0149	0.0363	0.0119	0.0115	0.0251	0.00407 J	0.0109	0.00746	0.0183
STC6-ES01	0	NORM	7/20/2012	< 0.00167 U	< 0.00167 U	< 0.00167 U	0.00736 J	0.00368 J	0.0114 J	0.00435 J	0.00334 J	0.00669 J	< 0.00167 U	0.00401 J	0.00535 J	0.00802 J
STC6-ES01	0	FD	7/20/2012	< 0.00167 U	< 0.00167 U	0.00634 J	0.0727 J	0.0534 J	0.0981 J	0.0364 J	0.0337 J	0.0754 J	0.0113	0.034 J	0.0517 J	0.103 J
STC6-JD10	10	NORM	7/20/2012	< 0.0017 U	< 0.0017 U	0.00409 J	0.0668	0.0651	0.0995	0.0296	0.0313	0.0763	0.0123	0.032	0.0324	0.0675
STC6-JD11	10	NORM	7/23/2012	< 0.0017 U	< 0.0017 U	< 0.0017 U	0.00715	0.0017 J	0.0119	< 0.0017 U	0.00374 J	0.00851	0.00204 J	< 0.0017 U	0.0157	0.00885
STC6-JD12	10	NORM	7/23/2012	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U	< 0.0017 U
STC6-JD13	10	NORM	7/23/2012	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U	< 0.00169 U
STC8-Prov3	0	NORM	2/6/2013	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC8-Prov4	0	NORM	2/6/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U
STC8-Prov4	0	FD	2/6/2013	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC8-Prov5	0	NORM	2/6/2013	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC8-Prov6	0	NORM	2/6/2013	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
STC8-Prov7	0	NORM	2/6/2013	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC9-JW01	0	NORM	12/19/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.00837	0.00732	0.0241	0.00663 J	0.00698	0.0234	0.00453 J	0.00593 J	0.00732	0.0143
STC9-JW02	0	NORM	12/19/2013	< 0.00175 U	< 0.00175 U	< 0.00175 U	0.00666 J	0.00736	0.014	0.00526 J	0.00526 J	0.0105	0.00245 J	0.00526 J	0.00491 J	0.00946
STC9-JW03	0	NORM	12/19/2013	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	0.00285 J	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	0.00214 J
STC9-JW04	0	NORM	12/19/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	0.00878	0.00948	0.0337	0.00948	0.0162	0.0316	0.00386 J	0.00773	0.0239	0.0211
STC9-JW05	0	NORM	12/19/2013	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U
STC9-JW05	0	FD	12/19/2013	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U	< 0.00178 U
STC9-JW06	0	NORM	12/19/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U
STC9-JW07	0	NORM	12/19/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.00174 J	0.00349 J	0.0122	0.00418 J	0.00558 J	0.00906	< 0.00174 U	0.00349 J	0.00418 J	0.00558 J
STC9-JW08	0	NORM	12/19/2013	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U	< 0.00175 U
STC9-JW09	0	NORM	12/19/2013	< 0.00175 U	< 0.00175 U	< 0.00175 U	0.0028 J	0.00315 J	0.00664 J	0.0021 J	0.00315 J	0.00525 J	< 0.00175 U	< 0.00175 U	0.00245 J	0.0056 J
STC9-JW10	0	NORM	12/19/2013	< 0.00175 U	< 0.00175 U	< 0.00175 U	0.00526 J	0.00701	0.0158	0.00386 J	0.00912	0.0112	< 0.00175 U	0.00351 J	0.00666 J	0.0119
STC9-JW11	0	NORM	12/19/2013	0.053	0.00242 J	0.161	1.79	1.12	1.93	0.354	0.522	1.83	0.163	0.383	0.359	2.24

TABLE B-6
SOIL POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Polynuclear Aromatic Hydrocarbons (PAHs)												
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
STC9-JW12	0	NORM	12/19/2013	0.00771	0.00245 J	0.0147	0.0599	0.042	0.0666	0.0231	0.0256	0.0441	0.00736	0.0224	0.0722	0.0928
STC9-JW13	0	NORM	12/20/2013	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U	< 0.00177 U
STC9-JW14	0	NORM	12/20/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.00313 J	< 0.00174 U	< 0.00174 U	0.00244 J	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.00244 J
STC9-JW15	0	NORM	12/20/2013	< 0.00177 U	< 0.00177 U	0.00426 J	0.0135	0.00781	0.0287 J	0.0071	0.0121	0.0195	0.00213 J	0.00745	0.0124	0.0153
STC9-JW15	0	FD	12/20/2013	< 0.00179 U	< 0.00179 U	0.00286 J	0.0118	0.00607 J	0.0214 J	0.00572 J	0.00965	0.0154	0.00179 J	0.00536 J	0.00786	0.0132
STC9-JW16	0	NORM	12/20/2013	< 0.00182 U	< 0.00182 U	0.00764	0.0207	0.0116	0.0288	0.00764	0.0102	0.024	0.00255 J	0.00691 J	0.0291	0.0291
STC9-JW17	0	NORM	12/20/2013	< 0.00173 U	< 0.00173 U	0.00312 J	0.0138	0.0128	0.0357	0.01	0.00727	0.0215	0.00381 J	0.00831	0.00969	0.0215
STC9-JW18	0	NORM	12/20/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	0.0172	0.0165	0.032	0.0123	0.0141	0.0221	0.00492 J	0.00984	0.00668 J	0.0274
STC9-JW19	0	NORM	12/20/2013	< 0.00176 U	< 0.00176 U	0.00247 J	0.012	0.00951	0.0233	0.00987	0.0106	0.0148	0.00388 J	0.00634 J	0.00634 J	0.0204
STC9-JW20	0	NORM	12/20/2013	< 0.00178 U	< 0.00178 U	< 0.00178 U	0.0032 J	0.00213 J	0.011	0.00427 J	0.00533 J	0.00498 J	< 0.00178 U	0.0032 J	0.00178 J	0.00533 J
STC9-JW21	0	NORM	12/20/2013	< 0.00175 U	< 0.00175 U	0.0028 J	0.00876	0.0049 J	0.034	0.00876	0.0154	0.0238	0.00455 J	0.00771	0.0151	0.0259
STC9-JW22	0	NORM	12/20/2013	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	0.00251 J	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	< 0.00179 U	0.00215 J
STC9-JW23	0	NORM	12/20/2013	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	< 0.00176 U	0.00422 J	< 0.00176 U	0.00211 J	0.00211 J	< 0.00176 U	< 0.00176 U	< 0.00176 U	0.00211 J
STC9-JW24	0	NORM	12/20/2013	< 0.00178 U	< 0.00178 U	0.00249 J	0.0128	0.0118	0.0345	0.0125	0.0135	0.0239	0.00392 J	0.00783	0.00641 J	0.0256
STC9-JW25	0	NORM	12/20/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.0209	0.0181	0.0341	0.0153	0.0129	0.0191	0.00417 J	0.0122	0.0136 J	0.0292 J
STC9-JW25	0	FD	12/20/2013	< 0.00174 U	< 0.00174 U	< 0.00174 U	0.0153	0.0143	0.0244	0.00906	0.00871	0.015	0.00349 J	0.00732	0.00209 J	0.0139 J
TMC1-JD01	0	NORM	3/30/2010	< 0.00185 U	< 0.00185 U	< 0.00185 U	0.00404 J	0.0041 J	0.00734 J	0.00287 J	0.00255 J	0.00374 J	< 0.00185 U	0.00234 J	< 0.00185 U	0.00718 J
TMC1-JD01	11	NORM	4/5/2010	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00182 U	< 0.00182 U	< 0.00182 U	0.0107	0.0102	0.0212 J	0.00732	0.00747	0.0126	< 0.00182 U	0.00582 J	0.0118	0.0149 J
TMC1-JD02	0	FD	3/30/2010	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 UJ	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 U	< 0.00183 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U	< 0.00181 U

All units in mg/kg.

-- = no sample data.

= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-7
SOIL POLYCHLORINATED BIPHENYLS (PCBs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Polychlorinated Biphenyls (PCBs)										
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCB 105	PCB 114	PCB 118	PCB 123
BDW-F High	0	NORM	2/6/2013	--	--	--	--	--	--	--	170	40	290	< 3.8 U
BDW-F Low	0	NORM	2/6/2013	--	--	--	--	--	--	--	420	34	1000	< 13 U
BDW-S S Wall	0	NORM	2/6/2013	--	--	--	--	--	--	--	160	36	270	< 4.1 U
GES-JWT-1	0	NORM	3/4/2013	--	--	--	--	--	--	--	18	1.5 J	39	0.62 J
GES-JWT-10	0	NORM	3/4/2013	--	--	--	--	--	--	--	2200 J	280	5200 J	86
GES-JWT-11	0	NORM	3/4/2013	--	--	--	--	--	--	--	6600	< 450 U	15000	< 460 U
GES-JWT-12	0	NORM	3/4/2013	--	--	--	--	--	--	--	7800	2400	16000	320
GES-JWT-13	0	NORM	3/4/2013	--	--	--	--	--	--	--	44000 J	13000	110000 J	1800
GES-JWT-14	0	NORM	3/4/2013	--	--	--	--	--	--	--	1200	380	2600 J	51
GES-JWT-15	0	NORM	3/4/2013	--	--	--	--	--	--	--	390	190	800	< 14 U
GES-JWT-16	0	NORM	3/4/2013	--	--	--	--	--	--	--	17 J	4.8	36 J	< 1.1 U
GES-JWT-17	0	NORM	3/4/2013	--	--	--	--	--	--	--	2000	1400	1900	410
GES-JWT-18	0	NORM	3/4/2013	--	--	--	--	--	--	--	5400	230	11000	< 150 U
GES-JWT-18	0	FD	3/4/2013	--	--	--	--	--	--	--	5800	340	11000	< 170 U
GES-JWT-19	0	NORM	3/4/2013	--	--	--	--	--	--	--	160000 J	8200	340000 J	4700
GES-JWT-2	0	NORM	3/4/2013	--	--	--	--	--	--	--	29	2.6	65	0.91 J
GES-JWT-3	0	NORM	3/4/2013	--	--	--	--	--	--	--	18 J	1.8 J	35 J	< 0.78 UJ
GES-JWT-4	0	NORM	3/4/2013	--	--	--	--	--	--	--	410000 J	44000 J	760000 J	18000
GES-JWT-5	0	NORM	3/4/2013	--	--	--	--	--	--	--	1900	120	3700 J	54
GES-JWT-6	0	NORM	3/4/2013	--	--	--	--	--	--	--	2400 J	240	4800 J	74
GES-JWT-7	0	NORM	3/4/2013	--	--	--	--	--	--	--	490000 J	41000 J	820000 J	18000
GES-JWT-8	0	NORM	3/4/2013	--	--	--	--	--	--	--	310000 J	39000	600000 J	< 13000 U
GES-JWT-9	0	NORM	3/4/2013	--	--	--	--	--	--	--	230000 J	37000	500000 J	9500
GES-JWT-9	0	FD	3/4/2013	--	--	--	--	--	--	--	210000 J	32000	450000 J	7200
STC10-JW02	0	NORM	5/12/2014	--	--	--	--	--	--	--	1800	240	3800 J	< 110 U
STC11-JW02	0	NORM	8/7/2014	--	--	--	--	--	--	--	900	46	1800	31
STC1-AI15	0	NORM	6/4/2010	--	--	--	--	--	--	--	< 0.15 U	< 0.14 U	< 0.16 U	< 0.15 U
STC1-AI15	0	FD	6/4/2010	--	--	--	--	--	--	--	< 0.1 U	< 0.1 U	2.5	< 0.11 U
STC1-AI16	0	NORM	6/7/2010	--	--	--	--	--	--	--	5.6	2.2	11	< 0.1 U
STC1-AJ15	0	NORM	6/7/2010	< 1.8 U	< 2.3 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	20	230000 J	15000 J	550000 J	< 32 U
STC1-AJ15	0	FD	6/7/2010	--	--	--	--	--	--	--	130 J	11 J	320 J	< 0.22 U
STC1-AJ16	0	NORM	6/7/2010	--	--	--	--	--	--	--	390	21	830	< 0.3 U
STC1-AJ18	0	NORM	5/24/2010	--	--	--	--	--	--	--	22	9.5	44	< 0.17 U
STC1-AK15	0	NORM	6/3/2010	--	--	--	--	--	--	--	34	< 0.12 U	65	< 0.14 U
STC1-AK15	0	FD	6/3/2010	--	--	--	--	--	--	--	23	< 0.11 U	42	< 0.12 U
STC1-AK20	0	NORM	5/27/2010	--	--	--	--	--	--	--	< 0.049 U	< 0.041 U	< 0.043 U	< 0.046 U
STC1-AK20	0	FD	5/27/2010	--	--	--	--	--	--	--	< 0.043 U	< 0.036 U	< 0.039 U	< 0.041 U
STC1-JB12	0	NORM	8/30/2010	--	--	--	--	--	--	--	17	3.6	40	< 0.15 U

TABLE B-7
SOIL POLYCHLORINATED BIPHENYLS (PCBs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Polychlorinated Biphenyls (PCBs)										
				Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCB 105	PCB 114	PCB 118	PCB 123
STC1-JD02	0	NORM	6/4/2010	--	--	--	--	--	--	--	480	14	1100	< 34 U
STC1-JD03	0	NORM	6/4/2010	--	--	--	--	--	--	--	1900	36	2600 J	< 130 U
STC1-JD04	0	NORM	6/4/2010	--	--	--	--	--	--	--	1900	120	4500 J	< 160 U
STC1-JD05	0	NORM	6/4/2010	--	--	--	--	--	--	--	620	33	1400	< 39 U
STC1-JD06	0	NORM	6/3/2010	< 0.044 UJ	< 0.058 UJ	< 0.044 UJ	< 0.044 UJ	< 0.044 UJ	0.31 J	< 0.044 UJ	15000 J	260	30000 J	< 0.67 U
STC1-JD07	0	NORM	6/7/2010	--	--	--	--	--	--	--	580	47	1300	< 0.33 U
STC1-JD08	0	NORM	5/20/2010	--	--	--	--	--	--	--	12 J	< 0.13 UJ	26 J	< 0.15 U
STC1-JD08	0	FD	5/20/2010	< 0.0088 U	< 0.012 U	< 0.0088 U	< 0.0088 U	< 0.0088 U	0.18 J+	< 0.0088 U	5800 J	230 J	11000 J	< 0.61 U
STC1-JD09	0	NORM	5/20/2010	--	--	--	--	--	--	--	3.4	< 0.2 U	4.1	< 0.12 U
STC1-JD10	0	NORM	5/21/2010	< 0.99 U	< 1.3 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	12000	6400	23000 J	< 600 U
STC1-JD11	0	NORM	5/21/2010	< 4.5 U	< 5.9 U	< 4.5 U	< 4.5 U	< 4.5 U	< 4.5 U	< 4.5 U	18000	39000	34000	< 730 U
STC1-JD12	0	NORM	5/21/2010	--	--	--	--	--	--	--	450	27	1200 J	< 33 U
STC1-JD12	0	FD	5/21/2010	--	--	--	--	--	--	--	280	28	1000	< 41 U
STC1-JD13	0	NORM	5/21/2010	--	--	--	--	--	--	--	110	16	380	< 16 U
STC1-JD14	0	NORM	6/1/2010	--	--	--	--	--	--	--	1600 J	230 J	3400 J	< 0.45 U
STC1-JD14	0	FD	6/1/2010	--	--	--	--	--	--	--	18 J	2.3 J	42 J	< 0.23 U
STC1-JD15	0	NORM	6/1/2010	--	--	--	--	--	--	--	< 0.12 U	< 0.1 U	7.4	< 0.11 U
STC6-AJ15	0	NORM	7/20/2012	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.11 U	< 0.11 U	23000 J	1700	50000 J	790
STC6-ES01	0	NORM	7/20/2012	--	--	--	--	--	--	--	18000 J	1100	38000 J	530
STC6-JD04	0	NORM	7/20/2012	--	--	--	--	--	--	--	2200 J	140	5100 J	58
STC6-JD06	0	NORM	7/20/2012	--	--	--	--	--	--	--	1200	47	2500 J	23
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	2000	290	4400 J	39
STC6-JD10	10	NORM	7/20/2012	--	--	--	--	--	--	--	12000 J	6000 J	25000 J	420
STC6-JD11	10	NORM	7/23/2012	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.11 U	< 0.11 U	7000 J	4000 J	16000 J	190
STC6-JD14	0	NORM	7/23/2012	--	--	--	--	--	--	--	420	76	830	17
STC6-JD14	0	FD	7/23/2012	--	--	--	--	--	--	--	450	71	980	17
STC7-AJ15	0	NORM	12/13/2012	< 0.9 U	< 0.9 U	< 0.9 U	< 0.9 U	< 0.9 U	3.7	< 0.57 U	80000 J	8300	170000 J	2500
STC7-AJ15	0	FD	12/13/2012	< 0.9 U	< 0.9 U	< 0.9 U	< 0.9 U	< 0.9 U	8.7	< 0.57 U	84000	9200	170000 J	2300
STC7-ES01	0	NORM	12/11/2012	--	--	--	--	--	--	--	120	9.8	260	4.5
STC7-JD04	0	NORM	12/19/2012	--	--	--	--	--	--	--	8000 J	< 2.2 U	15000 J	230
STC7-JD08	0	NORM	12/11/2012	--	--	--	--	--	--	--	130	39	280	4.6
STC7-JD10	10	NORM	12/11/2012	--	--	--	--	--	--	--	1600	65	2900 J	40
STC7-JD11	10	NORM	12/11/2012	--	--	--	--	--	--	--	700	82	1800	32
STC8-AJ15	0	NORM	2/5/2013	--	--	--	--	--	--	--	91	15	210	< 7.5 U
STC8-JD10	10	NORM	2/5/2013	--	--	--	--	--	--	--	150	37	500	< 16 U
STC8-Prov3	0	NORM	2/6/2013	--	--	--	--	--	--	--	280	31	940	< 13 U
STC8-Prov4	0	NORM	2/6/2013	--	--	--	--	--	--	--	930	43	2200	26
STC8-Prov4	0	FD	2/6/2013	--	--	--	--	--	--	--	890	39	2000	23

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SOIL POLYCHLORINATED BIPHENYLS (PCBs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Polychlorinated Biphenyls (PCBs)										
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCB 105	PCB 114	PCB 118	PCB 123
STC8-Prov5	0	NORM	2/6/2013	--	--	--	--	--	--	--	560	81	1200	17
STC8-Prov6	0	NORM	2/6/2013	--	--	--	--	--	--	--	3600	320	7100	61
STC8-Prov7	0	NORM	2/6/2013	--	--	--	--	--	--	--	250	48	710	< 14 U
STC9-JW01	0	NORM	12/19/2013	--	--	--	--	--	--	--	3200 J	150	6900 J	100
STC9-JW02	0	NORM	12/19/2013	--	--	--	--	--	--	--	2600 J	290	6100 J	160
STC9-JW03	0	NORM	12/19/2013	--	--	--	--	--	--	--	2400 J	110	5300 J	48
STC9-JW04	0	NORM	12/19/2013	--	--	--	--	--	--	--	15000 J	1800	34000 J	< 440 U
STC9-JW05	0	NORM	12/19/2013	--	--	--	--	--	--	--	2200 J	410 J	4500 J	55 J
STC9-JW05	0	FD	12/19/2013	--	--	--	--	--	--	--	610	150	1300	23
STC9-JW06	0	NORM	12/19/2013	--	--	--	--	--	--	--	1300	150	2900 J	53
STC9-JW07	0	NORM	12/19/2013	--	--	--	--	--	--	--	6600 J	710	15000 J	260
STC9-JW08	0	NORM	12/19/2013	--	--	--	--	--	--	--	1300	100	3100 J	40
STC9-JW09	0	NORM	12/19/2013	--	--	--	--	--	--	--	6900 J	600	15000 J	260
STC9-JW10	0	NORM	12/19/2013	--	--	--	--	--	--	--	4800 J	2100	11000 J	220
STC9-JW11	0	NORM	12/19/2013	--	--	--	--	--	--	--	20000 J	1500	42000 J	< 670 U
STC9-JW12	0	NORM	12/19/2013	--	--	--	--	--	--	--	1700	260	3600 J	62
STC9-JW13	0	NORM	12/20/2013	--	--	--	--	--	--	--	260	31	600	< 7.8 U
STC9-JW14	0	NORM	12/20/2013	--	--	--	--	--	--	--	560	150	1200	17
STC9-JW15	0	NORM	12/20/2013	--	--	--	--	--	--	--	56000 J	7200 J	120000 J	1800 J
STC9-JW15	0	FD	12/20/2013	--	--	--	--	--	--	--	110000 J	19000 J	230000 J	4900 J
STC9-JW16	0	NORM	12/20/2013	--	--	--	--	--	--	--	44000 J	4800	100000 J	< 1700 U
STC9-JW17	0	NORM	12/20/2013	--	--	--	--	--	--	--	65000 J	6600	140000 J	< 2000 U
STC9-JW18	0	NORM	12/20/2013	--	--	--	--	--	--	--	10000	1300	22000	390
STC9-JW19	0	NORM	12/20/2013	--	--	--	--	--	--	--	30000	2900	63000 J	< 1000 U
STC9-JW20	0	NORM	12/20/2013	--	--	--	--	--	--	--	60000 J	5700	140000 J	2000
STC9-JW21	0	NORM	12/20/2013	--	--	--	--	--	--	--	270000 J	23000	550000 J	8600
STC9-JW22	0	NORM	12/20/2013	--	--	--	--	--	--	--	5900 J	510	14000 J	190
STC9-JW23	0	NORM	12/20/2013	--	--	--	--	--	--	--	32000	2200	69000 J	< 770 U
STC9-JW24	0	NORM	12/20/2013	--	--	--	--	--	--	--	120000 J	9700	230000 J	4100
STC9-JW25	0	NORM	12/20/2013	--	--	--	--	--	--	--	3700	590	7900 J	< 100 U
STC9-JW25	0	FD	12/20/2013	--	--	--	--	--	--	--	2800	520	5800 J	98
TMC1-JD01	0	NORM	3/30/2010	--	--	--	--	--	--	--	59	2.4	100	< 0.16 U
TMC1-JD02	0	NORM	3/30/2010	--	--	--	--	--	--	--	850 J	21 J	1600 J	< 0.37 U
TMC1-JD02	0	FD	3/30/2010	--	--	--	--	--	--	--	32 J	< 0.14 UJ	32 J	< 0.15 U

All units in pg/g.
-- = no sample data.
= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-7
SOIL POLYCHLORINATED BIPHENYLS (PCBs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Polychlorinated Biphenyls (PCBs)									
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	PCB 126	PCB 156	PCB 156/157	PCB 157	PCB 167	PCB 169	PCB 189	PCB 209	PCB 77	PCB 81
BDW-F High	0	NORM	2/6/2013	< 3.4 U	--	57	--	18	< 0.34 U	3.4	600	9.5	23
BDW-F Low	0	NORM	2/6/2013	< 11 U	--	59	--	28	< 0.54 U	3.9	540	40	28
BDW-S S Wall	0	NORM	2/6/2013	< 3.4 U	--	54	--	17	< 0.3 U	2.9	600	9.3	22
GES-JWT-1	0	NORM	3/4/2013	< 0.41 U	--	7.7	--	2.3	< 0.12 U	0.44 J	16 J	0.75 J	0.31 J
GES-JWT-10	0	NORM	3/4/2013	< 60 U	--	930	--	290	8.9	68	6700 J	100	64
GES-JWT-11	0	NORM	3/4/2013	580	--	3800	--	2400	290	1900	250000 J	550	400
GES-JWT-12	0	NORM	3/4/2013	< 190 U	--	2900	--	950	40 J	250	45000 J	970	720
GES-JWT-13	0	NORM	3/4/2013	< 1200 U	--	25000	--	5300	170	1500	130000 J	7100	5100
GES-JWT-14	0	NORM	3/4/2013	37	--	460	--	170	8.6	52	9100 J	220	120
GES-JWT-15	0	NORM	3/4/2013	16	--	170	--	73	3.7	31	4000 J	52	94
GES-JWT-16	0	NORM	3/4/2013	1.4 J	--	9 J	--	4.6	< 0.29 U	2.8	270	3.1	2.7
GES-JWT-17	0	NORM	3/4/2013	1000	--	2900	--	2900	< 250 U	3200	330000 J	1300	960
GES-JWT-18	0	NORM	3/4/2013	< 160 U	--	3700	--	1200	< 31 U	320	20000	410	72
GES-JWT-18	0	FD	3/4/2013	< 180 U	--	4200	--	1400	38 J	360	19000	530	83
GES-JWT-19	0	NORM	3/4/2013	< 3300 U	--	60000	--	19000	< 370 U	2300	660000 J	1400	< 640 U
GES-JWT-2	0	NORM	3/4/2013	< 0.56 U	--	12	--	3.8	0.21 J	1.5 J	240	1.3 J	0.54 J
GES-JWT-3	0	NORM	3/4/2013	< 0.71 UJ	--	6.4 J	--	2 J	< 0.35 UJ	0.71 J	140 J	2.1 J	0.48 J
GES-JWT-4	0	NORM	3/4/2013	< 17000 U	--	300000 J	--	78000 J	< 1200 U	11000	59000 J	12000	3300
GES-JWT-5	0	NORM	3/4/2013	< 35 U	--	970	--	290	8.6	66	15000 J	73	15
GES-JWT-6	0	NORM	3/4/2013	< 65 U	--	1200	--	370	13	110	18000 J	240	64
GES-JWT-7	0	NORM	3/4/2013	< 19000 U	--	350000 J	--	97000 J	< 1500 U	13000	22000	10000	< 3500 U
GES-JWT-8	0	NORM	3/4/2013	< 14000 U	--	250000 J	--	46000 J	< 580 U	7700	45000 J	8000	6200
GES-JWT-9	0	NORM	3/4/2013	< 4200 U	--	130000 J	--	35000	< 740 U	7600	110000 J	11000	5600
GES-JWT-9	0	FD	3/4/2013	< 5400 U	--	120000 J	--	31000	< 780 U	9300	130000 J	12000	5000
STC10-JW02	0	NORM	5/12/2014	190	--	1000	--	570	64	530	57000 J	240	110
STC11-JW02	0	NORM	8/7/2014	41	--	500	--	200	< 12 U	86	13000 J	59	9.6
STC1-AI15	0	NORM	6/4/2010	< 0.15 U	< 0.19 U	--	< 0.18 U	< 0.22 U	< 0.19 U	< 0.16 U	< 0.1 U	< 0.14 U	< 0.13 U
STC1-AI15	0	FD	6/4/2010	< 0.11 U	< 0.098 U	--	< 0.094 U	< 0.11 U	< 0.096 U	< 0.094 U	23	< 0.093 U	< 0.087 U
STC1-AI16	0	NORM	6/7/2010	< 0.1 U	3	--	< 0.082 U	< 0.11 U	< 0.09 U	< 0.083 U	56	< 0.086 U	< 0.079 U
STC1-AJ15	0	NORM	6/7/2010	930 J	90000 J	--	19000 J	29000 J	< 26 U	3100 J	15000 J	< 22 U	< 22 U
STC1-AJ15	0	FD	6/7/2010	< 0.22 UJ	39 J	--	8.1 J	17 J	< 0.13 U	2.6 J	270 J	< 0.16 U	< 0.15 U
STC1-AJ16	0	NORM	6/7/2010	17	190	--	45	85	< 0.36 U	16	3000 J	< 0.19 U	< 0.18 U
STC1-AJ18	0	NORM	5/24/2010	< 0.22 U	5.8	--	< 0.16 U	< 0.18 U	< 0.22 U	< 0.19 U	330	< 0.21 U	< 0.19 U
STC1-AK15	0	NORM	6/3/2010	2.7	14 J	--	3.4	5.1	< 0.18 U	4.1	720	< 0.12 U	< 0.1 U
STC1-AK15	0	FD	6/3/2010	2.2	9.8 J	--	2.5	3.7	< 0.12 U	3.2	590	< 0.15 U	< 0.13 U
STC1-AK20	0	NORM	5/27/2010	< 0.06 U	< 0.044 U	--	< 0.041 U	< 0.046 U	< 0.061 U	< 0.073 U	< 0.03 U	< 0.046 U	< 0.041 U
STC1-AK20	0	FD	5/27/2010	< 0.054 U	< 0.038 U	--	< 0.036 U	< 0.041 U	< 0.052 U	< 0.069 U	< 0.031 U	< 0.055 U	< 0.048 U
STC1-JB12	0	NORM	8/30/2010	< 0.13 U	4.4	--	< 0.12 U	< 0.14 U	< 0.12 U	< 0.094 U	170	< 0.11 U	< 0.11 U

TABLE B-7
SOIL POLYCHLORINATED BIPHENYLS (PCBs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Polychlorinated Biphenyls (PCBs)									
				PCB 126	PCB 156	PCB 156/157	PCB 157	PCB 167	PCB 169	PCB 189	PCB 209	PCB 77	PCB 81
STC1-JD02	0	NORM	6/4/2010	10	250	--	56	91	< 0.24 U	16	3200 J	< 27 U	< 8.1 U
STC1-JD03	0	NORM	6/4/2010	56	1200	--	280	400	3.5	140	3100 J	< 70 U	< 22 U
STC1-JD04	0	NORM	6/4/2010	80	960	--	220	340	11	100	13000 J	< 230 U	< 65 U
STC1-JD05	0	NORM	6/4/2010	14	310	--	68	110	< 0.33 U	26	2500 J	< 36 U	< 15 U
STC1-JD06	0	NORM	6/3/2010	300	5000	--	1200	1300	< 0.98 U	360	20000 J	< 6.8 U	< 6 U
STC1-JD07	0	NORM	6/7/2010	10	170	--	40	62	< 0.24 U	13	7700 J	< 0.28 U	< 0.26 U
STC1-JD08	0	NORM	5/20/2010	< 0.17 UJ	2.5 J	--	< 0.093 UJ	< 0.11 UJ	< 0.13 UJ	< 0.11 UJ	180 J	< 0.16 U	< 0.14 U
STC1-JD08	0	FD	5/20/2010	61 J	1300 J	--	280 J	460 J	9.2 J	100 J	77000 J	< 0.41 U	< 0.39 U
STC1-JD09	0	NORM	5/20/2010	< 0.28 U	< 0.19 U	--	< 0.18 U	< 0.2 U	< 0.25 U	< 0.22 U	40	< 0.2 U	< 0.19 U
STC1-JD10	0	NORM	5/21/2010	270	3000	--	640	780	51	330	110000 J	< 1100 U	< 2000 U
STC1-JD11	0	NORM	5/21/2010	840	6800	--	1300	1800	< 15 U	770	110000 J	< 5000 U	< 13000 U
STC1-JD12	0	NORM	5/21/2010	8.3 J	24	--	5.2	16 J	< 0.27 U	< 0.21 U	190	< 24 U	< 26 U
STC1-JD12	0	FD	5/21/2010	2.7 J	17	--	3.7	9.9 J	< 0.24 U	< 0.17 U	180	< 31 U	< 32 U
STC1-JD13	0	NORM	5/21/2010	4.8	13	--	2.8	12	< 0.15 U	< 0.098 U	79	< 67 U	< 29 U
STC1-JD14	0	NORM	6/1/2010	26 J	410 J	--	91 J	160 J	3.1	39 J	12000 J	< 0.42 U	< 0.39 U
STC1-JD14	0	FD	6/1/2010	< 0.28 UJ	4.1 J	--	< 0.16 UJ	< 0.18 UJ	< 0.21 U	< 0.16 UJ	140 J	< 0.21 U	< 0.18 U
STC1-JD15	0	NORM	6/1/2010	< 0.14 U	< 0.093 U	--	< 0.086 U	< 0.098 U	< 0.13 U	< 0.095 U	< 0.062 U	< 0.12 U	< 0.11 U
STC6-AJ15	0	NORM	7/20/2012	74	9200 J	--	9200 J	2500 J	34	360	10000 J	740	190
STC6-ES01	0	NORM	7/20/2012	80	5900 J	--	5900 J	1700	22	250	88000 J	540	100
STC6-JD04	0	NORM	7/20/2012	19	1500	--	1500	500	4	180	7500 J	110	38
STC6-JD06	0	NORM	7/20/2012	13	700	--	700	220	4.9	56	3400 J	49	6.2
STC6-JD08	0	NORM	7/20/2012	15	680	--	680	210	11	64	28000 J	95	75
STC6-JD10	10	NORM	7/20/2012	100	4400 J	--	4400 J	1200	35	270	37000 J	1100	1600
STC6-JD11	10	NORM	7/23/2012	58	2500 J	--	2500 J	720	26	170	24000 J	640	1100
STC6-JD14	0	NORM	7/23/2012	2.2	140	--	140	45	< 0.4 U	9.6 J	3400 J	22	23
STC6-JD14	0	FD	7/23/2012	3.6	140	--	140	44	< 0.45 U	12 J	3500 J	21	19
STC7-AJ15	0	NORM	12/13/2012	370	--	34000	--	9200	81	1200	9700	1500	600
STC7-AJ15	0	FD	12/13/2012	370	--	34000	--	10000	100	1200	11000	1500	780
STC7-ES01	0	NORM	12/11/2012	< 2.1 U	--	37	--	11	< 2.1 U	2.6	2100	2.3	< 2.1 U
STC7-JD04	0	NORM	12/19/2012	< 2.2 U	--	3700	--	1300	< 2.2 U	220	15000 J	290	34
STC7-JD08	0	NORM	12/11/2012	< 2.1 U	--	47	--	15	< 2.1 U	4.5	1100	8.9	15
STC7-JD10	10	NORM	12/11/2012	< 2.2 U	--	410	--	130	8.7	39	3400 J	55	13
STC7-JD11	10	NORM	12/11/2012	< 2.2 U	--	160	--	66	< 2.2 U	8.1	950	59	37
STC8-AJ15	0	NORM	2/5/2013	8.4	--	34	--	19	2.7	14	2700 J	58	26
STC8-JD10	10	NORM	2/5/2013	< 15 U	--	12	--	14	< 0.17 U	0.42 J	29	71	24
STC8-Prov3	0	NORM	2/6/2013	32	--	120	--	39	< 1 U	12	1300	88	17
STC8-Prov4	0	NORM	2/6/2013	< 16 U	--	320	--	92	< 2.4 U	21	9200	17	< 5.1 U
STC8-Prov4	0	FD	2/6/2013	< 15 U	--	290	--	88	< 2.3 U	19	8800	18	< 5.2 U

TABLE B-7
SOIL POLYCHLORINATED BIPHENYLS (PCBs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
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Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Polychlorinated Biphenyls (PCBs)									
				PCB 126	PCB 156	PCB 156/157	PCB 157	PCB 167	PCB 169	PCB 189	PCB 209	PCB 77	PCB 81
STC8-Prov5	0	NORM	2/6/2013	< 6.9 U	--	180	--	54	< 1.4 U	11	4400	18	18
STC8-Prov6	0	NORM	2/6/2013	< 54 U	--	750	--	240	< 5.1 U	26	2000	120	76
STC8-Prov7	0	NORM	2/6/2013	< 13 U	--	58	--	24	< 0.58 U	5.4	500	38	25
STC9-JW01	0	NORM	12/19/2013	< 83 U	--	1300	--	460	< 17 U	130	95000 J	89	28
STC9-JW02	0	NORM	12/19/2013	210	--	1300	--	700	58	580	79000 J	240	140
STC9-JW03	0	NORM	12/19/2013	< 53 U	--	1200	--	370	< 10 U	61	4100 J	64	12
STC9-JW04	0	NORM	12/19/2013	< 570 U	--	6100 J	--	1800	< 67 U	480	130000 J	910	460
STC9-JW05	0	NORM	12/19/2013	< 64 UJ	--	970 J	--	270 J	< 10 UJ	64 J	18000 J	140 J	190 J
STC9-JW05	0	FD	12/19/2013	< 19 U	--	230	--	70	< 2.9 U	16	5000 J	42	91
STC9-JW06	0	NORM	12/19/2013	73	--	670	--	210	12	76	6400 J	81	49
STC9-JW07	0	NORM	12/19/2013	< 170 U	--	2500	--	750	< 24 U	150	49000 J	170	190
STC9-JW08	0	NORM	12/19/2013	< 33 U	--	580	--	180	< 4.2 U	27	1600	44	17
STC9-JW09	0	NORM	12/19/2013	< 160 U	--	2900	--	910	29	260	22000 J	210	110
STC9-JW10	0	NORM	12/19/2013	190	--	2100	--	680	27	250	25000 J	520	830
STC9-JW11	0	NORM	12/19/2013	< 1100 U	--	8800 J	--	2500 J	< 38 U	430	13000 J	2000	390
STC9-JW12	0	NORM	12/19/2013	63	--	840	--	280	9.7	87	10000 J	120	82
STC9-JW13	0	NORM	12/20/2013	< 9.2 U	--	110	--	34	< 0.98 U	6.4	720	12	3.9
STC9-JW14	0	NORM	12/20/2013	20	--	240	--	76	< 2.8 U	20	2300 J	51	48
STC9-JW15	0	NORM	12/20/2013	< 1800 U	--	22000 J	--	6500 J	< 200 U	1100 J	20000 J	1900 J	1300 J
STC9-JW15	0	FD	12/20/2013	< 3800 U	--	47000 J	--	14000 J	< 310 U	2300 J	40000 J	4100 J	3700 J
STC9-JW16	0	NORM	12/20/2013	< 2400 U	--	18000	--	4900	< 260 U	850	17000	1200	920
STC9-JW17	0	NORM	12/20/2013	< 2600 U	--	26000	--	7900	< 320 U	1000	15000	1400	930
STC9-JW18	0	NORM	12/20/2013	< 470 U	--	4200	--	1300	< 87 U	340	36000	430	270
STC9-JW19	0	NORM	12/20/2013	< 1400 U	--	12000	--	3300	< 150 U	540	14000	760	380
STC9-JW20	0	NORM	12/20/2013	< 2300 U	--	24000	--	6500	< 300 U	860	16000	920	480
STC9-JW21	0	NORM	12/20/2013	< 8200 U	--	110000 J	--	30000	< 1100 U	4200	27000	4100	< 1500 U
STC9-JW22	0	NORM	12/20/2013	< 170 U	--	2300	--	660	< 21 U	89	1300	100	45
STC9-JW23	0	NORM	12/20/2013	< 1000 U	--	13000	--	3500	< 150 U	450	3900	430	< 200 U
STC9-JW24	0	NORM	12/20/2013	< 2900 U	--	49000 J	--	13000	< 360 U	2200	36000 J	2300	840
STC9-JW25	0	NORM	12/20/2013	< 120 U	--	1500	--	470	< 17 U	110	13000 J	210	130
STC9-JW25	0	FD	12/20/2013	< 75 U	--	1200	--	360	< 13 U	83	9800 J	190	130
TMC1-JD01	0	NORM	3/30/2010	< 0.18 U	24	--	4.7	19	< 0.18 U	4.7	350	< 0.24 U	< 0.22 U
TMC1-JD02	0	NORM	3/30/2010	32 J	440 J	--	100 J	160 J	2.7	68 J	8000 J	< 0.28 U	< 0.26 U
TMC1-JD02	0	FD	3/30/2010	< 0.17 UJ	11 J	--	3.4 J	14 J	< 0.16 U	3 J	82 J	< 0.16 U	< 0.15 U

All units in pg/g.
-- = no sample data.
= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-8
SOIL RADIONUCLIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 3)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Radionuclides							
				Radium-226	Radium-228	Thorium-228	Thorium-230	Thorium-232	Uranium-233/234	Uranium-235/236	Uranium-238
STC1-AI15	0	NORM	6/4/2010	0.526	2.2	2.09	1.07	1.5 J	1.13	0.245 U	0.991
STC1-AI15	0	FD	6/4/2010	0.736	1.4	1.62	1.05	1.96 J	0.903	0.473 U	1.12
STC1-AI15	10	NORM	6/4/2010	0.869	1.72	2.02	0.991	1.99 J	1.02	0.262 U	1.45
STC1-AI16	0	NORM	6/7/2010	1 U	2	1.94	0.857	1.39	1.18	0.376 U	0.824
STC1-AI16	10	NORM	6/7/2010	1 U	0.739 U	2.23	1.95	1.57	1.04	0.473 U	1.04
STC1-AJ15	0	NORM	6/7/2010	0.422 U	1.79	1.43	0.528	1.85	0.874	0.273 U	0.884
STC1-AJ15	0	FD	6/7/2010	1.04	1.21	1.76	0.936	1.04	1.29	0.399 U	0.809
STC1-AJ15	10	NORM	6/7/2010	1 U	1.64	2.06	1.73	1.77	1.24	0.436 U	0.882
STC1-AJ16	0	NORM	6/7/2010	1 U	2.23	2.26	1.22	2.31	0.722	0.271 U	0.42
STC1-AJ16	10	NORM	6/7/2010	1 U	2.44	2.04	1.47	1.18	1.07	0.274 U	1.18
STC1-AJ18	0	NORM	5/24/2010	0.917	0.911 UJ	1.61	0.672	1.62	0.885	0.413 U	0.835
STC1-AJ18	12	NORM	5/24/2010	1.06	0.943 UJ	1.19	1.85	1.46	2.06	0.248 U	1.32
STC1-AK15	0	NORM	6/3/2010	0.674	1.55	1.93	1.05	2.53	1.14	0.232 U	0.596
STC1-AK15	0	FD	6/3/2010	1.05	0.983 U	2.01	0.781	1.55	0.605	0.354 U	0.837
STC1-AK15	3	NORM	6/3/2010	1.11	1.88	1.83	0.871	1.26	1.8	0.25 U	0.845
STC1-AK15	13	NORM	6/3/2010	0.967	1.95	1.07	1.03	1.06	0.719	0.299 U	0.748
STC1-AK20	0	NORM	5/27/2010	0.986	1.89	1.72	1.12	1.89	0.649	0.252 U	0.815
STC1-AK20	0	FD	5/27/2010	1.1	2	1.32	1.15	1.67	0.915	0.464 U	0.901
STC1-AK20	6	NORM	5/27/2010	0.792	1.46	1.54	1.1	1.42	0.804	0.274 U	0.812
STC1-AK20	16	NORM	5/27/2010	0.999	1.13	2.16	1.95	1.92	1.36	0.58 U	1.29
STC1-JB12	0	NORM	8/30/2010	0.509	1.98	1.73	0.803	1.39	0.648	0.125 U	0.517
STC1-JB12	10	NORM	8/30/2010	0.619	1.45	1.37	1.56	1.2	1.11	0.079 U	1.58
STC1-JD02	0	NORM	6/4/2010	2.6	3.02	3.74	4.18	3.55 J	4.29	0.364	4.58
STC1-JD02	10	NORM	6/4/2010	0.506	3.97	1.77	1.48	1.6 J	0.871	0.252 U	1.34
STC1-JD03	0	NORM	6/4/2010	0.695	2.45	1.77	0.885	0.8 J	0.476 U	0.252 U	0.865
STC1-JD03	10	NORM	6/4/2010	0.649	1.13	1.67	1.13	1.4 J	1.04	0.257 U	0.867
STC1-JD04	0	NORM	6/4/2010	0.833	1.26	1.87	1.78	2.03 J	0.52	0.227 U	0.934
STC1-JD04	10	NORM	6/4/2010	0.85	1.14	1.45	1.63	1.76 J	0.859	0.55 U	1.03
STC1-JD05	0	NORM	6/4/2010	0.728	2.52	1.6	1.28	1.17 J	1.15	0.235 U	0.873
STC1-JD05	10	NORM	6/4/2010	1.21	0.907 U	1.99	2.68	1.63 J	0.496	0.427 U	1.66
STC1-JD06	0	NORM	6/3/2010	1.6	1.61	2.88	2.09	1.95	2.5	0.467 U	1.81
STC1-JD06	10	NORM	6/3/2010	0.831	2.03	1.73	1.21	1.4	1.16	0.236 U	0.51
STC1-JD07	0	NORM	6/7/2010	1 U	2.27	1.88	0.557	1.32	0.744	0.271	0.476
STC1-JD07	4	NORM	6/7/2010	1 U	1.64	0.762	1.21	1.56	0.543	0.223 U	0.782
STC1-JD07	14	NORM	6/7/2010	1 U	2.73	1.59	1.46	1.55	1.1	0.383 U	0.88

TABLE B-8
SOIL RADIONUCLIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Radionuclides							
				Radium-226	Radium-228	Thorium-228	Thorium-230	Thorium-232	Uranium-233/234	Uranium-235/236	Uranium-238
STC1-JD08	0	NORM	5/20/2010	0.646	1.3	2.25 J	0.987	1.59	0.844	0.351 U	1.3
STC1-JD08	0	FD	5/20/2010	0.492	1.56	0.95 J	1.04	1.25	1.53	0.352 U	0.831
STC1-JD08	10	NORM	5/20/2010	0.791	1.84	2.08	1.27	1.71	1.05	0.313 U	1.03
STC1-JD09	0	NORM	5/20/2010	0.788	2.5	1.49	0.74	1.75	0.573	0.207 U	0.824
STC1-JD09	10	NORM	5/20/2010	0.744	1.63	2.71	1.07	2.06	1.36	0.42 U	1.06
STC1-JD10	0	NORM	5/21/2010	14.3	1.29	3.52	20	1.96 J	11	0.654	8.82
STC1-JD10	10	NORM	5/21/2010	2.34	2.45	2.48	2.54	1.43 J	1.81	0.314 U	1.53
STC1-JD11	0	NORM	5/21/2010	8.18	2.19	2.76	9.64	1.86 J	3.89	0.425 U	4.59
STC1-JD11	10	NORM	5/21/2010	1.04	1.39	1.31	1.13	2.17 J	0.919	0.583 U	1.34
STC1-JD12	0	NORM	5/21/2010	0.9	2.27	2.35	1.24	1.86 J	1.18	0.27 U	1.17
STC1-JD12	0	FD	5/21/2010	1.24	2.46	1.96	1.22	1.23 J	1.19	0.192	1.24
STC1-JD12	10	NORM	5/21/2010	0.906	2.29	1.24	1.06	1.33 J	1.26	0.256 U	0.827
STC1-JD13	0	NORM	5/21/2010	0.933	3.47	1.36	1.6	1.8 J	1.27	0.258 U	0.905
STC1-JD13	10	NORM	5/21/2010	1.18	3.36	0.934	1.43	1.04 J	1.21	0.404 U	0.954
STC1-JD14	0	NORM	6/1/2010	0.86	1.97	1.39	0.846	1.32	0.774	0.259 U	0.96
STC1-JD14	0	FD	6/1/2010	1.09	1.64	2.06	1.2	1.24	0.832	0.43 U	0.817
STC1-JD14	10	NORM	6/1/2010	0.635	0.939 U	1.27	0.735	1.24	0.987	0.31 U	1.15
STC1-JD15	0	NORM	6/1/2010	0.936	1.44	1.33	1.65	1.51	1.03	0.245 U	1.04
STC1-JD15	6	NORM	6/1/2010	1.2	1.74	1.43	1.35	0.595	1.31	0.232 U	0.999
STC1-JD15	16	NORM	6/1/2010	0.459	1.81	1.79	1.7	1.34	0.632	0.435 U	0.79
STC6-ES01	0	NORM	7/20/2012	2.39	2.16 J	0.347 U	1.51	0.579	1.56	-0.0249 U	1.53
STC6-ES01	0	FD	7/20/2012	1.83	0.643 UJ	0.359 U	1.87	0.452 U	1.19	0 U	1.5
STC6-JD02	0	NORM	7/20/2012	0.796 J	3.57	1.66	1.28	1.78	0.881	-0.0182 U	1.07
STC6-JD10	10	NORM	7/20/2012	2.62	1.5 U	0.451 U	1.7	0.4	2.07	0.262 U	1.13
STC6-JD11	10	NORM	7/23/2012	2.37	2.21	1.7	2.39	1.52	1.64	0.0886 U	2.01
STC6-JD13	10	NORM	7/23/2012	1.41	1.85	1.15	1.27	1.69	0.861	0.047 U	1.34
STC9-JW01	0	NORM	12/19/2013	1.11	2.4	2.11	0.995	2.06	1.11	-0.0438 U	0.555
STC9-JW02	0	NORM	12/19/2013	0.826	2.45	1.65	1.15	0.717	1.6	-0.0434 U	1.3
STC9-JW03	0	NORM	12/19/2013	1.19	2.27	1.64	1.18	1.18	1.46	-0.0244 U	1.96
STC9-JW04	0	NORM	12/19/2013	3.3	0.339 U	0.892	2.55	0.743	2.24	0.331 U	1.71
STC9-JW05	0	NORM	12/19/2013	0.84	1.97 U	1.92	1.01	1.23	0.501 U	0.218 U	0.772
STC9-JW05	0	FD	12/19/2013	1.47	2.38 U	1.51	1.14	0.754	0.6	0 U	0.664
STC9-JW06	0	NORM	12/19/2013	0.584	1.64 U	1.56	1.04	1.89	1.27	0.0262 U	0.742
STC9-JW07	0	NORM	12/19/2013	1.21	1.86 U	1.25	1.75	1.84	0.872	0.0467 U	1.05
STC9-JW08	0	NORM	12/19/2013	0.883	1.29 U	1.45	1.19	2.09	1.1	0.0969 U	1.22

TABLE B-8
SOIL RADIONUCLIDES DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 3 of 3)

				Radionuclides							
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Radium-226	Radium-228	Thorium-228	Thorium-230	Thorium-232	Uranium-233/234	Uranium-235/236	Uranium-238
STC9-JW09	0	NORM	12/19/2013	0.828	1.5 U	1.91	0.723	0.933	1	0.043 U	0.936
STC9-JW10	0	NORM	12/19/2013	0.807	1.86 U	2.1	1.07	1.47	0.835	-0.0202 U	1.16
STC9-JW11	0	NORM	12/19/2013	1.03	1.34 U	1.4	1.23	1.34	1.02	0.152 U	1.08
STC9-JW12	0	NORM	12/19/2013	0.835	1.76 U	1.74	1.1	1	1.01	0.106 U	0.603
STC9-JW13	0	NORM	12/20/2013	1.13	1.6 U	1.45	0.79	1.59	1.17	0.0989	0.693
STC9-JW14	0	NORM	12/20/2013	0.803	1.28 U	1.43	0.907	1.56	1.33	0.159	1.14
STC9-JW15	0	NORM	12/20/2013	0.866	1.83 U	1.01	0.95	1.17	0.943	0.194	0.943
STC9-JW15	0	FD	12/20/2013	0.833	1.86 U	1.3	1.3	1.65	1.19	-0.0254 U	1.07
STC9-JW16	0	NORM	12/20/2013	1.33	1.75 U	1.83	0.944	1.92	1.35	0.11 U	0.975
STC9-JW17	0	NORM	12/20/2013	0.949	3.03	1.54	1.39	1.53	1.37	0 U	1.38
STC9-JW18	0	NORM	12/20/2013	0.876	3.22	1.53	1.8	1.63	1.27	-0.0417 U	0.967
STC9-JW19	0	NORM	12/20/2013	0.877	1.41 U	2.2	1.09	1.4	1.1	0.145 U	0.967
STC9-JW20	0	NORM	12/20/2013	0.648	2.54	1.83	1.35	1.14	1.28	-0.019 U	1.33
STC9-JW21	0	NORM	12/20/2013	0.534	4.19	2.55	1.82	2.07	1.76	0.338 U	1.09
STC9-JW22	0	NORM	12/20/2013	0.458	-0.0719 U	1.75	0.736 U	1.37	1.71	-0.0228 U	1.43
STC9-JW23	0	NORM	12/20/2013	0.502	2.27	1.62	0.689	1.42	0.601	0 U	0.395
STC9-JW24	0	NORM	12/20/2013	0.795	2.85	0.983	0.905	1.33	1.1	0 U	0.806
STC9-JW25	0	NORM	12/20/2013	1.37	3.6	1.43	0.904	1.22	0.757	0.0232 U	0.623
STC9-JW25	0	FD	12/20/2013	0.724	2.4	2.28	0.844	0.831	0.917	0.302	1.05
TMC1-JD01	0	NORM	3/30/2010	1.65	1.37	1.69	0.925	1.63	1.17	0.107 U	1.1
TMC1-JD01	11	NORM	4/5/2010	0.618	0.461 U	1.57	1.35	1.83	0.889	0.169 U	1.16
TMC1-JD02	0	NORM	3/30/2010	1.85	1.8	2.14	1.52	2.63 J	1.4	0.0833 U	1.21
TMC1-JD02	0	FD	3/30/2010	1.61	1.32	2.17	0.881	1.61 J	0.844	0.11 U	0.686
TMC1-JD02	10	NORM	4/5/2010	1.37	0.689 U	1.46	0.945	1.21	1.02	0.353 U	0.78

All units in pCi/g.
-- = no sample data.
[shaded box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Aldehydes		Semi-Volatile Organic Compounds (SVOCs)							
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Acetaldehyde	Formaldehyde	1,2,4,5-Tetrachloro-benzene	1,2-Diphenylhydrazine	1,4-Dioxane	2,2'-Dichlorobenzil	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
BDW-F High	0	NORM	2/6/2013	--	--	< 0.108 U	< 0.108 U	< 0.108 U	0.372	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
BDW-F Low	0	NORM	2/6/2013	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
BDW-S S Wall	0	NORM	2/6/2013	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES Prov-3	0	NORM	12/10/2012	--	--	1.46	< 0.114 U	< 0.114 U	7.62	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U
GES Prov-4	0	NORM	12/10/2012	--	--	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
GES Prov-5	0	NORM	12/10/2012	--	--	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U
GES Prov-6	0	NORM	12/10/2012	--	--	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
GES Prov-7	0	NORM	12/10/2012	--	--	< 0.107 U	< 0.107 U	< 0.107 U	14.6	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-1	0	NORM	3/4/2013	--	--	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
GES-JWT-10	0	NORM	3/4/2013	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-11	0	NORM	3/4/2013	--	--	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-12	0	NORM	3/4/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-13	0	NORM	3/4/2013	--	--	< 1.07 U	< 1.07 U	< 1.07 U	3.33	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U
GES-JWT-14	0	NORM	3/4/2013	--	--	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-15	0	NORM	3/4/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-16	0	NORM	3/4/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-17	0	NORM	3/4/2013	--	--	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
GES-JWT-18	0	NORM	3/4/2013	--	--	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U
GES-JWT-18	0	FD	3/4/2013	--	--	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U
GES-JWT-19	0	NORM	3/4/2013	--	--	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U
GES-JWT-2	0	NORM	3/4/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-3	0	NORM	3/4/2013	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-4	0	NORM	3/4/2013	--	--	4.88	< 1.08 U	< 1.08 U	56	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U
GES-JWT-5	0	NORM	3/4/2013	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-6	0	NORM	3/4/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-7	0	NORM	3/4/2013	--	--	3.03	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U
GES-JWT-8	0	NORM	3/4/2013	--	--	0.209	< 0.11 U	< 0.11 U	1.09	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U
GES-JWT-9	0	NORM	3/4/2013	--	--	3.06	< 2.12 U	< 2.12 U	54.6	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U
GES-JWT-9	0	FD	3/4/2013	--	--	4.23	< 1.06 U	< 1.06 U	75.1	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U
STC10-JW02	0	NORM	5/12/2014	--	--	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U
STC11-JW02	0	NORM	8/7/2014	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC1-AI15	0	NORM	6/4/2010	2.24 J	0.5 J	< 0.07 U	< 0.07 U	< 0.07 U	< 0.115 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U
STC1-AI15	0	FD	6/4/2010	3.28 J	0.602 J	< 0.0691 U	< 0.0691 U	< 0.0691 U	< 0.114 U	< 0.0691 U	< 0.0691 U	< 0.0691 U	< 0.0691 U
STC1-AI15	10	NORM	6/4/2010	1.7 J+	0.439 J	< 0.071 U	< 0.071 U	< 0.071 U	< 0.117 U	< 0.071 U	< 0.071 U	< 0.071 U	< 0.071 U
STC1-AI16	0	NORM	6/7/2010	1.73 J+	< 0.216 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.117 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.0709 U
STC1-AI16	10	NORM	6/7/2010	2.02 J+	< 0.216 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.0726 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Aldehydes		Semi-Volatile Organic Compounds (SVOCs)							
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Acetaldehyde	Formaldehyde	1,2,4,5-Tetrachloro-benzene	1,2-Diphenylhydrazine	1,4-Dioxane	2,2'-Dichlorobenzil	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
STC1-AJ15	0	NORM	6/7/2010	3.4 J	< 0.23 U	< 0.0694 U	< 0.0694 U	< 0.0694 U	< 0.115 UJ	< 0.0694 U	< 0.0694 U	< 0.0694 U	< 0.0694 U
STC1-AJ15	0	FD	6/7/2010	6.27 J	< 0.221 U	0.445 J	< 0.285 U	< 0.285 U	4.31 J	< 0.285 UJ	< 0.285 UJ	< 0.285 UJ	< 0.285 UJ
STC1-AJ15	10	NORM	6/7/2010	7.21 J+	< 0.214 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.121 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.0731 U
STC1-AJ16	0	NORM	6/7/2010	2.39 J+	< 0.211 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.117 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.0708 U
STC1-AJ16	10	NORM	6/7/2010	4.47 J+	0.237 J	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U
STC1-AJ18	0	NORM	5/24/2010	1.5 J+	0.732 J	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U
STC1-AJ18	12	NORM	5/24/2010	< 0.343 U	< 0.229 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.0714 U
STC1-AK15	0	NORM	6/3/2010	1.82 J+	0.369	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U
STC1-AK15	0	FD	6/3/2010	0.856 J+	0.369	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U
STC1-AK15	3	NORM	6/3/2010	1.06 J+	0.244	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.115 U	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.0699 U
STC1-AK15	13	NORM	6/3/2010	1.25 J+	0.259	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.0732 U
STC1-AK20	0	NORM	5/27/2010	3.24 J	0.591 J+	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U
STC1-AK20	0	FD	5/27/2010	1.28 J	0.282 J	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U
STC1-AK20	6	NORM	5/27/2010	< 0.32 UJ	0.231 J	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U
STC1-AK20	16	NORM	5/27/2010	1.07 J	0.794 J+	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.119 U	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.0722 U
STC1-JB12	0	NORM	8/30/2010	1.09	0.312	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.0721 U
STC1-JB12	10	NORM	8/30/2010	0.603	0.318	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.074 U
STC1-JD02	0	NORM	6/4/2010	3.1 J+	0.769 J	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 U
STC1-JD02	10	NORM	6/4/2010	1.25 J+	0.258 J	< 0.0728 U	< 0.0728 U	< 0.0728 U	< 0.12 U	< 0.0728 U	< 0.0728 U	< 0.0728 U	< 0.0728 U
STC1-JD03	0	NORM	6/4/2010	6.59 J+	1.05	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U
STC1-JD03	10	NORM	6/4/2010	1.16 J+	0.446 J	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U
STC1-JD04	0	NORM	6/4/2010	1.84 J+	0.627 J	< 0.0697 U	< 0.0697 U	< 0.0697 U	< 0.115 U	< 0.0697 U	< 0.0697 U	< 0.0697 U	< 0.0697 U
STC1-JD04	10	NORM	6/4/2010	3.91 J+	0.765 J	< 0.0735 U	< 0.0735 U	< 0.0735 U	< 0.121 U	< 0.0735 U	< 0.0735 U	< 0.0735 U	< 0.0735 U
STC1-JD05	0	NORM	6/4/2010	2.86 J+	0.605 J	< 0.0742 U	< 0.0742 U	< 0.0742 U	< 0.122 U	< 0.0742 U	< 0.0742 U	< 0.0742 U	< 0.0742 U
STC1-JD05	10	NORM	6/4/2010	2.27 J+	0.398 J	< 0.0785 U	< 0.0785 U	< 0.0785 U	< 0.129 U	< 0.0785 U	< 0.0785 U	< 0.0785 U	< 0.0785 U
STC1-JD06	0	NORM	6/3/2010	1.09 J+	0.455	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U
STC1-JD06	10	NORM	6/3/2010	1.25 J+	0.434	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U
STC1-JD07	0	NORM	6/7/2010	4.33 J+	< 0.225 U	< 0.0705 U	< 0.0705 U	< 0.0705 U	0.581	< 0.0705 U	< 0.0705 U	< 0.0705 U	< 0.0705 U
STC1-JD07	4	NORM	6/7/2010	0.53 J	0.288 J	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.0712 U
STC1-JD07	14	NORM	6/7/2010	< 0.324 U	< 0.216 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U
STC1-JD08	0	NORM	5/20/2010	14.5 J	3.62 J	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 UJ
STC1-JD08	0	FD	5/20/2010	< 0.314 UJ	1.98 J	< 0.0733 U	< 0.0733 U	< 0.0733 U	< 0.121 U	< 0.0733 U	< 0.0733 U	< 0.0733 U	< 0.0733 UJ
STC1-JD08	10	NORM	5/20/2010	< 0.329 U	0.355 J	< 0.0725 U	< 0.0725 U	< 0.0725 U	< 0.12 U	< 0.0725 U	< 0.0725 U	< 0.0725 U	< 0.0725 UJ
STC1-JD09	0	NORM	5/20/2010	< 0.344 U	0.838 J	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.0721 UJ
STC1-JD09	10	NORM	5/20/2010	< 0.321 U	0.58 J	< 0.0707 U	< 0.0707 U	< 0.0707 U	< 0.117 U	< 0.0707 U	< 0.0707 U	< 0.0707 U	< 0.0707 UJ
STC1-JD10	0	NORM	5/21/2010	23.5 J-	5.19	0.9	< 0.0797 U	< 0.0797 U	1.09	< 0.0797 U	< 0.0797 U	< 0.0797 U	< 0.0797 UJ

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Aldehydes		Semi-Volatile Organic Compounds (SVOCs)							
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Acetaldehyde	Formaldehyde	1,2,4,5-Tetrachloro-benzene	1,2-Diphenylhydrazine	1,4-Dioxane	2,2'-Dichlorobenzil	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
STC1-JD10	10	NORM	5/21/2010	7.75 J+	1.93	< 0.0714 U	< 0.0714 U	< 0.0714 U	1.85	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.0714 UJ
STC1-JD11	0	NORM	5/21/2010	11.1 J-	< 0.236 U	< 0.0727 U	< 0.0727 U	< 0.0727 U	0.582	< 0.0727 U	< 0.0727 U	< 0.0727 U	< 0.0727 UJ
STC1-JD11	10	NORM	5/21/2010	12.8 J-	1.03 J+	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 UJ
STC1-JD12	0	NORM	5/21/2010	39 J	3.69	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.0715 UJ
STC1-JD12	0	FD	5/21/2010	18.2 J	3.77	< 0.0704 U	< 0.0704 U	< 0.0704 U	< 0.116 U	< 0.0704 U	< 0.0704 U	< 0.0704 U	< 0.0704 UJ
STC1-JD12	10	NORM	5/21/2010	3.47 J-	R	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.0715 UJ
STC1-JD13	0	NORM	5/21/2010	32.9 J-	0.653 J-	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 UJ
STC1-JD13	10	NORM	5/21/2010	12.4 J+	2.01	< 0.0717 U	< 0.0717 U	< 0.0717 U	< 0.118 U	< 0.0717 U	< 0.0717 U	< 0.0717 U	< 0.0717 UJ
STC1-JD14	0	NORM	6/1/2010	3.69 J	1.81	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U
STC1-JD14	0	FD	6/1/2010	1.61 J	1.04 J	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.118 U	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.0713 U
STC1-JD14	10	NORM	6/1/2010	0.708 J	0.321 J	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U
STC1-JD15	0	NORM	6/1/2010	14.5 J+	3.17	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 U
STC1-JD15	6	NORM	6/1/2010	1.05 J	0.364 J	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.117 U	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.0711 U
STC1-JD15	16	NORM	6/1/2010	0.722 J	0.292 J	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.0712 U
STC6-AJ15	0	NORM	7/20/2012	--	--	0.225 J	< 0.0678 U	< 0.0678 U	0.593	< 0.0678 U	< 0.0678 U	< 0.0678 U	< 0.0678 U
STC6-ES01	0	NORM	7/20/2012	6.7	4.5	< 0.0669 U	< 0.0669 U	< 0.0669 U	< 0.11 U	< 0.0669 U	< 0.0669 U	< 0.0669 U	< 0.0669 U
STC6-ES01	0	FD	7/20/2012	--	--	< 0.0667 U	< 0.0667 U	< 0.0667 U	< 0.11 U	< 0.0667 U	< 0.0667 U	< 0.0667 U	< 0.0667 U
STC6-JD08	0	NORM	7/20/2012	2.7	1.9	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	9.3	5.6	< 0.0681 U	< 0.0681 U	< 0.0681 U	3.35	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.0681 U
STC6-JD11	10	NORM	7/23/2012	--	--	< 0.0681 U	< 0.0681 U	< 0.0681 U	1.64	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.0681 U
STC6-JD12	10	NORM	7/23/2012	5.8	1.4	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.0681 U
STC6-JD13	10	NORM	7/23/2012	7.1	2.8	< 0.0676 U	< 0.0676 U	< 0.0676 U	< 0.112 U	< 0.0676 U	< 0.0676 U	< 0.0676 U	< 0.0676 U
STC6-JD15	0	NORM	7/23/2012	0.44 J	< 0.69 U	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	--	--	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC7-JD10	10	NORM	12/11/2012	--	--	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U
STC7-JD11	10	NORM	12/11/2012	--	--	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
STC7-JD13	10	NORM	12/11/2012	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC8-Prov3	0	NORM	2/6/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov4	0	NORM	2/6/2013	--	--	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC8-Prov4	0	FD	2/6/2013	--	--	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC8-Prov5	0	NORM	2/6/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov6	0	NORM	2/6/2013	--	--	< 0.106 U	< 0.106 U	< 0.106 U	0.108 J	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov7	0	NORM	2/6/2013	--	--	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW01	0	NORM	12/19/2013	4.1 J-	< 0.71 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW02	0	NORM	12/19/2013	1.7 J-	< 0.71 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW03	0	NORM	12/19/2013	1.5 J-	< 0.72 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Aldehydes		Semi-Volatile Organic Compounds (SVOCs)							
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Acetaldehyde	Formaldehyde	1,2,4,5-Tetrachloro-benzene	1,2-Diphenylhydrazine	1,4-Dioxane	2,2'-Dichlorobenzil	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol
STC9-JW04	0	NORM	12/19/2013	15 J-	2.2	< 0.105 U	< 0.105 U	< 0.105 U	1.01	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW05	0	NORM	12/19/2013	5.5 J-	0.79 J	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
STC9-JW05	0	FD	12/19/2013	4.2 J-	< 0.72 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW06	0	NORM	12/19/2013	9.9 J-	0.73 J	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW07	0	NORM	12/19/2013	2.5 J-	< 0.72 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW08	0	NORM	12/19/2013	2 J-	< 0.71 U	< 0.105 U	< 0.105 U	< 0.105 U	0.291 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW09	0	NORM	12/19/2013	1.7 J-	< 0.72 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW10	0	NORM	12/19/2013	8 J-	0.95 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW11	0	NORM	12/19/2013	1.1 J-	< 0.71 U	< 0.104 U	< 0.104 U	< 0.104 U	0.293 J	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW12	0	NORM	12/19/2013	1.8 J-	< 0.71 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW13	0	NORM	12/20/2013	0.96 J	< 0.72 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW14	0	NORM	12/20/2013	0.96 J	< 0.71 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW15	0	NORM	12/20/2013	0.94 J	< 0.73 U	0.873 J	< 0.106 U	< 0.106 U	2.35 J	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW15	0	FD	12/20/2013	0.92 J	< 0.73 U	0.35 J	< 0.107 U	< 0.107 U	1.31 J	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW16	0	NORM	12/20/2013	1.2	< 0.72 U	5.18	< 0.109 U	< 0.109 U	1.08	< 0.109 U	0.132 J	< 0.109 U	< 0.109 U
STC9-JW17	0	NORM	12/20/2013	1.5	< 0.71 U	0.178 J	< 0.104 U	< 0.104 U	1.91	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW18	0	NORM	12/20/2013	2.9	0.82 J	< 0.105 U	< 0.105 U	< 0.105 U	0.111 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW19	0	NORM	12/20/2013	2.2	0.79 J	0.195 J	< 0.106 U	< 0.106 U	1.65	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW20	0	NORM	12/20/2013	1.9	< 0.73 U	< 0.107 U	< 0.107 U	< 0.107 U	0.287 J	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW21	0	NORM	12/20/2013	0.91 J	< 0.72 U	0.504	< 0.105 U	< 0.105 U	2.81	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW22	0	NORM	12/20/2013	0.85 J	< 0.71 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW23	0	NORM	12/20/2013	1.6	< 0.71 U	< 0.106 U	< 0.106 U	< 0.106 U	0.186 J	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW24	0	NORM	12/20/2013	1.6	< 0.72 U	0.646	< 0.107 U	< 0.107 U	3.32	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW25	0	NORM	12/20/2013	1.1	< 0.71 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW25	0	FD	12/20/2013	1.2	< 0.71 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
TMC1-JD01	0	NORM	3/30/2010	4.32	1.28	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.074 U
TMC1-JD01	11	NORM	4/5/2010	< 0.32 U	< 0.214 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.0732 U
TMC1-JD02	0	NORM	3/30/2010	1.58	0.736	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.0726 U
TMC1-JD02	0	FD	3/30/2010	1.18	< 0.216 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.12 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.073 U
TMC1-JD02	10	NORM	4/5/2010	1.29	< 0.217 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U

All units in mg/kg.
-- = no sample data.
= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Nitroaniline	2-Nitrophenol	3,3-Dichlorobenzidine	3-Nitroaniline
BDW-F High	0	NORM	2/6/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U	< 0.0108 U	< 0.119 U	< 0.108 U	< 0.108 U	< 0.108 U
BDW-F Low	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
GES Prov-3	0	NORM	12/10/2012	< 0.114 U	< 0.114 U	0.114 J	< 0.0114 U	< 0.114 U	< 0.0114 U	< 0.125 U	< 0.114 U	< 0.114 U	< 0.114 U
GES Prov-4	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.117 U	< 0.107 U	< 0.107 U	< 0.107 U
GES Prov-5	0	NORM	12/10/2012	< 0.111 U	< 0.111 U	< 0.111 U	< 0.0111 U	< 0.111 U	< 0.0111 U	< 0.122 U	< 0.111 U	< 0.111 U	< 0.111 U
GES Prov-6	0	NORM	12/10/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U	< 0.0108 U	< 0.119 U	< 0.108 U	< 0.108 U	< 0.108 U
GES Prov-7	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-1	0	NORM	3/4/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U	< 0.0108 U	< 0.118 U	< 0.108 U	< 0.108 U	< 0.108 U
GES-JWT-10	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-11	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-12	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-13	0	NORM	3/4/2013	< 1.07 U	< 1.07 U	< 1.07 U	< 0.107 U	< 1.07 U	< 0.107 U	< 1.17 U	< 1.07 U	< 1.07 U	< 1.07 U
GES-JWT-14	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.117 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-15	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-16	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.116 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-17	0	NORM	3/4/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
GES-JWT-18	0	NORM	3/4/2013	< 0.103 U	< 0.103 U	< 0.103 U	< 0.0103 U	< 0.103 U	< 0.0103 U	< 0.113 U	< 0.103 U	< 0.103 U	< 0.103 U
GES-JWT-18	0	FD	3/4/2013	< 0.102 U	< 0.102 U	< 0.102 U	< 0.0102 U	< 0.102 U	< 0.0102 U	< 0.113 U	< 0.102 U	< 0.102 U	< 0.102 U
GES-JWT-19	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.011 U	< 0.11 U	< 0.011 U	< 0.121 U	< 0.11 U	< 0.11 U	< 0.11 U
GES-JWT-2	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-3	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-4	0	NORM	3/4/2013	< 1.08 U	< 1.08 U	< 1.08 U	< 0.108 U	< 1.08 U	< 0.108 U	< 1.19 U	< 1.08 U	< 1.08 U	< 1.08 U
GES-JWT-5	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-6	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.116 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-7	0	NORM	3/4/2013	< 1.09 U	< 1.09 U	< 1.09 U	< 0.109 U	< 1.09 U	< 0.109 U	< 1.2 U	< 1.09 U	< 1.09 U	< 1.09 U
GES-JWT-8	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.011 U	< 0.11 U	< 0.011 U	< 0.121 U	< 0.11 U	< 0.11 U	< 0.11 U
GES-JWT-9	0	NORM	3/4/2013	< 2.12 U	< 2.12 U	< 2.12 U	< 0.212 U	< 2.12 U	< 0.212 U	< 2.34 U	< 2.12 U	< 2.12 U	< 2.12 U
GES-JWT-9	0	FD	3/4/2013	< 1.06 U	< 1.06 U	< 1.06 U	< 0.106 U	< 1.06 U	< 0.106 U	< 1.17 U	< 1.06 U	< 1.06 U	< 1.06 U
STC10-JW02	0	NORM	5/12/2014	< 0.102 UJ	< 0.102 U	< 0.102 U	< 0.0102 U	< 0.102 U	< 0.0102 U	< 0.112 U	< 0.102 U	< 0.102 U	< 0.102 U
STC11-JW02	0	NORM	8/7/2014	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC1-AI15	0	NORM	6/4/2010	< 0.133 U	< 0.035 U	< 0.035 U	< 0.0122 U	< 0.07 U	< 0.007 U	< 0.07 U	< 0.035 U	< 0.105 U	< 0.07 UJ
STC1-AI15	0	FD	6/4/2010	< 0.131 U	< 0.0345 U	< 0.0345 U	< 0.0121 U	< 0.0691 U	< 0.00691 U	< 0.0691 U	< 0.0345 U	< 0.104 U	< 0.0691 UJ
STC1-AI15	10	NORM	6/4/2010	< 0.135 U	< 0.0355 U	< 0.0355 U	< 0.0124 U	< 0.071 U	< 0.0071 U	< 0.071 U	< 0.0355 U	< 0.107 U	< 0.071 UJ
STC1-AI16	0	NORM	6/7/2010	< 0.135 U	< 0.0355 U	< 0.0355 U	< 0.0124 U	< 0.0709 U	< 0.00709 U	< 0.0709 U	< 0.0355 U	< 0.106 U	< 0.0709 U
STC1-AI16	10	NORM	6/7/2010	< 0.138 U	< 0.0363 U	< 0.0363 U	< 0.0127 U	< 0.0726 U	< 0.00726 U	< 0.0726 U	< 0.0363 U	< 0.109 U	< 0.0726 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Nitroaniline	2-Nitrophenol	3,3-Dichlorobenzidine	3-Nitroaniline
STC1-AJ15	0	NORM	6/7/2010	< 0.132 U	< 0.0347 U	< 0.0347 U	< 0.0122 U	< 0.0694 U	< 0.00694 U	< 0.0694 U	< 0.0347 U	< 0.104 U	< 0.0694 U
STC1-AJ15	0	FD	6/7/2010	< 0.541 UJ	< 0.142 U	< 0.142 U	< 0.0498 U	< 0.285 UJ	< 0.0285 U	< 0.285 U	< 0.142 UJ	< 0.427 U	< 0.285 U
STC1-AJ15	10	NORM	6/7/2010	< 0.139 U	< 0.0365 U	< 0.0365 U	< 0.0128 U	< 0.0731 U	< 0.00731 U	< 0.0731 U	< 0.0365 U	< 0.11 U	< 0.0731 U
STC1-AJ16	0	NORM	6/7/2010	< 0.135 U	< 0.0354 U	< 0.0354 U	< 0.0124 U	< 0.0708 U	< 0.00708 U	< 0.0708 U	< 0.0354 U	< 0.106 U	< 0.0708 U
STC1-AJ16	10	NORM	6/7/2010	< 0.137 U	< 0.0359 U	< 0.0359 U	< 0.0126 U	< 0.0719 U	< 0.00719 U	< 0.0719 U	< 0.0359 U	< 0.108 U	< 0.0719 U
STC1-AJ18	0	NORM	5/24/2010	< 0.133 U	< 0.035 U	< 0.035 U	< 0.0123 U	< 0.07 U	< 0.007 U	< 0.07 U	< 0.035 U	< 0.105 U	< 0.07 U
STC1-AJ18	12	NORM	5/24/2010	< 0.136 U	< 0.0357 U	< 0.0357 U	< 0.0125 U	< 0.0714 U	< 0.00714 U	< 0.0714 U	< 0.0357 U	< 0.107 U	< 0.0714 U
STC1-AK15	0	NORM	6/3/2010	< 0.133 UJ	< 0.0351 U	< 0.0351 U	< 0.0123 U	< 0.0701 U	< 0.00701 U	< 0.0701 U	< 0.0351 U	< 0.105 U	< 0.0701 U
STC1-AK15	0	FD	6/3/2010	< 0.133 UJ	< 0.035 U	< 0.035 U	< 0.0123 U	< 0.07 U	< 0.007 U	< 0.07 U	< 0.035 U	< 0.105 U	< 0.07 U
STC1-AK15	3	NORM	6/3/2010	< 0.133 UJ	< 0.035 U	< 0.035 U	< 0.0122 U	< 0.0699 U	< 0.00699 U	< 0.0699 U	< 0.035 U	< 0.105 U	< 0.0699 U
STC1-AK15	13	NORM	6/3/2010	< 0.139 UJ	< 0.0366 U	< 0.0366 U	< 0.0128 U	< 0.0732 U	< 0.00732 U	< 0.0732 U	< 0.0366 U	< 0.11 U	< 0.0732 U
STC1-AK20	0	NORM	5/27/2010	< 0.136 U	< 0.0358 U	< 0.0358 U	< 0.0125 U	< 0.0716 U	< 0.00716 U	< 0.0716 U	< 0.0358 U	< 0.107 U	< 0.0716 U
STC1-AK20	0	FD	5/27/2010	< 0.136 U	< 0.0358 U	< 0.0358 U	< 0.0125 U	< 0.0716 U	< 0.00716 U	< 0.0716 U	< 0.0358 U	< 0.107 U	< 0.0716 U
STC1-AK20	6	NORM	5/27/2010	< 0.138 U	< 0.0362 U	< 0.0362 U	< 0.0127 U	< 0.0724 U	< 0.00724 U	< 0.0724 U	< 0.0362 U	< 0.109 U	< 0.0724 U
STC1-AK20	16	NORM	5/27/2010	< 0.137 U	< 0.0361 U	< 0.0361 U	< 0.0126 U	< 0.0722 U	< 0.00722 U	< 0.0722 U	< 0.0361 U	< 0.108 U	< 0.0722 U
STC1-JB12	0	NORM	8/30/2010	< 0.137 U	< 0.036 U	< 0.036 U	< 0.0126 U	< 0.0721 U	< 0.00721 U	< 0.0721 U	< 0.036 U	< 0.108 U	< 0.0721 U
STC1-JB12	10	NORM	8/30/2010	< 0.141 U	< 0.037 U	< 0.037 U	< 0.0129 U	< 0.074 U	< 0.0074 U	< 0.074 U	< 0.037 U	< 0.111 U	< 0.074 U
STC1-JD02	0	NORM	6/4/2010	< 0.137 U	< 0.0361 U	< 0.0361 U	< 0.0126 U	< 0.0723 U	< 0.00723 U	< 0.0723 U	< 0.0361 U	< 0.108 U	< 0.0723 U
STC1-JD02	10	NORM	6/4/2010	< 0.138 U	< 0.0364 U	< 0.0364 U	< 0.0127 U	< 0.0728 U	< 0.00728 U	< 0.0728 U	< 0.0364 U	< 0.109 U	< 0.0728 U
STC1-JD03	0	NORM	6/4/2010	< 0.133 U	< 0.035 U	< 0.035 U	< 0.0123 U	< 0.0701 U	< 0.00701 U	< 0.0701 U	< 0.035 U	< 0.105 U	< 0.0701 UJ
STC1-JD03	10	NORM	6/4/2010	< 0.133 U	< 0.035 U	< 0.035 U	< 0.0123 U	< 0.0701 U	< 0.00701 U	< 0.0701 U	< 0.035 U	< 0.105 U	< 0.0701 U
STC1-JD04	0	NORM	6/4/2010	< 0.132 U	< 0.0348 U	< 0.0348 U	< 0.0122 U	< 0.0697 U	< 0.00697 U	< 0.0697 U	< 0.0348 U	< 0.104 U	< 0.0697 UJ
STC1-JD04	10	NORM	6/4/2010	< 0.14 U	< 0.0368 U	< 0.0368 U	< 0.0129 U	< 0.0735 U	< 0.00735 U	< 0.0735 U	< 0.0368 U	< 0.11 U	< 0.0735 UJ
STC1-JD05	0	NORM	6/4/2010	< 0.141 U	< 0.0371 U	< 0.0371 U	< 0.013 U	< 0.0742 U	< 0.00742 U	< 0.0742 U	< 0.0371 U	< 0.111 U	< 0.0742 UJ
STC1-JD05	10	NORM	6/4/2010	< 0.149 U	< 0.0392 U	< 0.0392 U	< 0.0137 U	< 0.0785 U	< 0.00785 U	< 0.0785 U	< 0.0392 U	< 0.118 U	< 0.0785 UJ
STC1-JD06	0	NORM	6/3/2010	< 0.136 UJ	< 0.0358 U	< 0.0358 U	< 0.0125 U	< 0.0716 U	< 0.00716 U	< 0.0716 U	< 0.0358 U	< 0.107 U	< 0.0716 U
STC1-JD06	10	NORM	6/3/2010	< 0.138 UJ	< 0.0362 U	< 0.0362 U	< 0.0127 U	< 0.0724 U	< 0.00724 U	< 0.0724 U	< 0.0362 U	< 0.109 U	< 0.0724 U
STC1-JD07	0	NORM	6/7/2010	< 0.134 U	< 0.0352 U	< 0.0352 U	< 0.0123 U	< 0.0705 U	< 0.00705 U	< 0.0705 U	< 0.0352 U	< 0.106 U	< 0.0705 U
STC1-JD07	4	NORM	6/7/2010	< 0.135 U	< 0.0356 U	< 0.0356 U	< 0.0125 U	< 0.0712 U	< 0.00712 U	< 0.0712 U	< 0.0356 U	< 0.107 U	< 0.0712 U
STC1-JD07	14	NORM	6/7/2010	< 0.137 U	< 0.0359 U	< 0.0359 U	< 0.0126 U	< 0.0719 U	< 0.00719 U	< 0.0719 U	< 0.0359 U	< 0.108 U	< 0.0719 U
STC1-JD08	0	NORM	5/20/2010	< 0.133 U	< 0.035 U	< 0.035 U	< 0.0123 U	< 0.0701 U	< 0.00701 U	< 0.0701 U	< 0.035 U	< 0.105 U	< 0.0701 UJ
STC1-JD08	0	FD	5/20/2010	< 0.139 U	< 0.0367 U	< 0.0367 U	< 0.0128 U	< 0.0733 U	< 0.00733 U	< 0.0733 U	< 0.0367 U	< 0.11 U	< 0.0733 UJ
STC1-JD08	10	NORM	5/20/2010	< 0.138 U	< 0.0362 U	< 0.0362 U	< 0.0127 U	< 0.0725 U	< 0.00725 U	< 0.0725 U	< 0.0362 U	< 0.109 U	< 0.0725 UJ
STC1-JD09	0	NORM	5/20/2010	< 0.137 U	< 0.036 U	< 0.036 U	< 0.0126 U	< 0.0721 U	< 0.00721 U	< 0.0721 U	< 0.036 U	< 0.108 U	< 0.0721 UJ
STC1-JD09	10	NORM	5/20/2010	< 0.134 U	< 0.0354 U	< 0.0354 U	< 0.0124 U	< 0.0707 U	< 0.00707 U	< 0.0707 U	< 0.0354 U	< 0.106 U	< 0.0707 UJ
STC1-JD10	0	NORM	5/21/2010	< 0.152 U	< 0.0399 U	< 0.0399 U	< 0.014 U	< 0.0797 U	< 0.00797 U	< 0.0797 U	< 0.0399 U	< 0.12 U	< 0.0797 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Nitroaniline	2-Nitrophenol	3,3-Dichlorobenzidine	3-Nitroaniline
STC1-JD10	10	NORM	5/21/2010	< 0.136 U	< 0.0357 U	< 0.0357 U	< 0.0125 U	< 0.0714 U	< 0.00714 U	< 0.0714 U	< 0.0357 U	< 0.107 U	< 0.0714 U
STC1-JD11	0	NORM	5/21/2010	< 0.138 U	< 0.0363 U	< 0.0363 U	< 0.0127 U	< 0.0727 U	< 0.00727 U	< 0.0727 U	< 0.0363 U	< 0.109 U	< 0.0727 U
STC1-JD11	10	NORM	5/21/2010	< 0.137 U	< 0.0362 U	< 0.0362 U	< 0.0127 U	< 0.0723 U	< 0.00723 U	< 0.0723 U	< 0.0362 U	< 0.108 U	< 0.0723 U
STC1-JD12	0	NORM	5/21/2010	< 0.136 U	< 0.0358 U	< 0.0358 U	< 0.0125 U	< 0.0715 U	< 0.00715 U	< 0.0715 U	< 0.0358 U	< 0.107 U	< 0.0715 U
STC1-JD12	0	FD	5/21/2010	< 0.134 U	< 0.0352 U	< 0.0352 U	< 0.0123 U	< 0.0704 U	< 0.00704 U	< 0.0704 U	< 0.0352 U	< 0.106 U	< 0.0704 U
STC1-JD12	10	NORM	5/21/2010	< 0.136 U	< 0.0357 U	< 0.0357 U	< 0.0125 U	< 0.0715 U	< 0.00715 U	< 0.0715 U	< 0.0357 U	< 0.107 U	< 0.0715 U
STC1-JD13	0	NORM	5/21/2010	< 0.136 U	< 0.0358 U	< 0.0358 U	< 0.0125 U	< 0.0716 U	< 0.00716 U	< 0.0716 U	< 0.0358 U	< 0.107 U	< 0.0716 U
STC1-JD13	10	NORM	5/21/2010	< 0.136 U	< 0.0358 U	< 0.0358 U	< 0.0125 U	< 0.0717 U	< 0.00717 U	< 0.0717 U	< 0.0358 U	< 0.107 U	< 0.0717 U
STC1-JD14	0	NORM	6/1/2010	< 0.137 U	< 0.036 U	< 0.036 U	< 0.0126 U	< 0.0719 U	< 0.00719 U	< 0.0719 U	< 0.036 U	< 0.108 U	< 0.0719 U
STC1-JD14	0	FD	6/1/2010	< 0.136 U	< 0.0357 U	< 0.0357 U	< 0.0125 U	< 0.0713 U	< 0.00713 U	< 0.0713 U	< 0.0357 U	< 0.107 U	< 0.0713 U
STC1-JD14	10	NORM	6/1/2010	< 0.137 U	< 0.0362 U	< 0.0362 U	< 0.0127 U	< 0.0724 U	< 0.00724 U	< 0.0724 U	< 0.0362 U	< 0.109 U	< 0.0724 U
STC1-JD15	0	NORM	6/1/2010	< 0.137 U	< 0.0361 U	< 0.0361 U	< 0.0127 U	< 0.0723 U	< 0.00723 U	< 0.0723 U	< 0.0361 U	< 0.108 U	< 0.0723 U
STC1-JD15	6	NORM	6/1/2010	< 0.135 U	< 0.0355 U	< 0.0355 U	< 0.0124 U	< 0.0711 U	< 0.00711 U	< 0.0711 U	< 0.0355 U	< 0.107 U	< 0.0711 U
STC1-JD15	16	NORM	6/1/2010	< 0.135 U	< 0.0356 U	< 0.0356 U	< 0.0125 U	< 0.0712 U	< 0.00712 U	< 0.0712 U	< 0.0356 U	< 0.107 U	< 0.0712 U
STC6-AJ15	0	NORM	7/20/2012	< 0.129 U	< 0.0339 U	< 0.0339 U	< 0.0119 U	< 0.0678 U	< 0.00678 U	< 0.0678 U	< 0.0339 U	< 0.102 U	< 0.0678 UJ
STC6-ES01	0	NORM	7/20/2012	< 0.127 U	< 0.0334 U	< 0.0334 U	< 0.0117 U	< 0.0669 U	< 0.00669 U	< 0.0669 U	< 0.0334 U	< 0.1 U	< 0.0669 UJ
STC6-ES01	0	FD	7/20/2012	< 0.127 U	< 0.0334 U	< 0.0334 U	< 0.0117 U	< 0.0667 U	< 0.00667 U	< 0.0667 U	< 0.0334 U	< 0.1 U	< 0.0667 UJ
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	< 0.129 U	< 0.0341 U	< 0.0341 U	< 0.0119 U	< 0.0681 U	< 0.00681 U	< 0.0681 U	< 0.0341 U	< 0.102 U	< 0.0681 UJ
STC6-JD11	10	NORM	7/23/2012	< 0.129 U	< 0.034 U	< 0.034 U	< 0.0119 U	< 0.0681 U	< 0.00681 U	< 0.0681 U	< 0.034 U	< 0.102 U	< 0.0681 UJ
STC6-JD12	10	NORM	7/23/2012	< 0.129 U	< 0.034 U	< 0.034 U	< 0.0119 U	< 0.0681 U	< 0.00681 U	< 0.0681 U	< 0.034 U	< 0.102 U	< 0.0681 UJ
STC6-JD13	10	NORM	7/23/2012	< 0.128 U	< 0.0338 U	< 0.0338 U	< 0.0118 U	< 0.0676 U	< 0.00676 U	< 0.0676 U	< 0.0338 U	< 0.101 U	< 0.0676 UJ
STC6-JD15	0	NORM	7/23/2012	--	--	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
STC7-JD10	10	NORM	12/11/2012	< 0.109 U	< 0.109 U	< 0.109 U	< 0.0109 U	< 0.109 U	< 0.0109 U	< 0.12 U	< 0.109 U	< 0.109 U	< 0.109 U
STC7-JD11	10	NORM	12/11/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U	< 0.0108 U	< 0.119 U	< 0.108 U	< 0.108 U	< 0.108 U
STC7-JD13	10	NORM	12/11/2012	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC8-Prov3	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov4	0	NORM	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
STC8-Prov4	0	FD	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
STC8-Prov5	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov6	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov7	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW01	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW02	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW03	0	NORM	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 8 of 28)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Nitroaniline	2-Nitrophenol	3,3-Dichlorobenzidine	3-Nitroaniline
STC9-JW04	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW05	0	NORM	12/19/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U	< 0.0108 U	< 0.118 U	< 0.108 U	< 0.108 U	< 0.108 U
STC9-JW05	0	FD	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW06	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW07	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW08	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW09	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW10	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW11	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.114 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW12	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW13	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW14	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW15	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.117 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW15	0	FD	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW16	0	NORM	12/20/2013	< 0.109 U	< 0.109 U	< 0.109 U	< 0.0109 U	< 0.109 U	< 0.0109 U	< 0.12 U	< 0.109 U	< 0.109 U	< 0.109 U
STC9-JW17	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.114 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW18	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW19	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.116 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW20	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.117 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW21	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.116 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW22	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW23	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U	< 0.0106 U	< 0.116 U	< 0.106 U	< 0.106 U	< 0.106 U
STC9-JW24	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U	< 0.0107 U	< 0.118 U	< 0.107 U	< 0.107 U	< 0.107 U
STC9-JW25	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U	< 0.0104 U	< 0.115 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW25	0	FD	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U	< 0.0105 U	< 0.115 U	< 0.105 U	< 0.105 U	< 0.105 U
TMC1-JD01	0	NORM	3/30/2010	< 0.141 UJ	< 0.037 U	< 0.037 U	< 0.0129 U	< 0.074 U	< 0.0074 U	< 0.074 U	< 0.037 U	< 0.111 U	< 0.074 UJ
TMC1-JD01	11	NORM	4/5/2010	< 0.139 UJ	< 0.0366 U	< 0.0366 U	< 0.0128 U	< 0.0732 U	< 0.00732 U	< 0.0732 U	< 0.0366 U	< 0.11 U	< 0.0732 UJ
TMC1-JD02	0	NORM	3/30/2010	< 0.138 UJ	< 0.0363 U	< 0.0363 U	< 0.0127 U	< 0.0726 U	< 0.00726 U	< 0.0726 U	< 0.0363 U	< 0.109 U	< 0.0726 UJ
TMC1-JD02	0	FD	3/30/2010	< 0.139 UJ	< 0.0365 U	< 0.0365 U	< 0.0128 U	< 0.073 U	< 0.0073 U	< 0.073 U	< 0.0365 U	< 0.11 U	< 0.073 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.138 UJ	< 0.0362 U	< 0.0362 U	< 0.0127 U	< 0.0724 U	< 0.00724 U	< 0.0724 U	< 0.0362 U	< 0.109 U	< 0.0724 UJ

All units in mg/kg.
-- = no sample data.
= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether	4-Chlorothioanisole	4-Nitroaniline	4-Nitrophenol	Acetophenone	Aniline	Benzenethiol	Benzoic acid
BDW-F High	0	NORM	2/6/2013	< 0.108 U	< 0.144 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.18 U
BDW-F Low	0	NORM	2/6/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
GES Prov-3	0	NORM	12/10/2012	< 0.114 U	< 0.151 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	1.25 J+
GES Prov-4	0	NORM	12/10/2012	< 0.107 U	< 0.142 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U
GES Prov-5	0	NORM	12/10/2012	< 0.111 U	< 0.148 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.185 U
GES Prov-6	0	NORM	12/10/2012	< 0.108 U	< 0.144 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.18 U
GES Prov-7	0	NORM	12/10/2012	< 0.107 U	< 0.143 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.179 U
GES-JWT-1	0	NORM	3/4/2013	< 0.108 U	< 0.144 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.18 U
GES-JWT-10	0	NORM	3/4/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
GES-JWT-11	0	NORM	3/4/2013	< 0.107 U	< 0.142 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U
GES-JWT-12	0	NORM	3/4/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
GES-JWT-13	0	NORM	3/4/2013	< 1.07 U	< 1.42 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.78 U
GES-JWT-14	0	NORM	3/4/2013	< 0.107 U	< 0.142 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U
GES-JWT-15	0	NORM	3/4/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
GES-JWT-16	0	NORM	3/4/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.176 U
GES-JWT-17	0	NORM	3/4/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
GES-JWT-18	0	NORM	3/4/2013	< 0.103 U	< 0.137 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.171 U
GES-JWT-18	0	FD	3/4/2013	< 0.102 U	< 0.137 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.171 U
GES-JWT-19	0	NORM	3/4/2013	< 0.11 U	< 0.147 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.183 U
GES-JWT-2	0	NORM	3/4/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
GES-JWT-3	0	NORM	3/4/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
GES-JWT-4	0	NORM	3/4/2013	< 1.08 U	< 1.44 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.8 U
GES-JWT-5	0	NORM	3/4/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
GES-JWT-6	0	NORM	3/4/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.176 U
GES-JWT-7	0	NORM	3/4/2013	< 1.09 U	< 1.45 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.81 U
GES-JWT-8	0	NORM	3/4/2013	< 0.11 U	< 0.147 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	0.511
GES-JWT-9	0	NORM	3/4/2013	< 2.12 U	< 2.83 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 3.54 U
GES-JWT-9	0	FD	3/4/2013	< 1.06 U	< 1.42 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.77 U
STC10-JW02	0	NORM	5/12/2014	< 0.102 U	< 0.135 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.169 U
STC11-JW02	0	NORM	8/7/2014	< 0.105 U	< 0.141 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
STC1-AI15	0	NORM	6/4/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.115 U	< 0.07 U	< 0.07 U	< 0.035 U	< 0.122 U	< 0.115 U	< 0.175 U
STC1-AI15	0	FD	6/4/2010	< 0.0345 U	< 0.0345 U	< 0.0345 U	< 0.114 U	< 0.0691 U	< 0.0691 U	< 0.0345 U	< 0.121 U	< 0.114 U	< 0.173 U
STC1-AI15	10	NORM	6/4/2010	< 0.0355 U	< 0.0355 U	< 0.0355 U	< 0.117 U	< 0.071 U	< 0.071 U	< 0.0355 U	< 0.124 U	< 0.117 U	< 0.178 U
STC1-AI16	0	NORM	6/7/2010	< 0.0355 U	< 0.0355 U	< 0.0355 U	< 0.117 U	< 0.0709 U	< 0.0709 U	< 0.0355 U	< 0.124 U	< 0.117 U	< 0.177 U
STC1-AI16	10	NORM	6/7/2010	< 0.0363 U	< 0.0363 U	< 0.0363 U	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0363 U	< 0.127 U	< 0.12 U	< 0.181 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether	4-Chlorothioanisole	4-Nitroaniline	4-Nitrophenol	Acetophenone	Aniline	Benzenethiol	Benzoic acid
STC1-AJ15	0	NORM	6/7/2010	< 0.0347 U	< 0.0347 U	< 0.0347 U	< 0.115 U	< 0.0694 U	< 0.0694 U	< 0.0347 U	< 0.122 U	< 0.115 U	< 0.174 U
STC1-AJ15	0	FD	6/7/2010	< 0.142 U	< 0.142 UJ	< 0.142 U	< 0.47 U	< 0.285 U	< 0.285 UJ	< 0.142 U	< 0.498 U	< 0.47 UJ	< 0.712 UJ
STC1-AJ15	10	NORM	6/7/2010	< 0.0365 U	< 0.0365 U	< 0.0365 U	< 0.121 U	< 0.0731 U	< 0.0731 U	< 0.0365 U	< 0.128 U	< 0.121 U	< 0.183 U
STC1-AJ16	0	NORM	6/7/2010	< 0.0354 U	< 0.0354 U	< 0.0354 U	< 0.117 U	< 0.0708 U	< 0.0708 U	< 0.0354 U	< 0.124 U	< 0.117 U	< 0.177 U
STC1-AJ16	10	NORM	6/7/2010	< 0.0359 U	< 0.0359 U	< 0.0359 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0359 U	< 0.126 U	< 0.119 U	< 0.18 U
STC1-AJ18	0	NORM	5/24/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.116 U	< 0.07 U	< 0.07 U	< 0.035 U	< 0.123 U	< 0.116 U	< 0.175 U
STC1-AJ18	12	NORM	5/24/2010	< 0.0357 U	< 0.0357 U	< 0.0357 U	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0357 U	< 0.125 U	< 0.118 U	< 0.179 U
STC1-AK15	0	NORM	6/3/2010	< 0.0351 U	< 0.0351 U	< 0.0351 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0351 U	< 0.123 U	< 0.116 U	< 0.175 U
STC1-AK15	0	FD	6/3/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.116 U	< 0.07 U	< 0.07 U	< 0.035 U	< 0.123 U	< 0.116 U	< 0.175 U
STC1-AK15	3	NORM	6/3/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.115 U	< 0.0699 U	< 0.0699 U	< 0.035 U	< 0.122 U	< 0.115 U	< 0.175 U
STC1-AK15	13	NORM	6/3/2010	< 0.0366 U	< 0.0366 U	< 0.0366 U	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0366 U	< 0.128 U	< 0.121 U	< 0.183 U
STC1-AK20	0	NORM	5/27/2010	< 0.0358 U	< 0.0358 U	< 0.0358 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.125 U	< 0.118 U	< 0.179 U
STC1-AK20	0	FD	5/27/2010	< 0.0358 U	< 0.0358 U	< 0.0358 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.125 U	< 0.118 U	< 0.179 U
STC1-AK20	6	NORM	5/27/2010	< 0.0362 U	< 0.0362 U	< 0.0362 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0362 U	< 0.127 U	< 0.119 U	< 0.181 U
STC1-AK20	16	NORM	5/27/2010	< 0.0361 U	< 0.0361 U	< 0.0361 U	< 0.119 U	< 0.0722 U	< 0.0722 U	< 0.0361 U	< 0.126 U	< 0.119 U	< 0.181 U
STC1-JB12	0	NORM	8/30/2010	< 0.036 U	< 0.036 U	< 0.036 U	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.036 U	< 0.126 U	< 0.119 U	< 0.18 U
STC1-JB12	10	NORM	8/30/2010	< 0.037 U	< 0.037 U	< 0.037 U	< 0.122 U	< 0.074 U	< 0.074 U	< 0.037 U	< 0.129 U	< 0.122 U	< 0.185 U
STC1-JD02	0	NORM	6/4/2010	< 0.0361 U	< 0.0361 U	< 0.0361 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0361 U	< 0.126 U	< 0.119 U	< 0.181 U
STC1-JD02	10	NORM	6/4/2010	< 0.0364 U	< 0.0364 U	< 0.0364 U	< 0.12 U	< 0.0728 U	< 0.0728 U	< 0.0364 U	< 0.127 U	< 0.12 U	< 0.182 U
STC1-JD03	0	NORM	6/4/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.035 U	< 0.123 U	< 0.116 U	< 0.175 U
STC1-JD03	10	NORM	6/4/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.116 U	< 0.0701 UJ	< 0.0701 U	< 0.035 U	< 0.123 U	< 0.116 U	< 0.175 U
STC1-JD04	0	NORM	6/4/2010	< 0.0348 U	< 0.0348 U	< 0.0348 U	< 0.115 U	< 0.0697 U	< 0.0697 U	< 0.0348 U	< 0.122 U	< 0.115 U	< 0.174 U
STC1-JD04	10	NORM	6/4/2010	< 0.0368 U	< 0.0368 U	< 0.0368 U	< 0.121 U	< 0.0735 U	< 0.0735 U	< 0.0368 U	< 0.129 U	< 0.121 U	< 0.184 U
STC1-JD05	0	NORM	6/4/2010	< 0.0371 U	< 0.0371 U	< 0.0371 U	< 0.122 U	< 0.0742 U	< 0.0742 U	< 0.0371 U	< 0.13 U	< 0.122 U	< 0.186 U
STC1-JD05	10	NORM	6/4/2010	< 0.0392 U	< 0.0392 U	< 0.0392 U	< 0.129 U	< 0.0785 U	< 0.0785 U	< 0.0392 U	< 0.137 U	< 0.129 U	< 0.196 U
STC1-JD06	0	NORM	6/3/2010	< 0.0358 U	< 0.0358 U	< 0.0358 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.125 U	< 0.118 U	< 0.179 U
STC1-JD06	10	NORM	6/3/2010	< 0.0362 U	< 0.0362 U	< 0.0362 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0362 U	< 0.127 U	< 0.119 U	< 0.181 U
STC1-JD07	0	NORM	6/7/2010	< 0.0352 U	< 0.0352 U	< 0.0352 U	< 0.116 U	< 0.0705 U	< 0.0705 U	< 0.0352 U	< 0.123 U	< 0.116 U	< 0.176 U
STC1-JD07	4	NORM	6/7/2010	< 0.0356 U	< 0.0356 U	< 0.0356 U	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0356 U	< 0.125 U	< 0.117 U	< 0.178 U
STC1-JD07	14	NORM	6/7/2010	< 0.0359 U	< 0.0359 U	< 0.0359 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0359 U	< 0.126 U	< 0.119 U	< 0.18 U
STC1-JD08	0	NORM	5/20/2010	< 0.035 U	< 0.035 U	< 0.035 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.035 U	< 0.123 U	< 0.116 U	< 0.175 U
STC1-JD08	0	FD	5/20/2010	< 0.0367 U	< 0.0367 U	< 0.0367 U	< 0.121 U	< 0.0733 U	< 0.0733 U	< 0.0367 U	< 0.128 U	< 0.121 U	< 0.183 U
STC1-JD08	10	NORM	5/20/2010	< 0.0362 U	< 0.0362 U	< 0.0362 U	< 0.12 U	< 0.0725 U	< 0.0725 U	< 0.0362 U	< 0.127 U	< 0.12 U	< 0.181 U
STC1-JD09	0	NORM	5/20/2010	< 0.036 U	< 0.036 U	< 0.036 U	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.036 U	< 0.126 U	< 0.119 U	< 0.18 U
STC1-JD09	10	NORM	5/20/2010	< 0.0354 U	< 0.0354 U	< 0.0354 U	< 0.117 U	< 0.0707 U	< 0.0707 U	< 0.0354 U	< 0.124 U	< 0.117 U	< 0.177 U
STC1-JD10	0	NORM	5/21/2010	< 0.0399 U	< 0.0399 U	< 0.0399 U	< 0.132 U	< 0.0797 U	< 0.0797 U	0.111 J	< 0.14 UJ	< 0.132 U	1.01

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether	4-Chlorothioanisole	4-Nitroaniline	4-Nitrophenol	Acetophenone	Aniline	Benzenethiol	Benzoic acid
STC1-JD10	10	NORM	5/21/2010	< 0.0357 U	< 0.0357 U	< 0.0357 U	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0357 U	< 0.125 UJ	< 0.118 U	0.467 J
STC1-JD11	0	NORM	5/21/2010	< 0.0363 U	< 0.0363 U	< 0.0363 U	< 0.12 U	< 0.0727 U	< 0.0727 U	< 0.0363 U	< 0.127 UJ	< 0.12 U	0.468 J
STC1-JD11	10	NORM	5/21/2010	< 0.0362 U	< 0.0362 U	< 0.0362 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0362 U	< 0.127 UJ	< 0.119 U	< 0.181 U
STC1-JD12	0	NORM	5/21/2010	< 0.0358 U	< 0.0358 U	< 0.0358 U	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0358 U	< 0.125 UJ	< 0.118 U	< 0.179 U
STC1-JD12	0	FD	5/21/2010	< 0.0352 U	< 0.0352 U	< 0.0352 U	< 0.116 U	< 0.0704 U	< 0.0704 U	< 0.0352 U	< 0.123 UJ	< 0.116 U	< 0.176 U
STC1-JD12	10	NORM	5/21/2010	< 0.0357 U	< 0.0357 U	< 0.0357 U	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0357 U	< 0.125 UJ	< 0.118 U	< 0.179 U
STC1-JD13	0	NORM	5/21/2010	< 0.0358 U	< 0.0358 U	< 0.0358 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.125 UJ	< 0.118 U	< 0.179 U
STC1-JD13	10	NORM	5/21/2010	< 0.0358 U	< 0.0358 U	< 0.0358 U	< 0.118 U	< 0.0717 U	< 0.0717 U	< 0.0358 U	< 0.125 UJ	< 0.118 U	< 0.179 U
STC1-JD14	0	NORM	6/1/2010	< 0.036 U	< 0.036 U	< 0.036 U	< 0.119 U	< 0.0719 UJ	< 0.0719 UJ	< 0.036 U	< 0.126 U	< 0.119 U	< 0.18 U
STC1-JD14	0	FD	6/1/2010	< 0.0357 U	< 0.0357 U	< 0.0357 U	< 0.118 U	< 0.0713 UJ	< 0.0713 UJ	< 0.0357 U	< 0.125 U	< 0.118 U	< 0.178 U
STC1-JD14	10	NORM	6/1/2010	< 0.0362 U	< 0.0362 U	< 0.0362 U	< 0.119 U	< 0.0724 UJ	< 0.0724 UJ	< 0.0362 U	< 0.127 U	< 0.119 U	< 0.181 U
STC1-JD15	0	NORM	6/1/2010	< 0.0361 U	< 0.0361 U	< 0.0361 U	< 0.119 U	< 0.0723 UJ	< 0.0723 UJ	< 0.0361 U	< 0.127 U	< 0.119 U	< 0.181 U
STC1-JD15	6	NORM	6/1/2010	< 0.0355 U	< 0.0355 U	< 0.0355 U	< 0.117 U	< 0.0711 UJ	< 0.0711 UJ	< 0.0355 U	< 0.124 U	< 0.117 U	< 0.178 U
STC1-JD15	16	NORM	6/1/2010	< 0.0356 U	< 0.0356 U	< 0.0356 U	< 0.117 U	< 0.0712 UJ	< 0.0712 UJ	< 0.0356 U	< 0.125 U	< 0.117 U	< 0.178 U
STC6-AJ15	0	NORM	7/20/2012	< 0.0339 U	< 0.0339 U	< 0.0339 U	< 0.112 U	< 0.0678 U	< 0.0678 UJ	< 0.0339 U	< 0.119 U	< 0.112 U	< 0.17 U
STC6-ES01	0	NORM	7/20/2012	< 0.0334 U	< 0.0334 U	< 0.0334 U	< 0.11 U	< 0.0669 U	< 0.0669 UJ	< 0.0334 U	< 0.117 U	< 0.11 U	< 0.167 U
STC6-ES01	0	FD	7/20/2012	< 0.0334 U	< 0.0334 U	< 0.0334 U	< 0.11 U	< 0.0667 U	< 0.0667 UJ	< 0.0334 U	< 0.117 U	< 0.11 U	< 0.167 U
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	< 0.0341 U	< 0.0341 U	< 0.0341 U	< 0.112 U	< 0.0681 U	< 0.0681 UJ	< 0.0341 U	< 0.119 U	< 0.112 U	< 0.17 U
STC6-JD11	10	NORM	7/23/2012	< 0.034 U	< 0.034 U	< 0.034 U	< 0.112 U	< 0.0681 U	< 0.0681 UJ	< 0.034 U	< 0.119 U	< 0.112 U	< 0.17 U
STC6-JD12	10	NORM	7/23/2012	< 0.034 U	< 0.034 U	< 0.034 U	< 0.112 U	< 0.0681 U	< 0.0681 UJ	< 0.034 U	< 0.119 U	< 0.112 U	< 0.17 U
STC6-JD13	10	NORM	7/23/2012	< 0.0338 U	< 0.0338 U	< 0.0338 U	< 0.112 U	< 0.0676 U	< 0.0676 UJ	< 0.0338 U	< 0.118 U	< 0.112 U	< 0.169 U
STC6-JD15	0	NORM	7/23/2012	--	--	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
STC7-JD10	10	NORM	12/11/2012	< 0.109 U	< 0.145 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.182 U
STC7-JD11	10	NORM	12/11/2012	< 0.108 U	< 0.144 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.18 U
STC7-JD13	10	NORM	12/11/2012	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
STC8-Prov3	0	NORM	2/6/2013	< 0.106 U	< 0.142 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
STC8-Prov4	0	NORM	2/6/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
STC8-Prov4	0	FD	2/6/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
STC8-Prov5	0	NORM	2/6/2013	< 0.106 U	< 0.142 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
STC8-Prov6	0	NORM	2/6/2013	< 0.106 U	< 0.142 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
STC8-Prov7	0	NORM	2/6/2013	< 0.105 U	< 0.141 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
STC9-JW01	0	NORM	12/19/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.174 U
STC9-JW02	0	NORM	12/19/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
STC9-JW03	0	NORM	12/19/2013	< 0.107 U	< 0.143 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether	4-Chlorothioanisole	4-Nitroaniline	4-Nitrophenol	Acetophenone	Aniline	Benzenethiol	Benzoic acid
STC9-JW04	0	NORM	12/19/2013	< 0.105 U	< 0.141 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
STC9-JW05	0	NORM	12/19/2013	< 0.108 U	< 0.143 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.179 U
STC9-JW05	0	FD	12/19/2013	< 0.107 U	< 0.143 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U
STC9-JW06	0	NORM	12/19/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
STC9-JW07	0	NORM	12/19/2013	< 0.105 U	< 0.139 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.174 U
STC9-JW08	0	NORM	12/19/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
STC9-JW09	0	NORM	12/19/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
STC9-JW10	0	NORM	12/19/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
STC9-JW11	0	NORM	12/19/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.173 U
STC9-JW12	0	NORM	12/19/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
STC9-JW13	0	NORM	12/20/2013	< 0.106 U	< 0.142 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
STC9-JW14	0	NORM	12/20/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
STC9-JW15	0	NORM	12/20/2013	< 0.106 U	< 0.142 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.177 U
STC9-JW15	0	FD	12/20/2013	< 0.107 U	< 0.143 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.179 U
STC9-JW16	0	NORM	12/20/2013	< 0.109 U	< 0.146 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.182 U
STC9-JW17	0	NORM	12/20/2013	< 0.104 U	< 0.138 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.173 U
STC9-JW18	0	NORM	12/20/2013	< 0.105 U	< 0.141 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.176 U
STC9-JW19	0	NORM	12/20/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.176 U
STC9-JW20	0	NORM	12/20/2013	< 0.107 U	< 0.142 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U
STC9-JW21	0	NORM	12/20/2013	< 0.105 U	< 0.14 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.175 U
STC9-JW22	0	NORM	12/20/2013	< 0.107 U	< 0.143 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.179 U
STC9-JW23	0	NORM	12/20/2013	< 0.106 U	< 0.141 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.176 U
STC9-JW24	0	NORM	12/20/2013	< 0.107 U	< 0.142 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.178 U
STC9-JW25	0	NORM	12/20/2013	< 0.104 U	< 0.139 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.174 U
STC9-JW25	0	FD	12/20/2013	< 0.105 U	< 0.139 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.174 U
TMC1-JD01	0	NORM	3/30/2010	< 0.037 U	< 0.037 U	< 0.037 U	< 0.122 U	< 0.074 UJ	< 0.074 UJ	< 0.037 U	< 0.129 U	< 0.122 U	< 0.185 U
TMC1-JD01	11	NORM	4/5/2010	< 0.0366 U	< 0.0366 U	< 0.0366 U	< 0.121 U	< 0.0732 UJ	< 0.0732 UJ	< 0.0366 U	< 0.128 U	< 0.121 U	< 0.183 U
TMC1-JD02	0	NORM	3/30/2010	< 0.0363 U	< 0.0363 U	< 0.0363 U	< 0.12 U	< 0.0726 UJ	< 0.0726 UJ	< 0.0363 U	< 0.127 U	< 0.12 U	< 0.182 U
TMC1-JD02	0	FD	3/30/2010	< 0.0365 U	< 0.0365 U	< 0.0365 U	< 0.12 U	< 0.073 UJ	< 0.073 UJ	< 0.0365 U	< 0.128 U	< 0.12 U	< 0.183 U
TMC1-JD02	10	NORM	4/5/2010	< 0.0362 U	< 0.0362 U	< 0.0362 U	< 0.119 U	< 0.0724 UJ	< 0.0724 UJ	< 0.0362 U	< 0.127 U	< 0.119 U	< 0.181 U

All units in mg/kg.
-- = no sample data.
[grey box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Benzyl alcohol	bis(2-Chloroethoxy) methane	bis(2-Chloroethyl) ether	bis(2-Chloroisopropyl) ether	bis(2-Ethylhexyl) phthalate	bis(p-Chlorophenyl) sulfone	bis(p-Chlorophenyl) disulfide	Butylbenzyl phthalate	Carbazole	Dibenzofuran
BDW-F High	0	NORM	2/6/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
BDW-F Low	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
GES Prov-3	0	NORM	12/10/2012	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	0.979	< 0.114 U	< 0.114 U	< 0.0114 U	< 0.114 U
GES Prov-4	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
GES Prov-5	0	NORM	12/10/2012	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.0111 U	< 0.111 U
GES Prov-6	0	NORM	12/10/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
GES Prov-7	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.114 J	< 0.107 U	0.214 J	< 0.107 U	< 0.0107 U	< 0.107 U
GES-JWT-1	0	NORM	3/4/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
GES-JWT-10	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.126	< 0.0105 UJ	< 0.105 U
GES-JWT-11	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 UJ	< 0.107 U
GES-JWT-12	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 UJ	< 0.106 U
GES-JWT-13	0	NORM	3/4/2013	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 0.107 UJ	< 1.07 U
GES-JWT-14	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 UJ	< 0.107 U
GES-JWT-15	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 UJ	< 0.106 U
GES-JWT-16	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
GES-JWT-17	0	NORM	3/4/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
GES-JWT-18	0	NORM	3/4/2013	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.0103 UJ	< 0.103 U
GES-JWT-18	0	FD	3/4/2013	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.0102 UJ	< 0.102 U
GES-JWT-19	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.011 U	< 0.11 U
GES-JWT-2	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 UJ	< 0.106 U
GES-JWT-3	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 UJ	< 0.105 U
GES-JWT-4	0	NORM	3/4/2013	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	4.57	< 1.08 U	< 1.08 U	0.295 J-	< 1.08 U
GES-JWT-5	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 UJ	< 0.105 U
GES-JWT-6	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 UJ	< 0.106 U
GES-JWT-7	0	NORM	3/4/2013	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	1.54	< 1.09 U	< 1.09 U	0.272 J-	< 1.09 U
GES-JWT-8	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	1.58	< 0.11 U	< 0.11 U	0.0165 J-	< 0.11 U
GES-JWT-9	0	NORM	3/4/2013	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 0.212 UJ	< 2.12 U
GES-JWT-9	0	FD	3/4/2013	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	1.12	< 1.06 U	< 1.06 U	0.17 J-	< 1.06 U
STC10-JW02	0	NORM	5/12/2014	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.0102 U	< 0.102 U
STC11-JW02	0	NORM	8/7/2014	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC1-AI15	0	NORM	6/4/2010	< 0.105 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.115 U	< 0.115 U	< 0.07 U	< 0.0105 UJ	< 0.07 U
STC1-AI15	0	FD	6/4/2010	< 0.104 U	< 0.0691 U	< 0.0691 U	< 0.0691 U	< 0.0691 U	< 0.114 U	< 0.114 U	< 0.0691 U	< 0.0104 UJ	< 0.0691 U
STC1-AI15	10	NORM	6/4/2010	< 0.107 U	< 0.071 U	< 0.071 U	< 0.071 U	< 0.071 U	< 0.117 U	< 0.117 U	< 0.071 U	< 0.0107 UJ	< 0.071 U
STC1-AI16	0	NORM	6/7/2010	< 0.106 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.117 U	< 0.117 U	< 0.0709 U	< 0.0106 U	< 0.0709 U
STC1-AI16	10	NORM	6/7/2010	< 0.109 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.12 U	< 0.0726 U	< 0.0109 U	< 0.0726 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Benzyl alcohol	bis(2-Chloroethoxy) methane	bis(2-Chloroethyl) ether	bis(2-Chloroisopropyl) ether	bis(2-Ethylhexyl) phthalate	bis(p-Chlorophenyl) sulfone	bis(p-Chlorophenyl) disulfide	Butylbenzyl phthalate	Carbazole	Dibenzofuran
STC1-AJ15	0	NORM	6/7/2010	< 0.104 U	< 0.0694 U	< 0.0694 U	< 0.0694 U	< 0.0694 U	< 0.115 U	< 0.115 U	< 0.0694 U	< 0.0104 U	< 0.0694 U
STC1-AJ15	0	FD	6/7/2010	< 0.427 U	< 0.285 U	< 0.285 U	< 0.285 U	< 0.285 U	< 0.47 U	< 0.47 U	< 0.285 U	< 0.0427 U	< 0.285 U
STC1-AJ15	10	NORM	6/7/2010	< 0.11 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.121 U	< 0.121 U	< 0.0731 U	< 0.011 U	< 0.0731 U
STC1-AJ16	0	NORM	6/7/2010	< 0.106 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.117 U	< 0.117 U	< 0.0708 U	< 0.0106 U	< 0.0708 U
STC1-AJ16	10	NORM	6/7/2010	< 0.108 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.119 U	< 0.0719 U	< 0.0108 U	< 0.0719 U
STC1-AJ18	0	NORM	5/24/2010	< 0.105 UJ	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 U	< 0.116 U	< 0.07 U	< 0.0105 U	< 0.07 U
STC1-AJ18	12	NORM	5/24/2010	< 0.107 UJ	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.118 U	< 0.118 U	< 0.0714 U	< 0.0107 U	< 0.0714 U
STC1-AK15	0	NORM	6/3/2010	< 0.105 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 U	< 0.0701 U
STC1-AK15	0	FD	6/3/2010	< 0.105 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 U	< 0.116 U	< 0.07 U	< 0.0105 U	< 0.07 U
STC1-AK15	3	NORM	6/3/2010	< 0.105 U	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.115 U	< 0.115 U	< 0.0699 U	< 0.0105 U	< 0.0699 U
STC1-AK15	13	NORM	6/3/2010	< 0.11 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.121 U	< 0.0732 U	< 0.011 U	< 0.0732 U
STC1-AK20	0	NORM	5/27/2010	< 0.107 UJ	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U	< 0.0716 U
STC1-AK20	0	FD	5/27/2010	< 0.107 UJ	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U	< 0.0716 U
STC1-AK20	6	NORM	5/27/2010	< 0.109 UJ	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U	< 0.0724 U
STC1-AK20	16	NORM	5/27/2010	< 0.108 UJ	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.119 U	< 0.119 U	< 0.0722 U	< 0.0108 U	< 0.0722 U
STC1-JB12	0	NORM	8/30/2010	< 0.108 UJ	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.119 U	< 0.0721 U	< 0.0108 U	< 0.0721 U
STC1-JB12	10	NORM	8/30/2010	< 0.111 UJ	< 0.074 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 U	< 0.122 U	< 0.074 U	< 0.0111 U	< 0.074 U
STC1-JD02	0	NORM	6/4/2010	< 0.108 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.119 U	< 0.0723 U	< 0.0108 U	< 0.0723 U
STC1-JD02	10	NORM	6/4/2010	< 0.109 U	< 0.0728 U	< 0.0728 U	< 0.0728 U	< 0.0728 U	< 0.12 U	< 0.12 U	< 0.0728 U	< 0.0109 U	< 0.0728 U
STC1-JD03	0	NORM	6/4/2010	< 0.105 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 UJ	< 0.0701 U
STC1-JD03	10	NORM	6/4/2010	< 0.105 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 U	< 0.0701 U
STC1-JD04	0	NORM	6/4/2010	< 0.104 U	< 0.0697 U	< 0.0697 U	< 0.0697 U	< 0.0697 U	< 0.115 U	< 0.115 U	< 0.0697 U	< 0.0104 UJ	< 0.0697 U
STC1-JD04	10	NORM	6/4/2010	< 0.11 U	< 0.0735 U	< 0.0735 U	< 0.0735 U	< 0.0735 U	< 0.121 U	< 0.121 U	< 0.0735 U	< 0.011 UJ	< 0.0735 U
STC1-JD05	0	NORM	6/4/2010	< 0.111 U	< 0.0742 U	< 0.0742 U	< 0.0742 U	< 0.0742 U	< 0.122 U	< 0.122 U	< 0.0742 U	< 0.0111 UJ	< 0.0742 U
STC1-JD05	10	NORM	6/4/2010	< 0.118 U	< 0.0785 U	< 0.0785 U	< 0.0785 U	< 0.0785 U	< 0.129 U	< 0.129 U	< 0.0785 U	< 0.0118 UJ	< 0.0785 U
STC1-JD06	0	NORM	6/3/2010	< 0.107 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U	< 0.0716 U
STC1-JD06	10	NORM	6/3/2010	< 0.109 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U	< 0.0724 U
STC1-JD07	0	NORM	6/7/2010	< 0.106 U	< 0.0705 U	< 0.0705 U	< 0.0705 U	< 0.0705 U	< 0.116 U	< 0.116 U	< 0.0705 U	< 0.0106 U	< 0.0705 U
STC1-JD07	4	NORM	6/7/2010	< 0.107 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.117 U	< 0.0712 U	< 0.0107 U	< 0.0712 U
STC1-JD07	14	NORM	6/7/2010	< 0.108 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.119 U	< 0.0719 U	< 0.0108 U	< 0.0719 U
STC1-JD08	0	NORM	5/20/2010	< 0.105 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 UJ	< 0.0701 U
STC1-JD08	0	FD	5/20/2010	< 0.11 U	< 0.0733 U	< 0.0733 U	< 0.0733 U	< 0.0733 U	< 0.121 U	< 0.121 U	< 0.0733 U	< 0.011 UJ	< 0.0733 U
STC1-JD08	10	NORM	5/20/2010	< 0.109 U	< 0.0725 U	< 0.0725 U	< 0.0725 U	< 0.0725 U	< 0.12 U	< 0.12 U	< 0.0725 U	< 0.0109 UJ	< 0.0725 U
STC1-JD09	0	NORM	5/20/2010	< 0.108 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.119 U	< 0.0721 U	< 0.0108 UJ	< 0.0721 U
STC1-JD09	10	NORM	5/20/2010	< 0.106 U	< 0.0707 U	< 0.0707 U	< 0.0707 U	< 0.0707 U	< 0.117 U	< 0.117 U	< 0.0707 U	< 0.0106 UJ	< 0.0707 U
STC1-JD10	0	NORM	5/21/2010	< 0.12 U	< 0.0797 U	< 0.0797 U	< 0.0797 U	< 0.0797 U	< 0.132 U	< 0.132 U	< 0.0797 U	< 0.012 U	< 0.0797 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Benzyl alcohol	bis(2-Chloroethoxy) methane	bis(2-Chloroethyl) ether	bis(2-Chloroisopropyl) ether	bis(2-Ethylhexyl) phthalate	bis(p-Chlorophenyl) sulfone	bis(p-Chlorophenyl) disulfide	Butylbenzyl phthalate	Carbazole	Dibenzofuran
STC1-JD10	10	NORM	5/21/2010	< 0.107 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.118 U	< 0.118 U	< 0.0714 U	< 0.0107 U	< 0.0714 U
STC1-JD11	0	NORM	5/21/2010	< 0.109 U	< 0.0727 U	< 0.0727 U	< 0.0727 U	< 0.0727 U	< 0.12 U	< 0.12 U	< 0.0727 U	< 0.0109 U	< 0.0727 U
STC1-JD11	10	NORM	5/21/2010	< 0.108 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.119 U	< 0.0723 U	< 0.0108 U	< 0.0723 U
STC1-JD12	0	NORM	5/21/2010	< 0.107 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.118 U	< 0.0715 U	< 0.0107 U	< 0.0715 U
STC1-JD12	0	FD	5/21/2010	< 0.106 U	< 0.0704 U	< 0.0704 U	< 0.0704 U	< 0.0704 U	< 0.116 U	< 0.116 U	< 0.0704 U	< 0.0106 U	< 0.0704 U
STC1-JD12	10	NORM	5/21/2010	< 0.107 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.118 U	< 0.0715 U	< 0.0107 U	< 0.0715 U
STC1-JD13	0	NORM	5/21/2010	< 0.107 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	0.088 J	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U	< 0.0716 U
STC1-JD13	10	NORM	5/21/2010	< 0.107 U	< 0.0717 U	< 0.0717 U	< 0.0717 U	< 0.0717 U	< 0.118 U	< 0.118 U	< 0.0717 U	< 0.0107 U	< 0.0717 U
STC1-JD14	0	NORM	6/1/2010	< 0.108 UJ	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.119 U	< 0.0719 U	< 0.0108 U	< 0.0719 U
STC1-JD14	0	FD	6/1/2010	< 0.107 UJ	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.118 U	< 0.118 U	< 0.0713 U	< 0.0107 U	< 0.0713 U
STC1-JD14	10	NORM	6/1/2010	< 0.109 UJ	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U	< 0.0724 U
STC1-JD15	0	NORM	6/1/2010	R	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.119 U	< 0.0723 U	< 0.0108 U	< 0.0723 U
STC1-JD15	6	NORM	6/1/2010	< 0.107 UJ	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.117 U	< 0.117 U	< 0.0711 U	< 0.0107 U	< 0.0711 U
STC1-JD15	16	NORM	6/1/2010	< 0.107 UJ	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.117 U	< 0.0712 U	< 0.0107 U	< 0.0712 U
STC6-AJ15	0	NORM	7/20/2012	< 0.102 U	< 0.0678 U	< 0.0678 U	< 0.0678 U	< 0.0678 U	< 0.112 U	< 0.112 U	< 0.0678 U	< 0.0102 U	< 0.0678 U
STC6-ES01	0	NORM	7/20/2012	< 0.1 U	< 0.0669 U	< 0.0669 U	< 0.0669 U	< 0.0669 U	< 0.11 U	< 0.11 U	< 0.0669 U	< 0.01 U	< 0.0669 U
STC6-ES01	0	FD	7/20/2012	< 0.1 U	< 0.0667 U	< 0.0667 U	< 0.0667 U	< 0.0667 U	< 0.11 U	< 0.11 U	< 0.0667 U	< 0.01 U	< 0.0667 U
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	< 0.102 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	0.0695 J	< 0.112 U	< 0.112 U	< 0.0681 U	< 0.0102 U	< 0.0681 U
STC6-JD11	10	NORM	7/23/2012	< 0.102 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.112 U	< 0.0681 U	< 0.0102 U	< 0.0681 U
STC6-JD12	10	NORM	7/23/2012	< 0.102 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.112 U	< 0.0681 U	< 0.0102 U	< 0.0681 U
STC6-JD13	10	NORM	7/23/2012	< 0.101 U	< 0.0676 U	< 0.0676 U	< 0.0676 U	< 0.0676 U	< 0.112 U	< 0.112 U	< 0.0676 U	< 0.0101 U	< 0.0676 U
STC6-JD15	0	NORM	7/23/2012	--	--	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC7-JD10	10	NORM	12/11/2012	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.0109 U	< 0.109 U
STC7-JD11	10	NORM	12/11/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
STC7-JD13	10	NORM	12/11/2012	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC8-Prov3	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC8-Prov4	0	NORM	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC8-Prov4	0	FD	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC8-Prov5	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC8-Prov6	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC8-Prov7	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW01	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW02	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW03	0	NORM	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Benzyl alcohol	bis(2-Chloroethoxy) methane	bis(2-Chloroethyl) ether	bis(2-Chloroisopropyl) ether	bis(2-Ethylhexyl) phthalate	bis(p-Chlorophenyl) sulfone	bis(p-Chlorophenyl) disulfide	Butylbenzyl phthalate	Carbazole	Dibenzofuran
STC9-JW04	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW05	0	NORM	12/19/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
STC9-JW05	0	FD	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW06	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW07	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW08	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW09	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW10	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW11	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	0.0994	< 0.104 U
STC9-JW12	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW13	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW14	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW15	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.017 J	< 0.106 U
STC9-JW15	0	FD	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.0118 J	< 0.107 U
STC9-JW16	0	NORM	12/20/2013	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	0.0124 J	< 0.109 U
STC9-JW17	0	NORM	12/20/2013	< 0.104 UJ	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U	0.118 J	< 0.104 U	< 0.104 U	0.0104 J	< 0.104 U
STC9-JW18	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW19	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW20	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW21	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.124 J	0.488	< 0.105 U	< 0.105 U	0.0599	< 0.105 U
STC9-JW22	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW23	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW24	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.312 J	< 0.107 U	< 0.107 U	0.0385	< 0.107 U
STC9-JW25	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW25	0	FD	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
TMC1-JD01	0	NORM	3/30/2010	< 0.111 UJ	< 0.074 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 U	< 0.122 U	< 0.074 U	< 0.0111 UJ	< 0.074 U
TMC1-JD01	11	NORM	4/5/2010	< 0.11 UJ	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.121 U	< 0.0732 U	< 0.011 UJ	< 0.0732 U
TMC1-JD02	0	NORM	3/30/2010	< 0.109 UJ	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.12 U	< 0.0726 U	< 0.0109 UJ	< 0.0726 U
TMC1-JD02	0	FD	3/30/2010	< 0.11 UJ	< 0.073 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.12 U	< 0.12 U	< 0.073 U	< 0.011 UJ	< 0.073 U
TMC1-JD02	10	NORM	4/5/2010	< 0.109 UJ	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 UJ	< 0.0724 U

All units in mg/kg.
-- = no sample data.
= Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Dichloromethyl ether	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Diphenyl disulfide	Diphenyl sulfide	Diphenyl sulfone	Diphenylamine	Fluoranthene
BDW-F High	0	NORM	2/6/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	0.018 J
BDW-F Low	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
GES Prov-3	0	NORM	12/10/2012	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	0.16
GES Prov-4	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.107
GES Prov-5	0	NORM	12/10/2012	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U	0.0329 J
GES Prov-6	0	NORM	12/10/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	0.027 J
GES Prov-7	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.053
GES-JWT-1	0	NORM	3/4/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U
GES-JWT-10	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.014
GES-JWT-11	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.161
GES-JWT-12	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.0364
GES-JWT-13	0	NORM	3/4/2013	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 0.107 U
GES-JWT-14	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U
GES-JWT-15	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
GES-JWT-16	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
GES-JWT-17	0	NORM	3/4/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U
GES-JWT-18	0	NORM	3/4/2013	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.0103 U
GES-JWT-18	0	FD	3/4/2013	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.0102 U
GES-JWT-19	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	0.0602
GES-JWT-2	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
GES-JWT-3	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
GES-JWT-4	0	NORM	3/4/2013	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	0.14
GES-JWT-5	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.046
GES-JWT-6	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.0661
GES-JWT-7	0	NORM	3/4/2013	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 0.109 U
GES-JWT-8	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	0.022
GES-JWT-9	0	NORM	3/4/2013	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 0.212 U
GES-JWT-9	0	FD	3/4/2013	< 1.06 U	< 1.06 U	< 1.06 U	2.13	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	0.181
STC10-JW02	0	NORM	5/12/2014	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.0102 U
STC11-JW02	0	NORM	8/7/2014	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
STC1-AI15	0	NORM	6/4/2010	< 0.115 U	< 0.07 U	< 0.07 U	< 0.035 U	< 0.07 U	< 0.115 U	< 0.115 U	< 0.115 U	< 0.07 U	< 0.0105 U
STC1-AI15	0	FD	6/4/2010	< 0.114 U	< 0.0691 U	< 0.0691 U	< 0.0345 U	< 0.0691 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.0691 U	0.0334 J
STC1-AI15	10	NORM	6/4/2010	< 0.117 U	< 0.071 U	< 0.071 U	< 0.0355 U	< 0.071 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.071 U	< 0.0107 U
STC1-AI16	0	NORM	6/7/2010	< 0.117 U	< 0.0709 U	< 0.0709 U	< 0.0355 U	< 0.0709 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.0709 U	< 0.0106 U
STC1-AI16	10	NORM	6/7/2010	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0363 U	< 0.0726 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.0726 U	< 0.0109 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Semi-Volatile Organic Compounds (SVOCs)									
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Dichloromethyl ether	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Diphenyl disulfide	Diphenyl sulfide	Diphenyl sulfone	Diphenylamine	Fluoranthene
STC1-AJ15	0	NORM	6/7/2010	< 0.115 U	< 0.0694 U	< 0.0694 U	< 0.0347 U	< 0.0694 U	< 0.115 U	< 0.115 U	< 0.115 U	< 0.0694 U	< 0.0104 U
STC1-AJ15	0	FD	6/7/2010	< 0.47 U	< 0.285 U	< 0.285 U	< 0.142 U	< 0.285 U	< 0.47 U	< 0.47 U	< 0.47 U	< 0.285 U	< 0.0427 U
STC1-AJ15	10	NORM	6/7/2010	< 0.121 U	< 0.0731 U	< 0.0731 U	< 0.0365 U	< 0.0731 U	< 0.121 U	< 0.121 U	< 0.121 U	< 0.0731 U	< 0.011 U
STC1-AJ16	0	NORM	6/7/2010	< 0.117 U	< 0.0708 U	< 0.0708 U	< 0.0354 U	< 0.0708 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.0708 U	< 0.0106 U
STC1-AJ16	10	NORM	6/7/2010	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0359 U	< 0.0719 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0719 U	< 0.0108 U
STC1-AJ18	0	NORM	5/24/2010	< 0.116 U	< 0.07 U	< 0.07 U	< 0.035 U	< 0.07 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.07 U	< 0.0105 U
STC1-AJ18	12	NORM	5/24/2010	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0357 U	< 0.0714 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0714 U	< 0.0107 U
STC1-AK15	0	NORM	6/3/2010	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0351 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 U
STC1-AK15	0	FD	6/3/2010	< 0.116 U	< 0.07 U	< 0.07 U	< 0.035 U	< 0.07 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.07 U	< 0.0105 U
STC1-AK15	3	NORM	6/3/2010	< 0.115 U	< 0.0699 U	< 0.0699 U	< 0.035 U	< 0.0699 U	< 0.115 U	< 0.115 U	< 0.115 U	< 0.0699 U	< 0.0105 U
STC1-AK15	13	NORM	6/3/2010	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0366 U	< 0.0732 U	< 0.121 U	< 0.121 U	< 0.121 U	< 0.0732 U	< 0.011 U
STC1-AK20	0	NORM	5/27/2010	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U
STC1-AK20	0	FD	5/27/2010	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U
STC1-AK20	6	NORM	5/27/2010	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0362 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U
STC1-AK20	16	NORM	5/27/2010	< 0.119 U	< 0.0722 U	< 0.0722 U	< 0.0361 U	< 0.0722 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0722 U	< 0.0108 U
STC1-JB12	0	NORM	8/30/2010	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.036 U	< 0.0721 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0721 U	< 0.0108 U
STC1-JB12	10	NORM	8/30/2010	< 0.122 U	< 0.074 U	< 0.074 U	< 0.037 U	< 0.074 U	< 0.122 U	< 0.122 U	< 0.122 U	< 0.074 U	< 0.0111 U
STC1-JD02	0	NORM	6/4/2010	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0361 U	< 0.0723 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0723 U	< 0.0108 U
STC1-JD02	10	NORM	6/4/2010	< 0.12 U	< 0.0728 U	< 0.0728 U	< 0.0364 U	< 0.0728 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.0728 U	< 0.0109 U
STC1-JD03	0	NORM	6/4/2010	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.035 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 U
STC1-JD03	10	NORM	6/4/2010	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.035 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 U
STC1-JD04	0	NORM	6/4/2010	< 0.115 U	< 0.0697 U	< 0.0697 U	< 0.0348 U	< 0.0697 U	< 0.115 U	< 0.115 U	< 0.115 U	< 0.0697 U	< 0.0104 U
STC1-JD04	10	NORM	6/4/2010	< 0.121 U	< 0.0735 U	< 0.0735 U	< 0.0368 U	< 0.0735 U	< 0.121 U	< 0.121 U	< 0.121 U	< 0.0735 U	< 0.011 U
STC1-JD05	0	NORM	6/4/2010	< 0.122 U	< 0.0742 U	< 0.0742 U	< 0.0371 U	< 0.0742 U	< 0.122 U	< 0.122 U	< 0.122 U	< 0.0742 U	0.0128 J
STC1-JD05	10	NORM	6/4/2010	< 0.129 U	< 0.0785 U	< 0.0785 U	< 0.0392 U	< 0.0785 U	< 0.129 U	< 0.129 U	< 0.129 U	< 0.0785 U	< 0.0118 U
STC1-JD06	0	NORM	6/3/2010	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0716 U	0.0108 J
STC1-JD06	10	NORM	6/3/2010	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0362 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U
STC1-JD07	0	NORM	6/7/2010	< 0.116 U	< 0.0705 U	< 0.0705 U	< 0.0352 U	< 0.0705 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.0705 U	0.018 J
STC1-JD07	4	NORM	6/7/2010	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0356 U	< 0.0712 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.0712 U	< 0.0107 U
STC1-JD07	14	NORM	6/7/2010	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0359 U	< 0.0719 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0719 U	< 0.0108 U
STC1-JD08	0	NORM	5/20/2010	< 0.116 UJ	< 0.0701 U	< 0.0701 U	< 0.035 U	< 0.0701 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.0701 U	< 0.0105 U
STC1-JD08	0	FD	5/20/2010	< 0.121 UJ	< 0.0733 U	< 0.0733 U	< 0.0367 U	< 0.0733 U	< 0.121 U	< 0.121 U	< 0.121 U	< 0.0733 U	< 0.011 U
STC1-JD08	10	NORM	5/20/2010	< 0.12 UJ	< 0.0725 U	< 0.0725 U	< 0.0362 U	< 0.0725 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.0725 U	< 0.0109 U
STC1-JD09	0	NORM	5/20/2010	< 0.119 UJ	< 0.0721 U	< 0.0721 U	< 0.036 U	< 0.0721 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0721 U	< 0.0108 U
STC1-JD09	10	NORM	5/20/2010	< 0.117 UJ	< 0.0707 U	< 0.0707 U	< 0.0354 U	< 0.0707 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.0707 U	< 0.0106 U
STC1-JD10	0	NORM	5/21/2010	< 0.132 U	< 0.0797 U	< 0.0797 U	< 0.0399 U	< 0.0797 U	< 0.132 U	< 0.132 U	< 0.132 U	< 0.0797 U	0.201

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				Dichloromethyl ether	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Diphenyl disulfide	Diphenyl sulfide	Diphenyl sulfone	Diphenylamine	Fluoranthene
STC1-JD10	10	NORM	5/21/2010	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0357 U	< 0.0714 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0714 U	< 0.0107 U
STC1-JD11	0	NORM	5/21/2010	< 0.12 U	< 0.0727 U	< 0.0727 U	< 0.0363 U	< 0.0727 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.0727 U	< 0.0109 U
STC1-JD11	10	NORM	5/21/2010	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0362 U	< 0.0723 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0723 U	< 0.0108 U
STC1-JD12	0	NORM	5/21/2010	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0358 U	< 0.0715 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0715 U	< 0.0107 U
STC1-JD12	0	FD	5/21/2010	< 0.116 U	< 0.0704 U	< 0.0704 U	< 0.0352 U	< 0.0704 U	< 0.116 U	< 0.116 U	< 0.116 U	< 0.0704 U	< 0.0106 U
STC1-JD12	10	NORM	5/21/2010	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0357 U	< 0.0715 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0715 U	< 0.0107 U
STC1-JD13	0	NORM	5/21/2010	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0358 U	< 0.0716 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0716 U	< 0.0107 U
STC1-JD13	10	NORM	5/21/2010	< 0.118 U	< 0.0717 U	< 0.0717 U	< 0.0358 U	< 0.0717 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0717 U	< 0.0107 U
STC1-JD14	0	NORM	6/1/2010	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.036 U	< 0.0719 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0719 U	< 0.0108 U
STC1-JD14	0	FD	6/1/2010	< 0.118 U	< 0.0713 U	< 0.0713 U	< 0.0357 U	< 0.0713 U	< 0.118 U	< 0.118 U	< 0.118 U	< 0.0713 U	< 0.0107 U
STC1-JD14	10	NORM	6/1/2010	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0362 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U
STC1-JD15	0	NORM	6/1/2010	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0361 U	< 0.0723 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0723 U	< 0.0108 U
STC1-JD15	6	NORM	6/1/2010	< 0.117 U	< 0.0711 U	< 0.0711 U	< 0.0355 U	< 0.0711 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.0711 U	< 0.0107 U
STC1-JD15	16	NORM	6/1/2010	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0356 U	< 0.0712 U	< 0.117 U	< 0.117 U	< 0.117 U	< 0.0712 U	< 0.0107 U
STC6-AJ15	0	NORM	7/20/2012	< 0.112 U	< 0.0678 U	< 0.0678 U	< 0.0339 U	< 0.0678 U	< 0.112 U	< 0.112 U	< 0.112 U	< 0.0678 U	0.0214 J
STC6-ES01	0	NORM	7/20/2012	< 0.11 U	< 0.0669 U	< 0.0669 U	< 0.0334 U	< 0.0669 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.0669 U	0.0137 J
STC6-ES01	0	FD	7/20/2012	< 0.11 U	< 0.0667 U	< 0.0667 U	< 0.0334 U	< 0.0667 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.0667 U	0.138 J
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	< 0.112 U	< 0.0681 U	< 0.0681 U	< 0.0341 U	< 0.0681 U	< 0.112 U	< 0.112 U	< 0.112 U	< 0.0681 U	0.0736
STC6-JD11	10	NORM	7/23/2012	< 0.112 U	< 0.0681 U	< 0.0681 U	< 0.034 U	< 0.0681 U	< 0.112 U	< 0.112 U	< 0.112 U	< 0.0681 U	0.016 J
STC6-JD12	10	NORM	7/23/2012	< 0.112 U	< 0.0681 U	< 0.0681 U	< 0.034 U	< 0.0681 U	< 0.112 U	< 0.112 U	< 0.112 U	< 0.0681 U	< 0.0102 U
STC6-JD13	10	NORM	7/23/2012	< 0.112 U	< 0.0676 U	< 0.0676 U	< 0.0338 U	< 0.0676 U	< 0.112 U	< 0.112 U	< 0.112 U	< 0.0676 U	< 0.0101 U
STC6-JD15	0	NORM	7/23/2012	--	--	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U
STC7-JD10	10	NORM	12/11/2012	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.0109 U
STC7-JD11	10	NORM	12/11/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U
STC7-JD13	10	NORM	12/11/2012	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
STC8-Prov3	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
STC8-Prov4	0	NORM	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U
STC8-Prov4	0	FD	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U
STC8-Prov5	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
STC8-Prov6	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
STC8-Prov7	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
STC9-JW01	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.0181 J
STC9-JW02	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.0158 J
STC9-JW03	0	NORM	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				Dichloromethyl ether	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Diphenyl disulfide	Diphenyl sulfide	Diphenyl sulfone	Diphenylamine	Fluoranthene
STC9-JW04	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.045
STC9-JW05	0	NORM	12/19/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U
STC9-JW05	0	FD	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U
STC9-JW06	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U
STC9-JW07	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
STC9-JW08	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
STC9-JW09	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U
STC9-JW10	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.0179 J
STC9-JW11	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	2.7
STC9-JW12	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.15
STC9-JW13	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
STC9-JW14	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U
STC9-JW15	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.022 J
STC9-JW15	0	FD	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.0164 J
STC9-JW16	0	NORM	12/20/2013	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	0.048
STC9-JW17	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	0.0242 J
STC9-JW18	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.0302 J
STC9-JW19	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.0187 J
STC9-JW20	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U
STC9-JW21	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.028 J
STC9-JW22	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U
STC9-JW23	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U
STC9-JW24	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.0221 J
STC9-JW25	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	0.0424
STC9-JW25	0	FD	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.0171 J
TMC1-JD01	0	NORM	3/30/2010	< 0.122 U	< 0.074 U	< 0.074 U	< 0.037 U	< 0.074 U	< 0.122 U	< 0.122 U	< 0.122 U	< 0.074 U	< 0.0111 U
TMC1-JD01	11	NORM	4/5/2010	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0366 U	< 0.0732 U	< 0.121 U	< 0.121 U	< 0.121 U	< 0.0732 U	< 0.011 U
TMC1-JD02	0	NORM	3/30/2010	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0363 U	< 0.0726 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.0726 U	0.0187 J
TMC1-JD02	0	FD	3/30/2010	< 0.12 U	< 0.073 U	< 0.073 U	< 0.0365 U	< 0.073 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.073 U	< 0.011 U
TMC1-JD02	10	NORM	4/5/2010	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0362 U	< 0.0724 U	< 0.119 U	< 0.119 U	< 0.119 U	< 0.0724 U	< 0.0109 U

All units in mg/kg.

-- = no sample data.

[shaded box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclo-pentadiene	Hexachloroethane	Hydroxymethyl phthalimide	Isophorone	m,p-Cresols	Naphthalene	Nitrobenzene
BDW-F High	0	NORM	2/6/2013	< 0.0108 U	0.311 J	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
BDW-F Low	0	NORM	2/6/2013	< 0.0105 U	0.126 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
GES Prov-3	0	NORM	12/10/2012	< 0.0114 U	2.37	1.39	< 0.114 U	< 0.114 U	< 0.114 UJ	< 0.114 U	< 0.114 U	< 0.0114 U	< 0.114 U
GES Prov-4	0	NORM	12/10/2012	< 0.0107 U	2.82	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
GES Prov-5	0	NORM	12/10/2012	< 0.0111 U	2.17	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 UJ	< 0.111 U	< 0.111 U	< 0.0111 U	< 0.111 U
GES Prov-6	0	NORM	12/10/2012	< 0.0108 U	0.677	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 UJ	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
GES Prov-7	0	NORM	12/10/2012	< 0.0107 U	0.379	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
GES-JWT-1	0	NORM	3/4/2013	< 0.0108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
GES-JWT-10	0	NORM	3/4/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
GES-JWT-11	0	NORM	3/4/2013	< 0.0107 U	0.309	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
GES-JWT-12	0	NORM	3/4/2013	< 0.0106 U	0.131	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
GES-JWT-13	0	NORM	3/4/2013	< 0.107 U	7.29	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 0.107 U	< 1.07 U
GES-JWT-14	0	NORM	3/4/2013	< 0.0107 U	0.11	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
GES-JWT-15	0	NORM	3/4/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
GES-JWT-16	0	NORM	3/4/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
GES-JWT-17	0	NORM	3/4/2013	< 0.0104 U	16.7	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
GES-JWT-18	0	NORM	3/4/2013	< 0.0103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.0103 U	< 0.103 U
GES-JWT-18	0	FD	3/4/2013	< 0.0102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.0102 U	< 0.102 U
GES-JWT-19	0	NORM	3/4/2013	< 0.011 U	1.4	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.011 U	< 0.11 U
GES-JWT-2	0	NORM	3/4/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
GES-JWT-3	0	NORM	3/4/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
GES-JWT-4	0	NORM	3/4/2013	< 0.108 U	3.34	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 0.108 U	< 1.08 U
GES-JWT-5	0	NORM	3/4/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
GES-JWT-6	0	NORM	3/4/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
GES-JWT-7	0	NORM	3/4/2013	< 0.109 U	4.6	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 0.109 U	< 1.09 U
GES-JWT-8	0	NORM	3/4/2013	< 0.011 U	0.54	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.011 U	< 0.11 U
GES-JWT-9	0	NORM	3/4/2013	< 0.212 U	4.79	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 0.212 U	< 2.12 U
GES-JWT-9	0	FD	3/4/2013	< 0.106 U	11.2	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 0.106 U	< 1.06 U
STC10-JW02	0	NORM	5/12/2014	< 0.0102 U	0.429	< 0.102 U	< 0.102 UJ	< 0.102 U	R	< 0.102 U	< 0.102 U	< 0.0102 U	< 0.102 U
STC11-JW02	0	NORM	8/7/2014	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC1-AI15	0	NORM	6/4/2010	< 0.0105 U	< 0.07 U	< 0.07 U	< 0.07 UJ	< 0.07 U	< 0.115 U	< 0.07 U	< 0.14 U	< 0.0105 U	< 0.07 U
STC1-AI15	0	FD	6/4/2010	< 0.0104 U	< 0.0691 U	< 0.0691 U	< 0.0691 UJ	< 0.0691 U	< 0.114 U	< 0.0691 U	< 0.138 U	< 0.0104 U	< 0.0691 U
STC1-AI15	10	NORM	6/4/2010	< 0.0107 U	< 0.071 U	< 0.071 U	< 0.071 UJ	< 0.071 U	< 0.117 U	< 0.071 U	< 0.142 U	< 0.0107 U	< 0.071 U
STC1-AI16	0	NORM	6/7/2010	< 0.0106 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.117 U	< 0.0709 U	< 0.142 U	< 0.0106 U	< 0.0709 U
STC1-AI16	10	NORM	6/7/2010	< 0.0109 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.145 U	< 0.0109 U	< 0.0726 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclo-pentadiene	Hexachloroethane	Hydroxymethyl phthalimide	Isophorone	m,p-Cresols	Naphthalene	Nitrobenzene
STC1-AJ15	0	NORM	6/7/2010	< 0.0104 U	< 0.0694 UJ	< 0.0694 U	< 0.0694 U	< 0.0694 U	< 0.115 U	< 0.0694 U	< 0.139 U	< 0.0104 U	< 0.0694 U
STC1-AJ15	0	FD	6/7/2010	< 0.0427 U	0.999 J	< 0.285 U	< 0.285 U	< 0.285 U	< 0.47 U	< 0.285 U	< 0.569 UJ	< 0.0427 U	< 0.285 U
STC1-AJ15	10	NORM	6/7/2010	< 0.011 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.121 U	< 0.0731 U	< 0.146 U	< 0.011 U	< 0.0731 U
STC1-AJ16	0	NORM	6/7/2010	< 0.0106 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.117 U	< 0.0708 U	< 0.142 U	< 0.0106 U	< 0.0708 U
STC1-AJ16	10	NORM	6/7/2010	< 0.0108 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.144 U	< 0.0108 U	< 0.0719 U
STC1-AJ18	0	NORM	5/24/2010	< 0.0105 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 U	< 0.07 U	< 0.14 U	< 0.0105 U	< 0.07 U
STC1-AJ18	12	NORM	5/24/2010	< 0.0107 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.118 U	< 0.0714 U	< 0.143 U	< 0.0107 U	< 0.0714 U
STC1-AK15	0	NORM	6/3/2010	< 0.0105 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.14 U	< 0.0105 U	< 0.0701 U
STC1-AK15	0	FD	6/3/2010	< 0.0105 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 U	< 0.07 U	< 0.14 U	< 0.0105 U	< 0.07 U
STC1-AK15	3	NORM	6/3/2010	< 0.0105 U	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.115 U	< 0.0699 U	< 0.14 U	< 0.0105 U	< 0.0699 U
STC1-AK15	13	NORM	6/3/2010	< 0.011 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.146 U	< 0.011 U	< 0.0732 U
STC1-AK20	0	NORM	5/27/2010	< 0.0107 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.143 U	< 0.0107 U	< 0.0716 U
STC1-AK20	0	FD	5/27/2010	< 0.0107 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.143 U	< 0.0107 U	< 0.0716 U
STC1-AK20	6	NORM	5/27/2010	< 0.0109 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.145 U	< 0.0109 U	< 0.0724 U
STC1-AK20	16	NORM	5/27/2010	< 0.0108 U	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.119 U	< 0.0722 U	< 0.144 U	< 0.0108 U	< 0.0722 U
STC1-JB12	0	NORM	8/30/2010	< 0.0108 U	< 0.0721 U	< 0.0721 U	< 0.0721 UJ	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.144 U	< 0.0108 U	< 0.0721 U
STC1-JB12	10	NORM	8/30/2010	< 0.0111 U	< 0.074 U	< 0.074 U	< 0.074 UJ	< 0.074 U	< 0.122 U	< 0.074 U	< 0.148 U	< 0.0111 U	< 0.074 U
STC1-JD02	0	NORM	6/4/2010	< 0.0108 U	< 0.0723 U	< 0.0723 U	< 0.0723 UJ	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.145 U	< 0.0108 U	< 0.0723 U
STC1-JD02	10	NORM	6/4/2010	< 0.0109 U	< 0.0728 U	< 0.0728 U	< 0.0728 UJ	< 0.0728 U	< 0.12 U	< 0.0728 U	< 0.146 U	< 0.0109 U	< 0.0728 U
STC1-JD03	0	NORM	6/4/2010	< 0.0105 U	< 0.0701 U	< 0.0701 U	< 0.0701 UJ	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.14 U	< 0.0105 U	< 0.0701 U
STC1-JD03	10	NORM	6/4/2010	< 0.0105 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.14 U	< 0.0105 U	< 0.0701 U
STC1-JD04	0	NORM	6/4/2010	< 0.0104 U	< 0.0697 U	< 0.0697 U	< 0.0697 UJ	< 0.0697 U	< 0.115 U	< 0.0697 U	< 0.139 U	< 0.0104 U	< 0.0697 U
STC1-JD04	10	NORM	6/4/2010	< 0.011 U	< 0.0735 U	< 0.0735 U	< 0.0735 UJ	< 0.0735 U	< 0.121 U	< 0.0735 U	< 0.147 U	< 0.011 U	< 0.0735 U
STC1-JD05	0	NORM	6/4/2010	< 0.0111 U	< 0.0742 U	< 0.0742 U	< 0.0742 UJ	< 0.0742 U	< 0.122 U	< 0.0742 U	< 0.148 U	< 0.0111 U	< 0.0742 U
STC1-JD05	10	NORM	6/4/2010	< 0.0118 U	< 0.0785 U	< 0.0785 U	< 0.0785 UJ	< 0.0785 U	< 0.129 U	< 0.0785 U	< 0.157 U	< 0.0118 U	< 0.0785 U
STC1-JD06	0	NORM	6/3/2010	< 0.0107 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.143 U	< 0.0107 U	< 0.0716 U
STC1-JD06	10	NORM	6/3/2010	< 0.0109 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.145 U	< 0.0109 U	< 0.0724 U
STC1-JD07	0	NORM	6/7/2010	< 0.0106 U	0.205 J	< 0.0705 U	< 0.0705 U	< 0.0705 U	< 0.116 U	< 0.0705 U	< 0.141 U	< 0.0106 U	< 0.0705 U
STC1-JD07	4	NORM	6/7/2010	< 0.0107 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.142 U	< 0.0107 U	< 0.0712 U
STC1-JD07	14	NORM	6/7/2010	< 0.0108 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.144 U	< 0.0108 U	< 0.0719 U
STC1-JD08	0	NORM	5/20/2010	< 0.0105 U	< 0.0701 U	< 0.0701 U	< 0.0701 UJ	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.14 U	< 0.0105 U	< 0.0701 U
STC1-JD08	0	FD	5/20/2010	< 0.011 U	< 0.0733 U	< 0.0733 U	< 0.0733 UJ	< 0.0733 U	< 0.121 U	< 0.0733 U	< 0.147 U	< 0.011 U	< 0.0733 U
STC1-JD08	10	NORM	5/20/2010	< 0.0109 U	< 0.0725 U	< 0.0725 U	< 0.0725 UJ	< 0.0725 U	< 0.12 U	< 0.0725 U	< 0.145 U	< 0.0109 U	< 0.0725 U
STC1-JD09	0	NORM	5/20/2010	< 0.0108 U	< 0.0721 U	< 0.0721 U	< 0.0721 UJ	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.144 U	< 0.0108 U	< 0.0721 U
STC1-JD09	10	NORM	5/20/2010	< 0.0106 U	< 0.0707 U	< 0.0707 U	< 0.0707 UJ	< 0.0707 U	< 0.117 U	< 0.0707 U	< 0.141 U	< 0.0106 U	< 0.0707 U
STC1-JD10	0	NORM	5/21/2010	< 0.012 U	3.5	< 0.0797 U	< 0.0797 UJ	< 0.0797 U	< 0.132 U	< 0.0797 U	< 0.159 U	< 0.012 U	< 0.0797 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclo-pentadiene	Hexachloroethane	Hydroxymethyl phthalimide	Isophorone	m,p-Cresols	Naphthalene	Nitrobenzene
STC1-JD10	10	NORM	5/21/2010	< 0.0107 U	0.359	< 0.0714 U	< 0.0714 UJ	< 0.0714 U	< 0.118 U	< 0.0714 U	< 0.143 U	< 0.0107 U	< 0.0714 U
STC1-JD11	0	NORM	5/21/2010	< 0.0109 U	1.18	< 0.0727 U	< 0.0727 UJ	< 0.0727 U	< 0.12 U	< 0.0727 U	< 0.145 U	< 0.0109 U	< 0.0727 U
STC1-JD11	10	NORM	5/21/2010	< 0.0108 U	0.252 J	< 0.0723 U	< 0.0723 UJ	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.145 U	< 0.0108 U	< 0.0723 U
STC1-JD12	0	NORM	5/21/2010	< 0.0107 U	0.159 J	< 0.0715 U	< 0.0715 UJ	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.143 U	< 0.0107 U	< 0.0715 U
STC1-JD12	0	FD	5/21/2010	< 0.0106 U	0.241 J	< 0.0704 U	< 0.0704 UJ	< 0.0704 U	< 0.116 U	< 0.0704 U	< 0.141 U	< 0.0106 U	< 0.0704 U
STC1-JD12	10	NORM	5/21/2010	< 0.0107 U	0.163 J	< 0.0715 U	< 0.0715 UJ	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.143 U	< 0.0107 U	< 0.0715 U
STC1-JD13	0	NORM	5/21/2010	< 0.0107 U	0.345 J	< 0.0716 U	< 0.0716 UJ	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.143 U	< 0.0107 U	< 0.0716 U
STC1-JD13	10	NORM	5/21/2010	< 0.0107 U	< 0.0717 U	< 0.0717 U	< 0.0717 UJ	< 0.0717 U	< 0.118 U	< 0.0717 U	< 0.143 U	< 0.0107 U	< 0.0717 U
STC1-JD14	0	NORM	6/1/2010	< 0.0108 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.144 U	< 0.0108 U	< 0.0719 U
STC1-JD14	0	FD	6/1/2010	< 0.0107 U	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.118 U	< 0.0713 U	< 0.143 U	< 0.0107 U	< 0.0713 U
STC1-JD14	10	NORM	6/1/2010	< 0.0109 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.145 U	< 0.0109 U	< 0.0724 U
STC1-JD15	0	NORM	6/1/2010	< 0.0108 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.145 U	< 0.0108 U	< 0.0723 U
STC1-JD15	6	NORM	6/1/2010	< 0.0107 U	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.117 U	< 0.0711 U	< 0.142 U	< 0.0107 U	< 0.0711 U
STC1-JD15	16	NORM	6/1/2010	< 0.0107 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.142 U	< 0.0107 U	< 0.0712 U
STC6-AJ15	0	NORM	7/20/2012	< 0.0102 U	0.105 J	< 0.0678 U	< 0.0678 UJ	< 0.0678 U	< 0.112 UJ	< 0.0678 U	< 0.136 U	< 0.0102 U	< 0.0678 U
STC6-ES01	0	NORM	7/20/2012	< 0.01 U	0.316 J	< 0.0669 U	< 0.0669 UJ	< 0.0669 U	< 0.11 UJ	< 0.0669 U	< 0.134 U	< 0.01 U	< 0.0669 U
STC6-ES01	0	FD	7/20/2012	< 0.01 U	0.339	< 0.0667 U	< 0.0667 UJ	< 0.0667 U	< 0.11 UJ	< 0.0667 U	< 0.133 U	< 0.01 U	< 0.0667 U
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	< 0.0102 U	0.357	< 0.0681 U	< 0.0681 UJ	< 0.0681 U	< 0.112 UJ	< 0.0681 U	< 0.136 U	< 0.0102 U	< 0.0681 U
STC6-JD11	10	NORM	7/23/2012	< 0.0102 U	0.355	< 0.0681 U	< 0.0681 UJ	< 0.0681 U	< 0.112 UJ	< 0.0681 U	< 0.136 U	< 0.0102 U	< 0.0681 U
STC6-JD12	10	NORM	7/23/2012	< 0.0102 U	0.153 J	< 0.0681 U	< 0.0681 UJ	< 0.0681 U	< 0.112 UJ	< 0.0681 U	< 0.136 U	< 0.0102 U	< 0.0681 U
STC6-JD13	10	NORM	7/23/2012	< 0.0101 U	0.447	< 0.0676 U	< 0.0676 UJ	< 0.0676 U	< 0.112 UJ	< 0.0676 U	< 0.135 U	< 0.0101 U	< 0.0676 U
STC6-JD15	0	NORM	7/23/2012	--	--	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	< 0.0104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC7-JD10	10	NORM	12/11/2012	< 0.0109 U	0.141 J	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 UJ	< 0.109 U	< 0.109 U	< 0.0109 U	< 0.109 U
STC7-JD11	10	NORM	12/11/2012	< 0.0108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 UJ	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
STC7-JD13	10	NORM	12/11/2012	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC8-Prov3	0	NORM	2/6/2013	< 0.0106 U	0.211 J	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC8-Prov4	0	NORM	2/6/2013	< 0.0104 U	0.11 J	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC8-Prov4	0	FD	2/6/2013	< 0.0104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC8-Prov5	0	NORM	2/6/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC8-Prov6	0	NORM	2/6/2013	< 0.0106 U	0.263 J	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC8-Prov7	0	NORM	2/6/2013	< 0.0105 U	0.249 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW01	0	NORM	12/19/2013	< 0.0105 U	0.422	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW02	0	NORM	12/19/2013	< 0.0105 U	1.49	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW03	0	NORM	12/19/2013	< 0.0107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclo-pentadiene	Hexachloroethane	Hydroxymethyl phthalimide	Isophorone	m,p-Cresols	Naphthalene	Nitrobenzene
STC9-JW04	0	NORM	12/19/2013	< 0.0105 U	1.13	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW05	0	NORM	12/19/2013	< 0.0108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.0108 U	< 0.108 U
STC9-JW05	0	FD	12/19/2013	< 0.0107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW06	0	NORM	12/19/2013	< 0.0104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW07	0	NORM	12/19/2013	< 0.0105 U	0.156 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW08	0	NORM	12/19/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW09	0	NORM	12/19/2013	< 0.0105 U	0.284 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW10	0	NORM	12/19/2013	< 0.0105 U	0.237 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW11	0	NORM	12/19/2013	0.0405	0.109 J	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW12	0	NORM	12/19/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW13	0	NORM	12/20/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW14	0	NORM	12/20/2013	< 0.0104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW15	0	NORM	12/20/2013	< 0.0106 U	0.573	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW15	0	FD	12/20/2013	< 0.0107 U	0.368	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW16	0	NORM	12/20/2013	< 0.0109 U	0.454	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.0109 U	< 0.109 U
STC9-JW17	0	NORM	12/20/2013	< 0.0104 U	0.298 J	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW18	0	NORM	12/20/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW19	0	NORM	12/20/2013	< 0.0106 U	0.259 J	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW20	0	NORM	12/20/2013	< 0.0107 U	0.161 J	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW21	0	NORM	12/20/2013	< 0.0105 U	0.764	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
STC9-JW22	0	NORM	12/20/2013	< 0.0107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW23	0	NORM	12/20/2013	< 0.0106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U	< 0.106 U	< 0.0106 U	< 0.106 U
STC9-JW24	0	NORM	12/20/2013	< 0.0107 U	0.664	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.0107 U	< 0.107 U
STC9-JW25	0	NORM	12/20/2013	< 0.0104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U	< 0.104 U	< 0.0104 U	< 0.104 U
STC9-JW25	0	FD	12/20/2013	< 0.0105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.0105 U	< 0.105 U
TMC1-JD01	0	NORM	3/30/2010	< 0.0111 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.148 U	< 0.0111 U	< 0.074 U
TMC1-JD01	11	NORM	4/5/2010	< 0.011 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.146 U	< 0.011 U	< 0.0732 U
TMC1-JD02	0	NORM	3/30/2010	< 0.0109 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.145 U	< 0.0109 U	< 0.0726 U
TMC1-JD02	0	FD	3/30/2010	< 0.011 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.12 U	< 0.073 U	< 0.146 U	< 0.011 U	< 0.073 U
TMC1-JD02	10	NORM	4/5/2010	< 0.0109 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.145 U	< 0.0109 U	< 0.0724 U

All units in mg/kg.

-- = no sample data.

[grey box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				N-nitrosodi-n-propyl-amine	o-Cresol	Octachlorostyrene	p-Chloroaniline	p-Chlorobenzenethiol	Pentachlorobenzene	Pentachlorophenol	Phenol	Phthalic acid	Pyridine
BDW-F High	0	NORM	2/6/2013	< 0.108 U	< 0.108 U	0.175 J+	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	0.321 J	< 0.108 U
BDW-F Low	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
BDW-S S Wall	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES Prov-3	0	NORM	12/10/2012	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 UJ	2.42	< 0.114 U	< 0.114 U	< 0.114 U	< 0.114 U
GES Prov-4	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	0.593	< 0.107 U	< 0.107 UJ	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
GES Prov-5	0	NORM	12/10/2012	< 0.111 U	< 0.111 U	0.437	< 0.111 U	< 0.111 UJ	0.142 J	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U
GES Prov-6	0	NORM	12/10/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 UJ	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
GES Prov-7	0	NORM	12/10/2012	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	0.116 J	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U
GES-JWT-1	0	NORM	3/4/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
GES-JWT-10	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.284 J-	< 0.105 U
GES-JWT-11	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	0.856	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.285 J-	< 0.107 U
GES-JWT-12	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.278 J-	< 0.106 U
GES-JWT-13	0	NORM	3/4/2013	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	< 1.07 U	2.99	< 1.07 U	< 1.07 U	< 1.07 UJ	< 1.07 U
GES-JWT-14	0	NORM	3/4/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U
GES-JWT-15	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U
GES-JWT-16	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-17	0	NORM	3/4/2013	< 0.104 U	< 0.104 U	2.5	< 0.104 U	< 0.104 U	0.951	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
GES-JWT-18	0	NORM	3/4/2013	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	< 0.103 U	0.279	< 0.103 U
GES-JWT-18	0	FD	3/4/2013	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	0.267	< 0.102 U
GES-JWT-19	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	0.827	< 0.11 U	< 0.11 UJ	< 0.11 U	< 0.11 U	< 0.11 U	0.327	< 0.11 U
GES-JWT-2	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-3	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-4	0	NORM	3/4/2013	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	< 1.08 U	5.09	< 1.08 U	< 1.08 U	2.87 J-	< 1.08 U
GES-JWT-5	0	NORM	3/4/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
GES-JWT-6	0	NORM	3/4/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
GES-JWT-7	0	NORM	3/4/2013	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	< 1.09 U	5.7	< 1.09 U	< 1.09 U	2.81 J-	< 1.09 U
GES-JWT-8	0	NORM	3/4/2013	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	0.428	< 0.11 U	< 0.11 U	0.327 J-	< 0.11 U
GES-JWT-9	0	NORM	3/4/2013	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	< 2.12 U	3.89	< 2.12 U	< 2.12 U	< 2.12 UJ	< 2.12 U
GES-JWT-9	0	FD	3/4/2013	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	< 1.06 U	7.93	< 1.06 U	< 1.06 U	< 1.06 UJ	< 1.06 U
STC10-JW02	0	NORM	5/12/2014	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 UJ	< 0.102 U	< 0.102 U	< 0.102 U	< 0.102 UJ	< 0.102 U
STC11-JW02	0	NORM	8/7/2014	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC1-AI15	0	NORM	6/4/2010	< 0.07 U	< 0.07 U	< 0.115 U	< 0.07 UJ	< 0.115 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.115 UJ	< 0.07 U
STC1-AI15	0	FD	6/4/2010	< 0.0691 U	< 0.0691 U	< 0.114 U	< 0.0691 UJ	< 0.114 U	< 0.0691 U	< 0.0691 U	< 0.0691 U	< 0.114 UJ	< 0.0691 U
STC1-AI15	10	NORM	6/4/2010	< 0.071 U	< 0.071 U	< 0.117 U	< 0.071 UJ	< 0.117 U	< 0.071 U	< 0.071 U	< 0.071 U	< 0.117 UJ	< 0.071 U
STC1-AI16	0	NORM	6/7/2010	< 0.0709 U	< 0.0709 U	< 0.117 U	< 0.0709 U	< 0.117 U	< 0.0709 U	< 0.0709 U	< 0.0709 U	< 0.117 U	< 0.0709 U
STC1-AI16	10	NORM	6/7/2010	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				N-nitrosodi-n-propyl-amine	o-Cresol	Octachlorostyrene	p-Chloroaniline	p-Chlorobenzenethiol	Pentachlorobenzene	Pentachlorophenol	Phenol	Phthalic acid	Pyridine
STC1-AJ15	0	NORM	6/7/2010	< 0.0694 U	< 0.0694 U	< 0.115 U	< 0.0694 U	< 0.115 U	< 0.0694 UJ	< 0.0694 U	< 0.0694 U	< 0.115 U	< 0.0694 U
STC1-AJ15	0	FD	6/7/2010	< 0.285 U	< 0.285 UJ	< 0.47 U	< 0.285 U	< 0.47 UJ	0.783 J	< 0.285 UJ	< 0.285 UJ	< 0.47 UJ	< 0.285 U
STC1-AJ15	10	NORM	6/7/2010	< 0.0731 U	< 0.0731 U	< 0.121 U	< 0.0731 U	< 0.121 U	< 0.0731 U	< 0.0731 U	< 0.0731 U	< 0.121 U	< 0.0731 U
STC1-AJ16	0	NORM	6/7/2010	< 0.0708 U	< 0.0708 U	< 0.117 U	< 0.0708 U	< 0.117 U	< 0.0708 U	< 0.0708 U	< 0.0708 U	< 0.117 U	< 0.0708 U
STC1-AJ16	10	NORM	6/7/2010	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U
STC1-AJ18	0	NORM	5/24/2010	< 0.07 U	< 0.07 U	< 0.116 UJ	< 0.07 U	< 0.116 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 UJ	< 0.07 UJ
STC1-AJ18	12	NORM	5/24/2010	< 0.0714 U	< 0.0714 U	< 0.118 UJ	< 0.0714 U	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.118 UJ	< 0.0714 UJ
STC1-AK15	0	NORM	6/3/2010	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 UJ	< 0.0701 U
STC1-AK15	0	FD	6/3/2010	< 0.07 U	< 0.07 U	< 0.116 U	< 0.07 U	< 0.116 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.116 UJ	< 0.07 U
STC1-AK15	3	NORM	6/3/2010	< 0.0699 U	< 0.0699 U	< 0.115 U	< 0.0699 U	< 0.115 U	< 0.0699 U	< 0.0699 U	< 0.0699 U	< 0.115 UJ	< 0.0699 U
STC1-AK15	13	NORM	6/3/2010	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 UJ	< 0.0732 U
STC1-AK20	0	NORM	5/27/2010	< 0.0716 U	< 0.0716 U	< 0.118 UJ	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 UJ	< 0.0716 U
STC1-AK20	0	FD	5/27/2010	< 0.0716 U	< 0.0716 U	< 0.118 UJ	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 UJ	< 0.0716 U
STC1-AK20	6	NORM	5/27/2010	< 0.0724 U	< 0.0724 U	< 0.119 UJ	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 UJ	< 0.0724 U
STC1-AK20	16	NORM	5/27/2010	< 0.0722 U	< 0.0722 U	< 0.119 UJ	< 0.0722 U	< 0.119 U	< 0.0722 U	< 0.0722 U	< 0.0722 U	< 0.119 UJ	< 0.0722 U
STC1-JB12	0	NORM	8/30/2010	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.0721 U
STC1-JB12	10	NORM	8/30/2010	< 0.074 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 U	< 0.074 U
STC1-JD02	0	NORM	6/4/2010	< 0.0723 U	< 0.0723 U	< 0.119 UJ	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 UJ	< 0.0723 U
STC1-JD02	10	NORM	6/4/2010	< 0.0728 U	< 0.0728 U	< 0.12 UJ	< 0.0728 U	< 0.12 U	< 0.0728 U	< 0.0728 U	< 0.0728 U	< 0.12 UJ	< 0.0728 U
STC1-JD03	0	NORM	6/4/2010	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 UJ	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 UJ	< 0.0701 U
STC1-JD03	10	NORM	6/4/2010	< 0.0701 U	< 0.0701 U	< 0.116 UJ	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 UJ	< 0.0701 U
STC1-JD04	0	NORM	6/4/2010	< 0.0697 U	< 0.0697 U	< 0.115 U	< 0.0697 UJ	< 0.115 U	< 0.0697 U	< 0.0697 U	< 0.0697 U	< 0.115 UJ	< 0.0697 U
STC1-JD04	10	NORM	6/4/2010	< 0.0735 U	< 0.0735 U	< 0.121 U	< 0.0735 UJ	< 0.121 U	< 0.0735 U	< 0.0735 U	< 0.0735 U	< 0.121 UJ	< 0.0735 U
STC1-JD05	0	NORM	6/4/2010	< 0.0742 U	< 0.0742 U	< 0.122 U	< 0.0742 UJ	< 0.122 U	< 0.0742 U	< 0.0742 U	< 0.0742 U	< 0.122 UJ	< 0.0742 U
STC1-JD05	10	NORM	6/4/2010	< 0.0785 U	< 0.0785 U	< 0.129 U	< 0.0785 UJ	< 0.129 U	< 0.0785 U	< 0.0785 U	< 0.0785 U	< 0.129 UJ	< 0.0785 U
STC1-JD06	0	NORM	6/3/2010	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 UJ	< 0.0716 U
STC1-JD06	10	NORM	6/3/2010	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 UJ	< 0.0724 U
STC1-JD07	0	NORM	6/7/2010	< 0.0705 U	< 0.0705 U	< 0.116 U	< 0.0705 U	< 0.116 U	< 0.0705 U	< 0.0705 U	< 0.0705 U	< 0.116 U	< 0.0705 U
STC1-JD07	4	NORM	6/7/2010	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U
STC1-JD07	14	NORM	6/7/2010	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U
STC1-JD08	0	NORM	5/20/2010	< 0.0701 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.116 U	< 0.0701 U	< 0.0701 U	< 0.0701 U	< 0.116 UJ	< 0.0701 U
STC1-JD08	0	FD	5/20/2010	< 0.0733 U	< 0.0733 U	< 0.121 U	< 0.0733 U	< 0.121 U	< 0.0733 U	< 0.0733 U	< 0.0733 U	< 0.121 UJ	< 0.0733 U
STC1-JD08	10	NORM	5/20/2010	< 0.0725 U	< 0.0725 U	< 0.12 U	< 0.0725 U	< 0.12 U	< 0.0725 U	< 0.0725 U	< 0.0725 U	< 0.12 UJ	< 0.0725 U
STC1-JD09	0	NORM	5/20/2010	< 0.0721 U	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.119 U	< 0.0721 U	< 0.0721 U	< 0.0721 U	< 0.119 UJ	< 0.0721 U
STC1-JD09	10	NORM	5/20/2010	< 0.0707 U	< 0.0707 U	< 0.117 U	< 0.0707 U	< 0.117 U	< 0.0707 U	< 0.0707 U	< 0.0707 U	< 0.117 UJ	< 0.0707 U
STC1-JD10	0	NORM	5/21/2010	< 0.0797 U	< 0.0797 U	0.338 J	< 0.0797 U	< 0.132 U	0.974	< 0.0797 U	< 0.0797 U	< 0.132 U	< 0.0797 UJ

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				N-nitrosodi-n-propyl-amine	o-Cresol	Octachlorostyrene	p-Chloroaniline	p-Chlorobenzenethiol	Pentachlorobenzene	Pentachlorophenol	Phenol	Phthalic acid	Pyridine
STC1-JD10	10	NORM	5/21/2010	< 0.0714 U	< 0.0714 U	< 0.118 U	< 0.0714 U	< 0.118 U	< 0.0714 U	< 0.0714 U	< 0.0714 U	< 0.118 U	< 0.0714 UJ
STC1-JD11	0	NORM	5/21/2010	< 0.0727 U	< 0.0727 U	< 0.12 U	< 0.0727 U	0.156 J	0.344 J	< 0.0727 U	< 0.0727 U	< 0.12 U	< 0.0727 UJ
STC1-JD11	10	NORM	5/21/2010	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 UJ
STC1-JD12	0	NORM	5/21/2010	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.0715 UJ
STC1-JD12	0	FD	5/21/2010	< 0.0704 U	< 0.0704 U	< 0.116 U	< 0.0704 U	< 0.116 U	< 0.0704 U	< 0.0704 U	< 0.0704 U	< 0.116 U	< 0.0704 UJ
STC1-JD12	10	NORM	5/21/2010	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.118 U	< 0.0715 U	< 0.0715 U	< 0.0715 U	< 0.118 U	< 0.0715 UJ
STC1-JD13	0	NORM	5/21/2010	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.118 U	< 0.0716 U	< 0.0716 U	< 0.0716 U	< 0.118 U	< 0.0716 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.0717 U	< 0.0717 U	< 0.118 U	< 0.0717 U	< 0.118 U	< 0.0717 U	< 0.0717 U	< 0.0717 U	< 0.118 U	< 0.0717 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.0719 U	< 0.0719 U	< 0.119 UJ	< 0.0719 U	< 0.119 U	< 0.0719 U	< 0.0719 U	< 0.0719 U	< 0.119 U	< 0.0719 U
STC1-JD14	0	FD	6/1/2010	< 0.0713 U	< 0.0713 U	< 0.118 UJ	< 0.0713 U	< 0.118 U	< 0.0713 U	< 0.0713 U	< 0.0713 U	< 0.118 U	< 0.0713 U
STC1-JD14	10	NORM	6/1/2010	< 0.0724 U	< 0.0724 U	< 0.119 UJ	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U
STC1-JD15	0	NORM	6/1/2010	< 0.0723 U	< 0.0723 U	< 0.119 UJ	< 0.0723 U	< 0.119 U	< 0.0723 U	< 0.0723 U	< 0.0723 U	< 0.119 U	< 0.0723 U
STC1-JD15	6	NORM	6/1/2010	< 0.0711 U	< 0.0711 U	< 0.117 UJ	< 0.0711 U	< 0.117 U	< 0.0711 U	< 0.0711 U	< 0.0711 U	< 0.117 U	< 0.0711 U
STC1-JD15	16	NORM	6/1/2010	< 0.0712 U	< 0.0712 U	< 0.117 UJ	< 0.0712 U	< 0.117 U	< 0.0712 U	< 0.0712 U	< 0.0712 U	< 0.117 U	< 0.0712 U
STC6-AJ15	0	NORM	7/20/2012	< 0.0678 U	< 0.0678 U	< 0.112 U	< 0.0678 U	< 0.112 U	0.129 J	< 0.0678 U	< 0.0678 U	< 0.112 U	< 0.0678 U
STC6-ES01	0	NORM	7/20/2012	< 0.0669 U	< 0.0669 U	< 0.11 U	< 0.0669 U	< 0.11 U	< 0.0669 U	< 0.0669 U	< 0.0669 U	< 0.11 U	< 0.0669 U
STC6-ES01	0	FD	7/20/2012	< 0.0667 U	< 0.0667 U	< 0.11 U	< 0.0667 U	< 0.11 U	< 0.0667 U	< 0.0667 U	< 0.0667 U	< 0.11 U	< 0.0667 U
STC6-JD08	0	NORM	7/20/2012	--	--	--	--	--	--	--	--	--	--
STC6-JD10	10	NORM	7/20/2012	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U	< 0.112 U	0.0814 J	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U
STC6-JD11	10	NORM	7/23/2012	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U	< 0.112 U	0.098 J	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U
STC6-JD12	10	NORM	7/23/2012	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U	< 0.112 U	< 0.0681 U	< 0.0681 U	< 0.0681 U	< 0.112 U	< 0.0681 U
STC6-JD13	10	NORM	7/23/2012	< 0.0676 U	< 0.0676 U	< 0.112 U	< 0.0676 U	< 0.112 U	< 0.0676 U	< 0.0676 U	< 0.0676 U	< 0.112 U	< 0.0676 U
STC6-JD15	0	NORM	7/23/2012	--	--	--	--	--	--	--	--	--	--
STC7-ES01	0	NORM	12/11/2012	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC7-JD10	10	NORM	12/11/2012	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 UJ	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U
STC7-JD11	10	NORM	12/11/2012	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 UJ	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
STC7-JD13	10	NORM	12/11/2012	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC8-Prov3	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov4	0	NORM	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC8-Prov4	0	FD	2/6/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC8-Prov5	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov6	0	NORM	2/6/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U
STC8-Prov7	0	NORM	2/6/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U
STC9-JW01	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	0.126 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.345 J-	< 0.105 U
STC9-JW02	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	0.212 J	< 0.105 U	< 0.105 U	0.21 J	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW03	0	NORM	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U

TABLE B-9
SOIL ALDEHYDES AND SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Semi-Volatile Organic Compounds (SVOCs)									
				N-nitrosodi-n-propyl-amine	o-Cresol	Octachlorostyrene	p-Chloroaniline	p-Chlorobenzenethiol	Pentachlorobenzene	Pentachlorophenol	Phenol	Phthalic acid	Pyridine
STC9-JW04	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	0.128 J	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW05	0	NORM	12/19/2013	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 UJ	< 0.108 U
STC9-JW05	0	FD	12/19/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U
STC9-JW06	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U
STC9-JW07	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW08	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW09	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW10	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW11	0	NORM	12/19/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U
STC9-JW12	0	NORM	12/19/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW13	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U
STC9-JW14	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U
STC9-JW15	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.51	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U
STC9-JW15	0	FD	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.273 J	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U
STC9-JW16	0	NORM	12/20/2013	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	< 0.109 U	0.725	< 0.109 U	< 0.109 U	< 0.109 UJ	< 0.109 U
STC9-JW17	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	0.174 J	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U
STC9-JW18	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW19	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	0.153 J	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U
STC9-JW20	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U
STC9-JW21	0	NORM	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	0.586	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
STC9-JW22	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U
STC9-JW23	0	NORM	12/20/2013	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 U	< 0.106 UJ	< 0.106 U
STC9-JW24	0	NORM	12/20/2013	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	< 0.107 U	0.86	< 0.107 U	< 0.107 U	< 0.107 UJ	< 0.107 U
STC9-JW25	0	NORM	12/20/2013	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 U	< 0.104 UJ	< 0.104 U
STC9-JW25	0	FD	12/20/2013	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 U	< 0.105 UJ	< 0.105 U
TMC1-JD01	0	NORM	3/30/2010	< 0.074 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.122 U	< 0.074 U	< 0.074 U	< 0.074 U	< 0.122 UJ	< 0.074 UJ
TMC1-JD01	11	NORM	4/5/2010	< 0.0732 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.121 U	< 0.0732 U	< 0.0732 U	< 0.0732 U	< 0.121 UJ	< 0.0732 UJ
TMC1-JD02	0	NORM	3/30/2010	< 0.0726 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.12 U	< 0.0726 U	< 0.0726 U	< 0.0726 U	< 0.12 UJ	< 0.0726 UJ
TMC1-JD02	0	FD	3/30/2010	< 0.073 U	< 0.073 U	< 0.12 U	< 0.073 U	< 0.12 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.12 UJ	< 0.073 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.0724 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.119 U	< 0.0724 U	< 0.0724 U	< 0.0724 U	< 0.119 UJ	< 0.0724 UJ

All units in mg/kg.
-- = no sample data.
[shaded box] = Data not included in risk assessment. Sample location either excavated and data replaced with post-excavation data or sample location/depth below 10 feet bgs.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dichlorobenzene
STC1-AI15	0	NORM	6/4/2010	< 0.00039 U	< 0.00024 U	< 0.00046 U	< 0.00037 U	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00047 U	< 0.0005 U	< 0.00032 U	< 0.00074 U	< 0.00037 U
STC1-AI15	0	FD	6/4/2010	< 0.00039 U	< 0.00024 U	< 0.00046 U	< 0.00037 U	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00047 U	< 0.0005 U	< 0.00032 U	< 0.00076 U	< 0.00037 U
STC1-AI15	10	NORM	6/4/2010	< 0.0004 U	< 0.00025 U	< 0.00046 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00047 U	< 0.00051 U	< 0.00032 U	< 0.00085 U	0.00063 J
STC1-AI16	0	NORM	6/7/2010	< 0.00041 U	< 0.00025 U	< 0.00047 U	< 0.00039 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00052 U	< 0.00033 U	< 0.00073 U	< 0.00038 U
STC1-AI16	10	NORM	6/7/2010	< 0.00043 U	< 0.00027 U	< 0.00051 U	< 0.00041 U	< 0.00042 U	< 0.00027 U	< 0.00025 U	< 0.00052 U	< 0.00055 U	< 0.00035 U	< 0.00081 U	< 0.00041 U
STC1-AJ15	0	NORM	6/7/2010	< 0.0004 UJ	< 0.00025 UJ	< 0.00046 UJ	< 0.00038 UJ	< 0.00039 UJ	< 0.00025 UJ	< 0.00023 UJ	< 0.00047 UJ	< 0.00051 UJ	< 0.00035 UJ	< 0.00075 UJ	0.00056 J
STC1-AJ15	0	FD	6/7/2010	< 0.00043 U	< 0.00027 U	< 0.0005 U	< 0.00041 U	< 0.00042 U	< 0.00027 U	< 0.00025 U	0.0034 J	< 0.00055 U	0.015 J	< 0.0006 U	0.62 J
STC1-AJ15	10	NORM	6/7/2010	< 0.00043 U	< 0.00027 U	< 0.0005 U	< 0.00041 U	< 0.00042 U	< 0.00027 U	< 0.00025 U	< 0.00051 U	< 0.00055 U	< 0.00038 U	< 0.00072 U	0.002 J
STC1-AJ16	0	NORM	6/7/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00071 U	< 0.00038 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00041 U	< 0.00025 U	< 0.00047 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00048 U	< 0.00052 U	< 0.00033 U	< 0.00069 U	< 0.00038 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00044 U	< 0.00027 U	< 0.00051 U	< 0.00042 U	< 0.00043 U	< 0.00027 U	< 0.00026 U	< 0.00053 U	< 0.00056 U	< 0.00036 U	< 0.00072 U	< 0.00042 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00041 U	< 0.00025 U	< 0.00047 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00048 U	< 0.00052 U	< 0.00033 U	< 0.00064 U	< 0.00038 U
STC1-AK15	0	NORM	6/3/2010	< 0.00043 U	< 0.00027 U	< 0.0005 U	< 0.00041 U	< 0.00042 U	< 0.00027 U	< 0.00025 U	< 0.00051 U	< 0.00055 U	< 0.00035 U	< 0.00051 U	< 0.0004 U
STC1-AK15	0	FD	6/3/2010	< 0.0004 U	< 0.00025 U	< 0.00046 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00047 U	< 0.00051 U	< 0.00032 U	< 0.00056 U	< 0.00037 U
STC1-AK15	3	NORM	6/3/2010	< 0.0004 U	< 0.00025 U	< 0.00046 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00047 U	< 0.00051 U	< 0.00032 U	< 0.0006 U	< 0.00037 U
STC1-AK15	13	NORM	6/3/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00024 U	< 0.0005 U	< 0.00054 U	< 0.00034 U	< 0.00053 U	< 0.0004 U
STC1-AK20	0	NORM	5/27/2010	< 0.0004 U	< 0.00025 U	< 0.00046 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00042 U	< 0.00038 U
STC1-AK20	0	FD	5/27/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00024 U	< 0.0005 U	< 0.00054 U	< 0.00034 U	< 0.00044 U	< 0.0004 U
STC1-AK20	6	NORM	5/27/2010	< 0.00041 U	< 0.00025 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00049 U	< 0.00052 U	< 0.00033 U	< 0.00043 U	< 0.00039 U
STC1-AK20	16	NORM	5/27/2010	< 0.0004 U	< 0.00025 U	< 0.00046 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00047 U	< 0.00051 U	< 0.00032 U	< 0.00041 U	< 0.00037 U
STC1-JB12	0	NORM	8/30/2010	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00062 U	< 0.00042 U	< 0.0017 U	< 0.00032 U	< 0.00035 U	< 0.0006 U	< 0.00035 U	< 0.00065 U	< 0.0003 U
STC1-JB12	10	NORM	8/30/2010	< 0.00026 U	< 0.00047 U	< 0.00044 U	< 0.00063 U	< 0.00043 U	< 0.0018 U	< 0.00033 U	0.0007 J	< 0.00061 U	0.00052 J	< 0.00066 U	< 0.00031 U
STC1-JD02	0	NORM	6/4/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00062 U	< 0.00038 U
STC1-JD02	10	NORM	6/4/2010	< 0.00041 U	< 0.00026 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00026 U	< 0.00024 U	< 0.00049 U	< 0.00053 U	< 0.00033 U	< 0.00089 U	< 0.00039 U
STC1-JD03	0	NORM	6/4/2010	< 0.0004 U	< 0.00025 U	< 0.00046 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00047 U	< 0.00051 U	< 0.00032 U	< 0.00062 U	< 0.00037 U
STC1-JD03	10	NORM	6/4/2010	< 0.00039 U	< 0.00024 U	< 0.00046 U	< 0.00037 U	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00047 U	< 0.0005 U	< 0.00032 U	< 0.00072 U	< 0.00037 U
STC1-JD04	0	NORM	6/4/2010	< 0.00039 U	< 0.00024 U	< 0.00045 U	< 0.00037 U	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00046 U	< 0.0005 U	< 0.00031 U	< 0.00041 U	< 0.00037 U
STC1-JD04	10	NORM	6/4/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00024 U	< 0.0005 U	< 0.00053 U	< 0.00034 U	< 0.00044 U	< 0.00039 U
STC1-JD05	0	NORM	6/4/2010	< 0.00039 U	< 0.00024 U	< 0.00046 U	< 0.00037 U	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00047 U	< 0.0005 U	< 0.00032 U	< 0.00041 U	< 0.00037 U
STC1-JD05	10	NORM	6/4/2010	< 0.00041 U	< 0.00026 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00026 U	< 0.00024 U	< 0.00049 U	< 0.00053 U	< 0.00033 U	0.00049 J	< 0.00039 U
STC1-JD06	0	NORM	6/3/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00059 U	< 0.00038 U
STC1-JD06	10	NORM	6/3/2010	< 0.00041 U	< 0.00026 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00026 U	< 0.00024 U	< 0.00049 U	< 0.00053 U	< 0.00033 U	< 0.00048 U	< 0.00039 U
STC1-JD07	0	NORM	6/7/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00083 U	< 0.00038 U
STC1-JD07	4	NORM	6/7/2010	< 0.00041 U	< 0.00026 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00026 U	< 0.00024 U	< 0.00049 U	< 0.00053 U	< 0.00033 U	< 0.00077 U	< 0.00039 U
STC1-JD07	14	NORM	6/7/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00025 U	< 0.0005 U	< 0.00054 U	< 0.00034 U	< 0.00075 U	< 0.0004 U

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dichlorobenzene
STC1-JD08	0	NORM	5/20/2010	< 0.00041 U	< 0.00025 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00049 U	< 0.00052 U	< 0.00033 U	< 0.00043 U	< 0.00039 U
STC1-JD08	0	FD	5/20/2010	< 0.0004 UJ	< 0.00025 U	< 0.00047 UJ	< 0.00038 UJ	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 UJ	< 0.00051 UJ	< 0.00032 UJ	< 0.00042 UJ	< 0.00038 UJ
STC1-JD08	10	NORM	5/20/2010	< 0.00042 UJ	< 0.00026 U	< 0.00048 UJ	< 0.00039 UJ	< 0.0004 U	< 0.00026 U	< 0.00024 U	< 0.00049 UJ	< 0.00053 UJ	< 0.00033 UJ	< 0.00043 UJ	< 0.00039 UJ
STC1-JD09	0	NORM	5/20/2010	< 0.00044 UJ	< 0.00027 U	< 0.00051 UJ	< 0.00042 UJ	< 0.00043 U	< 0.00027 U	< 0.00026 U	< 0.00052 UJ	< 0.00056 UJ	< 0.00036 UJ	< 0.00046 UJ	< 0.00041 UJ
STC1-JD09	10	NORM	5/20/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00042 U	< 0.00038 U
STC1-JD10	0	NORM	5/21/2010	< 0.00045 UJ	< 0.00028 U	< 0.00052 UJ	< 0.00043 UJ	< 0.00044 U	< 0.00028 U	< 0.00026 U	0.0011 J	< 0.00057 UJ	0.0033 J	< 0.00047 UJ	0.00092 J
STC1-JD10	10	NORM	5/21/2010	< 0.00044 U	< 0.00028 U	< 0.00052 UJ	< 0.00042 U	< 0.00043 U	< 0.00028 U	< 0.00026 U	< 0.00053 UJ	< 0.00056 UJ	< 0.00036 UJ	< 0.00046 UJ	< 0.00042 UJ
STC1-JD11	0	NORM	5/21/2010	< 0.00041 U	< 0.00025 U	< 0.00047 UJ	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00048 UJ	< 0.00052 UJ	< 0.00033 UJ	< 0.00043 UJ	0.00043 J
STC1-JD11	10	NORM	5/21/2010	< 0.00044 U	< 0.00027 U	< 0.00051 U	< 0.00042 U	< 0.00043 U	< 0.00027 U	< 0.00025 U	< 0.00052 U	< 0.00056 U	< 0.00035 U	< 0.00081 U	< 0.00041 U
STC1-JD12	0	NORM	5/21/2010	< 0.00039 UJ	< 0.00024 U	< 0.00045 UJ	< 0.00037 UJ	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00046 UJ	< 0.0005 UJ	< 0.00031 UJ	0.00041 J	< 0.00037 UJ
STC1-JD12	0	FD	5/21/2010	< 0.00042 UJ	< 0.00026 U	< 0.00049 UJ	< 0.0004 UJ	< 0.00041 U	< 0.00026 U	< 0.00024 U	< 0.0005 UJ	< 0.00054 UJ	< 0.00034 UJ	< 0.00044 UJ	< 0.0004 UJ
STC1-JD12	10	NORM	5/21/2010	< 0.00041 U	< 0.00025 U	< 0.00047 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00048 U	< 0.00052 U	< 0.00033 U	< 0.00072 U	< 0.00038 U
STC1-JD13	0	NORM	5/21/2010	< 0.00039 UJ	< 0.00024 UJ	< 0.00045 UJ	< 0.00037 UJ	< 0.00038 UJ	< 0.00024 UJ	< 0.00023 UJ	< 0.00046 UJ	< 0.0005 UJ	< 0.00031 UJ	< 0.00056 UJ	< 0.00037 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00043 UJ	< 0.00026 UJ	< 0.0005 UJ	< 0.0004 UJ	< 0.00041 UJ	< 0.00026 UJ	< 0.00025 UJ	< 0.00051 UJ	< 0.00054 UJ	< 0.00034 UJ	< 0.0008 UJ	< 0.0004 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00048 U	< 0.0003 U	< 0.00056 U	< 0.00046 U	< 0.00047 U	< 0.0003 U	< 0.00028 U	< 0.00057 U	< 0.00061 U	< 0.00039 U	< 0.00092 U	< 0.00045 U
STC1-JD14	0	FD	6/1/2010	< 0.00039 U	< 0.00024 U	< 0.00046 U	< 0.00037 U	< 0.00038 U	< 0.00024 U	< 0.00023 U	< 0.00047 U	< 0.0005 U	< 0.00032 U	< 0.00076 U	< 0.00037 U
STC1-JD14	10	NORM	6/1/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00094 U	< 0.00038 U
STC1-JD15	0	NORM	6/1/2010	< 0.00041 U	< 0.00025 U	< 0.00048 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00049 U	< 0.00052 U	< 0.00035 U	< 0.00086 U	< 0.00038 U
STC1-JD15	6	NORM	6/1/2010	< 0.0004 U	< 0.00025 U	< 0.00047 U	< 0.00038 U	< 0.00039 U	< 0.00025 U	< 0.00023 U	< 0.00048 U	< 0.00051 U	< 0.00032 U	< 0.00083 U	< 0.00038 U
STC1-JD15	16	NORM	6/1/2010	< 0.00041 U	< 0.00025 U	< 0.00047 U	< 0.00039 U	< 0.0004 U	< 0.00025 U	< 0.00024 U	< 0.00048 U	< 0.00052 U	< 0.00033 U	< 0.00082 U	< 0.00038 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00025 U	< 0.0005 U	< 0.00054 U	< 0.00034 U	< 0.00044 U	< 0.0004 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00044 U	< 0.00027 U	< 0.00051 U	< 0.00042 U	< 0.00043 U	< 0.00027 U	< 0.00025 U	< 0.00052 U	< 0.00056 U	< 0.00036 U	< 0.00046 U	< 0.00041 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00024 U	< 0.0005 U	< 0.00054 U	< 0.00034 U	< 0.00044 U	< 0.0004 U
TMC1-JD02	0	FD	3/30/2010	< 0.00041 U	< 0.00026 U	< 0.00048 UJ	< 0.00039 U	< 0.0004 U	< 0.00026 U	< 0.00024 U	< 0.00049 UJ	< 0.00052 UJ	< 0.00033 UJ	< 0.00043 UJ	< 0.00039 UJ
TMC1-JD02	10	NORM	4/5/2010	< 0.00042 U	< 0.00026 U	< 0.00049 U	< 0.0004 U	< 0.00041 U	< 0.00026 U	< 0.00024 U	< 0.0005 U	< 0.00053 U	< 0.00034 U	< 0.00044 U	< 0.00039 U

All units in mg/kg.
-- = no sample data.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)											
				1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trichlorobenzene	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2,3-Trimethylbutane	2,2-Dichloropropane	2,2-Dimethylpentane	2,3-Dimethylpentane
STC1-AI15	0	NORM	6/4/2010	< 0.00033 U	< 0.00065 U	< 0.00038 U	< 0.00053 U	< 0.00026 U	< 0.00045 U	< 0.00043 U	< 0.00032 U	< 0.00054 U	< 0.00032 U	< 0.00054 U	< 0.00045 U
STC1-AI15	0	FD	6/4/2010	< 0.00033 U	< 0.00065 U	< 0.00038 U	< 0.00053 U	< 0.00026 U	< 0.00045 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-AI15	10	NORM	6/4/2010	< 0.00034 U	< 0.00065 U	< 0.00039 U	< 0.00053 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-AI16	0	NORM	6/7/2010	< 0.00034 U	< 0.00067 U	< 0.0004 U	< 0.00054 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00033 U	< 0.00056 U	< 0.00046 U
STC1-AI16	10	NORM	6/7/2010	< 0.00037 U	< 0.00072 U	< 0.00042 U	< 0.00058 U	< 0.00029 U	< 0.0005 U	< 0.00047 U	< 0.00035 U	< 0.0006 U	< 0.00035 U	< 0.0006 U	< 0.0005 U
STC1-AJ15	0	NORM	6/7/2010	< 0.00034 UJ	< 0.00066 UJ	< 0.00039 UJ	< 0.00054 UJ	< 0.00026 UJ	< 0.00046 UJ	< 0.00043 UJ	0.00065 J	< 0.00055 UJ	< 0.00032 UJ	< 0.00055 UJ	< 0.00046 UJ
STC1-AJ15	0	FD	6/7/2010	< 0.00037 U	< 0.00071 U	< 0.00042 U	< 0.00058 U	< 0.00029 U	0.012 J	< 0.00047 U	0.56 J	< 0.0006 U	< 0.00035 U	< 0.0006 U	< 0.00049 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00036 U	< 0.0007 U	< 0.00042 U	< 0.00057 U	< 0.00028 U	< 0.00049 U	< 0.00046 U	0.002 J	< 0.00059 U	< 0.00034 U	< 0.00059 U	< 0.00049 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00027 U	< 0.00046 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00035 U	< 0.00067 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00037 U	< 0.00073 U	< 0.00043 U	< 0.00059 U	< 0.00029 U	< 0.00051 U	< 0.00048 U	< 0.00036 U	< 0.00061 U	< 0.00036 U	< 0.00061 U	< 0.00051 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00034 U	< 0.00067 U	< 0.0004 U	< 0.00054 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00033 U	< 0.00056 U	< 0.00047 U
STC1-AK15	0	NORM	6/3/2010	< 0.00036 U	< 0.00071 U	< 0.00042 U	< 0.00058 U	< 0.00028 U	< 0.0005 U	< 0.00047 U	< 0.00035 U	< 0.0006 U	< 0.00035 U	< 0.0006 U	< 0.00049 U
STC1-AK15	0	FD	6/3/2010	< 0.00034 U	< 0.00065 U	< 0.00039 U	< 0.00053 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00046 U
STC1-AK15	3	NORM	6/3/2010	< 0.00034 U	< 0.00065 U	< 0.00039 U	< 0.00053 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-AK15	13	NORM	6/3/2010	< 0.00036 U	< 0.00069 U	< 0.00041 U	< 0.00057 U	< 0.00028 U	< 0.00049 U	< 0.00046 U	< 0.00034 U	< 0.00059 U	< 0.00034 U	< 0.00059 U	< 0.00048 U
STC1-AK20	0	NORM	5/27/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00046 U
STC1-AK20	0	FD	5/27/2010	< 0.00036 U	< 0.00069 U	< 0.00041 U	< 0.00056 U	< 0.00028 U	< 0.00049 U	< 0.00046 U	< 0.00034 U	< 0.00058 U	< 0.00034 U	< 0.00058 U	< 0.00048 U
STC1-AK20	6	NORM	5/27/2010	< 0.00035 U	< 0.00067 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00047 U	< 0.00045 U	< 0.00033 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-AK20	16	NORM	5/27/2010	< 0.00034 U	< 0.00065 U	< 0.00039 U	< 0.00053 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-JB12	0	NORM	8/30/2010	< 0.00093 U	< 0.00095 U	< 0.00041 U	< 0.00055 U	< 0.00034 U	< 0.00026 U	< 0.00034 U	< 0.00065 U	< 0.00057 U	< 0.00058 U	< 0.00057 U	< 0.00047 U
STC1-JB12	10	NORM	8/30/2010	< 0.00095 U	< 0.00097 U	< 0.00042 U	< 0.00056 U	< 0.00034 U	< 0.00026 U	< 0.00034 U	< 0.00066 U	< 0.00057 U	< 0.00059 U	< 0.00057 U	< 0.00047 U
STC1-JD02	0	NORM	6/4/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00027 U	< 0.00046 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD02	10	NORM	6/4/2010	< 0.00035 U	< 0.00068 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00048 U	< 0.00045 U	< 0.00034 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-JD03	0	NORM	6/4/2010	< 0.00034 U	< 0.00065 U	< 0.00039 U	< 0.00053 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-JD03	10	NORM	6/4/2010	< 0.00033 U	< 0.00065 U	< 0.00038 U	< 0.00053 U	< 0.00026 U	< 0.00045 U	< 0.00043 U	< 0.00032 U	< 0.00054 U	< 0.00032 U	< 0.00054 U	< 0.00045 U
STC1-JD04	0	NORM	6/4/2010	< 0.00033 U	< 0.00064 U	< 0.00038 U	< 0.00052 U	< 0.00026 U	< 0.00045 U	< 0.00042 U	< 0.00032 U	< 0.00054 U	< 0.00031 U	< 0.00054 U	< 0.00045 U
STC1-JD04	10	NORM	6/4/2010	< 0.00036 U	< 0.00069 U	< 0.00041 U	< 0.00056 U	< 0.00028 U	< 0.00048 U	< 0.00045 U	< 0.00034 U	< 0.00058 U	< 0.00034 U	< 0.00058 U	< 0.00048 U
STC1-JD05	0	NORM	6/4/2010	< 0.00033 U	< 0.00065 U	< 0.00038 U	< 0.00053 U	< 0.00026 U	< 0.00045 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-JD05	10	NORM	6/4/2010	< 0.00035 U	< 0.00068 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00048 U	< 0.00045 U	< 0.00034 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-JD06	0	NORM	6/3/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00026 U	< 0.00046 U	< 0.00043 U	< 0.00032 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD06	10	NORM	6/3/2010	< 0.00035 U	< 0.00068 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00048 U	< 0.00045 U	< 0.00033 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-JD07	0	NORM	6/7/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00027 U	< 0.00046 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD07	4	NORM	6/7/2010	< 0.00035 U	< 0.00068 U	< 0.0004 U	< 0.00056 U	< 0.00027 U	< 0.00048 U	< 0.00045 U	< 0.00034 U	< 0.00058 U	< 0.00033 U	< 0.00058 U	< 0.00048 U
STC1-JD07	14	NORM	6/7/2010	< 0.00036 U	< 0.0007 U	< 0.00041 U	< 0.00057 U	< 0.00028 U	< 0.00049 U	< 0.00046 U	< 0.00034 U	< 0.00059 U	< 0.00034 U	< 0.00059 U	< 0.00048 U

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)											
				1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trichlorobenzene	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2,3-Trimethylbutane	2,2-Dichloropropane	2,2-Dimethylpentane	2,3-Dimethylpentane
STC1-JD08	0	NORM	5/20/2010	< 0.00035 U	< 0.00067 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-JD08	0	FD	5/20/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 UJ	< 0.00027 UJ	< 0.00046 UJ	< 0.00044 UJ	< 0.00033 UJ	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD08	10	NORM	5/20/2010	< 0.00035 U	< 0.00068 U	< 0.00041 U	< 0.00056 UJ	< 0.00027 UJ	< 0.00048 UJ	< 0.00045 UJ	< 0.00034 UJ	< 0.00058 U	< 0.00033 U	< 0.00058 U	< 0.00048 U
STC1-JD09	0	NORM	5/20/2010	< 0.00037 U	< 0.00072 U	< 0.00043 U	< 0.00059 UJ	< 0.00029 UJ	< 0.00051 UJ	< 0.00048 UJ	< 0.00036 UJ	< 0.00061 U	< 0.00036 U	< 0.00061 U	< 0.0005 U
STC1-JD09	10	NORM	5/20/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00027 U	< 0.00046 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD10	0	NORM	5/21/2010	< 0.00038 U	< 0.00074 U	< 0.00044 U	< 0.0006 UJ	< 0.0003 UJ	< 0.00052 UJ	< 0.00049 UJ	< 0.00036 UJ	< 0.00062 U	< 0.00036 U	< 0.00062 U	< 0.00051 U
STC1-JD10	10	NORM	5/21/2010	< 0.00038 U	< 0.00073 U	< 0.00043 U	< 0.00059 UJ	< 0.00029 UJ	< 0.00051 UJ	< 0.00048 U	< 0.00036 UJ	< 0.00062 U	< 0.00036 U	< 0.00062 U	< 0.00051 U
STC1-JD11	0	NORM	5/21/2010	< 0.00035 U	< 0.00067 U	< 0.0004 U	< 0.00055 UJ	< 0.00027 UJ	< 0.00047 UJ	< 0.00044 U	< 0.00033 UJ	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-JD11	10	NORM	5/21/2010	< 0.00037 U	< 0.00072 U	< 0.00043 U	< 0.00059 U	< 0.00029 U	< 0.00051 U	< 0.00048 U	< 0.00036 U	< 0.00061 U	< 0.00035 U	< 0.00061 U	< 0.0005 U
STC1-JD12	0	NORM	5/21/2010	< 0.00033 U	< 0.00064 U	< 0.00038 U	< 0.00052 UJ	< 0.00026 UJ	< 0.00045 UJ	< 0.00042 UJ	< 0.00032 UJ	< 0.00054 U	< 0.00031 U	< 0.00054 U	< 0.00045 U
STC1-JD12	0	FD	5/21/2010	< 0.00036 U	< 0.00069 U	< 0.00041 U	< 0.00056 UJ	< 0.00028 UJ	< 0.00048 UJ	< 0.00046 UJ	< 0.00034 UJ	< 0.00058 U	< 0.00034 U	< 0.00058 U	< 0.00048 U
STC1-JD12	10	NORM	5/21/2010	< 0.00034 U	< 0.00067 U	< 0.0004 U	< 0.00054 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00033 U	< 0.00056 U	< 0.00047 U
STC1-JD13	0	NORM	5/21/2010	< 0.00033 UJ	< 0.00064 UJ	< 0.00038 UJ	< 0.00052 UJ	< 0.00026 UJ	< 0.00045 UJ	< 0.00042 UJ	< 0.00032 UJ	< 0.00054 UJ	< 0.00031 UJ	< 0.00054 UJ	< 0.00045 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00036 UJ	< 0.0007 UJ	< 0.00042 UJ	< 0.00057 UJ	< 0.00028 UJ	< 0.00049 UJ	< 0.00046 UJ	< 0.00035 UJ	< 0.00059 UJ	< 0.00034 UJ	< 0.00059 UJ	< 0.00049 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00041 U	< 0.00079 U	< 0.00047 U	< 0.00065 U	< 0.00032 U	< 0.00056 U	< 0.00052 U	< 0.00039 U	< 0.00067 U	< 0.00039 U	< 0.00067 U	< 0.00055 U
STC1-JD14	0	FD	6/1/2010	< 0.00033 U	< 0.00065 U	< 0.00038 U	< 0.00053 U	< 0.00026 U	< 0.00045 U	< 0.00043 U	< 0.00032 U	< 0.00055 U	< 0.00032 U	< 0.00055 U	< 0.00045 U
STC1-JD14	10	NORM	6/1/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00026 U	< 0.00046 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD15	0	NORM	6/1/2010	< 0.00035 U	< 0.00067 U	< 0.0004 U	< 0.00055 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
STC1-JD15	6	NORM	6/1/2010	< 0.00034 U	< 0.00066 U	< 0.00039 U	< 0.00054 U	< 0.00027 U	< 0.00046 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00032 U	< 0.00056 U	< 0.00046 U
STC1-JD15	16	NORM	6/1/2010	< 0.00034 U	< 0.00067 U	< 0.0004 U	< 0.00054 U	< 0.00027 U	< 0.00047 U	< 0.00044 U	< 0.00033 U	< 0.00056 U	< 0.00033 U	< 0.00056 U	< 0.00046 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00036 U	< 0.0007 U	< 0.00041 U	< 0.00057 U	< 0.00028 U	< 0.00049 U	< 0.00046 U	< 0.00034 U	< 0.00059 U	< 0.00034 U	< 0.00059 U	< 0.00048 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00037 U	< 0.00072 U	< 0.00043 U	< 0.00059 U	< 0.00029 U	< 0.00051 U	< 0.00048 U	< 0.00036 U	< 0.00061 U	< 0.00036 U	< 0.00061 U	< 0.0005 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00036 U	< 0.00069 U	< 0.00041 U	< 0.00056 U	< 0.00028 U	< 0.00049 U	< 0.00046 U	< 0.00034 U	< 0.00058 U	< 0.00034 U	< 0.00058 U	< 0.00048 U
TMC1-JD02	0	FD	3/30/2010	< 0.00035 U	< 0.00068 U	< 0.0004 U	< 0.00055 UJ	< 0.00027 UJ	< 0.00047 UJ	< 0.00045 U	< 0.00033 UJ	< 0.00057 U	< 0.00033 U	< 0.00057 U	< 0.00047 U
TMC1-JD02	10	NORM	4/5/2010	< 0.00036 U	< 0.00069 U	< 0.00041 U	< 0.00056 U	< 0.00028 U	< 0.00048 U	< 0.00046 U	< 0.00034 U	< 0.00058 U	< 0.00034 U	< 0.00058 U	< 0.00048 U

All units in mg/kg.
-- = no sample data.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 5 of 14)

				Volatile Organic Compounds (VOCs)											
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	2,4-Dimethylpentane	2-Chlorotoluene	2-Hexanone	2-Methylhexane	2-Nitropropane	3,3-Dimethylpentane	3-Ethylpentane	3-Methylhexane	4-Chlorotoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acetonitrile
STC1-AI15	0	NORM	6/4/2010	< 0.0005 U	< 0.00035 U	< 0.00029 U	< 0.00052 U	< 0.00033 UJ	< 0.00049 U	< 0.00046 U	< 0.00048 U	< 0.00026 U	< 0.00032 U	< 0.0067 U	< 0.0036 UJ
STC1-AI15	0	FD	6/4/2010	< 0.0005 U	< 0.00035 U	< 0.00029 U	< 0.00052 U	< 0.00033 UJ	< 0.00049 U	< 0.00046 U	< 0.00048 U	< 0.00026 U	< 0.00032 U	< 0.0067 U	< 0.0036 UJ
STC1-AI15	10	NORM	6/4/2010	< 0.00051 U	< 0.00035 U	< 0.00029 U	< 0.00053 U	< 0.00033 UJ	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0068 U	< 0.0036 UJ
STC1-AI16	0	NORM	6/7/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00034 UJ	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
STC1-AI16	10	NORM	6/7/2010	< 0.00056 U	< 0.00039 U	< 0.00032 U	< 0.00058 U	< 0.00037 UJ	< 0.00055 U	< 0.00051 U	< 0.00053 U	< 0.00029 U	< 0.00035 U	< 0.0074 U	< 0.004 UJ
STC1-AJ15	0	NORM	6/7/2010	< 0.00051 UJ	< 0.00035 UJ	< 0.0003 UJ	< 0.00053 UJ	< 0.00034 UJ	< 0.0005 UJ	< 0.00047 UJ	< 0.00049 UJ	< 0.00026 UJ	< 0.00032 UJ	0.0083 J-	< 0.0037 UJ
STC1-AJ15	0	FD	6/7/2010	< 0.00055 U	< 0.00038 U	< 0.00032 U	< 0.00057 U	< 0.00036 UJ	< 0.00054 U	< 0.00051 U	< 0.00053 U	< 0.00028 U	< 0.00035 U	< 0.0074 U	< 0.004 UJ
STC1-AJ15	10	NORM	6/7/2010	< 0.00055 U	< 0.00038 U	< 0.00032 U	< 0.00057 U	< 0.00036 UJ	< 0.00054 U	< 0.0005 U	< 0.00053 U	< 0.00028 U	< 0.00035 U	< 0.0073 U	< 0.0039 UJ
STC1-AJ16	0	NORM	6/7/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 UJ	< 0.00051 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
STC1-AJ16	10	NORM	6/7/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00034 UJ	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.007 U	< 0.0037 UJ
STC1-AJ18	0	NORM	5/24/2010	< 0.00056 U	< 0.00039 U	< 0.00033 U	< 0.00059 U	< 0.00037 U	< 0.00056 U	< 0.00052 U	< 0.00054 U	< 0.00029 U	< 0.00036 U	< 0.0076 U	< 0.0041 UJ
STC1-AJ18	12	NORM	5/24/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00034 U	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
STC1-AK15	0	NORM	6/3/2010	< 0.00055 U	< 0.00038 U	< 0.00032 U	< 0.00057 U	< 0.00036 U	< 0.00054 U	< 0.0005 U	< 0.00053 U	< 0.00028 U	< 0.00035 U	< 0.0074 U	< 0.0039 UJ
STC1-AK15	0	FD	6/3/2010	< 0.00051 U	< 0.00035 U	< 0.00029 U	< 0.00053 U	< 0.00034 U	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0068 U	< 0.0036 UJ
STC1-AK15	3	NORM	6/3/2010	< 0.00051 U	< 0.00035 U	< 0.00029 U	< 0.00053 U	< 0.00033 U	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0068 U	< 0.0036 UJ
STC1-AK15	13	NORM	6/3/2010	< 0.00054 U	< 0.00037 U	< 0.00031 U	< 0.00056 U	< 0.00036 U	< 0.00053 U	< 0.00049 U	< 0.00052 U	< 0.00028 U	< 0.00034 U	< 0.0072 U	< 0.0039 UJ
STC1-AK20	0	NORM	5/27/2010	< 0.00051 U	< 0.00035 U	< 0.0003 U	< 0.00053 U	< 0.00034 U	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0068 U	< 0.0037 UJ
STC1-AK20	0	FD	5/27/2010	< 0.00054 U	< 0.00037 U	< 0.00031 U	< 0.00056 U	< 0.00036 U	< 0.00053 U	< 0.00049 U	< 0.00052 U	< 0.00028 U	< 0.00034 U	< 0.0072 U	< 0.0039 UJ
STC1-AK20	6	NORM	5/27/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00035 U	< 0.00052 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.007 U	< 0.0038 UJ
STC1-AK20	16	NORM	5/27/2010	< 0.00051 U	< 0.00035 U	< 0.00029 U	< 0.00053 U	< 0.00033 U	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0068 U	< 0.0036 UJ
STC1-JB12	0	NORM	8/30/2010	< 0.00052 U	< 0.00036 U	< 0.00048 U	< 0.00054 U	< 0.0015 UJ	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.0004 U	< 0.00079 U	< 0.007 U	< 0.011 UJ
STC1-JB12	10	NORM	8/30/2010	< 0.00053 U	< 0.00037 U	< 0.00049 U	< 0.00055 U	< 0.0015 UJ	< 0.00052 U	< 0.00049 U	< 0.00051 U	< 0.00041 U	< 0.0008 U	< 0.0071 U	< 0.011 UJ
STC1-JD02	0	NORM	6/4/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 UJ	< 0.00051 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
STC1-JD02	10	NORM	6/4/2010	< 0.00053 U	< 0.00037 U	< 0.00031 U	< 0.00055 U	< 0.00035 UJ	< 0.00052 U	< 0.00049 U	< 0.00051 U	< 0.00027 U	< 0.00033 U	< 0.0071 U	< 0.0038 UJ
STC1-JD03	0	NORM	6/4/2010	< 0.00051 U	< 0.00035 U	< 0.00029 U	< 0.00053 U	< 0.00034 UJ	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	0.0074 J	< 0.0036 UJ
STC1-JD03	10	NORM	6/4/2010	< 0.0005 U	< 0.00035 U	< 0.00029 U	< 0.00052 U	< 0.00033 UJ	< 0.00049 U	< 0.00046 U	< 0.00048 U	< 0.00026 U	< 0.00032 U	< 0.0067 U	< 0.0036 UJ
STC1-JD04	0	NORM	6/4/2010	< 0.0005 U	< 0.00035 U	< 0.00029 U	< 0.00051 U	< 0.00033 U	< 0.00049 U	< 0.00046 U	< 0.00048 U	< 0.00026 U	< 0.00031 U	< 0.0066 U	< 0.0036 UJ
STC1-JD04	10	NORM	6/4/2010	< 0.00053 U	< 0.00037 U	< 0.00031 U	< 0.00055 U	< 0.00035 U	< 0.00053 U	< 0.00049 U	< 0.00051 U	< 0.00028 U	< 0.00034 U	< 0.0072 U	< 0.0038 UJ
STC1-JD05	0	NORM	6/4/2010	< 0.0005 U	< 0.00035 U	< 0.00029 U	< 0.00052 U	< 0.00033 U	< 0.0005 U	< 0.00046 U	< 0.00048 U	< 0.00026 U	< 0.00032 U	< 0.0067 U	< 0.0036 UJ
STC1-JD05	10	NORM	6/4/2010	< 0.00053 U	< 0.00037 U	< 0.00031 U	< 0.00055 U	< 0.00035 U	< 0.00052 U	< 0.00049 U	< 0.00051 U	< 0.00027 U	< 0.00033 U	< 0.0071 U	< 0.0038 UJ
STC1-JD06	0	NORM	6/3/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 U	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.013 U	< 0.0037 UJ
STC1-JD06	10	NORM	6/3/2010	< 0.00053 U	< 0.00037 U	< 0.00031 U	< 0.00055 U	< 0.00035 U	< 0.00052 U	< 0.00048 U	< 0.00051 U	< 0.00027 U	< 0.00033 U	< 0.0071 U	< 0.0038 UJ
STC1-JD07	0	NORM	6/7/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 UJ	< 0.00051 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
STC1-JD07	4	NORM	6/7/2010	< 0.00053 U	< 0.00037 U	< 0.00031 U	< 0.00055 U	< 0.00035 UJ	< 0.00052 U	< 0.00049 U	< 0.00051 U	< 0.00027 U	< 0.00034 U	< 0.0071 U	< 0.0038 UJ
STC1-JD07	14	NORM	6/7/2010	< 0.00054 U	< 0.00038 U	< 0.00031 U	< 0.00056 U	< 0.00036 UJ	< 0.00053 U	< 0.0005 U	< 0.00052 U	< 0.00028 U	< 0.00034 U	< 0.0072 U	< 0.0039 UJ

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 6 of 14)

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)											
				2,4-Dimethylpentane	2-Chlorotoluene	2-Hexanone	2-Methylhexane	2-Nitropropane	3,3-Dimethylpentane	3-Ethylpentane	3-Methylhexane	4-Chlorotoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acetonitrile
STC1-JD08	0	NORM	5/20/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00035 U	< 0.00052 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.007 U	< 0.0038 UJ
STC1-JD08	0	FD	5/20/2010	< 0.00051 U	< 0.00036 UJ	< 0.0003 UJ	< 0.00053 U	< 0.00034 UJ	< 0.00051 U	< 0.00047 U	< 0.00049 U	< 0.00027 UJ	< 0.00033 UJ	< 0.0069 U	< 0.0037 UJ
STC1-JD08	10	NORM	5/20/2010	< 0.00053 U	< 0.00037 UJ	< 0.00031 UJ	< 0.00055 U	< 0.00035 UJ	< 0.00052 U	< 0.00049 U	< 0.00051 U	< 0.00027 UJ	< 0.00034 UJ	< 0.0071 U	< 0.0038 UJ
STC1-JD09	0	NORM	5/20/2010	< 0.00056 U	< 0.00039 UJ	< 0.00033 UJ	< 0.00058 U	< 0.00037 UJ	< 0.00055 U	< 0.00052 U	< 0.00054 U	< 0.00029 UJ	< 0.00036 UJ	< 0.0075 U	< 0.004 UJ
STC1-JD09	10	NORM	5/20/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 U	< 0.00051 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
STC1-JD10	0	NORM	5/21/2010	< 0.00057 U	< 0.0004 UJ	< 0.00033 UJ	< 0.0006 U	< 0.00038 UJ	< 0.00057 U	< 0.00053 U	< 0.00055 U	< 0.0003 UJ	< 0.00036 UJ	< 0.0077 U	< 0.0041 UJ
STC1-JD10	10	NORM	5/21/2010	< 0.00057 U	< 0.00039 UJ	< 0.00033 U	< 0.00059 U	< 0.00037 U	< 0.00056 U	< 0.00052 U	< 0.00054 U	< 0.00029 UJ	< 0.00036 U	< 0.0076 U	< 0.0041 UJ
STC1-JD11	0	NORM	5/21/2010	< 0.00052 U	< 0.00036 UJ	< 0.0003 U	< 0.00054 U	< 0.00034 U	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 UJ	< 0.00033 U	< 0.007 U	< 0.0037 UJ
STC1-JD11	10	NORM	5/21/2010	< 0.00056 U	< 0.00039 U	< 0.00033 U	< 0.00058 U	< 0.00037 U	< 0.00055 U	< 0.00052 U	< 0.00054 U	< 0.00029 U	< 0.00036 U	< 0.0075 U	< 0.004 UJ
STC1-JD12	0	NORM	5/21/2010	< 0.0005 U	< 0.00035 UJ	< 0.00029 UJ	< 0.00052 U	< 0.00033 UJ	< 0.00049 U	< 0.00046 U	< 0.00048 U	< 0.00026 UJ	< 0.00032 UJ	< 0.0067 U	< 0.0036 UJ
STC1-JD12	0	FD	5/21/2010	< 0.00054 U	< 0.00037 UJ	< 0.00031 UJ	< 0.00056 U	< 0.00035 UJ	< 0.00053 U	< 0.00049 U	< 0.00052 U	< 0.00028 UJ	< 0.00034 UJ	< 0.0072 U	< 0.0039 UJ
STC1-JD12	10	NORM	5/21/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00034 U	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.007 U	< 0.0037 UJ
STC1-JD13	0	NORM	5/21/2010	< 0.0005 UJ	< 0.00035 UJ	< 0.00029 UJ	< 0.00052 UJ	< 0.00033 UJ	< 0.00049 UJ	< 0.00046 UJ	< 0.00048 UJ	< 0.00026 UJ	< 0.00032 UJ	< 0.0067 UJ	< 0.0036 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00054 UJ	< 0.00038 UJ	< 0.00032 UJ	< 0.00056 UJ	< 0.00036 UJ	< 0.00054 UJ	< 0.0005 UJ	< 0.00052 UJ	< 0.00028 UJ	< 0.00035 UJ	< 0.0073 UJ	< 0.0039 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00062 U	< 0.00043 U	< 0.00036 U	< 0.00064 U	< 0.00041 U	< 0.00061 U	< 0.00057 U	< 0.00059 U	< 0.00032 U	< 0.00039 U	< 0.0082 U	< 0.0044 UJ
STC1-JD14	0	FD	6/1/2010	< 0.0005 U	< 0.00035 U	< 0.00029 U	< 0.00052 U	< 0.00033 U	< 0.0005 U	< 0.00046 U	< 0.00048 U	< 0.00026 U	< 0.00032 U	< 0.0067 U	< 0.0036 UJ
STC1-JD14	10	NORM	6/1/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 U	< 0.0005 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0069 U	< 0.0037 UJ
STC1-JD15	0	NORM	6/1/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00034 U	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.007 U	< 0.0038 UJ
STC1-JD15	6	NORM	6/1/2010	< 0.00051 U	< 0.00036 U	< 0.0003 U	< 0.00053 U	< 0.00034 U	< 0.00051 U	< 0.00047 U	< 0.00049 U	< 0.00026 U	< 0.00032 U	< 0.0069 U	< 0.0037 UJ
STC1-JD15	16	NORM	6/1/2010	< 0.00052 U	< 0.00036 U	< 0.0003 U	< 0.00054 U	< 0.00034 U	< 0.00051 U	< 0.00048 U	< 0.0005 U	< 0.00027 U	< 0.00033 U	< 0.0069 U	< 0.0037 UJ
TMC1-JD01	0	NORM	3/30/2010	< 0.00054 U	< 0.00038 U	< 0.00031 U	< 0.00056 U	< 0.00036 U	< 0.00053 U	< 0.0005 U	< 0.00052 U	< 0.00028 U	< 0.00034 U	< 0.0086 U	< 0.0039 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00056 U	< 0.00039 U	< 0.00033 U	< 0.00058 U	< 0.00037 U	< 0.00055 U	< 0.00052 U	< 0.00054 U	< 0.00029 U	< 0.00036 U	< 0.0075 U	< 0.004 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00054 U	< 0.00037 U	< 0.00031 U	< 0.00056 U	< 0.00036 U	< 0.00053 U	< 0.00049 U	< 0.00052 U	< 0.00028 U	< 0.00034 U	< 0.0072 U	< 0.0039 U
TMC1-JD02	0	FD	3/30/2010	< 0.00052 U	< 0.00037 UJ	< 0.0003 U	< 0.00054 U	< 0.00035 U	< 0.00052 U	< 0.00048 U	< 0.00051 U	< 0.00027 UJ	< 0.00033 U	< 0.007 U	< 0.0038 U
TMC1-JD02	10	NORM	4/5/2010	< 0.00053 U	< 0.00037 U	< 0.00031 U	< 0.00055 U	< 0.00035 U	< 0.00053 U	< 0.00049 U	< 0.00052 U	< 0.00028 U	< 0.00034 U	< 0.0072 U	< 0.0038 U

All units in mg/kg.
-- = no sample data.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Volatile Organic Compounds (VOCs)											
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform	Chloromethane
STC1-AI15	0	NORM	6/4/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00041 U	< 0.00028 U	< 0.00031 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-AI15	0	FD	6/4/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00041 U	< 0.00028 U	< 0.00031 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-AI15	10	NORM	6/4/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-AI16	0	NORM	6/7/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-AI16	10	NORM	6/7/2010	< 0.00037 U	< 0.00043 U	< 0.00037 U	< 0.00047 U	< 0.00046 U	< 0.00032 U	< 0.00035 U	< 0.00034 U	< 0.0005 U	< 0.00035 U	< 0.00041 U	< 0.00031 U
STC1-AJ15	0	NORM	6/7/2010	0.00046 J-	< 0.00039 UJ	< 0.00034 UJ	< 0.00043 UJ	< 0.00042 UJ	< 0.00029 UJ	< 0.00032 UJ	0.0055 J	< 0.00046 UJ	< 0.00032 UJ	0.0011 J-	< 0.00029 UJ
STC1-AJ15	0	FD	6/7/2010	0.00096 J	< 0.00043 U	< 0.00036 U	< 0.00047 U	< 0.00045 U	< 0.00031 U	< 0.00035 U	0.04 J	< 0.00049 U	< 0.00035 U	< 0.00041 U	< 0.00031 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00037 U	< 0.00042 U	< 0.00036 U	< 0.00046 U	< 0.00045 U	< 0.00031 U	< 0.00034 U	< 0.00034 U	< 0.00049 U	< 0.00035 U	0.00042 J	< 0.00031 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	0.00082 J	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00043 U	< 0.00029 U	< 0.00033 U	< 0.00032 U	< 0.00047 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00038 U	< 0.00044 U	< 0.00037 U	< 0.00048 U	< 0.00046 U	< 0.00032 U	< 0.00035 U	< 0.00035 U	< 0.00051 U	< 0.00036 U	< 0.00041 U	< 0.00032 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00043 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00047 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-AK15	0	NORM	6/3/2010	< 0.00037 U	< 0.00042 U	< 0.00036 U	< 0.00047 U	< 0.00045 U	< 0.00031 U	< 0.00034 U	< 0.00034 U	< 0.00049 U	< 0.00035 U	< 0.0004 U	< 0.00031 U
STC1-AK15	0	FD	6/3/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00032 U	< 0.00037 U	< 0.00029 U
STC1-AK15	3	NORM	6/3/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-AK15	13	NORM	6/3/2010	< 0.00036 U	< 0.00042 U	< 0.00035 U	< 0.00046 U	< 0.00044 U	< 0.00031 U	< 0.00034 U	< 0.00033 U	< 0.00048 U	< 0.00034 U	< 0.0004 U	< 0.0003 U
STC1-AK20	0	NORM	5/27/2010	< 0.00034 U	< 0.00039 U	< 0.00034 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00032 U	< 0.00038 U	< 0.00029 U
STC1-AK20	0	FD	5/27/2010	< 0.00036 U	< 0.00042 U	< 0.00035 U	< 0.00046 U	< 0.00044 U	< 0.00031 U	< 0.00034 U	< 0.00033 U	< 0.00048 U	< 0.00034 U	< 0.0004 U	< 0.0003 U
STC1-AK20	6	NORM	5/27/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00045 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00047 U	< 0.00033 U	< 0.00039 U	< 0.00029 U
STC1-AK20	16	NORM	5/27/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-JB12	0	NORM	8/30/2010	< 0.00027 U	< 0.00038 U	< 0.00027 U	< 0.00039 U	< 0.001 U	< 0.00074 U	< 0.00055 U	< 0.00041 U	< 0.00059 U	< 0.00056 U	< 0.0004 U	< 0.0006 U
STC1-JB12	10	NORM	8/30/2010	< 0.00028 U	< 0.00039 U	< 0.00028 U	< 0.0004 U	< 0.0011 U	< 0.00075 U	< 0.00056 U	< 0.00042 U	< 0.0006 U	< 0.00057 U	< 0.00041 U	< 0.00061 U
STC1-JD02	0	NORM	6/4/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD02	10	NORM	6/4/2010	< 0.00036 U	< 0.00041 U	< 0.00035 U	< 0.00045 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00047 U	< 0.00034 U	< 0.00039 U	< 0.0003 U
STC1-JD03	0	NORM	6/4/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-JD03	10	NORM	6/4/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00041 U	< 0.00028 U	< 0.00031 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-JD04	0	NORM	6/4/2010	< 0.00034 U	< 0.00038 U	< 0.00033 U	< 0.00042 U	< 0.00041 U	< 0.00028 U	< 0.00031 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00036 U	< 0.00028 U
STC1-JD04	10	NORM	6/4/2010	< 0.00036 U	< 0.00041 U	< 0.00035 U	< 0.00045 U	< 0.00044 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00048 U	< 0.00034 U	< 0.00039 U	< 0.0003 U
STC1-JD05	0	NORM	6/4/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00041 U	< 0.00029 U	< 0.00031 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-JD05	10	NORM	6/4/2010	< 0.00036 U	< 0.00041 U	< 0.00035 U	< 0.00045 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00047 U	< 0.00034 U	< 0.00039 U	< 0.0003 U
STC1-JD06	0	NORM	6/3/2010	< 0.00034 U	< 0.00039 U	< 0.00034 U	< 0.00043 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00032 U	< 0.00038 U	< 0.00029 U
STC1-JD06	10	NORM	6/3/2010	< 0.00036 U	< 0.00041 U	< 0.00035 U	< 0.00045 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00047 U	< 0.00033 U	< 0.00039 U	< 0.0003 U
STC1-JD07	0	NORM	6/7/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD07	4	NORM	6/7/2010	< 0.00036 U	< 0.00041 U	< 0.00035 U	< 0.00045 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00048 U	< 0.00034 U	< 0.00039 U	< 0.0003 U
STC1-JD07	14	NORM	6/7/2010	< 0.00037 U	< 0.00042 U	< 0.00036 U	< 0.00046 U	< 0.00044 U	< 0.00031 U	< 0.00034 U	< 0.00034 U	< 0.00048 U	< 0.00034 U	< 0.0004 U	< 0.0003 U

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 8 of 14)

				Volatile Organic Compounds (VOCs)											
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform	Chloromethane
STC1-JD08	0	NORM	5/20/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00032 U	< 0.00047 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD08	0	FD	5/20/2010	< 0.00035 U	< 0.0004 UJ	< 0.00034 U	< 0.00044 UJ	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 UJ	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD08	10	NORM	5/20/2010	< 0.00036 U	< 0.00041 UJ	< 0.00035 U	< 0.00045 UJ	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 UJ	< 0.00048 U	< 0.00034 U	< 0.00039 U	< 0.0003 U
STC1-JD09	0	NORM	5/20/2010	< 0.00038 U	< 0.00043 UJ	< 0.00037 U	< 0.00048 UJ	< 0.00046 U	< 0.00032 U	< 0.00035 U	< 0.00035 UJ	< 0.0005 U	< 0.00036 U	< 0.00041 U	< 0.00032 U
STC1-JD09	10	NORM	5/20/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD10	0	NORM	5/21/2010	< 0.00039 U	< 0.00044 UJ	< 0.00038 U	< 0.00049 UJ	< 0.00047 U	< 0.00033 U	< 0.00036 U	< 0.00036 UJ	< 0.00051 U	< 0.00036 U	< 0.00042 U	< 0.00032 U
STC1-JD10	10	NORM	5/21/2010	< 0.00038 U	< 0.00044 UJ	< 0.00037 U	< 0.00048 UJ	< 0.00046 U	< 0.00032 U	< 0.00035 U	< 0.00035 U	< 0.00051 U	< 0.00036 U	< 0.00042 U	< 0.00032 U
STC1-JD11	0	NORM	5/21/2010	< 0.00035 U	< 0.0004 UJ	< 0.00034 U	< 0.00044 UJ	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00032 U	< 0.00047 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD11	10	NORM	5/21/2010	< 0.00038 U	< 0.00043 U	< 0.00037 U	< 0.00048 U	< 0.00046 U	< 0.00032 U	< 0.00035 U	< 0.00035 U	< 0.0005 U	< 0.00036 U	< 0.00041 U	< 0.00031 U
STC1-JD12	0	NORM	5/21/2010	< 0.00034 U	< 0.00039 UJ	< 0.00033 U	< 0.00042 UJ	< 0.00041 U	< 0.00028 U	< 0.00031 U	< 0.00031 UJ	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-JD12	0	FD	5/21/2010	< 0.00036 U	< 0.00041 UJ	< 0.00035 U	< 0.00046 UJ	< 0.00044 U	< 0.0003 U	< 0.00034 U	< 0.00033 UJ	< 0.00048 U	< 0.00034 U	< 0.00039 U	< 0.0003 U
STC1-JD12	10	NORM	5/21/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00043 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00047 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD13	0	NORM	5/21/2010	< 0.00034 UJ	< 0.00038 UJ	< 0.00033 UJ	< 0.00042 UJ	< 0.00041 UJ	< 0.00028 UJ	< 0.00031 UJ	< 0.00031 UJ	< 0.00045 UJ	< 0.00032 UJ	< 0.00037 UJ	< 0.00028 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00037 UJ	< 0.00042 UJ	< 0.00036 UJ	< 0.00046 UJ	< 0.00045 UJ	< 0.00031 UJ	< 0.00034 UJ	< 0.00034 UJ	< 0.00049 UJ	< 0.00035 UJ	< 0.0004 UJ	< 0.00031 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00042 U	< 0.00048 U	< 0.0004 U	< 0.00052 U	< 0.0005 U	< 0.00035 U	< 0.00038 U	< 0.00038 U	< 0.00055 U	< 0.00039 U	< 0.00045 U	< 0.00035 U
STC1-JD14	0	FD	6/1/2010	< 0.00034 U	< 0.00039 U	< 0.00033 U	< 0.00043 U	< 0.00041 U	< 0.00029 U	< 0.00031 U	< 0.00031 U	< 0.00045 U	< 0.00032 U	< 0.00037 U	< 0.00028 U
STC1-JD14	10	NORM	6/1/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD15	0	NORM	6/1/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00032 U	< 0.00047 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD15	6	NORM	6/1/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00042 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
STC1-JD15	16	NORM	6/1/2010	< 0.00035 U	< 0.0004 U	< 0.00034 U	< 0.00044 U	< 0.00043 U	< 0.00029 U	< 0.00032 U	< 0.00032 U	< 0.00046 U	< 0.00033 U	< 0.00038 U	< 0.00029 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00037 U	< 0.00042 U	< 0.00036 U	< 0.00046 U	< 0.00044 U	< 0.00031 U	< 0.00034 U	< 0.00034 U	< 0.00048 U	< 0.00034 U	< 0.0004 U	< 0.0003 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00038 U	< 0.00043 U	< 0.00037 U	< 0.00048 U	< 0.00046 U	< 0.00032 U	< 0.00035 U	< 0.00035 U	< 0.0005 U	< 0.00036 U	< 0.00041 U	< 0.00032 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00036 U	< 0.00042 U	< 0.00035 U	< 0.00046 U	< 0.00044 U	< 0.00031 U	< 0.00034 U	< 0.00033 U	< 0.00048 U	< 0.00034 U	< 0.0004 U	< 0.0003 U
TMC1-JD02	0	FD	3/30/2010	< 0.00035 U	< 0.00041 UJ	< 0.00035 U	< 0.00045 UJ	< 0.00043 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00047 U	< 0.00033 U	< 0.00039 U	< 0.00029 U
TMC1-JD02	10	NORM	4/5/2010	< 0.00036 U	< 0.00041 U	< 0.00035 U	< 0.00046 U	< 0.00044 U	< 0.0003 U	< 0.00033 U	< 0.00033 U	< 0.00048 U	< 0.00034 U	< 0.00039 U	< 0.0003 U

All units in mg/kg.
-- = no sample data.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)											
				cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene (Isopropy-ltoluene)	Dibromochloromethane	Dibromochloropropane	Dibromomethane	Dichloromethane (Methylene chloride)	Dimethyldisulfide	Ethanol	Ethylbenzene	Freon-11 (Trichlorofluoromethane)	Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)
STC1-AI15	0	NORM	6/4/2010	< 0.00034 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00061 U	< 0.00036 U	0.027	< 0.00049 U	< 0.064 UJ	< 0.0003 U	< 0.00031 U	< 0.00026 U
STC1-AI15	0	FD	6/4/2010	< 0.00034 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.024	< 0.00049 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-AI15	10	NORM	6/4/2010	< 0.00035 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.028	< 0.0005 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-AI16	0	NORM	6/7/2010	< 0.00035 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00063 U	< 0.00037 U	< 0.0045 U	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-AI16	10	NORM	6/7/2010	< 0.00038 U	< 0.00027 U	< 0.0003 U	< 0.00033 U	< 0.00068 U	< 0.00039 U	0.0062	< 0.00055 U	< 0.071 UJ	< 0.00033 U	< 0.00035 U	< 0.00028 U
STC1-AJ15	0	NORM	6/7/2010	< 0.00035 UJ	< 0.00025 UJ	< 0.00027 UJ	< 0.0003 UJ	< 0.00062 UJ	< 0.00036 UJ	< 0.0024 UJ	< 0.0005 UJ	< 0.065 UJ	< 0.0003 UJ	< 0.00032 UJ	< 0.00026 UJ
STC1-AJ15	0	FD	6/7/2010	< 0.00038 U	< 0.00027 U	< 0.00029 U	< 0.00033 U	< 0.00068 U	< 0.00039 U	< 0.0037 U	< 0.00054 U	< 0.07 UJ	< 0.00033 U	< 0.00035 U	< 0.00028 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00033 U	< 0.00067 U	< 0.00039 U	< 0.0042 U	< 0.00054 U	< 0.069 UJ	< 0.00033 U	< 0.00034 U	< 0.00028 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	< 0.0032 U	< 0.00051 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00036 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	< 0.0033 U	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00026 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00039 U	< 0.00027 U	< 0.0003 U	< 0.00034 U	< 0.00069 U	< 0.0004 U	0.0076	< 0.00056 U	< 0.072 UJ	< 0.00034 U	< 0.00035 U	< 0.00029 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00035 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	0.022	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00026 U
STC1-AK15	0	NORM	6/3/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00033 U	< 0.00067 U	< 0.00039 U	< 0.013 U	< 0.00054 U	< 0.07 UJ	< 0.00033 U	< 0.00034 U	< 0.00028 U
STC1-AK15	0	FD	6/3/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.016	< 0.0005 U	< 0.065 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-AK15	3	NORM	6/3/2010	< 0.00035 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	< 0.013 U	< 0.0005 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-AK15	13	NORM	6/3/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	< 0.0054 U	< 0.00053 U	< 0.068 UJ	< 0.00032 U	< 0.00034 U	< 0.00027 U
STC1-AK20	0	NORM	5/27/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	0.017	< 0.0005 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-AK20	0	FD	5/27/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	0.016	< 0.00053 U	< 0.068 UJ	< 0.00032 U	< 0.00034 U	< 0.00027 U
STC1-AK20	6	NORM	5/27/2010	< 0.00036 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	0.017	< 0.00052 U	< 0.067 UJ	< 0.00031 U	< 0.00033 U	< 0.00027 U
STC1-AK20	16	NORM	5/27/2010	< 0.00035 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.017	< 0.0005 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-JB12	0	NORM	8/30/2010	< 0.00064 U	< 0.00064 U	< 0.00034 U	< 0.00035 U	< 0.0012 U	< 0.00044 U	< 0.0017 U	< 0.00051 U	< 0.066 UJ	< 0.00032 U	< 0.00018 U	< 0.0018 U
STC1-JB12	10	NORM	8/30/2010	< 0.00065 U	< 0.00065 U	< 0.00035 U	< 0.00036 U	< 0.0013 U	< 0.00044 U	< 0.0017 U	< 0.00052 U	< 0.067 UJ	< 0.00033 U	< 0.00018 U	< 0.0018 U
STC1-JD02	0	NORM	6/4/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	0.027	< 0.00051 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-JD02	10	NORM	6/4/2010	< 0.00036 U	< 0.00025 U	< 0.00028 U	< 0.00032 U	< 0.00065 U	< 0.00038 U	0.027	< 0.00052 U	< 0.067 UJ	< 0.00032 U	< 0.00033 U	< 0.00027 U
STC1-JD03	0	NORM	6/4/2010	< 0.00035 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.043	< 0.0005 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-JD03	10	NORM	6/4/2010	< 0.00034 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00061 U	< 0.00036 U	0.028	< 0.00049 U	< 0.064 UJ	< 0.0003 U	< 0.00031 U	< 0.00026 U
STC1-JD04	0	NORM	6/4/2010	< 0.00034 U	< 0.00024 U	< 0.00026 U	< 0.0003 U	< 0.00061 U	< 0.00035 U	0.05	< 0.00049 U	< 0.063 UJ	< 0.0003 U	< 0.00031 U	< 0.00025 U
STC1-JD04	10	NORM	6/4/2010	< 0.00037 U	< 0.00026 U	< 0.00028 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	0.053	< 0.00053 U	< 0.068 UJ	< 0.00032 U	< 0.00034 U	< 0.00027 U
STC1-JD05	0	NORM	6/4/2010	< 0.00034 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.045	< 0.0005 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-JD05	10	NORM	6/4/2010	< 0.00036 U	< 0.00026 U	< 0.00028 U	< 0.00032 U	< 0.00065 U	< 0.00038 U	0.051	< 0.00052 U	< 0.067 UJ	< 0.00032 U	< 0.00033 U	< 0.00027 U
STC1-JD06	0	NORM	6/3/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	< 0.0085 U	< 0.0005 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-JD06	10	NORM	6/3/2010	< 0.00036 U	< 0.00025 U	< 0.00028 U	< 0.00032 U	< 0.00065 U	< 0.00037 U	< 0.0039 U	< 0.00052 U	< 0.067 UJ	< 0.00032 U	< 0.00033 U	< 0.00027 U
STC1-JD07	0	NORM	6/7/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	< 0.0035 U	< 0.00051 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-JD07	4	NORM	6/7/2010	< 0.00036 U	< 0.00026 U	< 0.00028 U	< 0.00032 U	< 0.00065 U	< 0.00038 U	< 0.0045 U	< 0.00052 U	< 0.067 UJ	< 0.00032 U	< 0.00033 U	< 0.00027 U
STC1-JD07	14	NORM	6/7/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	0.0064	< 0.00053 U	< 0.069 UJ	< 0.00032 U	< 0.00034 U	< 0.00028 U

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Volatile Organic Compounds (VOCs)											
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cymene (Isopropy-ltoluene)	Dibromochloromethane	Dibromochloropropane	Dibromomethane	Dichloromethane (Methylene chloride)	Dimethyldisulfide	Ethanol	Ethylbenzene	Freon-11 (Trichlorofluoromethane)	Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)
STC1-JD08	0	NORM	5/20/2010	< 0.00036 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	< 0.0025 U	< 0.00052 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00027 U
STC1-JD08	0	FD	5/20/2010	< 0.00035 U	< 0.00025 U	< 0.00027 UJ	< 0.00031 UJ	< 0.00063 UJ	< 0.00037 U	< 0.0096 U	< 0.00051 UJ	< 0.065 UJ	< 0.00031 UJ	< 0.00032 U	< 0.00026 U
STC1-JD08	10	NORM	5/20/2010	< 0.00036 U	< 0.00026 U	< 0.00028 UJ	< 0.00032 UJ	< 0.00065 UJ	< 0.00038 U	< 0.0097 U	< 0.00052 UJ	< 0.067 UJ	< 0.00032 UJ	< 0.00033 U	< 0.00027 U
STC1-JD09	0	NORM	5/20/2010	< 0.00038 U	< 0.00027 U	< 0.0003 UJ	< 0.00034 UJ	< 0.00069 UJ	< 0.0004 U	< 0.01 U	< 0.00055 UJ	< 0.072 UJ	< 0.00034 UJ	< 0.00035 U	< 0.00029 U
STC1-JD09	10	NORM	5/20/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	< 0.0025 U	< 0.00051 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-JD10	0	NORM	5/21/2010	< 0.00039 U	< 0.00028 U	< 0.00031 UJ	< 0.00034 UJ	< 0.0007 UJ	< 0.00041 U	0.0034 J	< 0.00057 UJ	< 0.073 UJ	< 0.00034 UJ	< 0.00036 U	< 0.00029 U
STC1-JD10	10	NORM	5/21/2010	< 0.00039 U	< 0.00027 U	< 0.0003 UJ	< 0.00034 U	< 0.00069 UJ	< 0.0004 U	< 0.0027 U	< 0.00056 U	< 0.072 UJ	< 0.00034 U	< 0.00036 U	< 0.00029 U
STC1-JD11	0	NORM	5/21/2010	< 0.00036 U	< 0.00025 U	< 0.00028 UJ	< 0.00031 U	< 0.00064 UJ	< 0.00037 U	< 0.0025 U	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00026 U
STC1-JD11	10	NORM	5/21/2010	< 0.00038 U	< 0.00027 U	< 0.0003 U	< 0.00034 U	< 0.00069 U	< 0.0004 U	0.017	< 0.00055 U	< 0.071 UJ	< 0.00034 U	< 0.00035 U	< 0.00029 U
STC1-JD12	0	NORM	5/21/2010	< 0.00034 U	< 0.00024 U	< 0.00027 UJ	< 0.0003 UJ	< 0.00061 UJ	< 0.00035 U	< 0.0024 U	< 0.00049 UJ	< 0.063 UJ	< 0.0003 UJ	< 0.00031 U	< 0.00025 U
STC1-JD12	0	FD	5/21/2010	< 0.00037 U	< 0.00026 U	< 0.00029 UJ	< 0.00032 UJ	< 0.00066 UJ	< 0.00038 U	< 0.0026 U	< 0.00053 UJ	< 0.068 UJ	< 0.00032 UJ	< 0.00034 U	< 0.00027 U
STC1-JD12	10	NORM	5/21/2010	< 0.00035 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	0.017	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00026 U
STC1-JD13	0	NORM	5/21/2010	< 0.00034 UJ	< 0.00024 UJ	< 0.00026 UJ	< 0.0003 UJ	< 0.00061 UJ	< 0.00035 UJ	0.0064 J-	< 0.00049 UJ	< 0.063 UJ	< 0.0003 UJ	< 0.00031 UJ	< 0.00025 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00037 UJ	< 0.00026 UJ	< 0.00029 UJ	< 0.00033 UJ	< 0.00067 UJ	< 0.00039 UJ	0.009 J-	< 0.00054 UJ	< 0.069 UJ	< 0.00033 UJ	< 0.00034 UJ	< 0.00028 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00042 U	< 0.0003 U	< 0.00033 U	< 0.00037 U	< 0.00075 U	< 0.00044 U	0.013	< 0.00061 U	< 0.078 UJ	< 0.00037 U	< 0.00039 U	< 0.00031 U
STC1-JD14	0	FD	6/1/2010	< 0.00034 U	< 0.00024 U	< 0.00027 U	< 0.0003 U	< 0.00062 U	< 0.00036 U	0.01	< 0.0005 U	< 0.064 UJ	< 0.0003 U	< 0.00032 U	< 0.00026 U
STC1-JD14	10	NORM	6/1/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	0.01	< 0.0005 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-JD15	0	NORM	6/1/2010	< 0.00036 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	0.0097	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00027 U
STC1-JD15	6	NORM	6/1/2010	< 0.00035 U	< 0.00025 U	< 0.00027 U	< 0.00031 U	< 0.00063 U	< 0.00036 U	0.01	< 0.00051 U	< 0.065 UJ	< 0.00031 U	< 0.00032 U	< 0.00026 U
STC1-JD15	16	NORM	6/1/2010	< 0.00035 U	< 0.00025 U	< 0.00028 U	< 0.00031 U	< 0.00064 U	< 0.00037 U	0.01	< 0.00051 U	< 0.066 UJ	< 0.00031 U	< 0.00033 U	< 0.00026 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	0.0082	< 0.00053 U	< 0.069 UJ	< 0.00032 U	< 0.00034 U	< 0.00028 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00038 U	< 0.00027 U	< 0.0003 U	< 0.00034 U	< 0.00069 U	< 0.0004 U	0.0094	< 0.00055 U	< 0.071 UJ	< 0.00034 U	< 0.00035 U	< 0.00029 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00037 U	< 0.00026 U	< 0.00029 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	0.0089	< 0.00053 U	< 0.068 UJ	< 0.00032 U	< 0.00034 U	< 0.00027 U
TMC1-JD02	0	FD	3/30/2010	< 0.00036 U	< 0.00025 U	< 0.00028 UJ	< 0.00031 U	< 0.00064 UJ	< 0.00037 U	0.0082	< 0.00052 U	< 0.067 UJ	< 0.00031 U	< 0.00033 U	< 0.00027 U
TMC1-JD02	10	NORM	4/5/2010	< 0.00037 U	< 0.00026 U	< 0.00028 U	< 0.00032 U	< 0.00066 U	< 0.00038 U	0.0092	< 0.00053 U	< 0.068 UJ	< 0.00032 U	< 0.00034 U	< 0.00027 U

All units in mg/kg.
-- = no sample data.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)										
				Freon-12 (Dichloro-difluoromethane)	Heptane	Isopropylbenzene	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide	MTBE (Methyl tert-butyl ether)	n-Butylbenzene	Nonanal	n-Propylbenzene	o-Xylene
STC1-AI15	0	NORM	6/4/2010	< 0.00026 U	< 0.00038 U	< 0.00029 U	< 0.00047 U	< 0.00059 U	< 0.0004 U	< 0.00048 U	< 0.0003 U	< 0.00037 U	< 0.00028 U	< 0.00024 U
STC1-AI15	0	FD	6/4/2010	< 0.00026 U	< 0.00039 U	< 0.00029 U	< 0.00047 U	< 0.00059 U	< 0.0004 U	< 0.00048 U	< 0.0003 U	< 0.00037 U	< 0.00028 U	< 0.00024 U
STC1-AI15	10	NORM	6/4/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00047 U	< 0.0006 U	< 0.0004 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00028 U	< 0.00024 U
STC1-AI16	0	NORM	6/7/2010	< 0.00026 U	< 0.0004 U	< 0.0003 U	< 0.00048 U	< 0.00061 U	< 0.00041 U	< 0.0005 U	< 0.00031 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-AI16	10	NORM	6/7/2010	< 0.00028 U	< 0.00043 U	< 0.00032 U	< 0.00052 U	< 0.00065 U	< 0.00044 U	< 0.00053 U	< 0.00034 U	< 0.00041 U	< 0.00031 U	< 0.00027 U
STC1-AJ15	0	NORM	6/7/2010	< 0.00026 UJ	< 0.00039 UJ	< 0.0003 UJ	< 0.00047 UJ	< 0.0006 UJ	< 0.00041 UJ	< 0.00049 UJ	< 0.00031 UJ	< 0.0017 UJ	< 0.00029 UJ	< 0.00025 UJ
STC1-AJ15	0	FD	6/7/2010	< 0.00028 U	< 0.00042 U	< 0.00032 U	< 0.00051 U	< 0.00065 U	< 0.00044 U	< 0.00053 U	< 0.00033 U	< 0.00041 U	< 0.00031 U	< 0.00027 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00028 U	< 0.00042 U	< 0.00032 U	< 0.00051 U	< 0.00064 U	< 0.00043 U	< 0.00052 U	< 0.00033 U	< 0.00041 U	< 0.00031 U	< 0.00026 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00026 U	< 0.0004 U	< 0.0003 U	< 0.00048 U	< 0.00061 U	< 0.00041 U	< 0.0005 U	< 0.00031 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00029 U	< 0.00043 U	< 0.00033 U	< 0.00053 U	< 0.00066 U	< 0.00045 U	< 0.00054 U	< 0.00034 U	< 0.00042 U	< 0.00032 U	< 0.00027 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00026 U	< 0.0004 U	< 0.0003 U	< 0.00048 U	< 0.00061 U	< 0.00041 U	< 0.0005 U	< 0.00031 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-AK15	0	NORM	6/3/2010	< 0.00028 U	< 0.00042 U	< 0.00032 U	< 0.00051 U	< 0.00065 U	< 0.00044 U	< 0.00052 U	< 0.00033 U	< 0.00041 U	< 0.00031 U	< 0.00026 U
STC1-AK15	0	FD	6/3/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00047 U	< 0.0006 U	< 0.0004 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-AK15	3	NORM	6/3/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00047 U	< 0.0006 U	< 0.0004 U	< 0.00048 U	< 0.00031 U	< 0.00038 U	< 0.00028 U	< 0.00024 U
STC1-AK15	13	NORM	6/3/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.0005 U	< 0.00063 U	< 0.00043 U	< 0.00051 U	< 0.00033 U	< 0.0004 U	< 0.0003 U	< 0.00026 U
STC1-AK20	0	NORM	5/27/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-AK20	0	FD	5/27/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.0005 U	< 0.00063 U	< 0.00043 U	< 0.00051 U	< 0.00033 U	< 0.0004 U	< 0.0003 U	< 0.00026 U
STC1-AK20	6	NORM	5/27/2010	< 0.00027 U	< 0.0004 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.0005 U	< 0.00032 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-AK20	16	NORM	5/27/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00047 U	< 0.0006 U	< 0.0004 U	< 0.00048 U	< 0.00031 U	< 0.00038 U	< 0.00028 U	< 0.00024 U
STC1-JB12	0	NORM	8/30/2010	< 0.0014 U	< 0.0004 U	< 0.00028 U	< 0.00061 U	< 0.0016 U	< 0.0016 U	< 0.00051 U	< 0.00065 U	< 0.00077 U	< 0.00034 U	< 0.00036 U
STC1-JB12	10	NORM	8/30/2010	< 0.0014 U	< 0.00041 U	< 0.00028 U	< 0.00062 U	< 0.0016 U	< 0.0017 U	< 0.00052 U	< 0.00066 U	0.0067 J	< 0.00035 U	< 0.00037 U
STC1-JD02	0	NORM	6/4/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-JD02	10	NORM	6/4/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.00051 U	< 0.00032 U	< 0.00039 U	< 0.0003 U	< 0.00025 U
STC1-JD03	0	NORM	6/4/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00047 U	< 0.0006 U	< 0.0004 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00028 U	< 0.00024 U
STC1-JD03	10	NORM	6/4/2010	< 0.00026 U	< 0.00038 U	< 0.00029 U	< 0.00047 U	< 0.00059 U	< 0.0004 U	< 0.00048 U	< 0.0003 U	< 0.00037 U	< 0.00028 U	< 0.00024 U
STC1-JD04	0	NORM	6/4/2010	< 0.00025 U	< 0.00038 U	< 0.00029 U	< 0.00046 U	< 0.00058 U	< 0.00039 U	< 0.00047 U	< 0.0003 U	< 0.00037 U	< 0.00028 U	< 0.00024 U
STC1-JD04	10	NORM	6/4/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.0005 U	< 0.00063 U	< 0.00042 U	< 0.00051 U	< 0.00032 U	< 0.0004 U	< 0.0003 U	< 0.00026 U
STC1-JD05	0	NORM	6/4/2010	< 0.00026 U	< 0.00039 U	< 0.00029 U	< 0.00047 U	< 0.00059 U	< 0.0004 U	< 0.00048 U	< 0.0003 U	< 0.00037 U	< 0.00028 U	< 0.00024 U
STC1-JD05	10	NORM	6/4/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.00051 U	< 0.00032 U	< 0.00039 U	< 0.0003 U	< 0.00026 U
STC1-JD06	0	NORM	6/3/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-JD06	10	NORM	6/3/2010	< 0.00027 U	< 0.0004 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.0005 U	< 0.00032 U	< 0.00039 U	< 0.0003 U	< 0.00025 U
STC1-JD07	0	NORM	6/7/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-JD07	4	NORM	6/7/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.00051 U	< 0.00032 U	< 0.0013 U	< 0.0003 U	< 0.00026 U
STC1-JD07	14	NORM	6/7/2010	< 0.00028 U	< 0.00042 U	< 0.00032 U	< 0.0005 U	< 0.00064 U	< 0.00043 U	< 0.00052 U	< 0.00033 U	< 0.0021 U	< 0.0003 U	< 0.00026 U

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Volatile Organic Compounds (VOCs)										
Sample ID	**Depth (ft bgs)**	**Sample Type**	**Sample Date**	Freon-12 (Dichloro-difluoromethane)	Heptane	Isopropylbenzene	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide	MTBE (Methyl tert-butyl ether)	n-Butylbenzene	Nonanal	n-Propylbenzene	o-Xylene
STC1-JD08	0	NORM	5/20/2010	< 0.00027 U	< 0.0004 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.0005 U	< 0.00032 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-JD08	0	FD	5/20/2010	< 0.00026 U	< 0.00039 U	< 0.0003 UJ	< 0.00048 UJ	< 0.00061 U	< 0.00041 U	< 0.00049 U	< 0.00031 UJ	< 0.00038 UJ	< 0.00029 UJ	< 0.00025 UJ
STC1-JD08	10	NORM	5/20/2010	< 0.00027 U	< 0.00041 U	< 0.00031 UJ	< 0.00049 UJ	< 0.00062 U	< 0.00042 U	< 0.00051 U	< 0.00032 UJ	< 0.0004 UJ	< 0.0003 UJ	< 0.00026 UJ
STC1-JD09	0	NORM	5/20/2010	< 0.00029 U	< 0.00043 U	< 0.00033 UJ	< 0.00052 UJ	< 0.00066 U	< 0.00045 U	< 0.00054 U	< 0.00034 UJ	< 0.00042 UJ	< 0.00032 UJ	< 0.00027 UJ
STC1-JD09	10	NORM	5/20/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-JD10	0	NORM	5/21/2010	< 0.00029 U	< 0.00044 U	< 0.00034 UJ	< 0.00054 UJ	< 0.00068 U	< 0.00046 U	< 0.00055 U	< 0.00035 UJ	< 0.00043 UJ	< 0.00032 UJ	< 0.00028 UJ
STC1-JD10	10	NORM	5/21/2010	< 0.00029 U	< 0.00043 U	< 0.00033 U	< 0.00053 U	< 0.00067 U	< 0.00045 U	< 0.00054 U	< 0.00034 UJ	< 0.00042 UJ	< 0.00032 UJ	< 0.00027 U
STC1-JD11	0	NORM	5/21/2010	< 0.00026 U	< 0.0004 U	< 0.0003 U	< 0.00048 U	< 0.00061 U	< 0.00041 U	< 0.0005 U	< 0.00031 UJ	< 0.00039 UJ	< 0.00029 UJ	< 0.00025 U
STC1-JD11	10	NORM	5/21/2010	< 0.00029 U	< 0.00043 U	< 0.00033 U	< 0.00052 U	< 0.00066 U	< 0.00045 U	< 0.00054 U	< 0.00034 U	< 0.00042 U	< 0.00031 U	< 0.00027 U
STC1-JD12	0	NORM	5/21/2010	< 0.00025 U	< 0.00038 U	< 0.00029 UJ	< 0.00046 UJ	< 0.00059 U	< 0.0004 U	< 0.00048 U	< 0.0003 UJ	< 0.00037 UJ	< 0.00028 UJ	< 0.00024 UJ
STC1-JD12	0	FD	5/21/2010	< 0.00027 U	< 0.00041 U	< 0.00031 UJ	< 0.0005 UJ	< 0.00063 U	< 0.00043 U	< 0.00051 U	< 0.00032 UJ	< 0.0004 UJ	< 0.0003 UJ	< 0.00026 UJ
STC1-JD12	10	NORM	5/21/2010	< 0.00026 U	< 0.0004 U	< 0.0003 U	< 0.00048 U	< 0.00061 U	< 0.00041 U	< 0.0005 U	< 0.00031 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-JD13	0	NORM	5/21/2010	< 0.00025 UJ	< 0.00038 UJ	< 0.00029 UJ	< 0.00046 UJ	< 0.00059 UJ	< 0.0004 UJ	< 0.00048 UJ	< 0.0003 UJ	< 0.00037 UJ	< 0.00028 UJ	< 0.00024 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00028 UJ	< 0.00042 UJ	< 0.00032 UJ	< 0.00051 UJ	< 0.00064 UJ	< 0.00043 UJ	< 0.00052 UJ	< 0.00033 UJ	< 0.00041 UJ	< 0.00031 UJ	< 0.00026 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00031 U	< 0.00047 U	< 0.00036 U	< 0.00057 U	< 0.00072 U	< 0.00049 U	< 0.00059 U	< 0.00037 U	< 0.00046 U	< 0.00035 U	< 0.0003 U
STC1-JD14	0	FD	6/1/2010	< 0.00026 U	< 0.00039 U	< 0.00029 U	< 0.00047 U	< 0.00059 U	< 0.0004 U	< 0.00048 U	< 0.0003 U	< 0.00038 U	< 0.00028 U	< 0.00024 U
STC1-JD14	10	NORM	6/1/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-JD15	0	NORM	6/1/2010	< 0.00027 U	< 0.0004 U	< 0.0003 U	< 0.00049 U	< 0.00061 U	< 0.00042 U	< 0.0005 U	< 0.00032 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
STC1-JD15	6	NORM	6/1/2010	< 0.00026 U	< 0.00039 U	< 0.0003 U	< 0.00048 U	< 0.0006 U	< 0.00041 U	< 0.00049 U	< 0.00031 U	< 0.00038 U	< 0.00029 U	< 0.00025 U
STC1-JD15	16	NORM	6/1/2010	< 0.00026 U	< 0.0004 U	< 0.0003 U	< 0.00048 U	< 0.00061 U	< 0.00041 U	< 0.0005 U	< 0.00031 U	< 0.00039 U	< 0.00029 U	< 0.00025 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00028 U	< 0.00042 U	< 0.00032 U	< 0.0005 U	< 0.00064 U	< 0.00043 U	< 0.00052 U	< 0.00033 U	< 0.0004 U	< 0.0003 U	< 0.00026 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00029 U	< 0.00043 U	< 0.00033 U	< 0.00052 U	< 0.00066 U	< 0.00045 U	< 0.00054 U	< 0.00034 U	< 0.00042 U	< 0.00032 U	< 0.00027 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.0005 U	< 0.00063 U	< 0.00043 U	< 0.00051 U	< 0.00033 U	< 0.0004 U	< 0.0003 U	< 0.00026 U
TMC1-JD02	0	FD	3/30/2010	< 0.00027 U	< 0.0004 U	< 0.00031 U	< 0.00049 U	< 0.00062 U	< 0.00042 U	< 0.0005 U	< 0.00032 UJ	< 0.00039 UJ	< 0.00029 UJ	< 0.00025 U
TMC1-JD02	10	NORM	4/5/2010	< 0.00027 U	< 0.00041 U	< 0.00031 U	< 0.0005 U	< 0.00063 U	< 0.00043 U	< 0.00051 U	< 0.00032 U	< 0.0004 U	< 0.0003 U	< 0.00026 U

All units in mg/kg.
-- = no sample data.

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Depth (ft bgs)	Sample Type	Sample Date	Volatile Organic Compounds (VOCs)										
				sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloro-propene	Trichloroethene	Vinyl acetate	Vinyl chloride	Xylenes (total)
STC1-AI15	0	NORM	6/4/2010	< 0.00033 U	< 0.00021 U	< 0.00023 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.00039 U	< 0.00033 U	< 0.00066 U
STC1-AI15	0	FD	6/4/2010	< 0.00033 U	< 0.00021 U	< 0.00023 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.00039 U	< 0.00033 U	< 0.00066 U
STC1-AI15	10	NORM	6/4/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-AI16	0	NORM	6/7/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00034 U	< 0.00068 U
STC1-AI16	10	NORM	6/7/2010	< 0.00037 U	< 0.00024 U	< 0.00026 U	< 0.00053 U	< 0.00027 U	< 0.00039 U	< 0.0002 U	< 0.0003 U	< 0.00044 U	< 0.00037 U	< 0.00073 U
STC1-AJ15	0	NORM	6/7/2010	< 0.00034 UJ	< 0.00022 UJ	< 0.00024 UJ	< 0.00049 UJ	< 0.00025 UJ	< 0.00036 UJ	< 0.00019 UJ	< 0.00028 UJ	< 0.0004 UJ	< 0.00034 UJ	< 0.00067 UJ
STC1-AJ15	0	FD	6/7/2010	< 0.00037 U	< 0.00024 U	< 0.00026 U	< 0.00053 U	< 0.00027 U	< 0.00039 U	< 0.0002 U	< 0.0003 U	< 0.00043 U	< 0.00037 U	< 0.00073 U
STC1-AJ15	10	NORM	6/7/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00052 U	< 0.00027 U	< 0.00038 U	< 0.0002 U	< 0.0003 U	< 0.00043 U	< 0.00036 U	< 0.00072 U
STC1-AJ16	0	NORM	6/7/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00068 U
STC1-AJ16	10	NORM	6/7/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00035 U	< 0.00068 U
STC1-AJ18	0	NORM	5/24/2010	< 0.00038 U	< 0.00024 U	< 0.00026 U	< 0.00054 U	< 0.00028 U	< 0.00039 U	< 0.00021 U	< 0.00031 U	< 0.00044 U	< 0.00037 U	< 0.00074 U
STC1-AJ18	12	NORM	5/24/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00034 U	< 0.00068 U
STC1-AK15	0	NORM	6/3/2010	< 0.00037 U	< 0.00023 U	< 0.00025 U	< 0.00052 U	< 0.00027 U	< 0.00038 U	< 0.0002 U	< 0.0003 U	< 0.00043 U	< 0.00036 U	< 0.00072 U
STC1-AK15	0	FD	6/3/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-AK15	3	NORM	6/3/2010	< 0.00034 U	< 0.00022 U	< 0.00023 U	< 0.00048 U	< 0.00031 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-AK15	13	NORM	6/3/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00051 U	< 0.00029 U	< 0.00038 U	< 0.0002 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.00071 U
STC1-AK20	0	NORM	5/27/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-AK20	0	FD	5/27/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00051 U	< 0.00027 U	< 0.00038 U	< 0.0002 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.00071 U
STC1-AK20	6	NORM	5/27/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00035 U	< 0.00069 U
STC1-AK20	16	NORM	5/27/2010	< 0.00034 U	< 0.00022 U	< 0.00023 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-JB12	0	NORM	8/30/2010	< 0.00033 U	< 0.00037 U	< 0.00033 U	< 0.0003 U	< 0.00065 U	< 0.00055 U	< 0.00038 U	< 0.00041 U	< 0.00084 U	< 0.00046 U	< 0.00092 U
STC1-JB12	10	NORM	8/30/2010	< 0.00034 U	< 0.00038 U	< 0.00034 U	< 0.00031 U	< 0.00066 U	< 0.00056 U	< 0.00038 U	< 0.00042 U	< 0.00086 U	< 0.00047 U	< 0.00094 U
STC1-JD02	0	NORM	6/4/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00068 U
STC1-JD02	10	NORM	6/4/2010	< 0.00035 U	< 0.00023 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00029 U	< 0.00041 U	< 0.00035 U	< 0.0007 U
STC1-JD03	0	NORM	6/4/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-JD03	10	NORM	6/4/2010	< 0.00033 U	< 0.00021 U	< 0.00023 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.00039 U	< 0.00033 U	< 0.00066 U
STC1-JD04	0	NORM	6/4/2010	< 0.00033 U	< 0.00021 U	< 0.00023 U	< 0.00047 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.00039 U	< 0.00033 U	< 0.00065 U
STC1-JD04	10	NORM	6/4/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00051 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.0007 U
STC1-JD05	0	NORM	6/4/2010	< 0.00033 U	< 0.00021 U	< 0.00023 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.00039 U	< 0.00033 U	< 0.00066 U
STC1-JD05	10	NORM	6/4/2010	< 0.00035 U	< 0.00023 U	< 0.00025 U	< 0.0005 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00029 U	< 0.00041 U	< 0.00035 U	< 0.0007 U
STC1-JD06	0	NORM	6/3/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00027 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-JD06	10	NORM	6/3/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00029 U	< 0.00041 U	< 0.00035 U	< 0.00069 U
STC1-JD07	0	NORM	6/7/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00068 U
STC1-JD07	4	NORM	6/7/2010	< 0.00035 U	< 0.00023 U	< 0.00025 U	< 0.00051 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00029 U	< 0.00042 U	< 0.00035 U	< 0.0007 U
STC1-JD07	14	NORM	6/7/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00052 U	< 0.00027 U	< 0.00038 U	< 0.0002 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.00071 U

TABLE B-10
SOIL VOLATILE ORGANIC COMPOUNDS (VOCS) DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

				Volatile Organic Compounds (VOCs)										
Sample ID	Depth (ft bgs)	Sample Type	Sample Date	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloro-propene	Trichloroethene	Vinyl acetate	Vinyl chloride	Xylenes (total)
STC1-JD08	0	NORM	5/20/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00035 U	< 0.00069 U
STC1-JD08	0	FD	5/20/2010	< 0.00034 UJ	< 0.00022 UJ	< 0.00024 UJ	< 0.00049 UJ	< 0.00025 UJ	< 0.00036 U	< 0.00019 UJ	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00068 UJ
STC1-JD08	10	NORM	5/20/2010	< 0.00035 UJ	< 0.00023 UJ	< 0.00025 UJ	< 0.00051 UJ	< 0.00026 UJ	< 0.00037 U	< 0.00019 UJ	< 0.00029 U	< 0.00042 U	< 0.00035 U	< 0.0007 UJ
STC1-JD09	0	NORM	5/20/2010	< 0.00038 UJ	< 0.00024 UJ	< 0.00026 UJ	< 0.00054 UJ	< 0.00028 UJ	< 0.00039 U	< 0.00021 UJ	< 0.00031 U	< 0.00044 U	< 0.00037 U	< 0.00074 UJ
STC1-JD09	10	NORM	5/20/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00068 U
STC1-JD10	0	NORM	5/21/2010	< 0.00038 UJ	< 0.00024 UJ	< 0.00027 UJ	< 0.00055 UJ	< 0.00028 UJ	< 0.0004 U	< 0.00021 UJ	< 0.00031 U	< 0.00045 U	< 0.00038 U	< 0.00076 UJ
STC1-JD10	10	NORM	5/21/2010	< 0.00038 UJ	< 0.00024 U	< 0.00026 UJ	< 0.00054 U	< 0.00028 U	< 0.00039 U	< 0.00021 U	< 0.00031 U	< 0.00044 U	< 0.00038 U	< 0.00075 U
STC1-JD11	0	NORM	5/21/2010	< 0.00035 UJ	< 0.00022 U	< 0.00024 UJ	< 0.0005 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00035 U	< 0.00068 U
STC1-JD11	10	NORM	5/21/2010	< 0.00037 U	< 0.00024 U	< 0.00026 U	< 0.00054 U	< 0.00028 U	< 0.00039 U	< 0.0002 U	< 0.0003 U	< 0.00044 U	< 0.00037 U	< 0.00074 U
STC1-JD12	0	NORM	5/21/2010	< 0.00033 UJ	< 0.00021 UJ	< 0.00023 UJ	< 0.00048 UJ	< 0.00025 UJ	< 0.00035 U	< 0.00018 UJ	< 0.00027 U	< 0.00039 U	< 0.00033 U	< 0.00066 UJ
STC1-JD12	0	FD	5/21/2010	< 0.00036 UJ	< 0.00023 UJ	< 0.00025 UJ	< 0.00051 UJ	< 0.00027 UJ	< 0.00037 U	< 0.0002 UJ	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.00071 UJ
STC1-JD12	10	NORM	5/21/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00034 U	< 0.00068 U
STC1-JD13	0	NORM	5/21/2010	< 0.00033 UJ	< 0.00021 UJ	< 0.00023 UJ	< 0.00047 UJ	< 0.00025 UJ	< 0.00035 UJ	< 0.00018 UJ	< 0.00027 UJ	< 0.00039 UJ	< 0.00033 UJ	< 0.00065 UJ
STC1-JD13	10	NORM	5/21/2010	< 0.00036 UJ	< 0.00023 UJ	< 0.00025 UJ	< 0.00052 UJ	< 0.00027 UJ	< 0.00038 UJ	< 0.0002 UJ	< 0.0003 UJ	< 0.00043 UJ	< 0.00036 UJ	< 0.00072 UJ
STC1-JD14	0	NORM	6/1/2010	< 0.00041 U	< 0.00026 U	< 0.00029 U	< 0.00059 U	< 0.0003 U	< 0.00043 U	< 0.00022 U	< 0.00033 U	< 0.00048 U	< 0.00041 U	< 0.00081 U
STC1-JD14	0	FD	6/1/2010	< 0.00034 U	< 0.00021 U	< 0.00023 U	< 0.00048 U	< 0.00025 U	< 0.00035 U	< 0.00018 U	< 0.00027 U	< 0.0004 U	< 0.00033 U	< 0.00066 U
STC1-JD14	10	NORM	6/1/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-JD15	0	NORM	6/1/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.0005 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00035 U	< 0.00069 U
STC1-JD15	6	NORM	6/1/2010	< 0.00034 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00025 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.0004 U	< 0.00034 U	< 0.00067 U
STC1-JD15	16	NORM	6/1/2010	< 0.00035 U	< 0.00022 U	< 0.00024 U	< 0.00049 U	< 0.00026 U	< 0.00036 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00034 U	< 0.00068 U
TMC1-JD01	0	NORM	3/30/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00052 U	< 0.00027 U	< 0.00038 U	< 0.0002 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.00071 U
TMC1-JD01	11	NORM	4/5/2010	< 0.00037 U	< 0.00024 U	< 0.00026 U	< 0.00054 U	< 0.00028 U	< 0.00039 U	< 0.0002 U	< 0.0003 U	< 0.00044 U	< 0.00037 U	< 0.00074 U
TMC1-JD02	0	NORM	3/30/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00051 U	< 0.00027 U	< 0.00038 U	< 0.0002 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.00071 U
TMC1-JD02	0	FD	3/30/2010	< 0.00035 UJ	< 0.00022 U	< 0.00024 UJ	< 0.0005 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00028 U	< 0.00041 U	< 0.00035 U	< 0.00069 U
TMC1-JD02	10	NORM	4/5/2010	< 0.00036 U	< 0.00023 U	< 0.00025 U	< 0.00051 U	< 0.00026 U	< 0.00037 U	< 0.00019 U	< 0.00029 U	< 0.00042 U	< 0.00036 U	< 0.0007 U

All units in mg/kg.

-- = no sample data.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 1 of 8)

Sample ID	Sample Type	Sample Date	Surface Flux								
			1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene
STC1-AJ16	NORM	7/26/2010	< 0.0112 U	< 0.0238 U	< 0.00296 UJ	< 0.0238 U	< 0.0173 U	< 0.0169 U	< 0.0115 U	< 0.0115 UJ	< 0.13 UJ
STC1-AJ16R	FD	7/26/2010	< 0.0112 U	< 0.0238 U	< 0.00415 UJ	< 0.0238 U	< 0.0173 U	< 0.0169 U	< 0.0115 U	< 0.0115 UJ	< 0.13 UJ
STC1-JD03	NORM	7/26/2010	< 0.0104 U	< 0.0219 U	< 0.00277 UJ	< 0.0219 U	< 0.0162 U	< 0.0158 U	< 0.0108 U	< 0.0108 UJ	< 0.12 UJ
STC1-JD05	NORM	7/26/2010	< 0.0108 U	< 0.0227 U	< 0.01 UJ	< 0.0227 U	< 0.0165 U	< 0.0165 U	< 0.0112 U	< 0.0112 UJ	< 0.125 UJ
STC1-JD06	NORM	7/26/2010	< 0.0108 U	< 0.0227 U	< 0.01 UJ	< 0.0227 U	< 0.0165 U	< 0.0165 U	< 0.0112 U	< 0.0112 UJ	< 0.125 UJ
STC1-JD07	NORM	7/26/2010	< 0.0104 U	< 0.0223 U	< 0.00981 UJ	< 0.0223 U	< 0.0165 U	< 0.0162 U	< 0.0112 U	< 0.0108 UJ	< 0.122 UJ
STC1-JD12	NORM	7/27/2010	< 0.0108 U	< 0.0227 U	< 0.00285 UJ	< 0.0227 U	< 0.0165 UJ	< 0.0162 UJ	< 0.0112 U	< 0.0112 U	< 0.124 U
STC1-JD14A	NORM	7/27/2010	< 0.0785 U	< 0.167 U	< 0.00277 UJ	< 0.167 U	< 0.123 U	< 0.12 U	< 0.0823 U	< 0.0819 U	< 0.917 UJ
STC1-JD14B	NORM	7/27/2010	--	--	< 0.00281 UJ	--	--	--	--	--	--
TMC1-JD02	NORM	7/13/2010	< 0.0108 U	< 0.0231 U	< 0.00292 UJ	< 0.0231 U	< 0.0169 U	< 0.0165 U	< 0.0115 U	< 0.0115 U	< 0.127 UJ

All units in $\mu g/m^2$, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Sample Type	Sample Date	Surface Flux								
			1,2,4-Trimethylbenzene	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	1,4-Dioxane
STC1-AJ16	NORM	7/26/2010	< 0.0854 UJ	< 0.102 UJ	< 0.00177 UJ	< 0.0204 U	< 0.0888 UJ	< 0.104 U	< 0.0119 U	< 0.00262 U	< 0.0288 U
STC1-AJ16R	FD	7/26/2010	< 0.0854 UJ	< 0.102 UJ	< 0.0025 UJ	< 0.0204 U	< 0.0888 UJ	< 0.104 U	< 0.0119 U	< 0.00365 U	< 0.0288 U
STC1-JD03	NORM	7/26/2010	< 0.0792 UJ	< 0.095 UJ	< 0.00165 UJ	< 0.0188 U	< 0.0823 UJ	< 0.0965 U	< 0.0112 U	< 0.00242 U	< 0.0265 U
STC1-JD05	NORM	7/26/2010	< 0.0819 UJ	< 0.0981 UJ	< 0.00596 UJ	< 0.0196 U	< 0.085 UJ	< 0.1 U	< 0.0115 U	< 0.00877 U	< 0.0277 U
STC1-JD06	NORM	7/26/2010	< 0.0819 UJ	< 0.0981 UJ	< 0.00596 UJ	< 0.0196 U	< 0.085 UJ	< 0.1 U	< 0.0115 U	< 0.00877 U	< 0.0277 U
STC1-JD07	NORM	7/26/2010	< 0.0804 UJ	< 0.0962 UJ	< 0.00585 UJ	< 0.0192 U	< 0.0835 UJ	< 0.0981 U	< 0.0112 U	< 0.00858 U	< 0.0269 U
STC1-JD12	NORM	7/27/2010	< 0.0815 UJ	< 0.0977 U	< 0.00169 U	< 0.0192 U	< 0.0846 UJ	< 0.0996 U	< 0.0112 U	< 0.0025 UJ	< 0.0273 UJ
STC1-JD14A	NORM	7/27/2010	< 0.602 U	< 0.721 UJ	0.00469 J	< 0.143 U	< 0.156 U	< 0.735 UJ	< 0.0838 U	< 0.00242 U	< 0.203 U
STC1-JD14B	NORM	7/27/2010	--	--	< 0.00165 U	--	--	--	--	< 0.00246 U	--
TMC1-JD02	NORM	7/13/2010	< 0.0835 U	< 0.1 U	< 0.00173 UJ	< 0.02 U	< 0.0215 U	< 0.102 U	< 0.0115 U	< 0.00254 U	< 0.0281 U

All units in μg/m^2, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Sample Type	Sample Date	Surface Flux								
			2,2-Dichloropropane	2-Hexanone	4-Methyl-2-pentanone (MIBK)	Acetone	Acetonitrile	Benzene	Bromodichloromethane	Bromoform	Bromomethane
STC1-AJ16	NORM	7/26/2010	< 0.0162 U	< 0.0115 U	< 0.0123 U	< 0.17 U	< 0.0146 U	< 0.0138 U	< 0.0104 U	< 0.0108 U	< 0.0173 U
STC1-AJ16R	FD	7/26/2010	< 0.0162 U	< 0.0115 U	< 0.0123 U	< 0.173 U	< 0.0146 U	< 0.0138 U	< 0.0104 U	< 0.0108 U	< 0.0173 U
STC1-JD03	NORM	7/26/2010	< 0.015 U	< 0.0104 U	< 0.0112 U	0.223	< 0.0135 U	< 0.0131 U	< 0.00962 U	< 0.01 U	< 0.0158 U
STC1-JD05	NORM	7/26/2010	< 0.0154 U	< 0.0108 U	< 0.0115 U	0.222	< 0.0138 U	< 0.0135 U	< 0.01 U	< 0.0104 U	< 0.0165 U
STC1-JD06	NORM	7/26/2010	< 0.0154 U	< 0.0108 U	< 0.0115 U	0.29	< 0.0138 U	< 0.0135 U	< 0.01 U	< 0.0104 U	< 0.0165 U
STC1-JD07	NORM	7/26/2010	< 0.015 U	< 0.0108 U	< 0.0115 U	0.346	< 0.0138 U	< 0.0131 U	< 0.01 U	< 0.0104 U	< 0.0162 U
STC1-JD12	NORM	7/27/2010	< 0.0154 UJ	< 0.0108 UJ	< 0.0115 U	0.506 J	< 0.0138 UJ	< 0.123 U	< 0.01 U	< 0.0104 U	< 0.0165 UJ
STC1-JD14A	NORM	7/27/2010	< 0.113 U	< 0.0804 U	< 0.0854 U	1.56	< 0.103 UJ	0.106 J	< 0.0742 U	< 0.0765 U	< 0.121 U
STC1-JD14B	NORM	7/27/2010	--	--	--	--	--	--	--	--	--
TMC1-JD02	NORM	7/13/2010	< 0.0158 U	< 0.0112 U	< 0.0119 U	0.386	< 0.0142 U	< 0.0188 U	< 0.0104 U	< 0.0108 U	< 0.0169 U

All units in μg/m^2, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Sample Type	Sample Date	Surface Flux							
			Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chlorobromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene
STC1-AJ16	NORM	7/26/2010	< 0.0112 U	0.0144	< 0.02 U	< 0.0112 U	< 0.0115 U	0.00485 J	< 0.0169 U	< 0.0173 U
STC1-AJ16R	FD	7/26/2010	< 0.0112 U	0.018 J	< 0.02 U	< 0.0112 U	< 0.0115 U	0.00615 J	< 0.0196 U	< 0.0173 U
STC1-JD03	NORM	7/26/2010	< 0.0104 U	0.00592 J	< 0.0185 U	< 0.0104 U	< 0.0108 U	0.00515 J	0.0492	< 0.0162 U
STC1-JD05	NORM	7/26/2010	< 0.0108 U	0.018 J	< 0.0192 U	< 0.0108 U	< 0.0112 U	< 0.00712 U	0.0365 J	< 0.0165 U
STC1-JD06	NORM	7/26/2010	< 0.0108 U	0.012 J	< 0.0192 U	< 0.0108 U	< 0.0112 U	< 0.00712 U	0.0219 J	< 0.0165 U
STC1-JD07	NORM	7/26/2010	< 0.0108 U	< 0.009 U	< 0.0188 U	< 0.0104 U	< 0.0112 U	0.0111 J	0.02 J	< 0.0162 U
STC1-JD12	NORM	7/27/2010	< 0.0108 UJ	0.00362 J	< 0.0192 U	< 0.0104 UJ	< 0.0112 UJ	0.00254 J	< 0.00846 UJ	< 0.0165 UJ
STC1-JD14A	NORM	7/27/2010	0.113 J	< 0.00496 U	< 0.141 U	< 0.0777 U	< 0.0823 U	0.00535 J	< 0.0631 U	< 0.122 U
STC1-JD14B	NORM	7/27/2010	--	< 0.00392 U	--	--	--	0.00438 J	--	--
TMC1-JD02	NORM	7/13/2010	< 0.0112 U	0.00588 J	< 0.0196 U	< 0.0108 U	< 0.0115 U	0.0035 J	0.0185 J	< 0.0169 U

All units in $\mu g/m^2$, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

			Surface Flux							
Sample ID	**Sample Type**	**Sample Date**	cis-1,3-Dichloropropene	Cymene (Isopropyltoluene)	Dibromochloromethane	Dibromochloropropane	Dibromomethane	Dichloromethane (Methylene chloride)	Ethanol	Ethylbenzene
STC1-AJ16	NORM	7/26/2010	< 0.0204 U	< 0.0596 U	< 0.00135 U	< 0.0124 UJ	< 0.0104 U	< 0.0154 U	< 0.11 UJ	< 0.0192 U
STC1-AJ16R	FD	7/26/2010	< 0.0204 U	< 0.0596 U	< 0.00188 U	< 0.0189 UJ	< 0.0104 U	< 0.0154 U	< 0.11 UJ	< 0.0192 U
STC1-JD03	NORM	7/26/2010	< 0.0188 U	< 0.0554 U	< 0.00123 U	< 0.0113 UJ	< 0.00962 U	< 0.0142 U	< 0.102 UJ	< 0.0177 U
STC1-JD05	NORM	7/26/2010	< 0.0196 U	< 0.0573 U	< 0.0045 U	0.0393 J	< 0.01 U	0.0169 J	0.967 J	< 0.0185 U
STC1-JD06	NORM	7/26/2010	< 0.0196 U	< 0.0573 U	< 0.0045 U	0.0409 J	< 0.01 U	< 0.0146 U	< 0.106 UJ	< 0.0185 U
STC1-JD07	NORM	7/26/2010	< 0.0192 U	< 0.0562 U	< 0.00442 U	0.0422 J	< 0.01 U	< 0.0146 U	< 0.104 UJ	< 0.0181 U
STC1-JD12	NORM	7/27/2010	< 0.0196 U	< 0.0569 U	< 0.00127 U	< 0.0345 UJ	< 0.01 U	< 0.0146 UJ	< 0.105 UJ	< 0.0185 U
STC1-JD14A	NORM	7/27/2010	< 0.144 U	< 0.105 U	< 0.00127 U	< 0.0119 UJ	< 0.0738 U	0.983	< 0.778 UJ	< 0.135 U
STC1-JD14B	NORM	7/27/2010	--	--	< 0.00127 U	< 0.0122 UJ	--	--	--	--
TMC1-JD02	NORM	7/13/2010	< 0.02 U	< 0.0146 U	< 0.00131 U	< 0.0158 UJ	< 0.0104 U	< 0.015 U	< 0.108 U	< 0.0188 U

All units in $\mu g/m^2$, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 6 of 8)

			Surface Flux							
Sample ID	**Sample Type**	**Sample Date**	Freon-11 (Trichlorofluoromethane)	Freon-113 (1,1,2-Trifluoro-1,2,2-trichloroethane)	Freon-12 (Dichloro-difluoromethane)	Heptane	Hexachlorobutadiene	Isopropylbenzene	Methyl ethyl ketone (2-Butanone)	Methyl iodide
STC1-AJ16	NORM	7/26/2010	< 0.025 U	< 0.0331 U	0.0358 J	< 0.00962 U	< 0.00469 UJ	< 0.0585 U	0.0131 J	< 0.00731 U
STC1-AJ16R	FD	7/26/2010	< 0.025 U	< 0.0331 U	0.0392 J	< 0.00962 U	< 0.00654 UJ	< 0.0585 U	< 0.0119 U	< 0.00731 U
STC1-JD03	NORM	7/26/2010	0.0369 J	< 0.0308 U	< 0.0204 U	< 0.00885 U	< 0.00435 UJ	< 0.0542 U	0.0188 J	< 0.00692 U
STC1-JD05	NORM	7/26/2010	0.0262 J	< 0.0319 U	0.0569 J	< 0.00923 U	< 0.0157 UJ	< 0.0562 U	0.0188 J	< 0.00731 U
STC1-JD06	NORM	7/26/2010	< 0.0238 U	< 0.0319 U	0.0262 J	< 0.00923 U	< 0.0157 UJ	< 0.0562 U	0.0323 J	< 0.00731 U
STC1-JD07	NORM	7/26/2010	< 0.0235 U	< 0.0312 U	< 0.0208 U	< 0.00923 U	< 0.0154 UJ	< 0.055 U	0.0492 J	< 0.00692 U
STC1-JD12	NORM	7/27/2010	< 0.0238 UJ	< 0.0315 UJ	< 0.0212 UJ	0.0108 J	< 0.00569 UJ	< 0.0558 U	0.0523 J	< 0.00692 UJ
STC1-JD14A	NORM	7/27/2010	< 0.175 U	< 0.234 U	< 0.156 U	0.132 J	< 0.00435 UJ	< 0.103 U	0.535	< 0.0527 U
STC1-JD14B	NORM	7/27/2010	--	--	--	--	< 0.00438 UJ	--	--	--
TMC1-JD02	NORM	7/13/2010	< 0.0242 U	< 0.0327 U	< 0.0215 U	< 0.00962 U	< 0.00458 UJ	0.0254 J	0.04 J	< 0.00731 U

All units in $\mu g/m^2$, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA
(Page 7 of 8)

Sample ID	Sample Type	Sample Date	Surface Flux							
			MTBE (Methyl tert-butyl ether)	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene
STC1-AJ16	NORM	7/26/2010	< 0.0104 U	< 0.0196 UJ	< 0.0562 UJ	< 0.0577 U	< 0.0188 U	< 0.0608 U	< 0.0188 U	< 0.0569 U
STC1-AJ16R	FD	7/26/2010	< 0.0104 U	< 0.0196 UJ	< 0.0562 UJ	< 0.0577 U	< 0.0188 U	< 0.0608 U	< 0.0188 U	< 0.0569 U
STC1-JD03	NORM	7/26/2010	< 0.00962 U	< 0.0181 UJ	< 0.0519 UJ	< 0.0535 U	< 0.0173 U	< 0.0562 U	< 0.0173 U	< 0.0527 U
STC1-JD05	NORM	7/26/2010	< 0.01 U	0.0477 J-	< 0.0538 UJ	< 0.0554 U	< 0.0181 U	< 0.0585 U	< 0.0181 U	< 0.0546 U
STC1-JD06	NORM	7/26/2010	< 0.01 U	< 0.0188 UJ	< 0.0538 UJ	< 0.0554 U	< 0.0181 U	< 0.0585 U	< 0.0181 U	< 0.0546 U
STC1-JD07	NORM	7/26/2010	< 0.00962 U	< 0.0185 UJ	< 0.0527 UJ	< 0.0542 U	< 0.0177 U	< 0.0569 U	< 0.0177 U	< 0.0535 U
STC1-JD12	NORM	7/27/2010	< 0.01 UJ	0.132	< 0.0535 U	< 0.055 U	< 0.0181 U	< 0.0581 U	< 0.0177 U	< 0.0542 U
STC1-JD14A	NORM	7/27/2010	< 0.0735 U	< 0.138 UJ	< 0.0988 U	< 0.102 U	< 0.133 U	< 0.107 U	< 0.132 U	< 0.1 U
STC1-JD14B	NORM	7/27/2010	--	--	--	--	--	--	--	--
TMC1-JD02	NORM	7/13/2010	< 0.0104 U	< 0.0192 UJ	< 0.0138 U	< 0.0142 U	0.0262 J	< 0.015 U	< 0.0185 U	< 0.0138 U

All units in $\mu g/m^2$, min^{-1}.

TABLE B-11
SURFACE FLUX DATA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Sample ID	Sample Type	Sample Date	Surface Flux							
			Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloro-propene	Trichloroethene	Vinyl acetate	Vinyl chloride	Xylenes (Total)
STC1-AJ16	NORM	7/26/2010	< 0.0296 U	< 0.0165 U	< 0.0112 U	< 0.02 U	< 0.0235 U	< 0.0485 UJ	< 0.0112 U	< 0.0381 U
STC1-AJ16R	FD	7/26/2010	< 0.0296 U	< 0.0165 U	< 0.0112 U	< 0.02 U	< 0.0235 U	< 0.0485 UJ	< 0.0112 U	< 0.0381 U
STC1-JD03	NORM	7/26/2010	< 0.0273 U	< 0.0154 U	< 0.0104 U	< 0.0185 U	< 0.0219 U	< 0.045 UJ	< 0.0104 U	< 0.0354 U
STC1-JD05	NORM	7/26/2010	< 0.0281 U	< 0.0158 U	< 0.0108 U	< 0.0192 U	< 0.0227 U	< 0.0465 UJ	< 0.0108 U	< 0.0365 U
STC1-JD06	NORM	7/26/2010	< 0.0281 U	< 0.0158 U	< 0.0108 U	< 0.0192 U	< 0.0227 U	< 0.0465 UJ	< 0.0108 U	< 0.0365 U
STC1-JD07	NORM	7/26/2010	< 0.0277 U	< 0.0154 U	< 0.0104 U	< 0.0188 U	< 0.0223 U	< 0.0458 UJ	< 0.0108 U	< 0.0358 U
STC1-JD12	NORM	7/27/2010	0.0312 J	0.0477 J	< 0.0108 UJ	< 0.0192 U	< 0.0223 U	< 0.0462 UJ	< 0.0108 UJ	< 0.0362 U
STC1-JD14A	NORM	7/27/2010	< 0.207 U	0.193 J	< 0.0788 U	< 0.142 U	< 0.166 U	< 0.342 UJ	< 0.0796 U	< 0.268 U
STC1-JD14B	NORM	7/27/2010	--	--	--	--	--	--	--	--
TMC1-JD02	NORM	7/13/2010	< 0.0288 U	0.0362 J	< 0.0112 U	< 0.0196 U	< 0.0231 U	< 0.0477 U	< 0.0112 U	0.0692 J

All units in $\mu g/m^2$, min^{-1}.

APPENDIX C

GES FIELD REPORTS
(on the report CD in Appendix B)

APPENDIX D

SURFACE FLUX CHAMBER TESTING INVESTIGATOR'S REPORT
(on the report CD in Appendix B)

APPENDIX E

DATA USABILITY TABLES
(on the report CD in Appendix B)

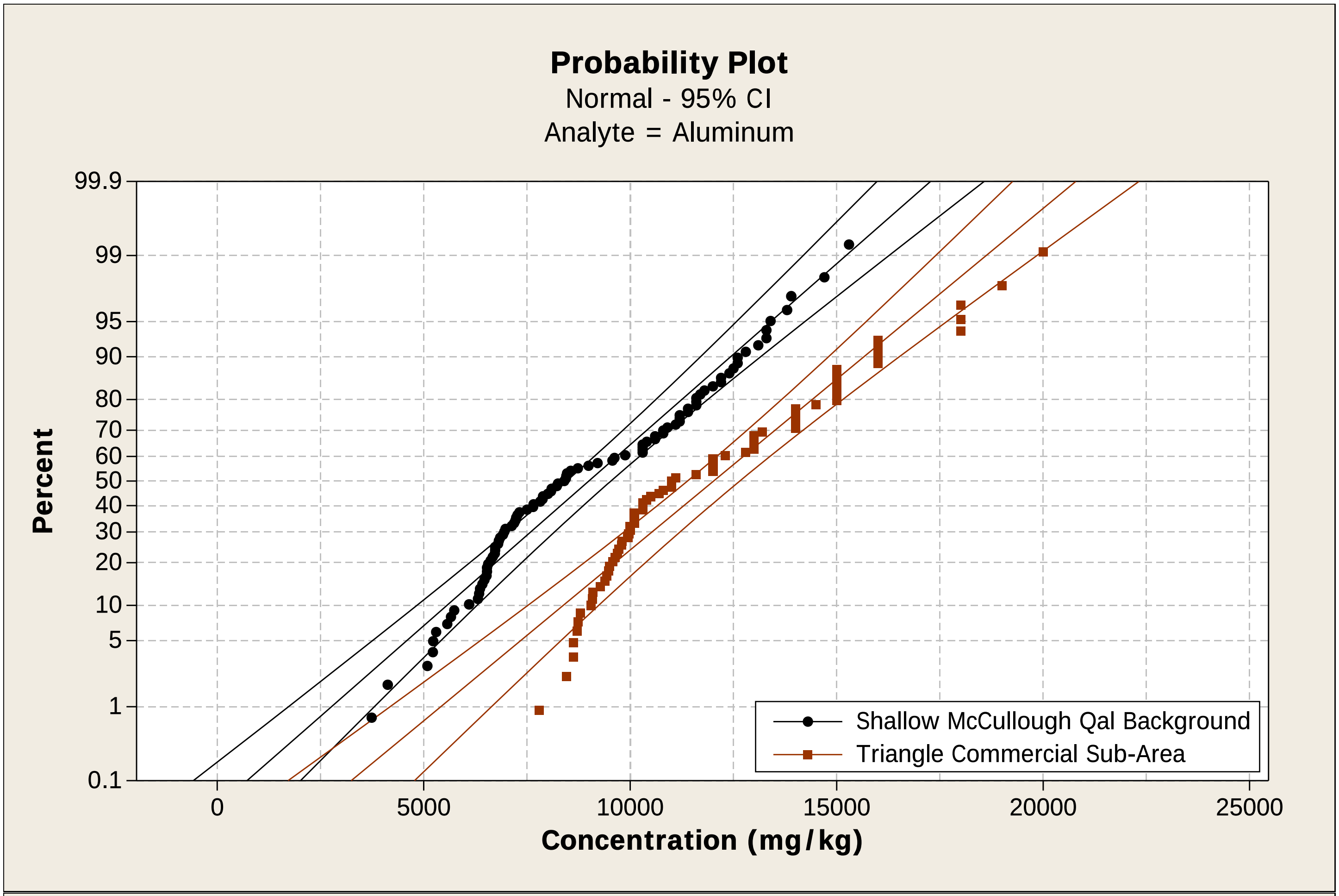
LIST OF TABLES (APPENDIX E)

APPENDIX F

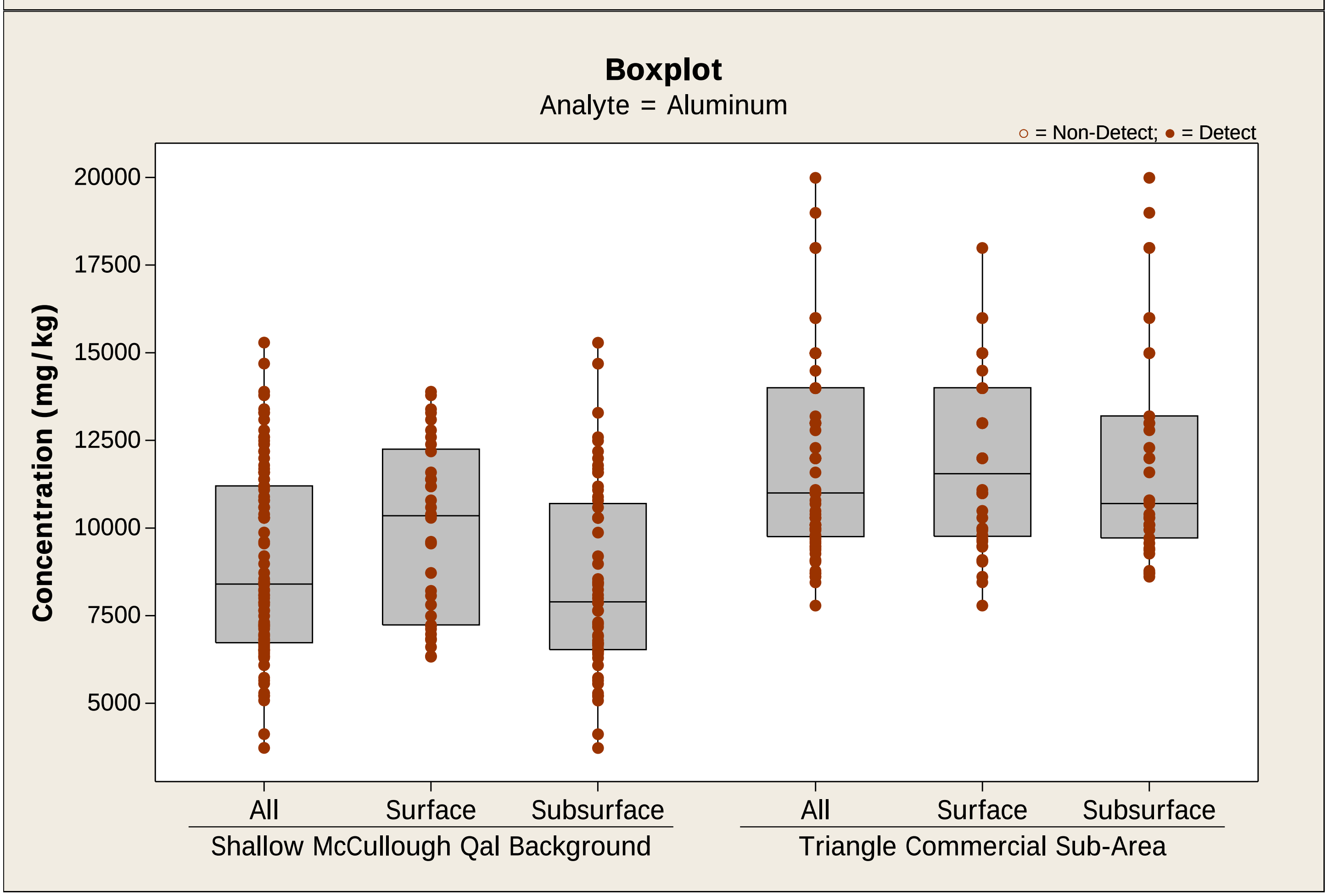
DATA VALIDATION SUMMARY REPORTS

APPENDIX G

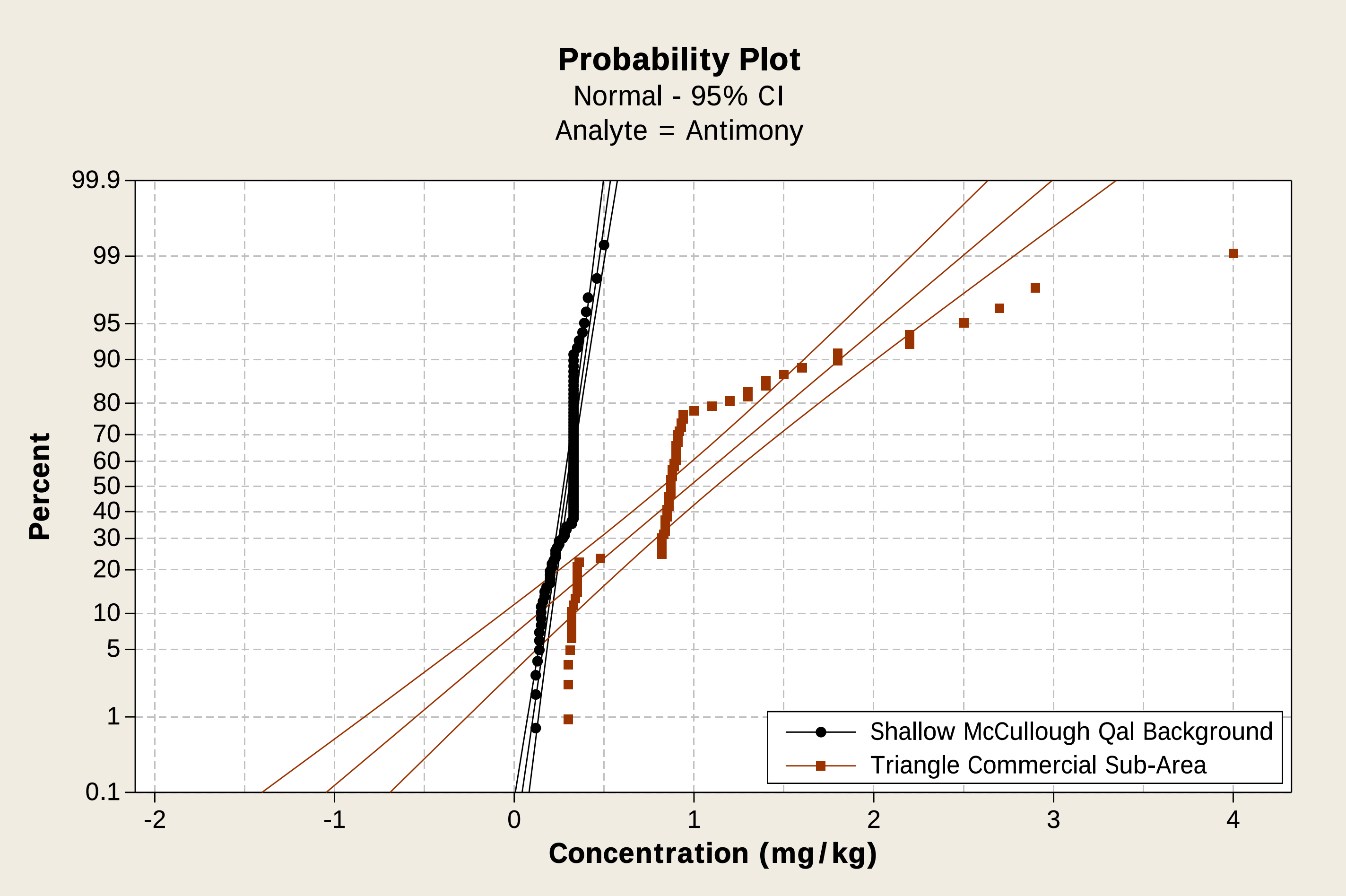
CUMULATIVE PROBABILITY PLOTS AND BOXPLOTS FOR METALS AND RADIONUCLIDES



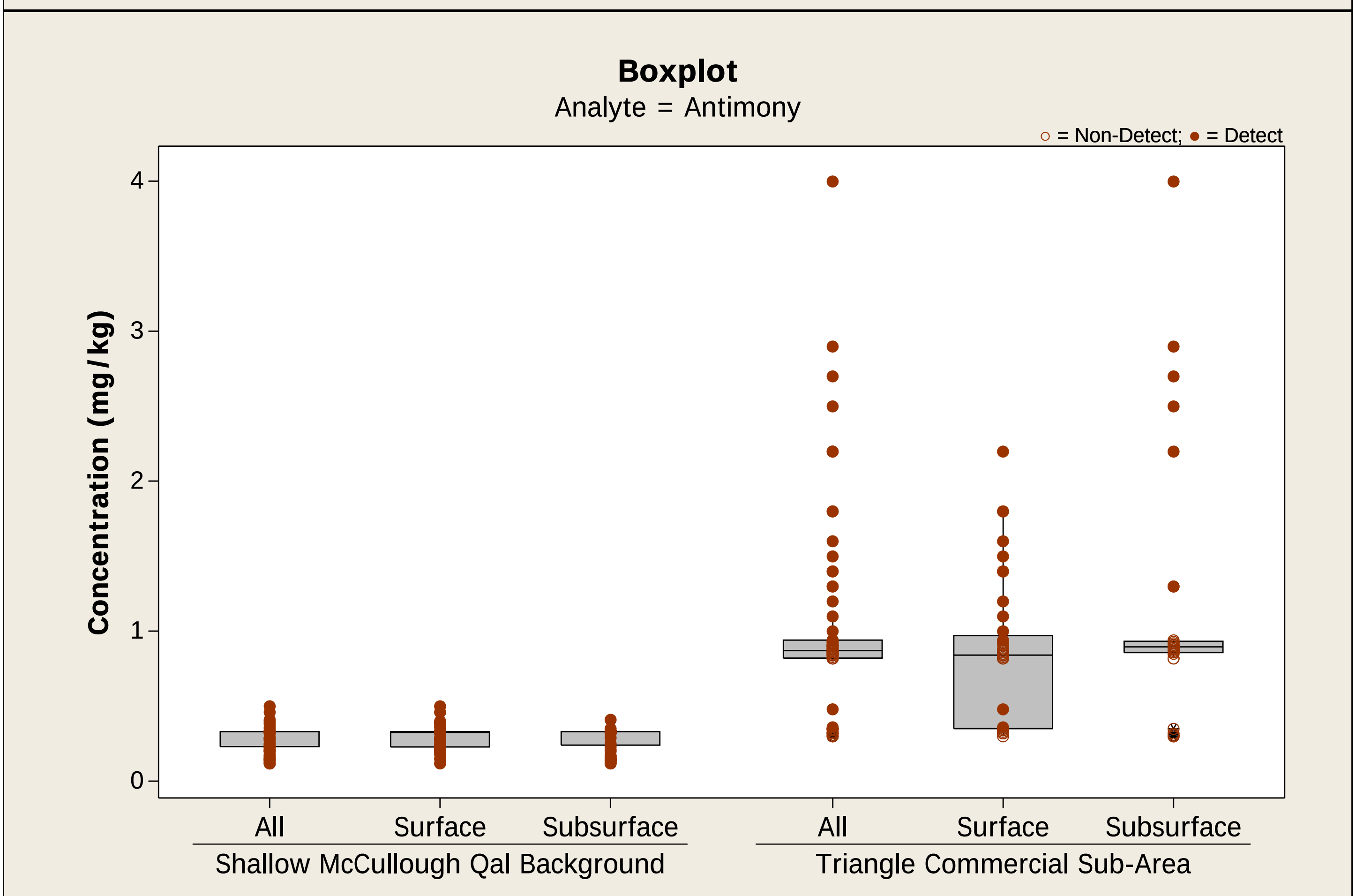
Probability Plot
Normal - 95% CI
Analyte = Aluminum
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
5000
10000
15000
20000
25000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



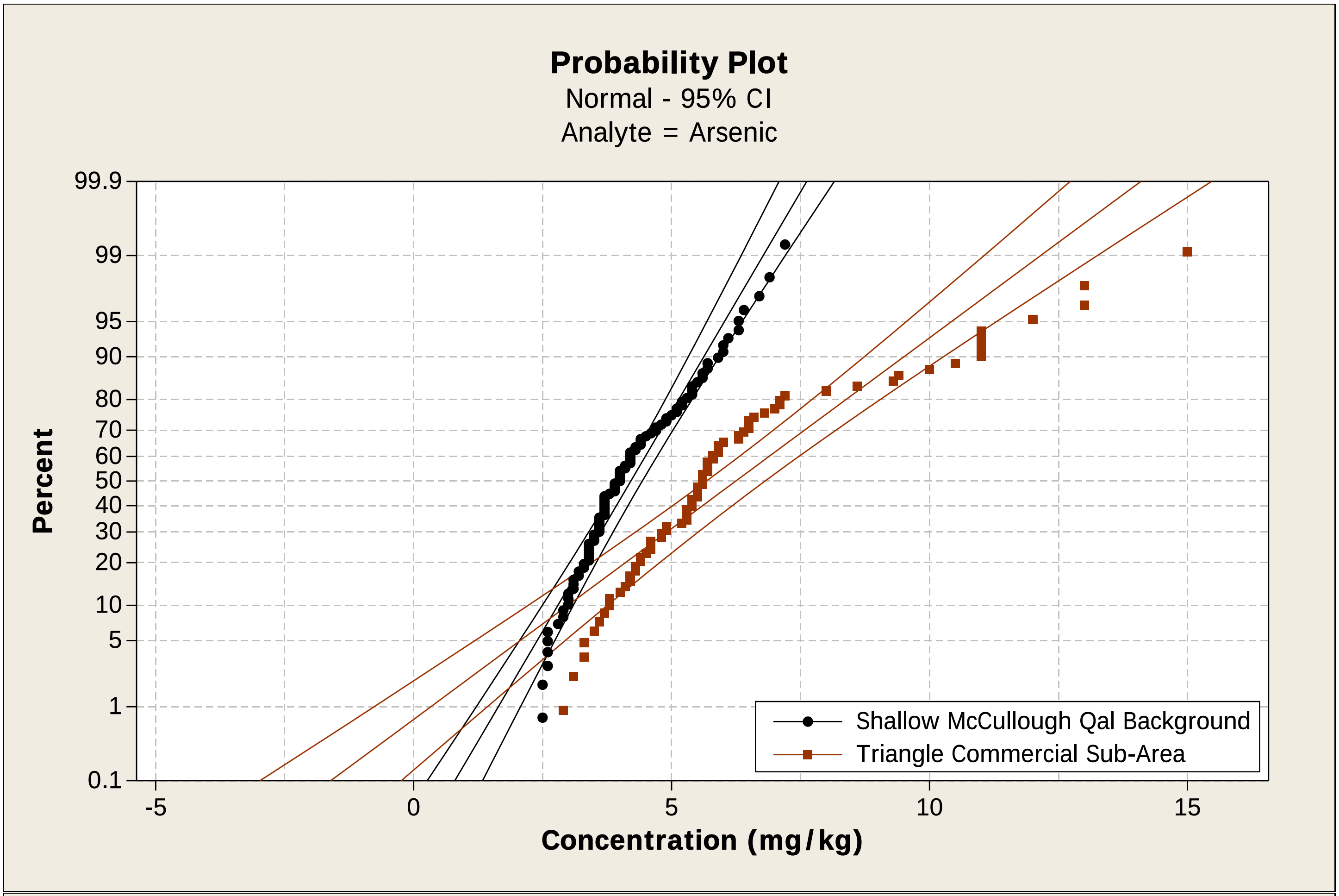
Boxplot
Analyte = Aluminum
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
20000
17500
15000
12500
10000
7500
5000
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



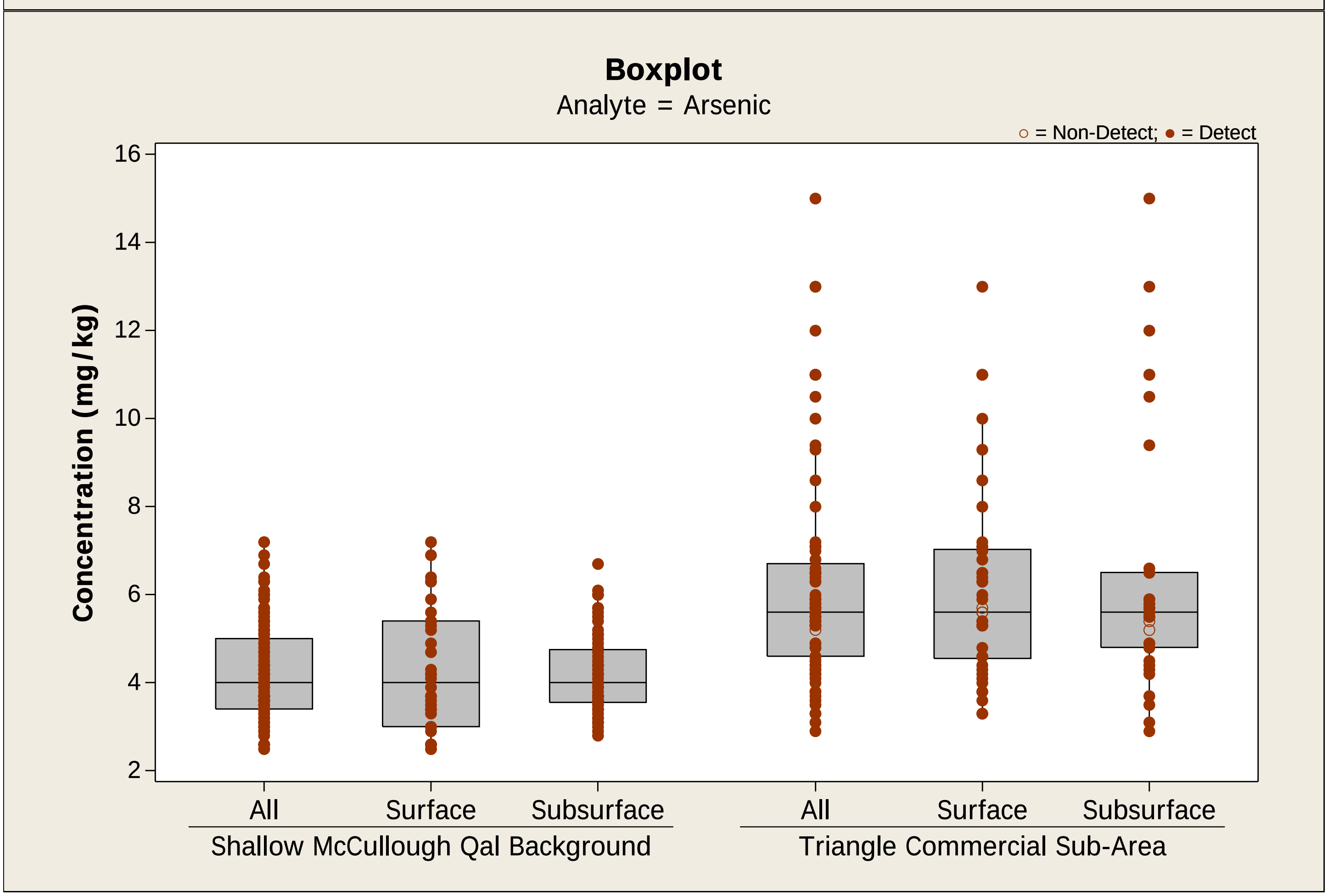
Probability Plot
Normal - 95% CI
Analyte = Antimony
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-2
-1
0
1
2
3
4
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



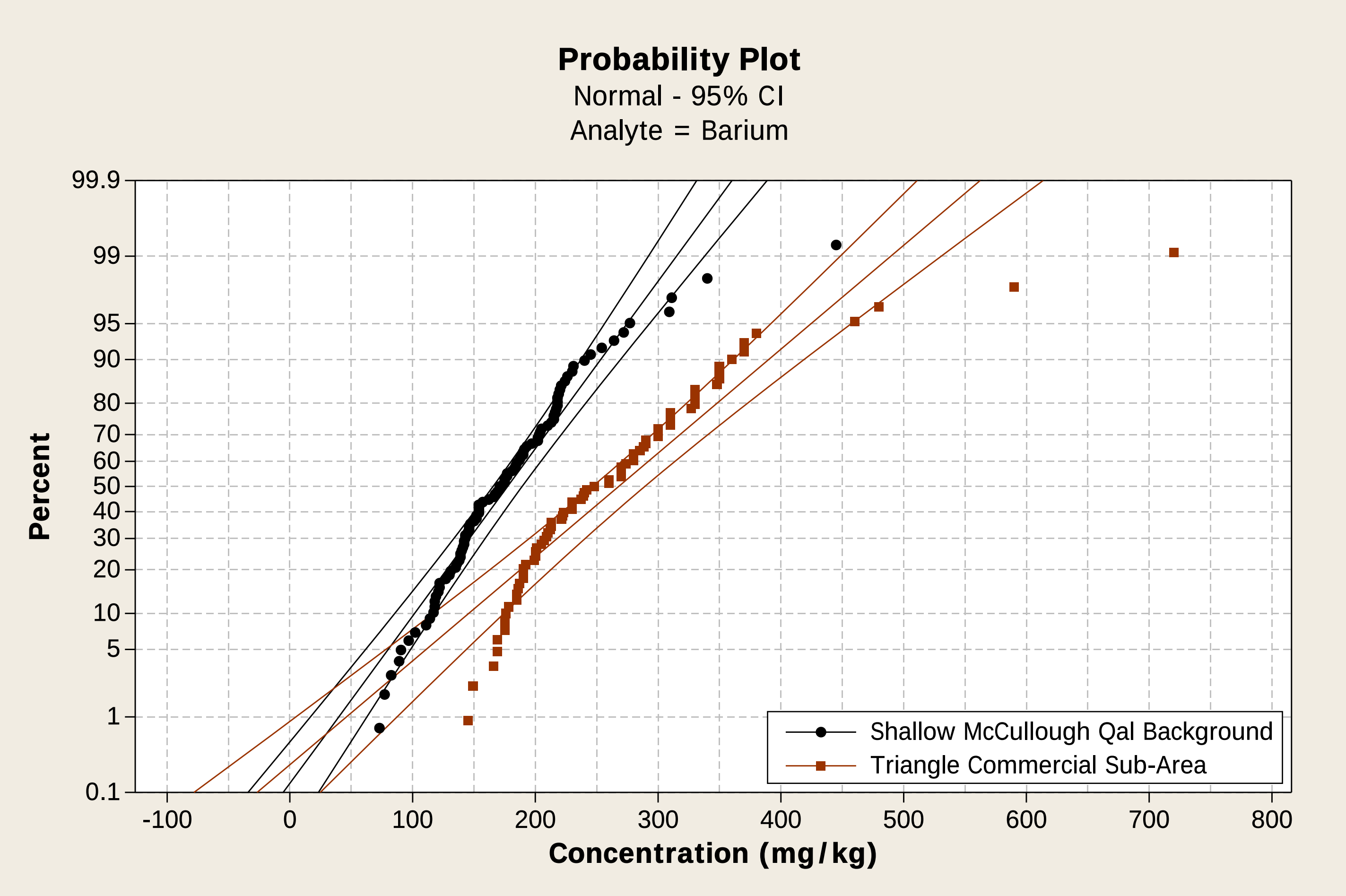
Boxplot
Analyte = Antimony
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
4
3
2
1
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area

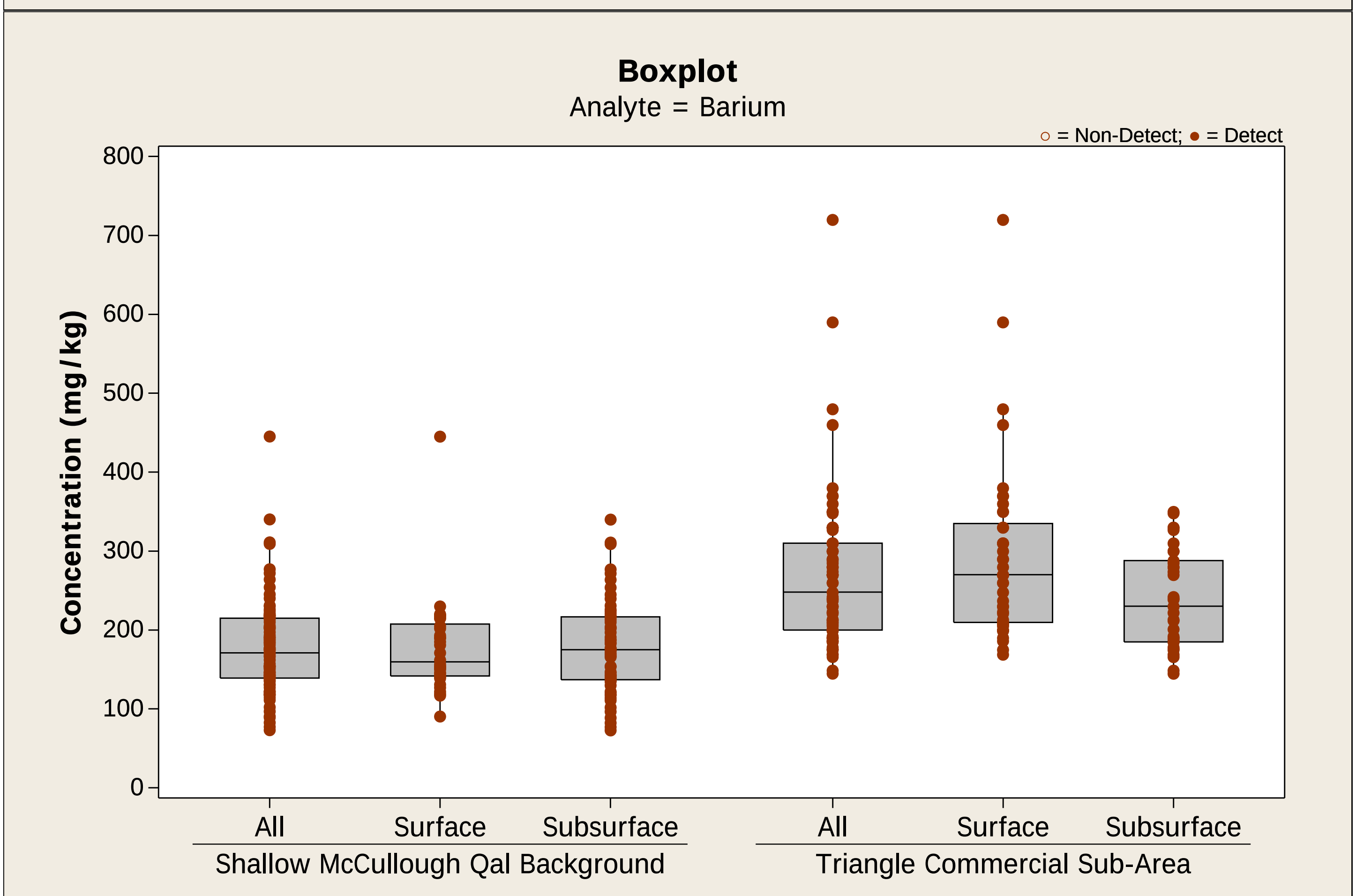


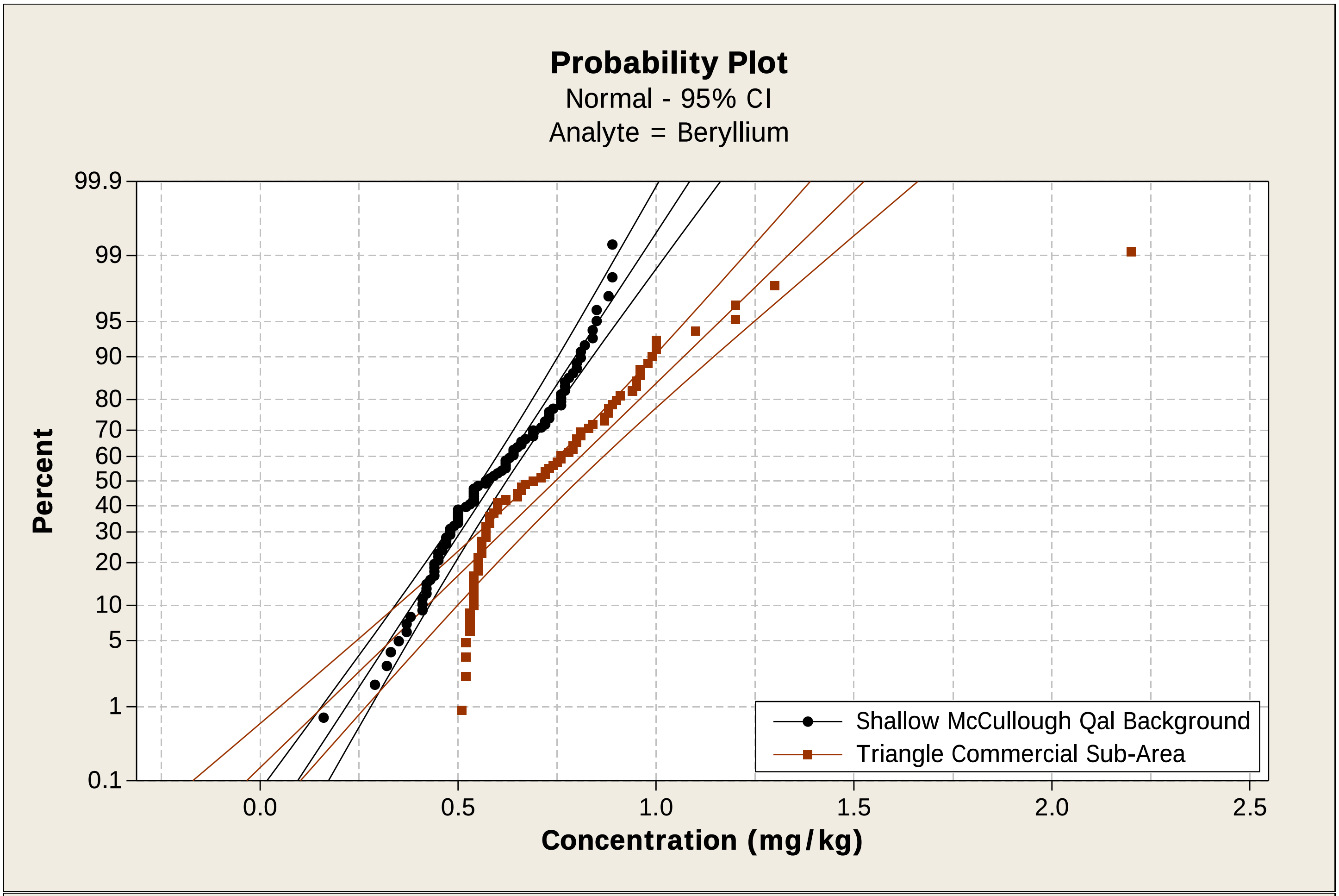
Probability Plot
Normal - 95% CI
Analyte = Arsenic
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-5
0
5
10
15
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

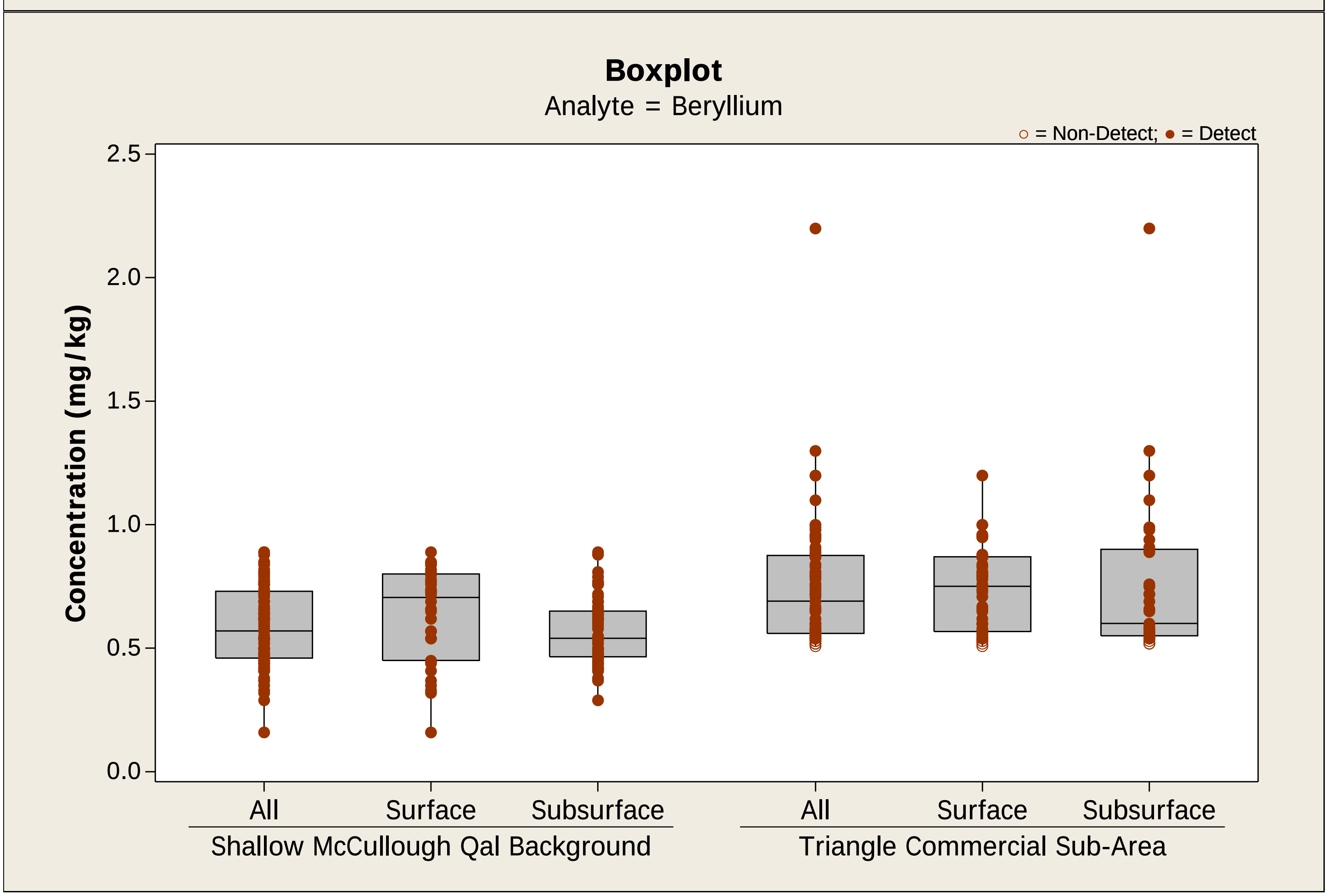


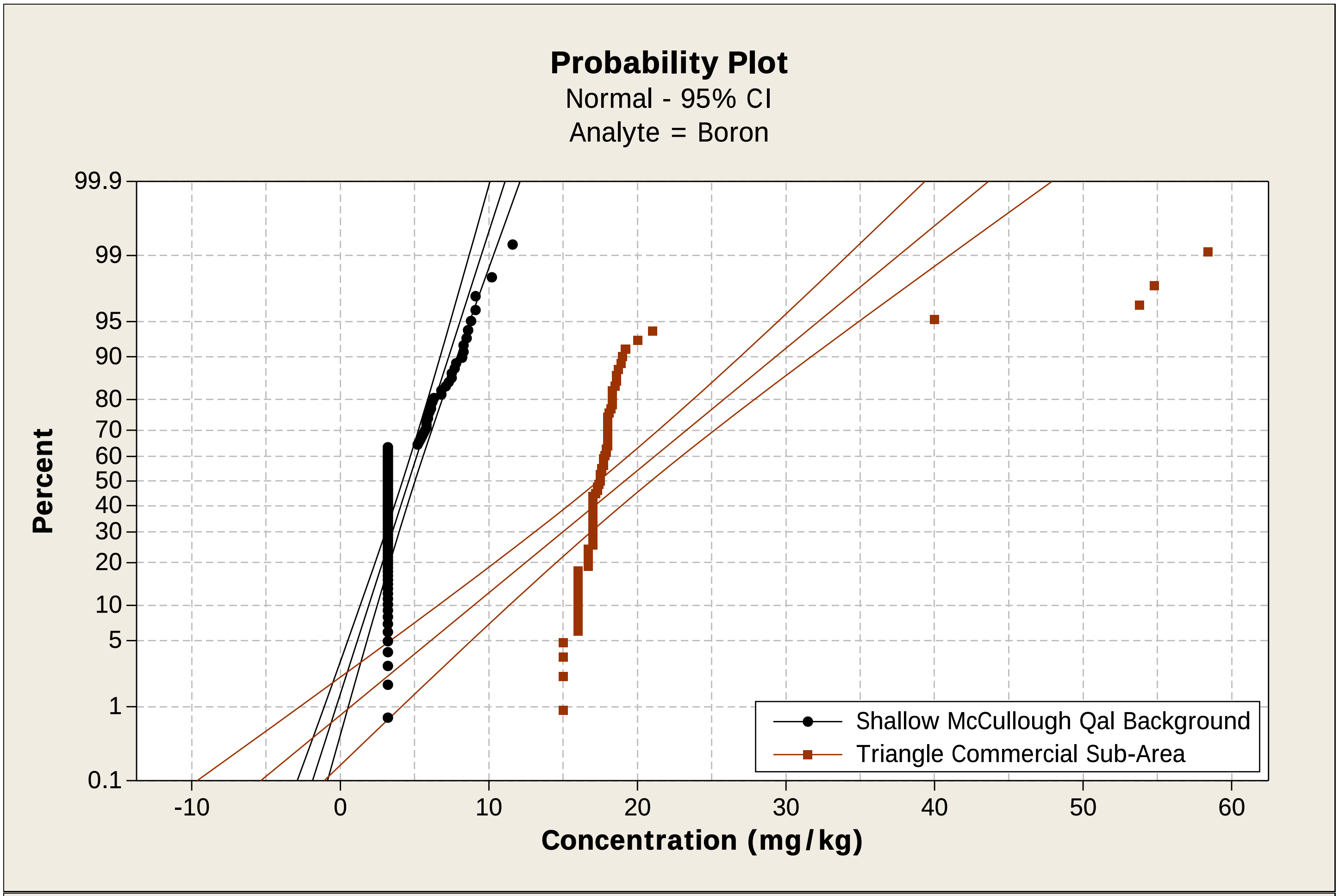
Boxplot
Analyte = Arsenic
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
16
14
12
10
8
6
4
2
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Barium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-100
0
100
200
300
400
500
600
700
800
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

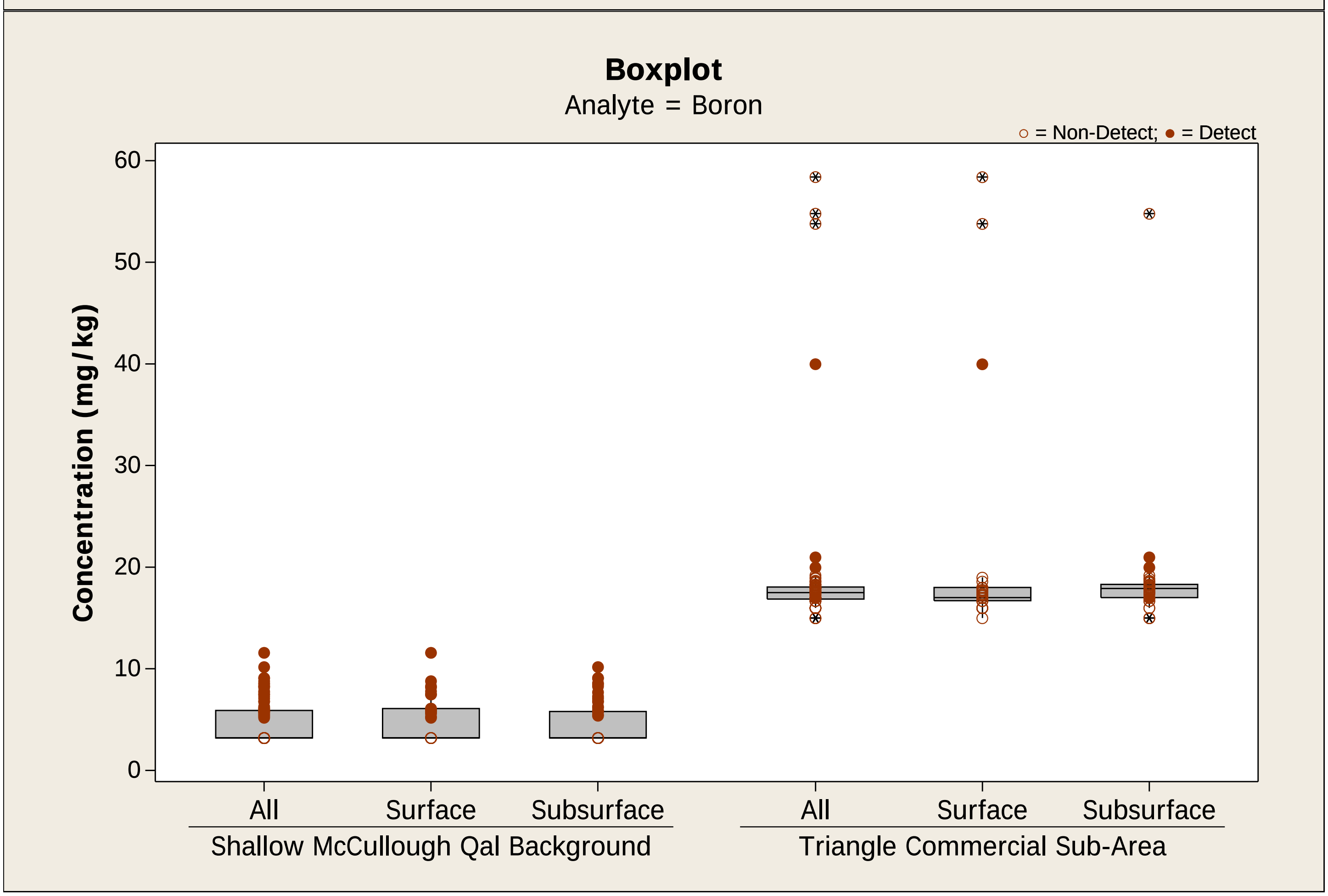

Boxplot
Analyte = Barium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
800
700
600
500
400
300
200
100
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Beryllium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0.0
0.5
1.0
1.5
2.0
2.5
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

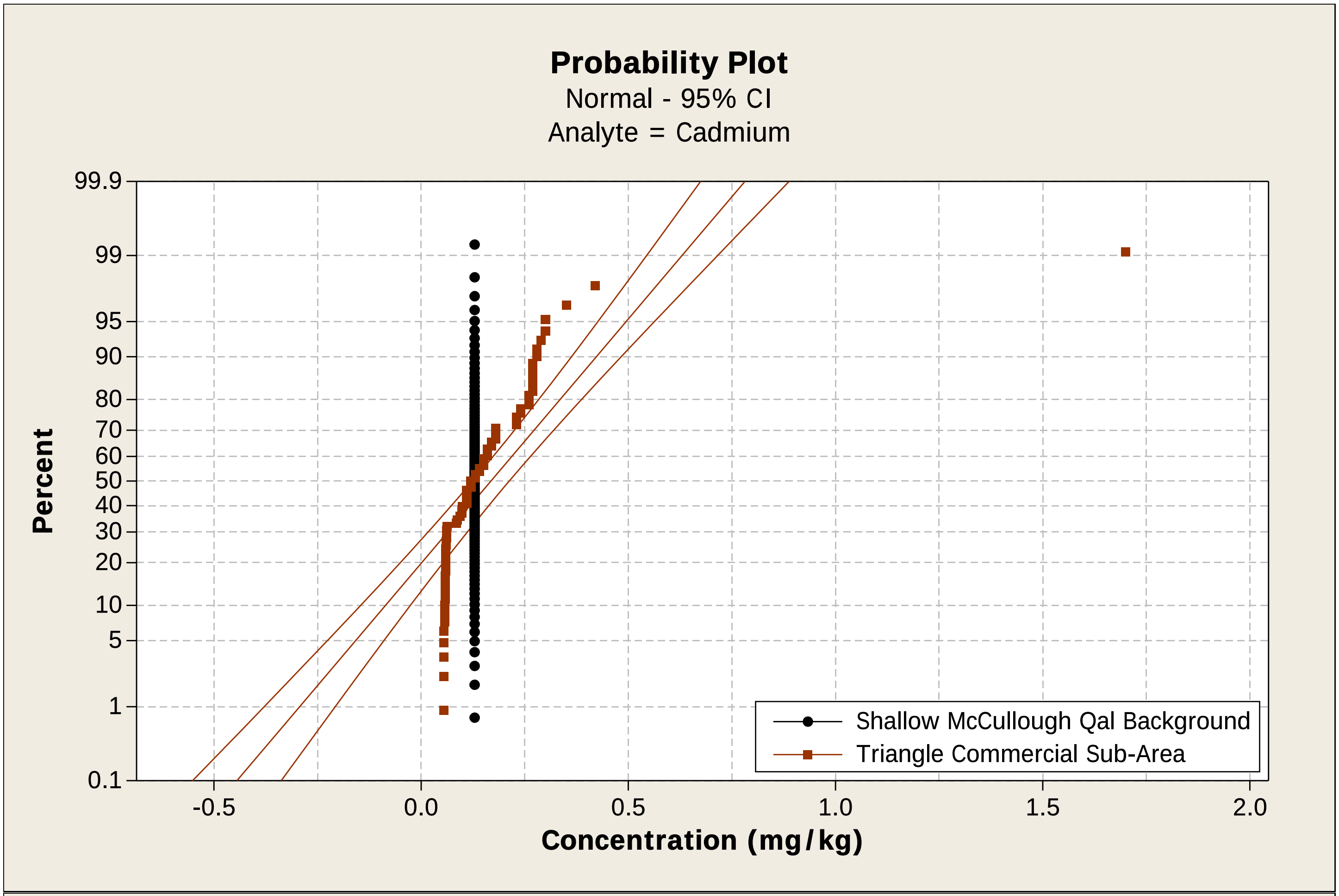

Boxplot
Analyte = Beryllium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
2.5
2.0
1.5
1.0
0.5
0.0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



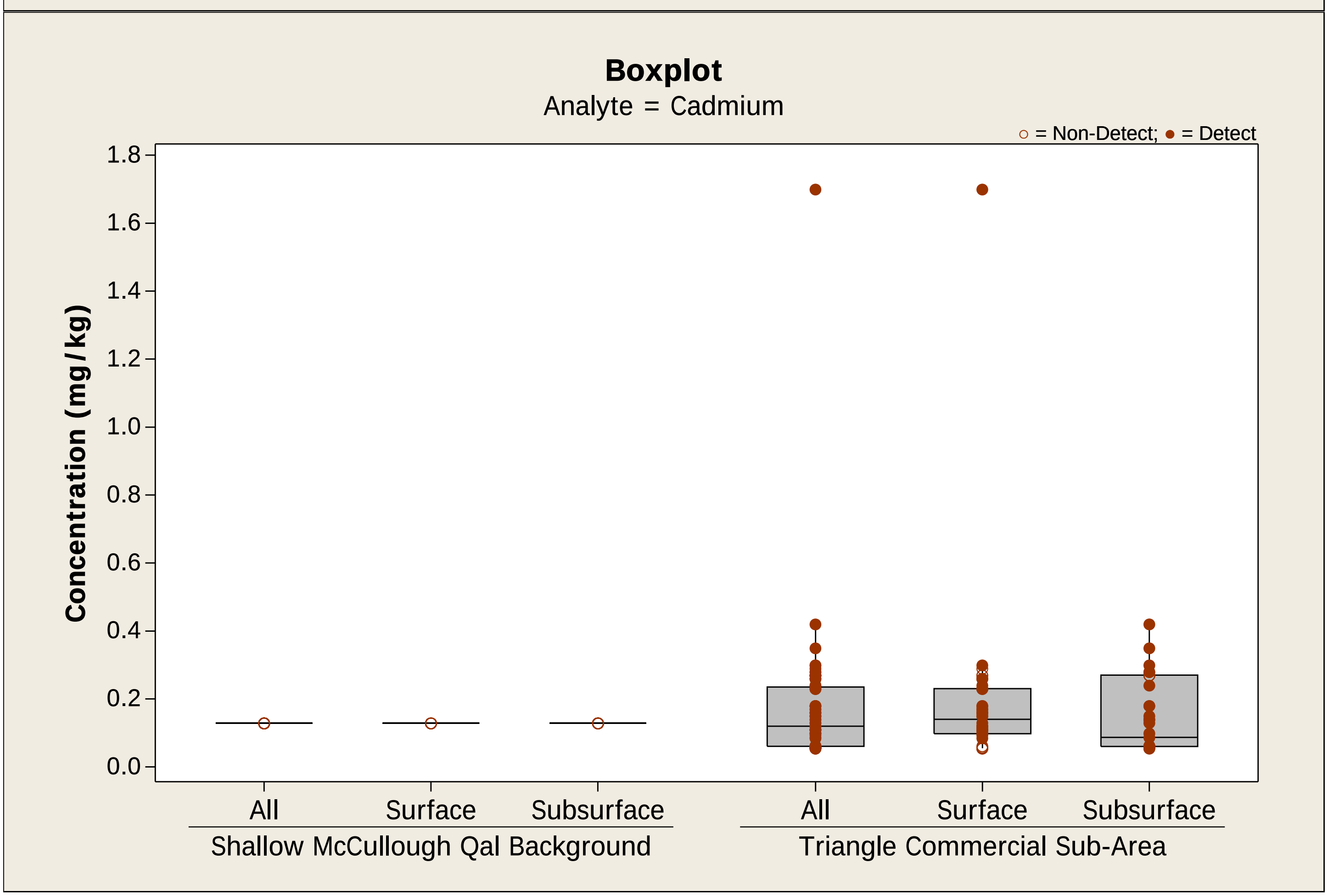
Probability Plot
Normal - 95% CI
Analyte = Boron
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-10
0
10
20
30
40
50
60
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



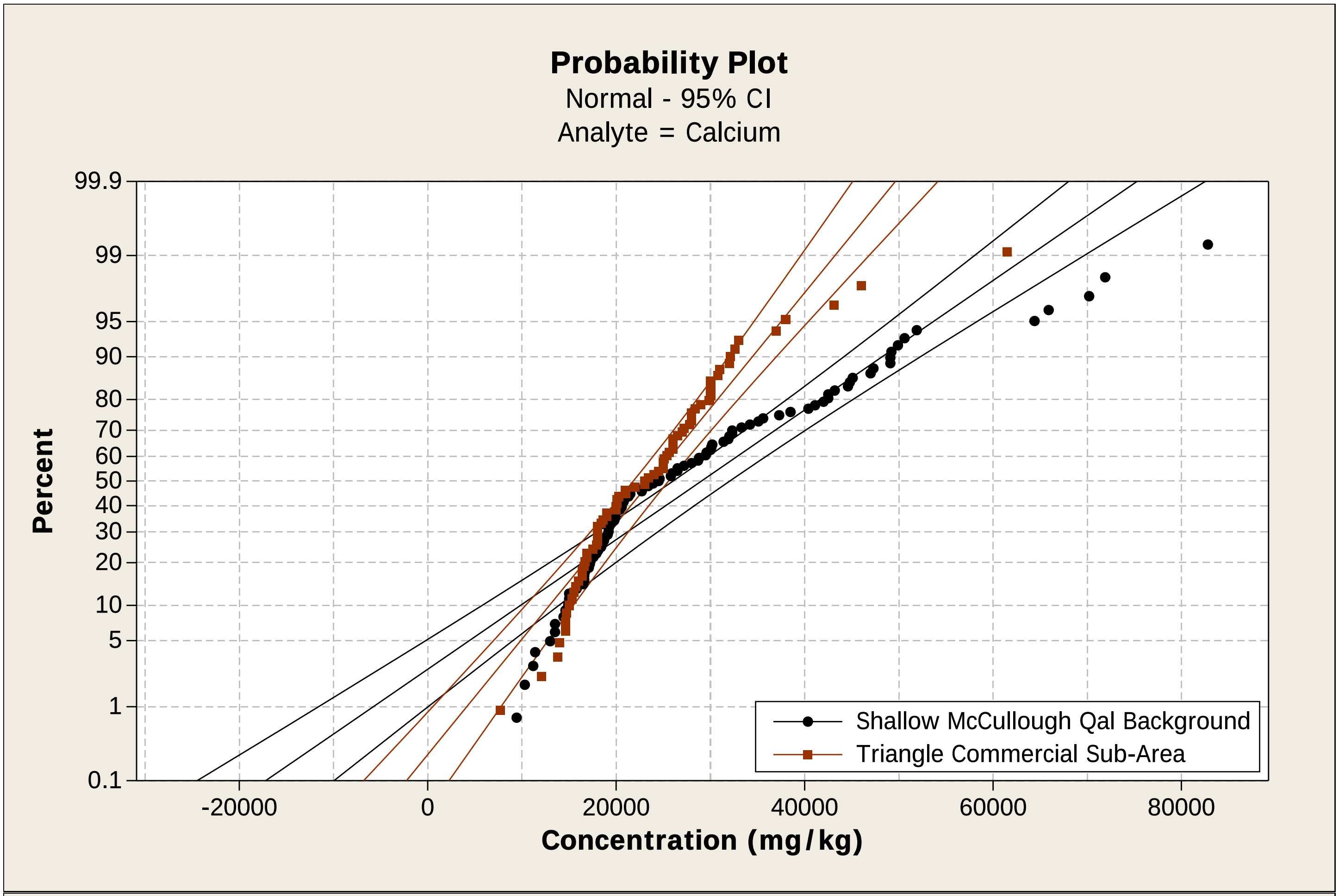
Boxplot
Analyte = Boron
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
60
50
40
30
20
10
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

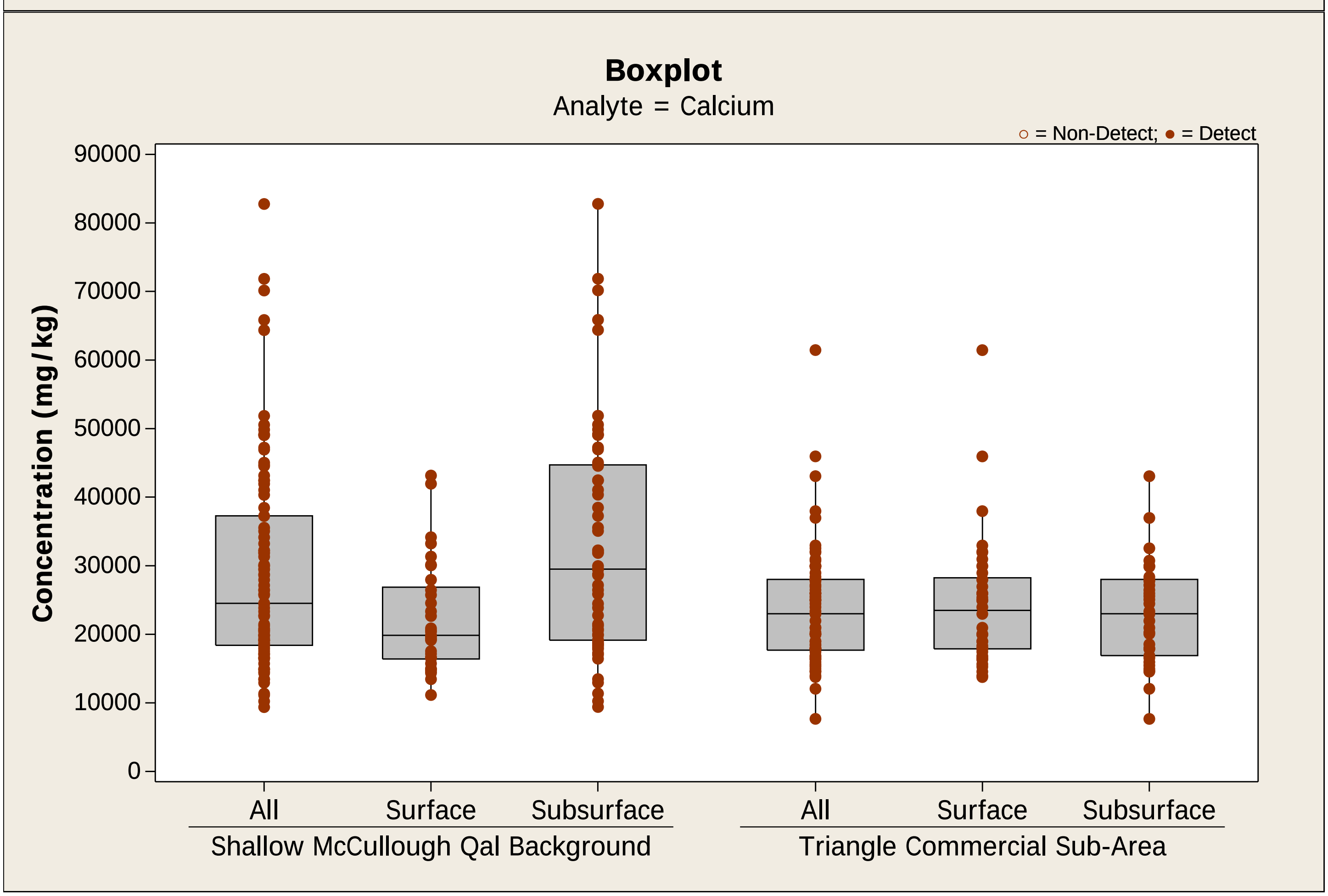


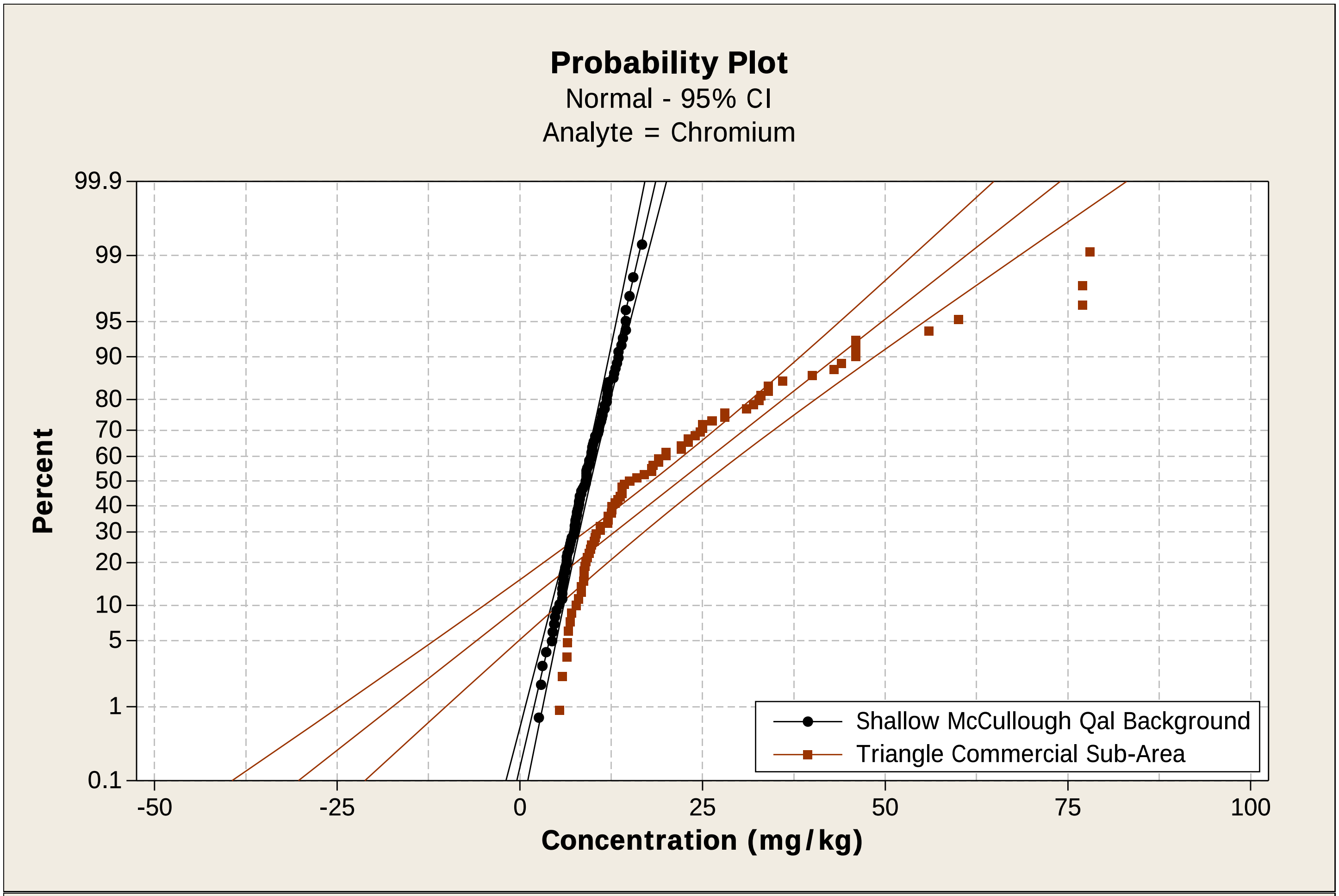
Probability Plot
Normal - 95% CI
Analyte = Cadmium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-0.5
0.0
0.5
1.0
1.5
2.0
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

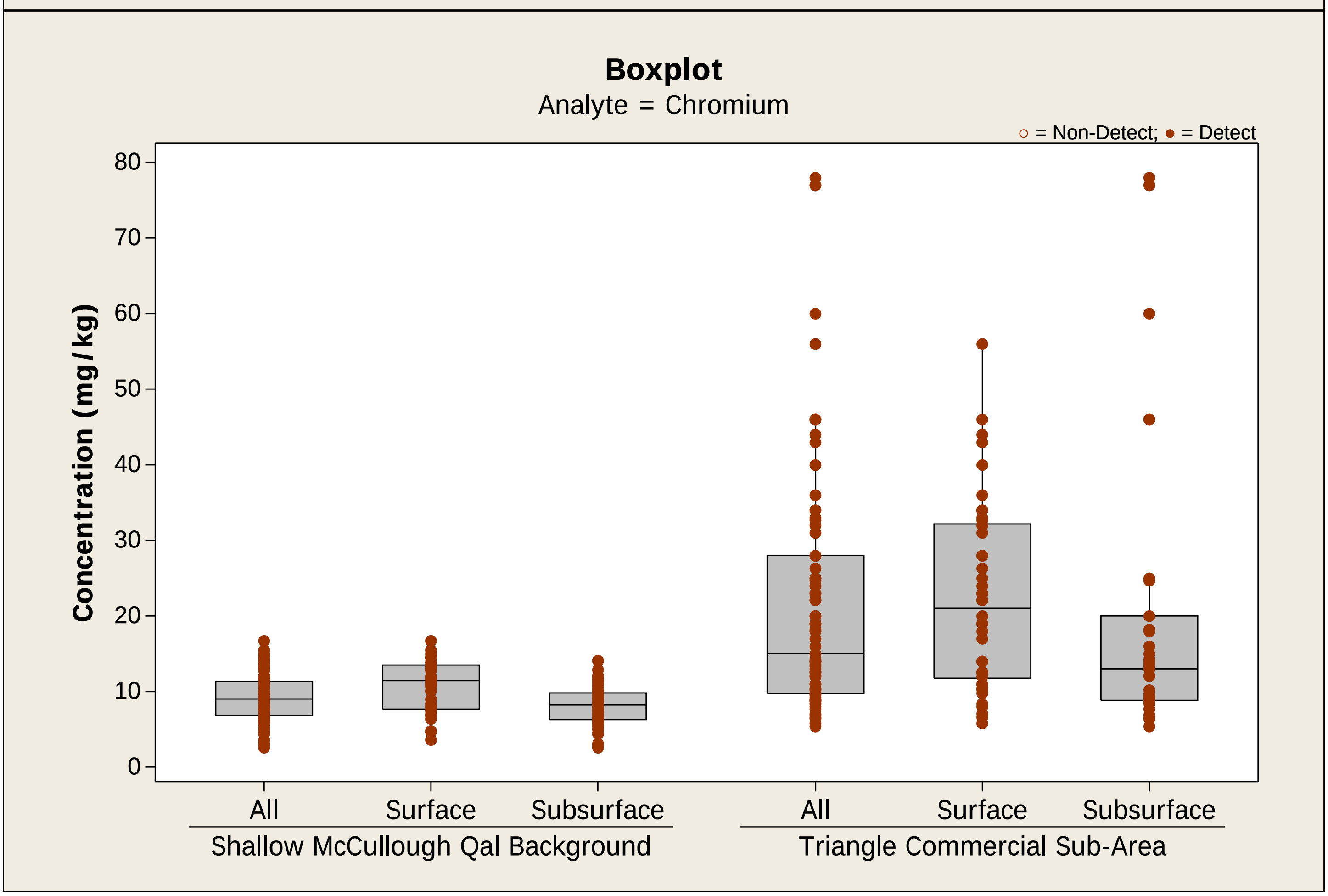


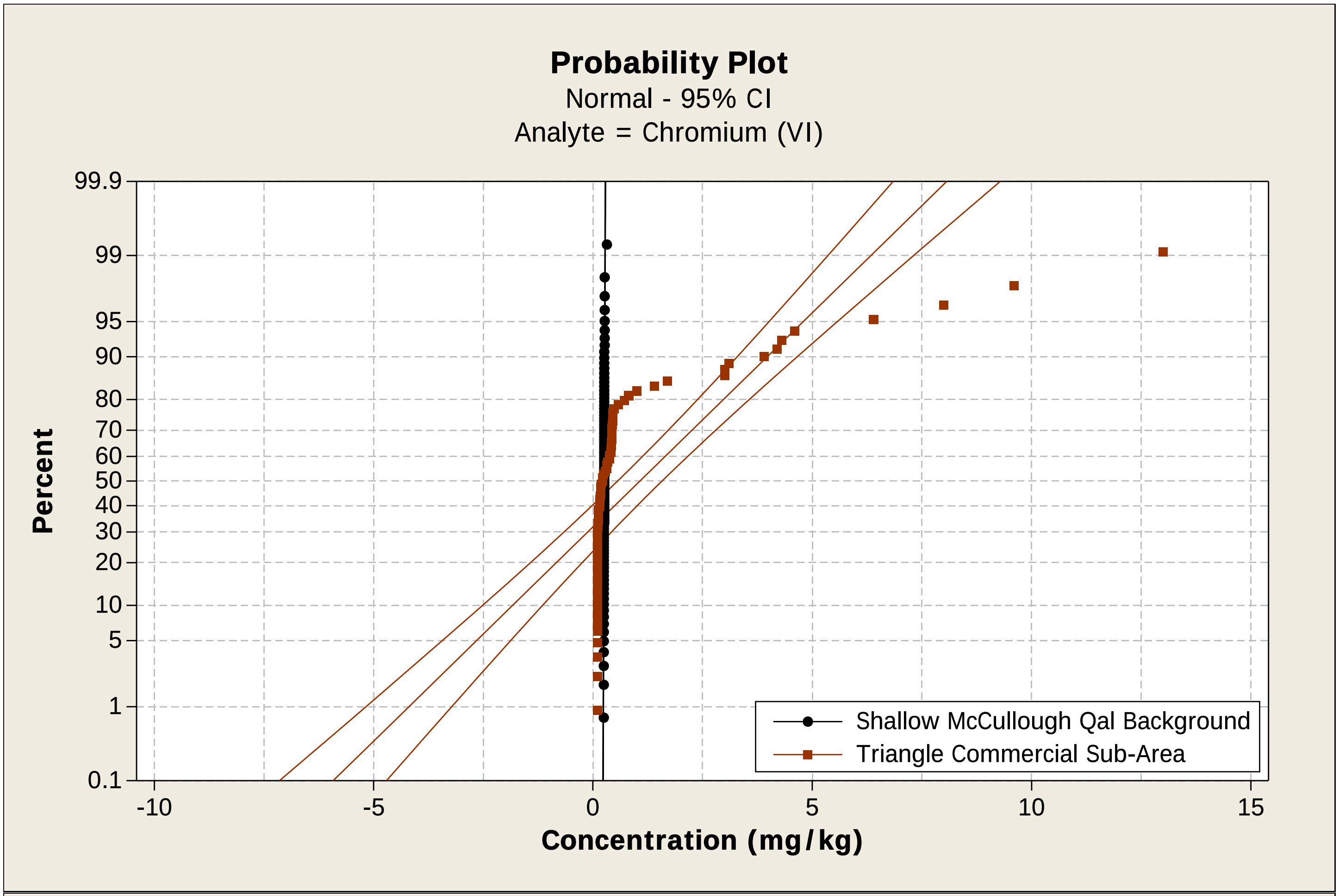
Boxplot
Analyte = Cadmium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

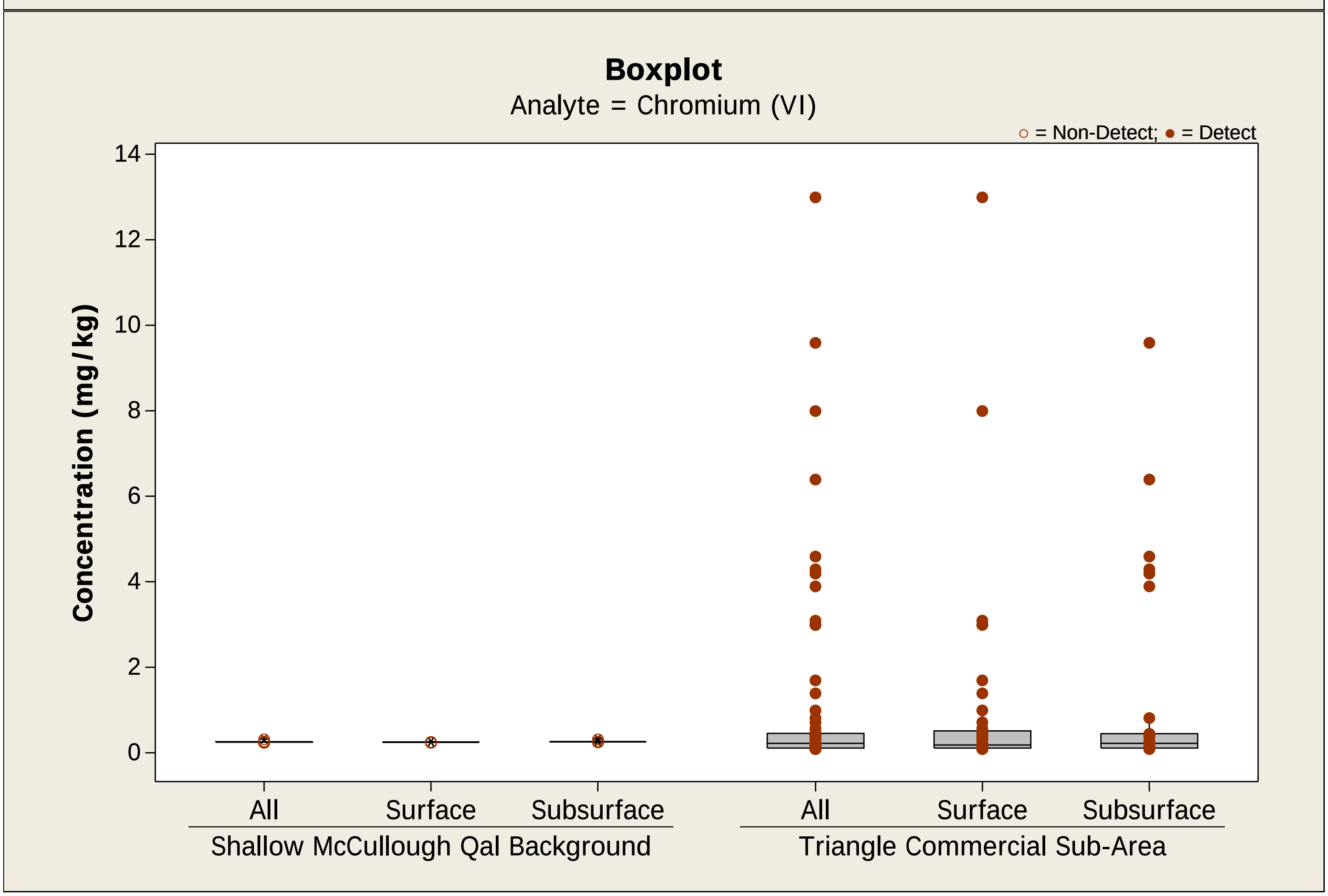

Probability Plot
Normal - 95% CI
Analyte = Calcium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-20000
0
20000
40000
60000
80000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

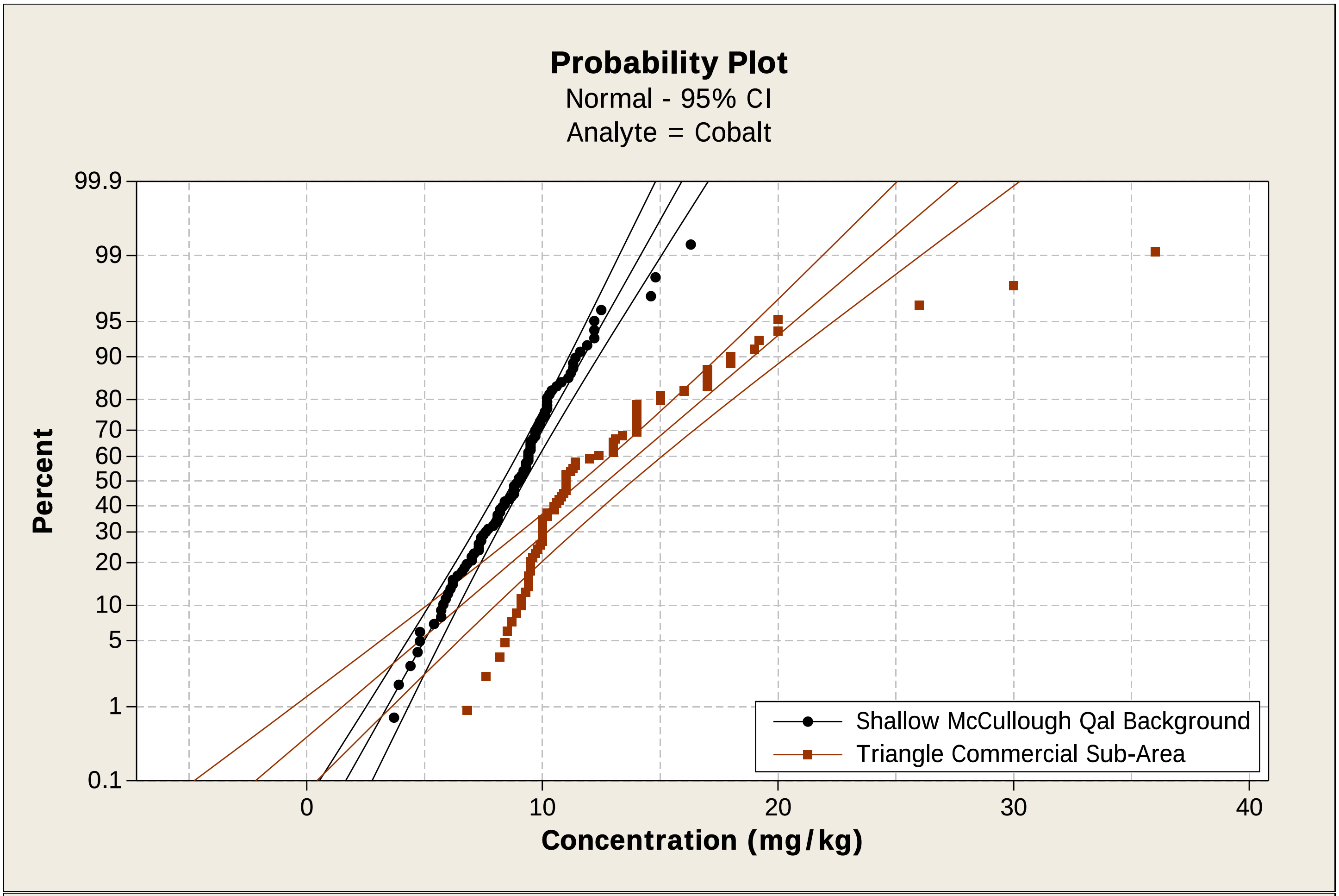

Boxplot
Analyte = Calcium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

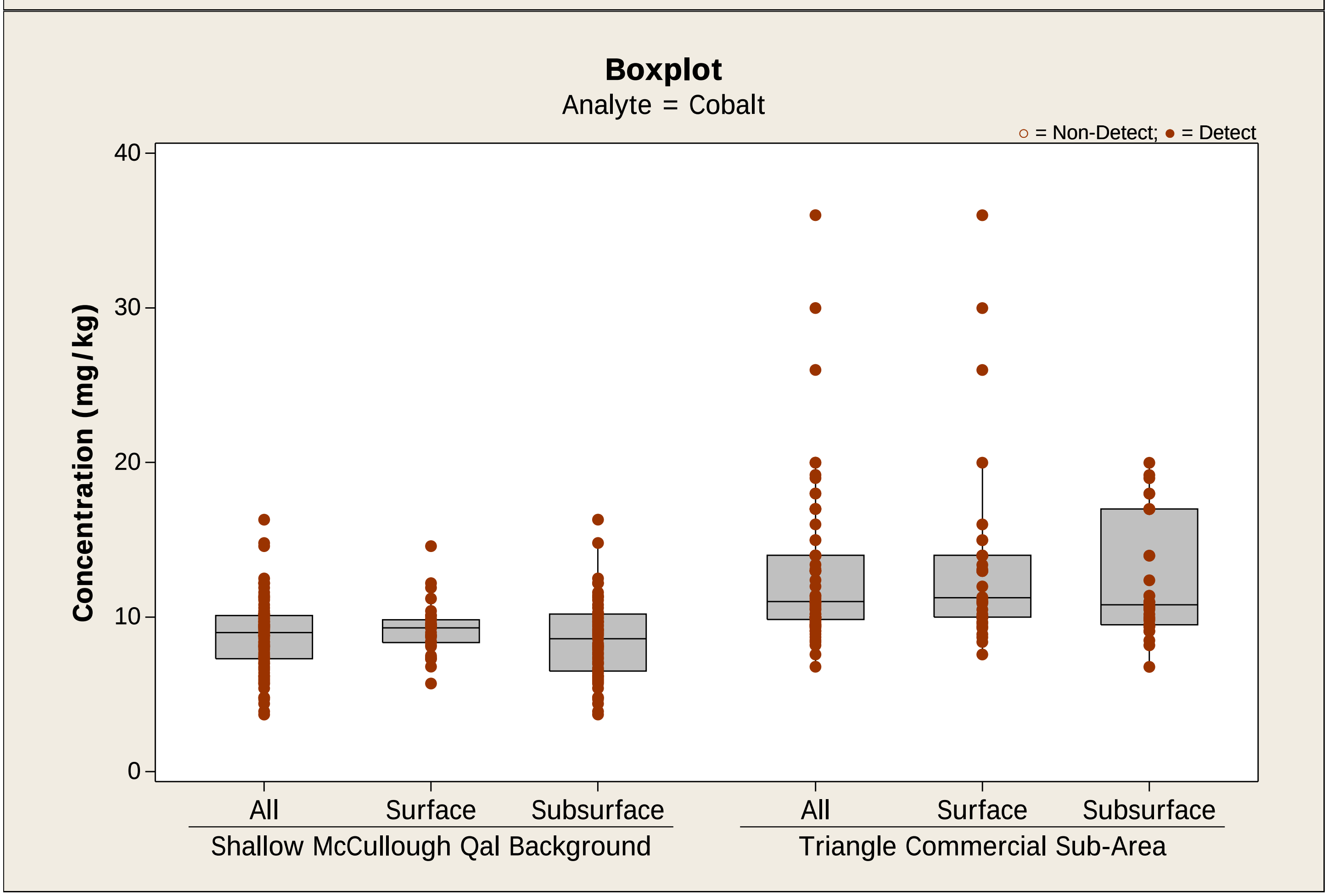

Probability Plot
Normal - 95% CI
Analyte = Chromium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-50
-25
0
25
50
75
100
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

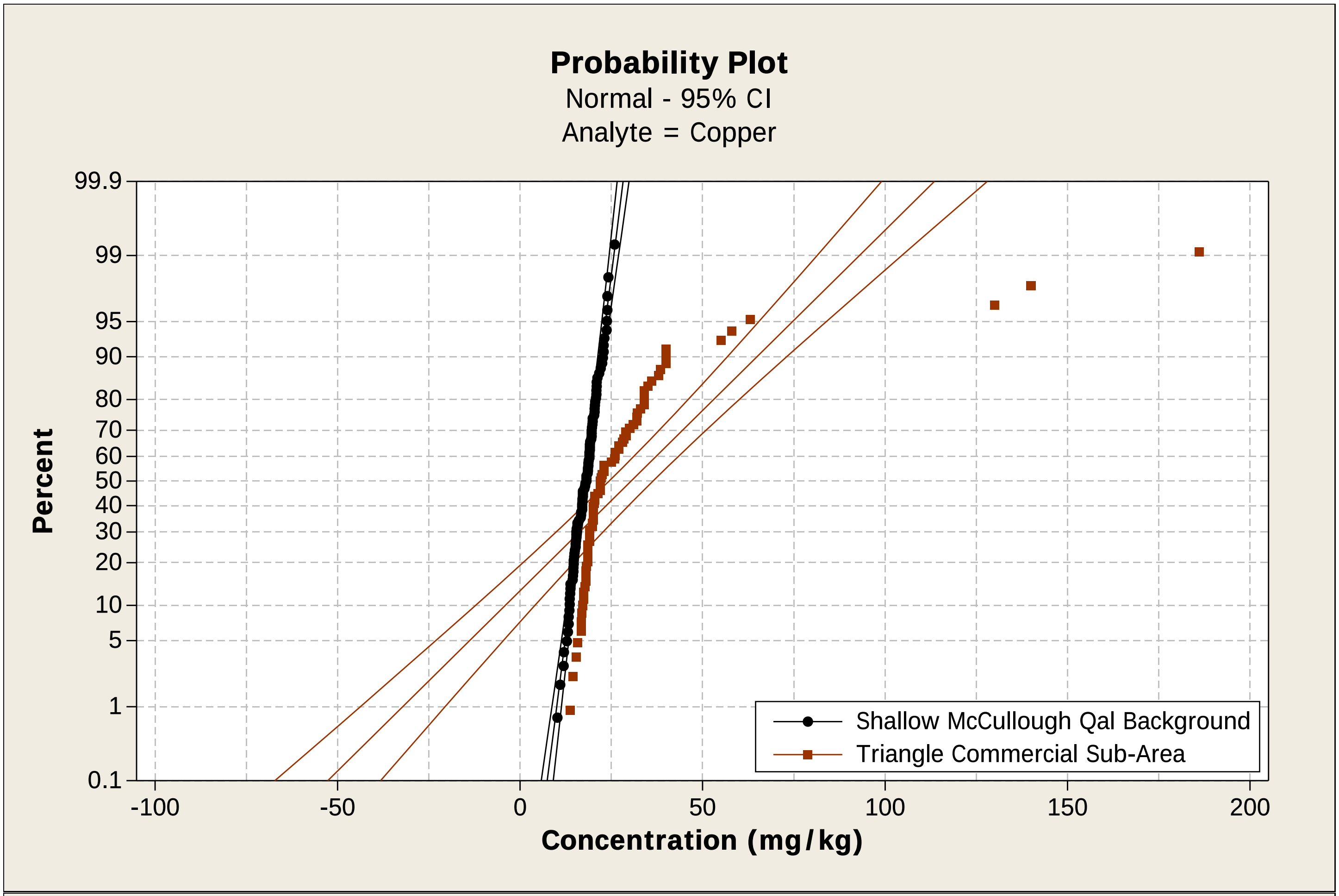

Boxplot
Analyte = Chromium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
80
70
60
50
40
30
20
10
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Chromium (VI)
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-10
-5
0
5
10
15
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

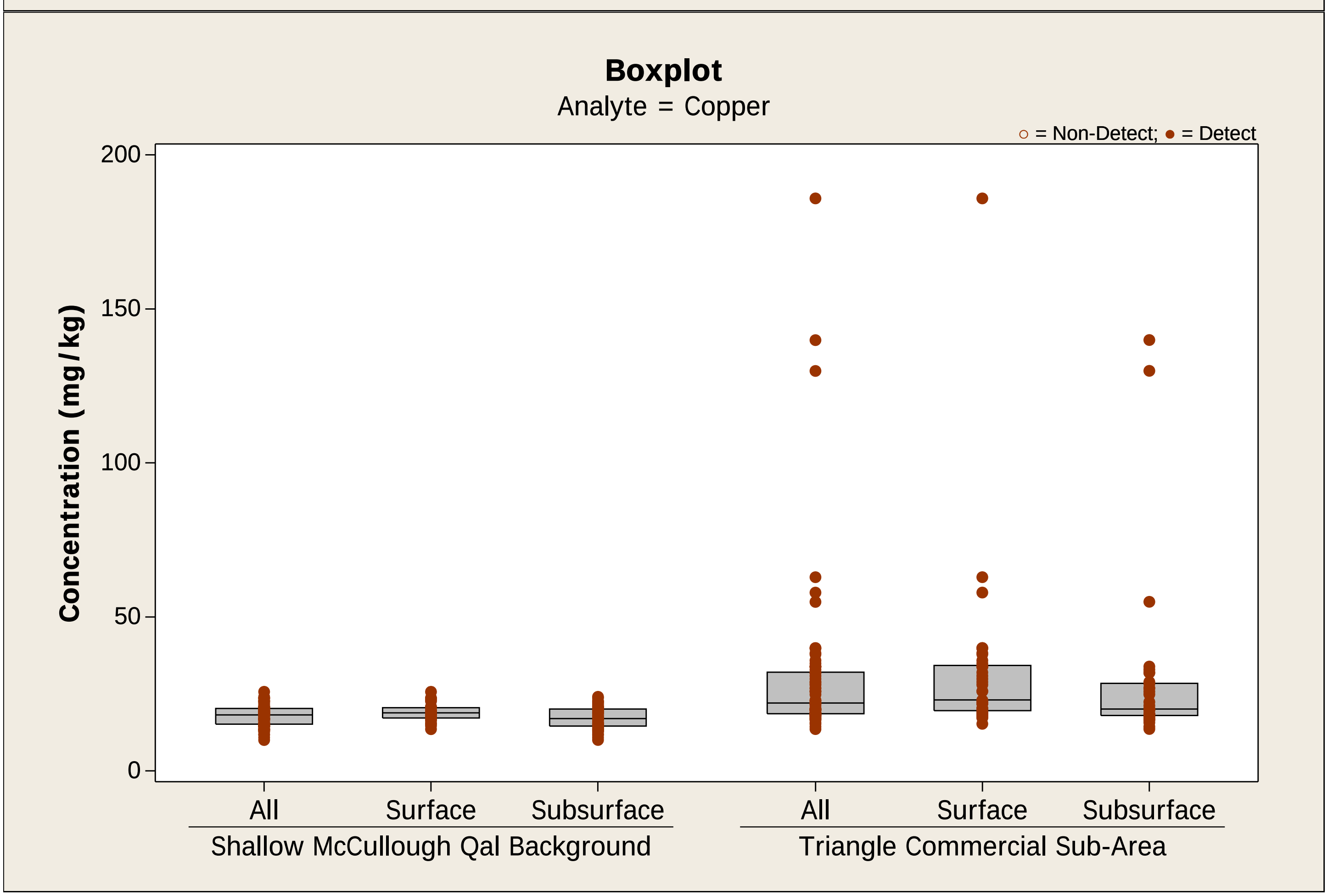

Boxplot
Analyte = Chromium (VI)
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
14
12
10
8
6
4
2
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Cobalt
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
10
20
30
40
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

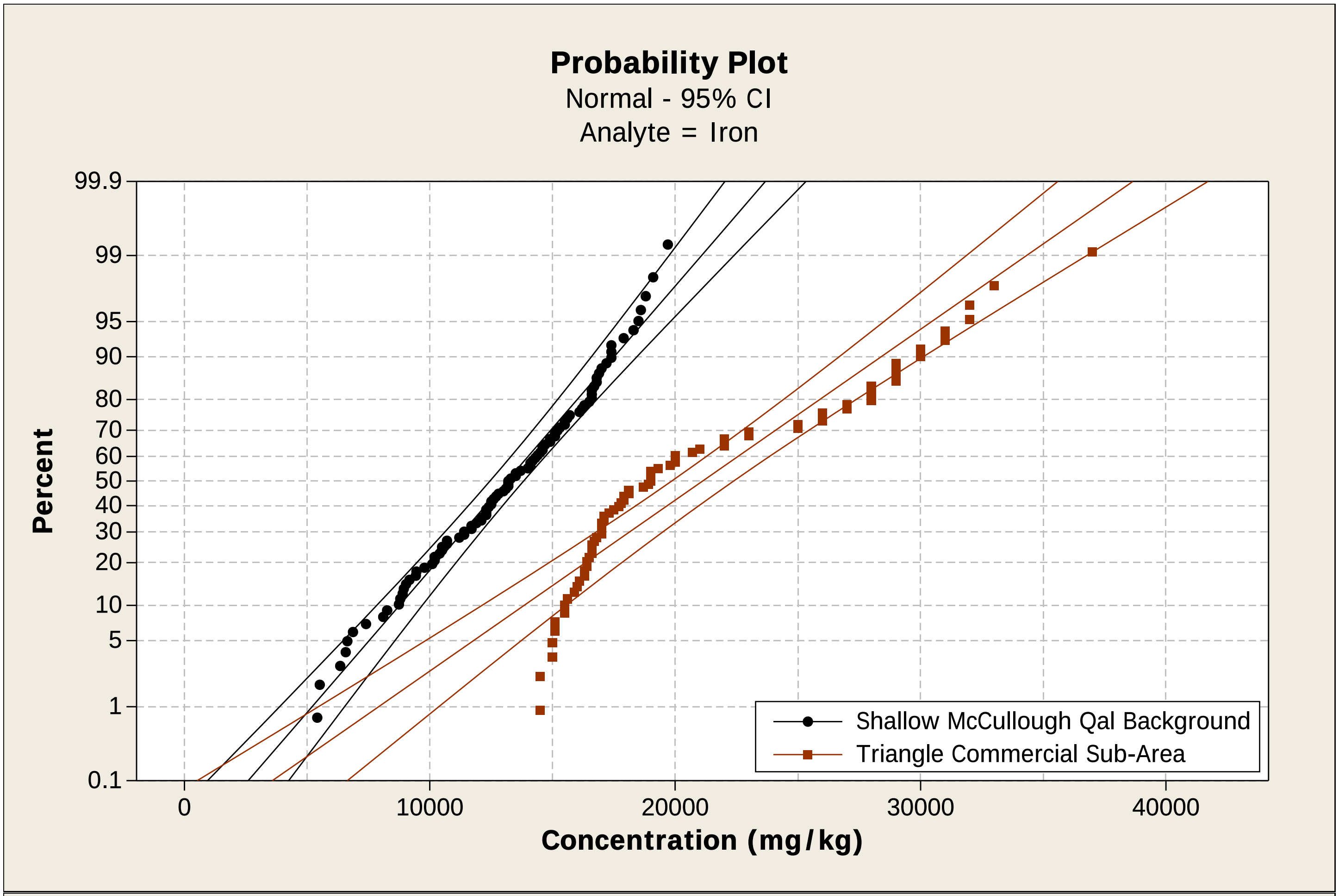

Boxplot
Analyte = Cobalt
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
40
30
20
10
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

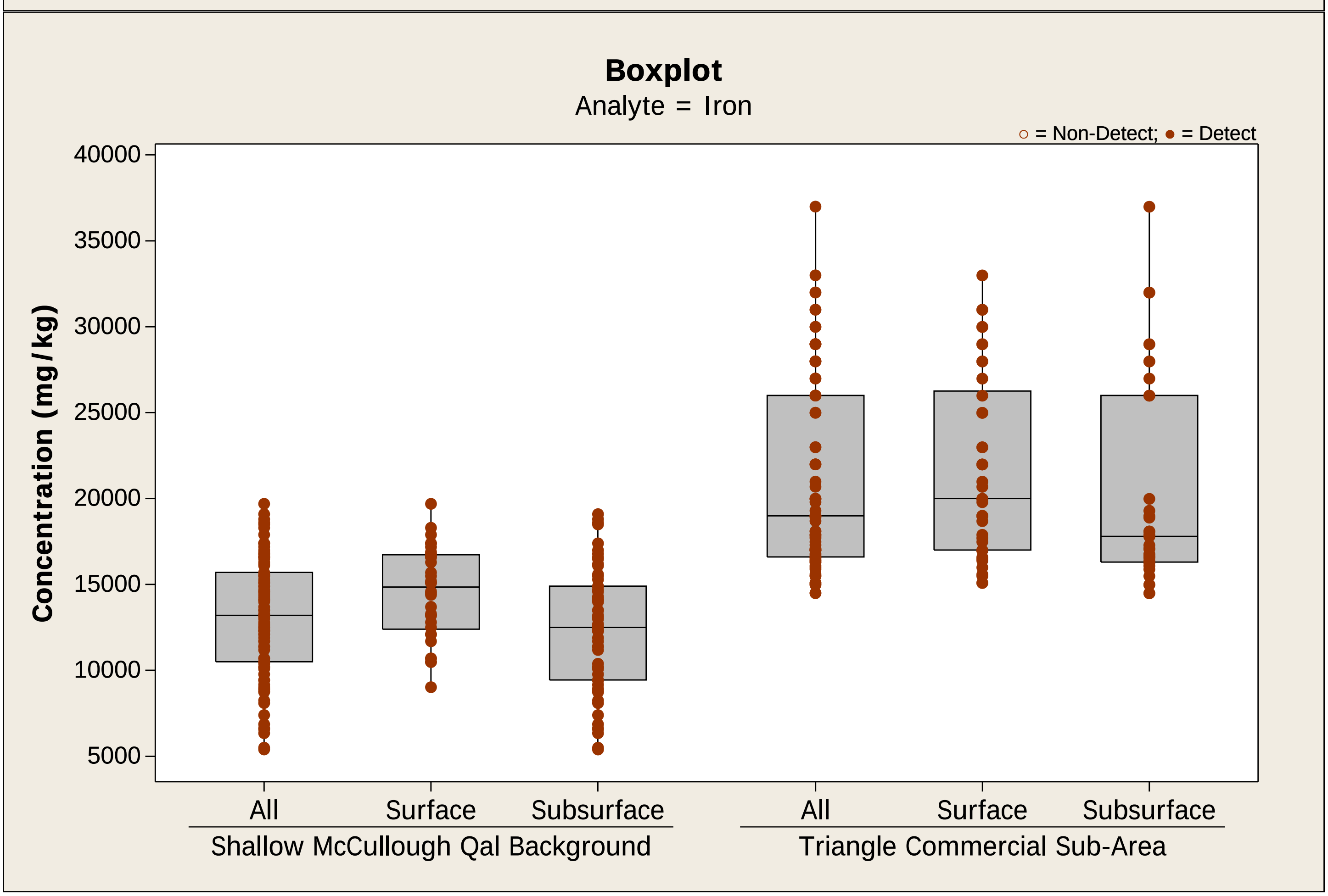


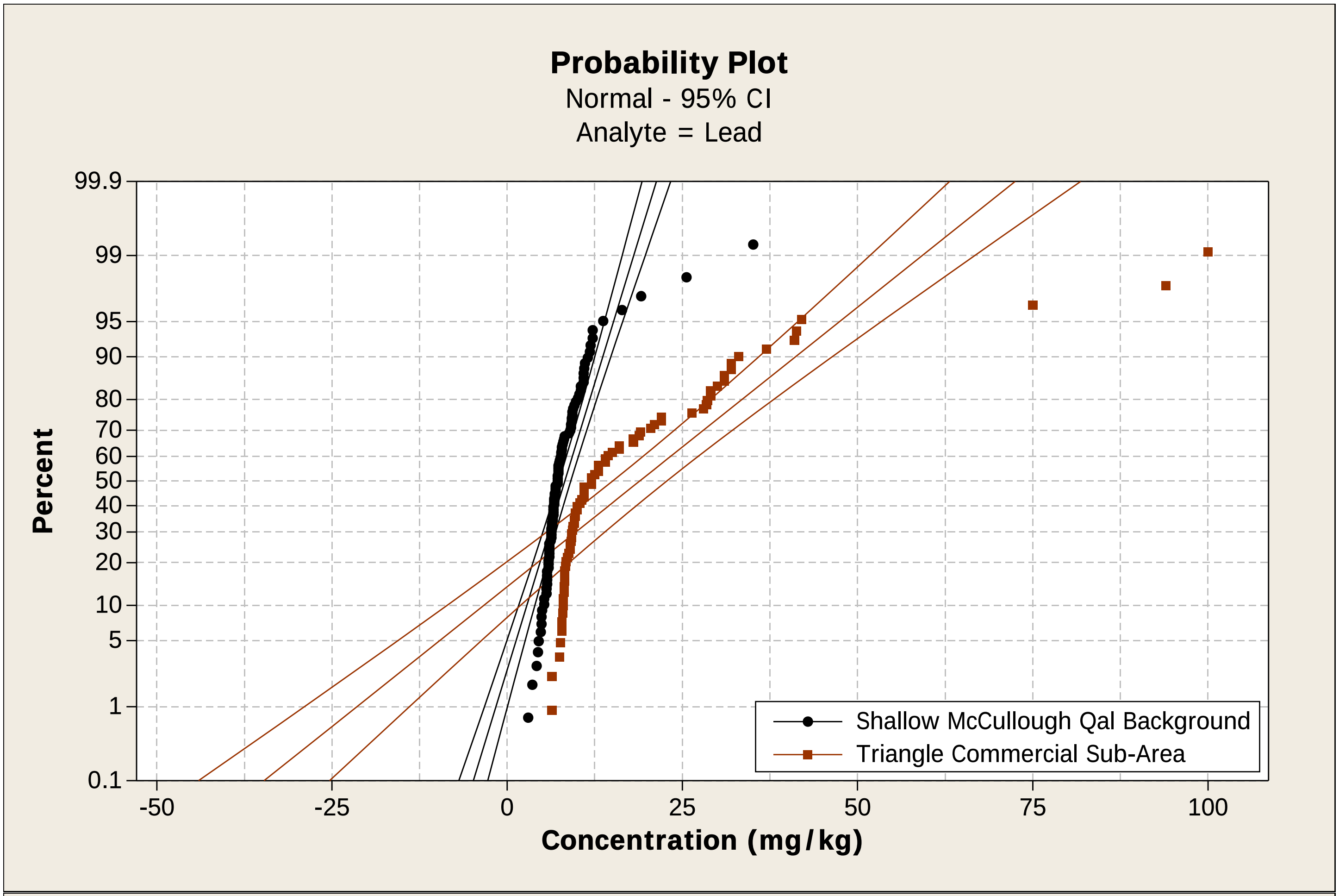
Probability Plot
Normal - 95% CI
Analyte = Copper
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-100
-50
0
50
100
150
200
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



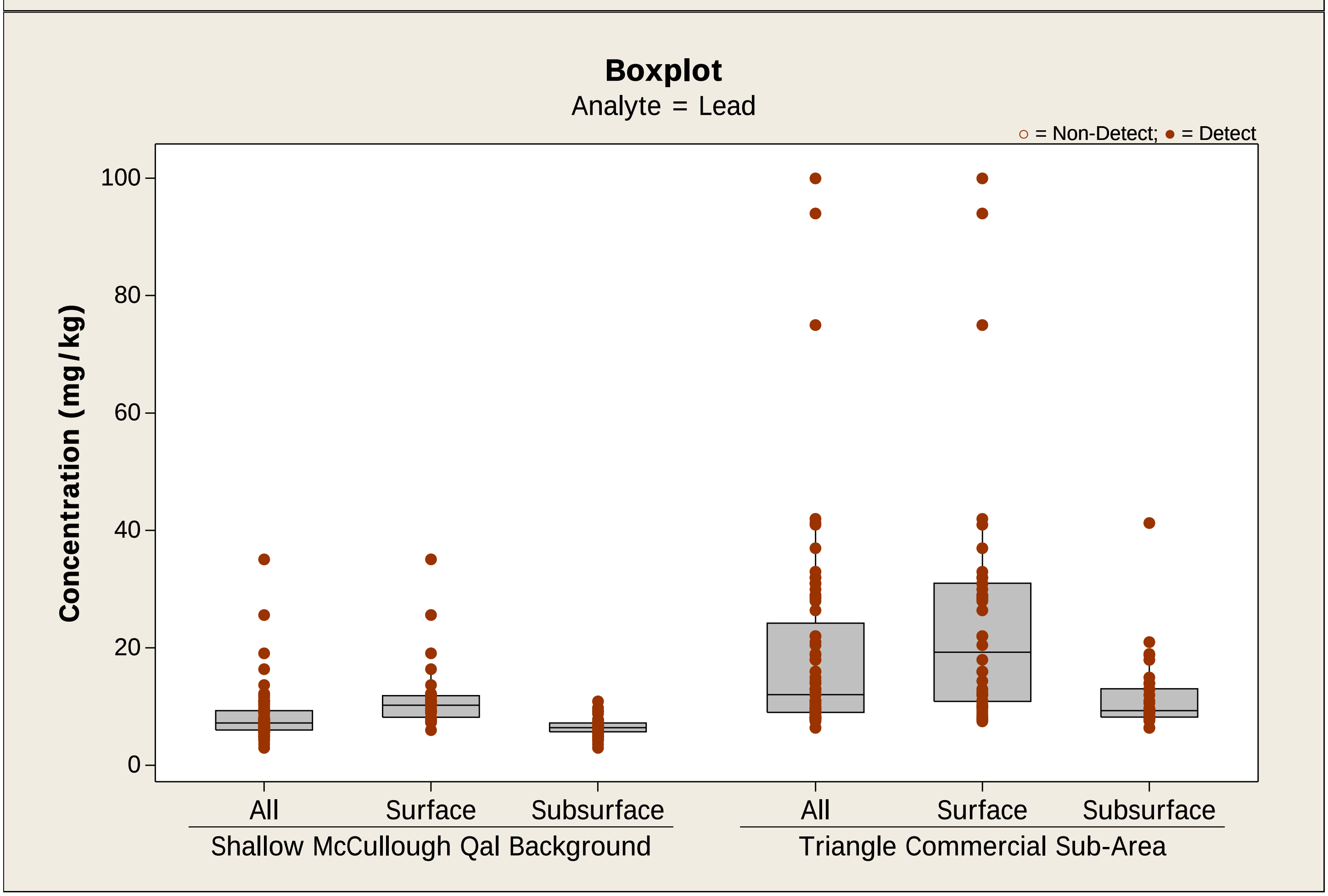
Boxplot
Analyte = Copper
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
200
150
100
50
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Iron
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
Percent
0
10000
20000
30000
40000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

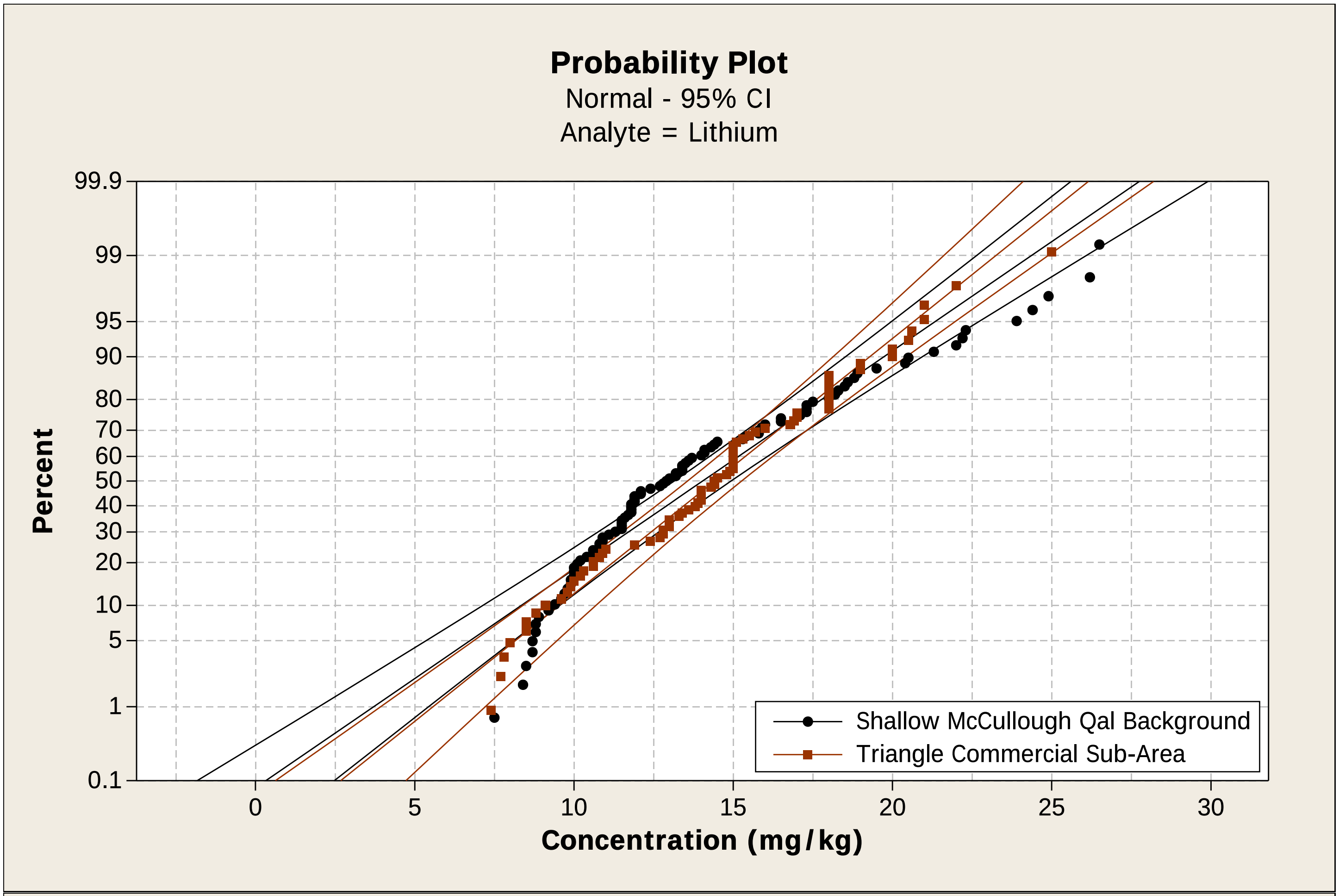

Boxplot
Analyte = Iron
○ = Non-Detect; ● = Detect
40000
35000
30000
25000
20000
15000
10000
5000
Concentration (mg/kg)
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

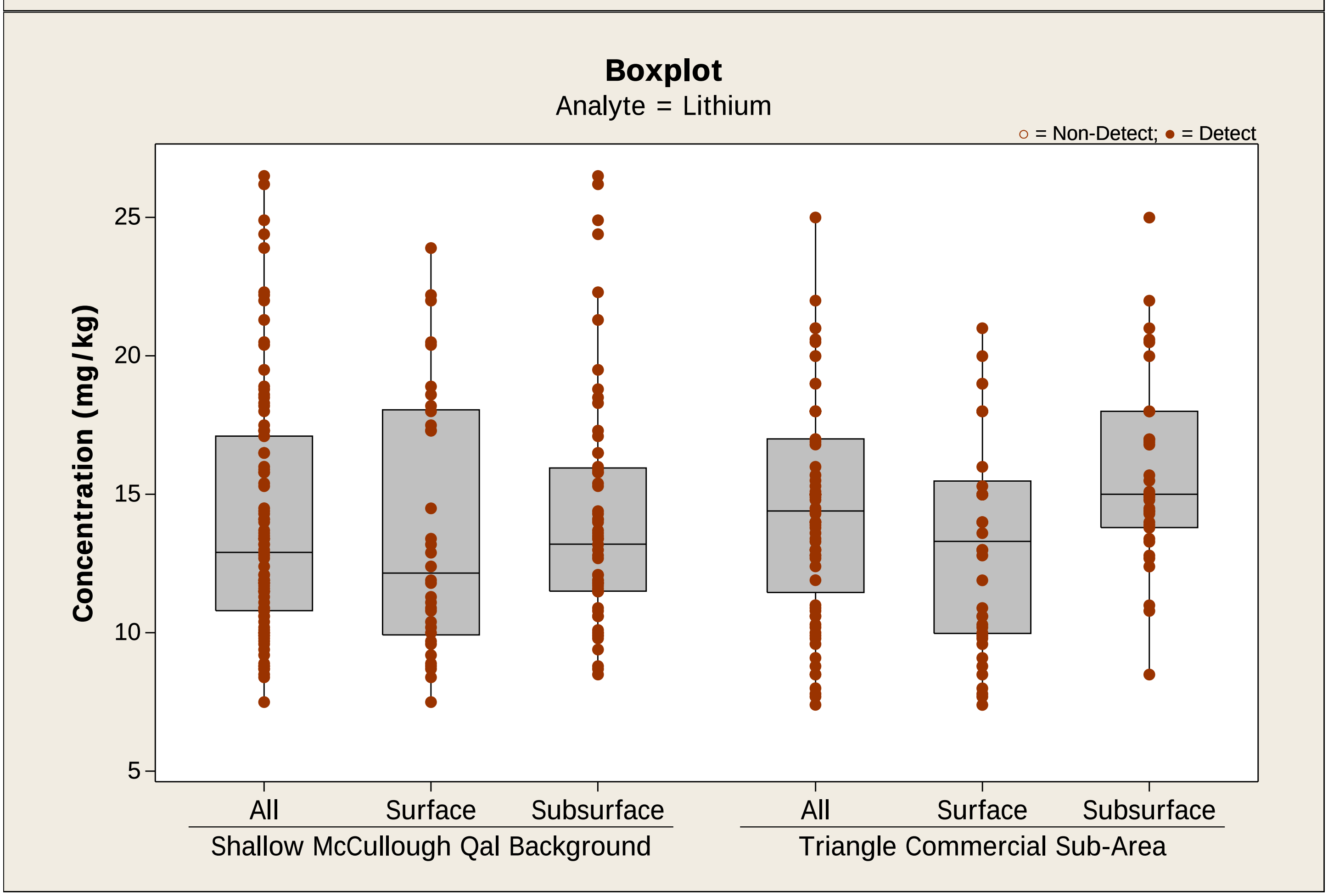


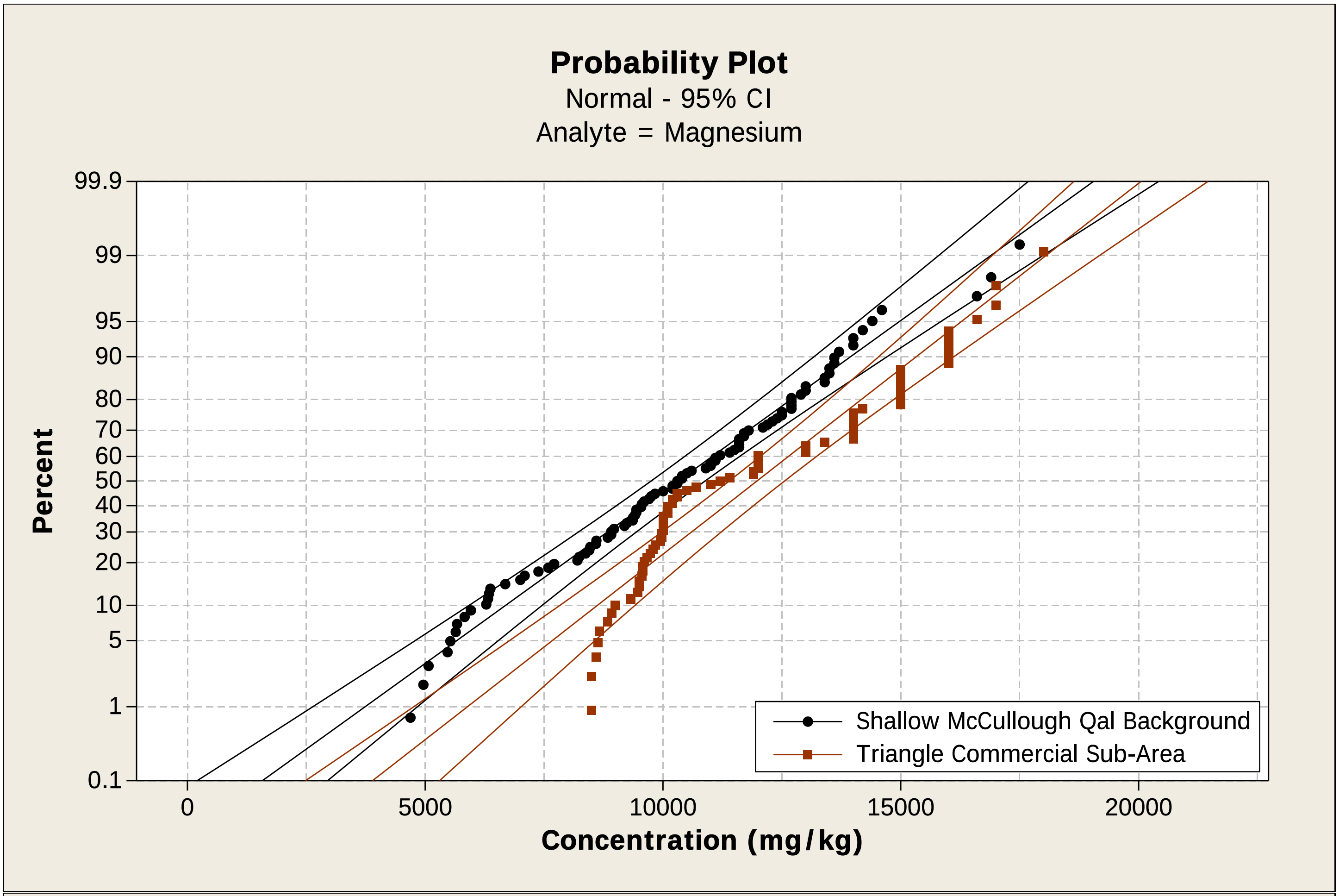
Probability Plot
Normal - 95% CI
Analyte = Lead
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-50
-25
0
25
50
75
100
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

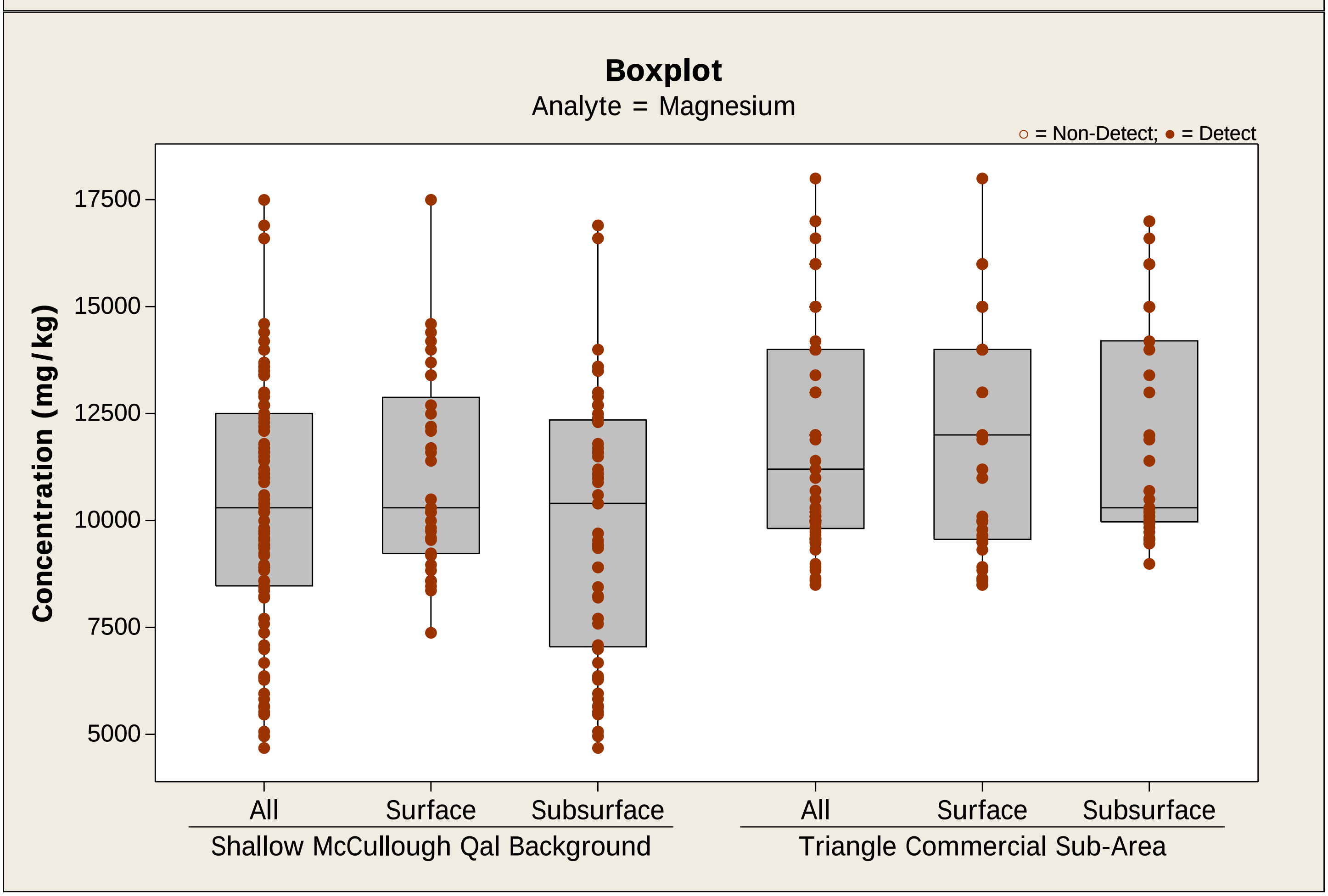


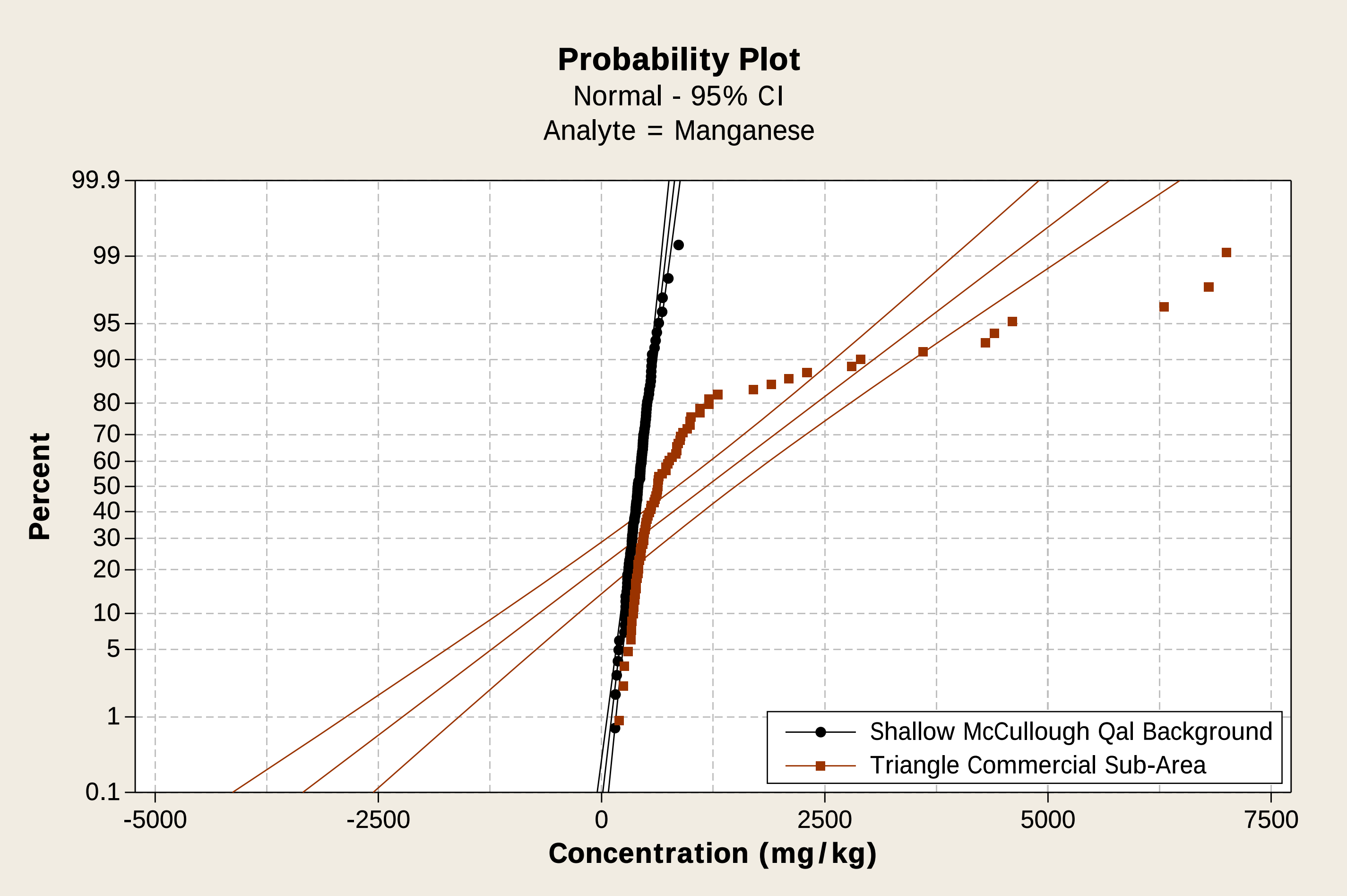
Boxplot
Analyte = Lead
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
100
80
60
40
20
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area

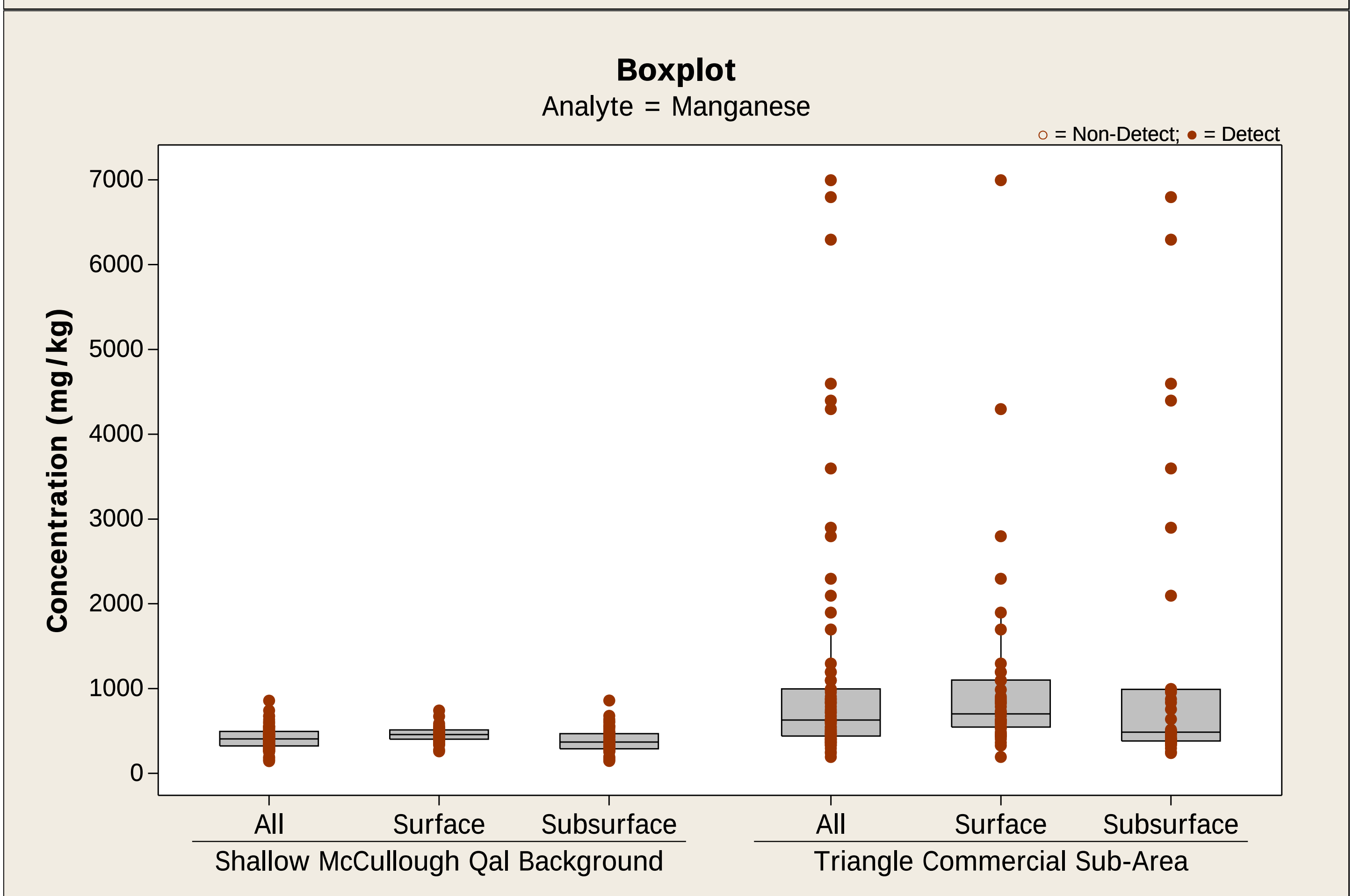

Probability Plot
Normal - 95% CI
Analyte = Lithium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
5
10
15
20
25
30
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

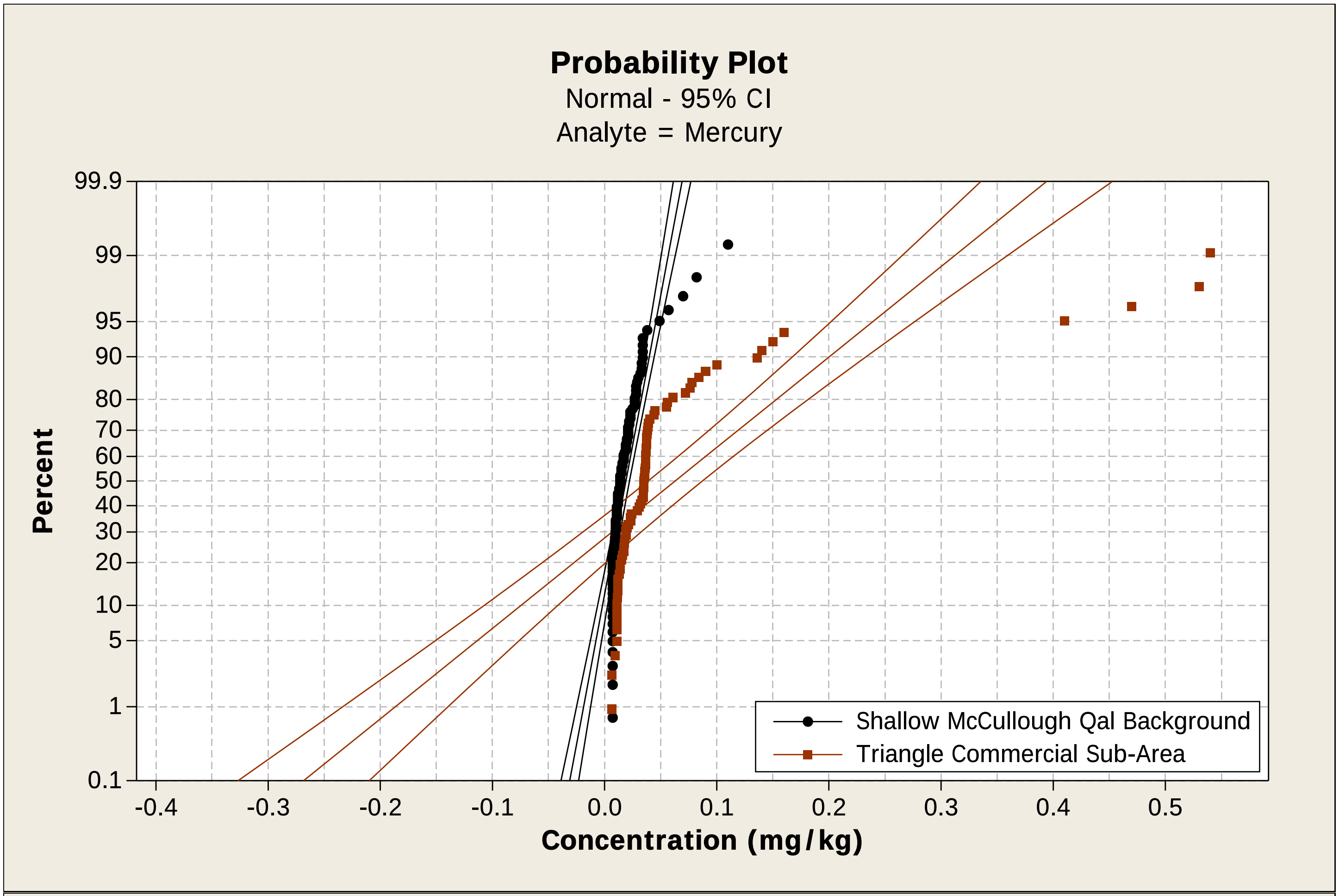

Boxplot
Analyte = Lithium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
25
20
15
10
5
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

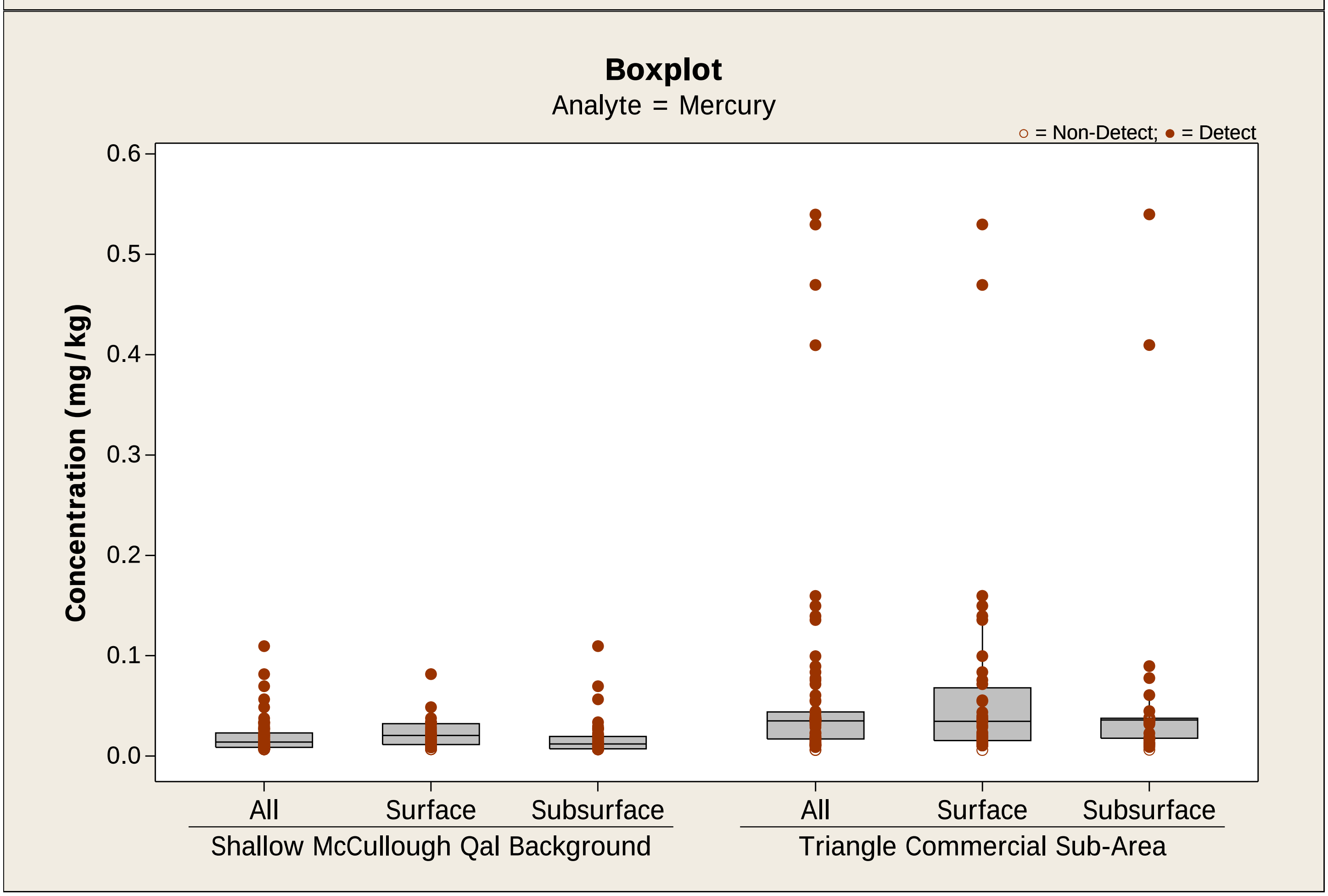

Probability Plot
Normal - 95% CI
Analyte = Magnesium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
5000
10000
15000
20000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

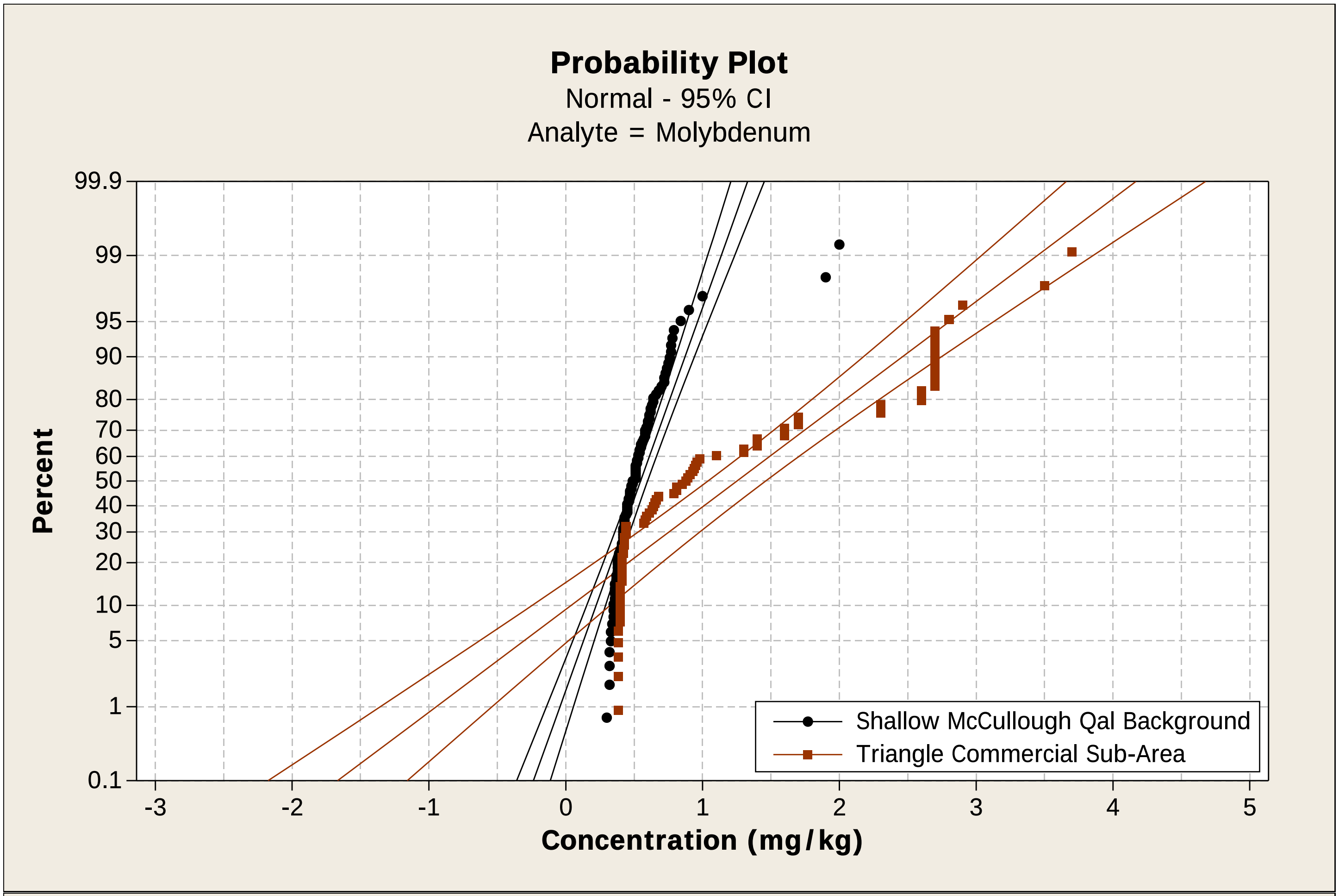

Boxplot
Analyte = Magnesium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
17500
15000
12500
10000
7500
5000
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

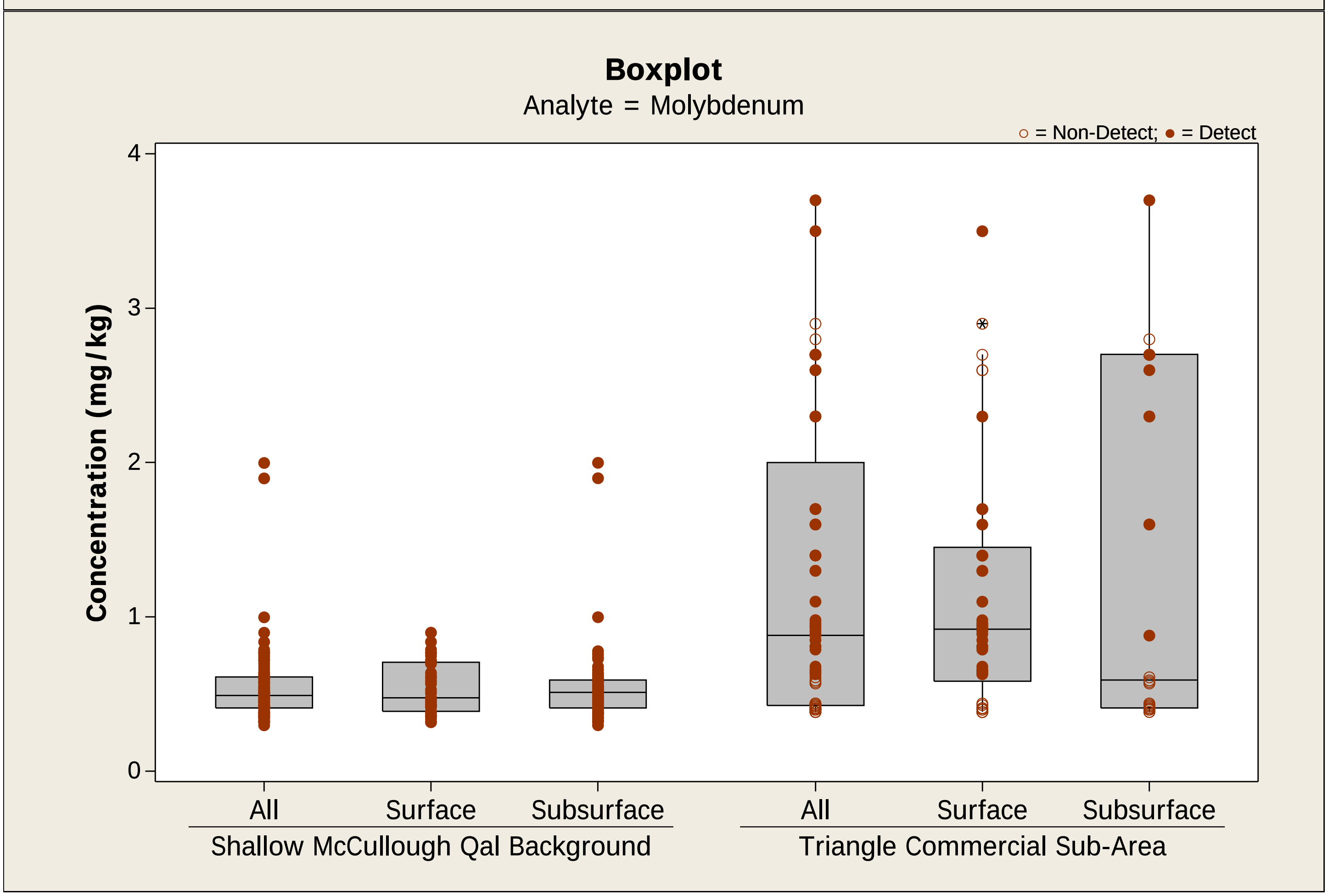

Probability Plot
Normal - 95% CI
Analyte = Manganese
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-5000
-2500
0
2500
5000
7500
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

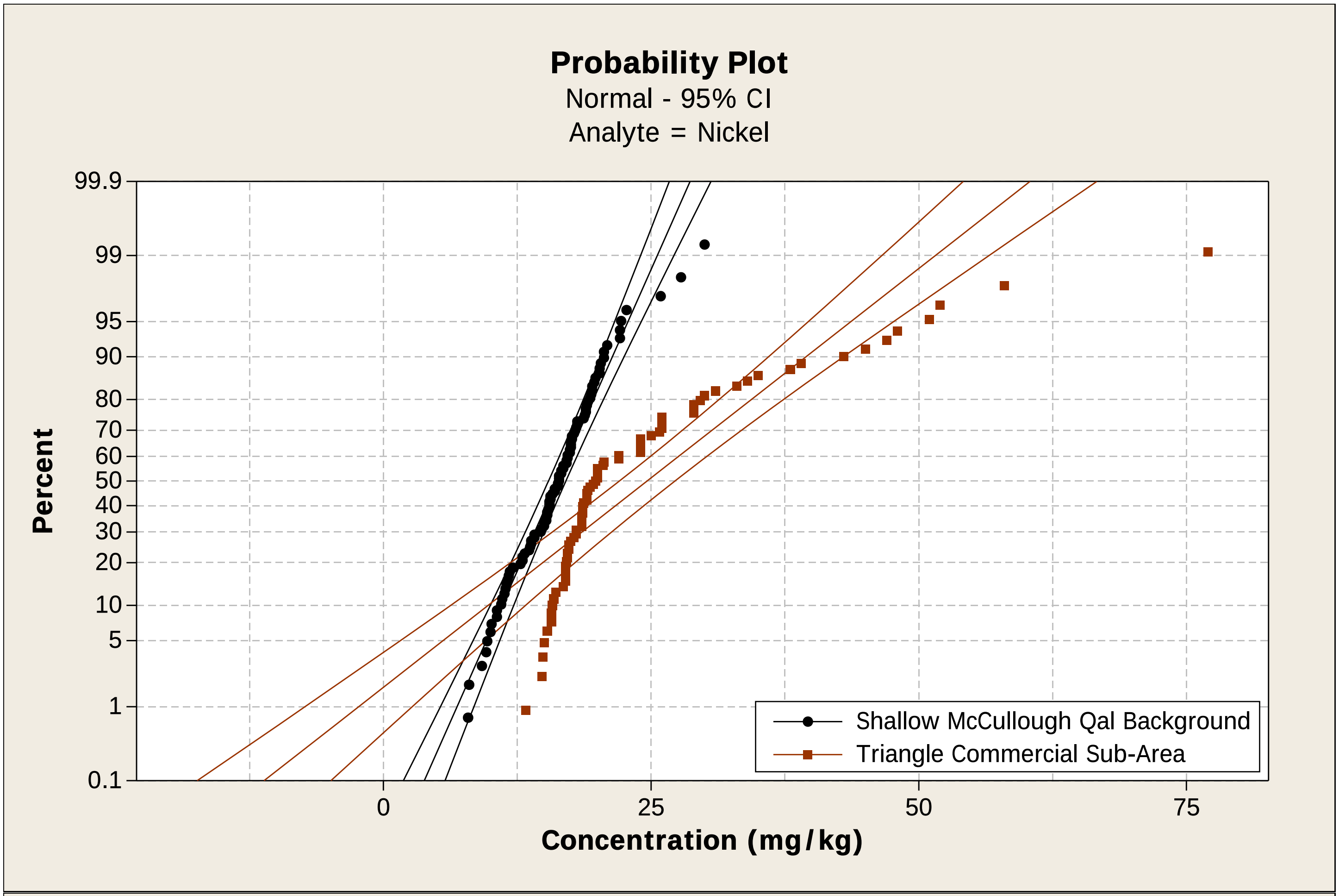

Boxplot
Analyte = Manganese
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
7000
6000
5000
4000
3000
2000
1000
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Mercury
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-0.4
-0.3
-0.2
-0.1
0.0
0.1
0.2
0.3
0.4
0.5
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

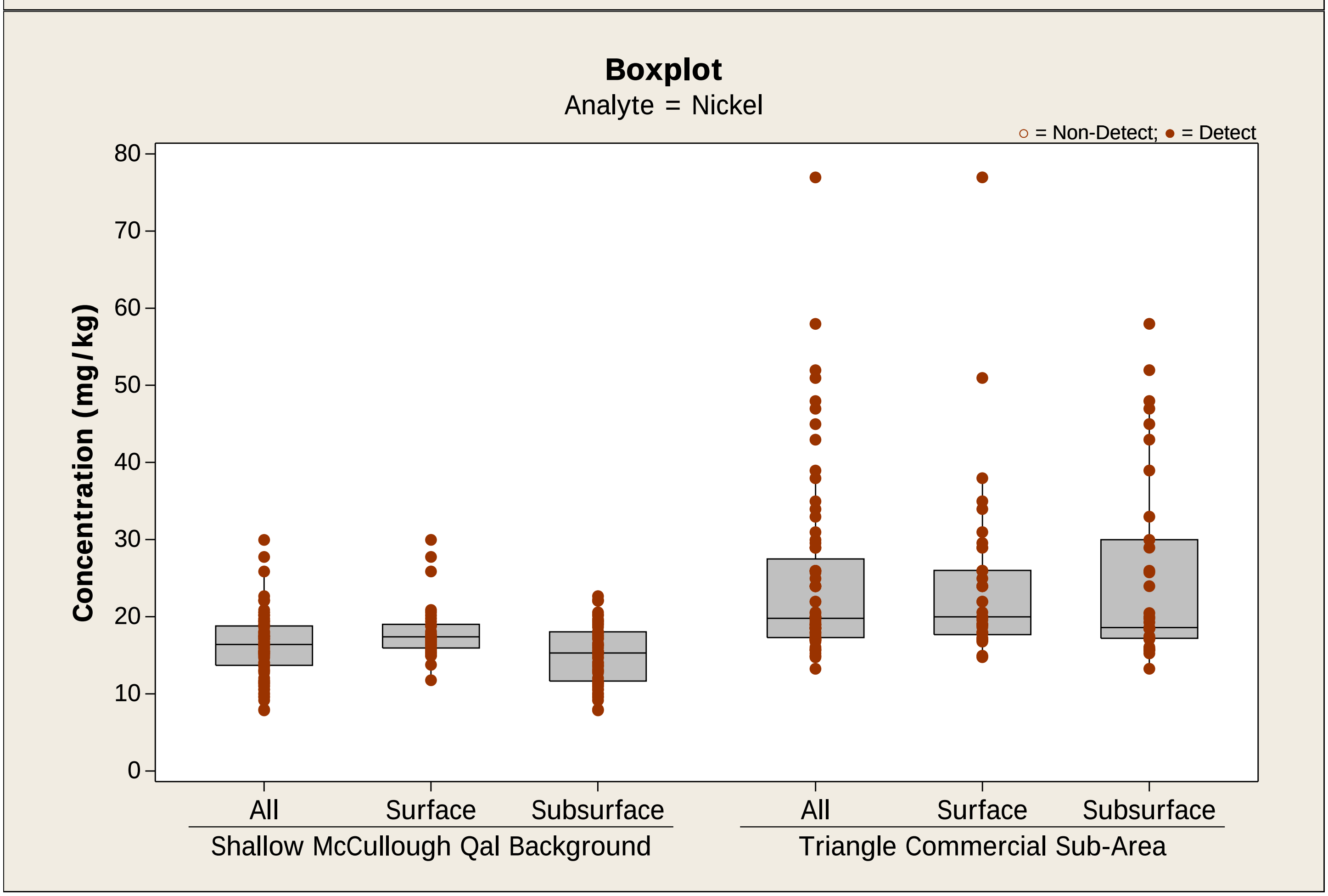

Boxplot
Analyte = Mercury
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Molybdenum
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-3
-2
-1
0
1
2
3
4
5
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

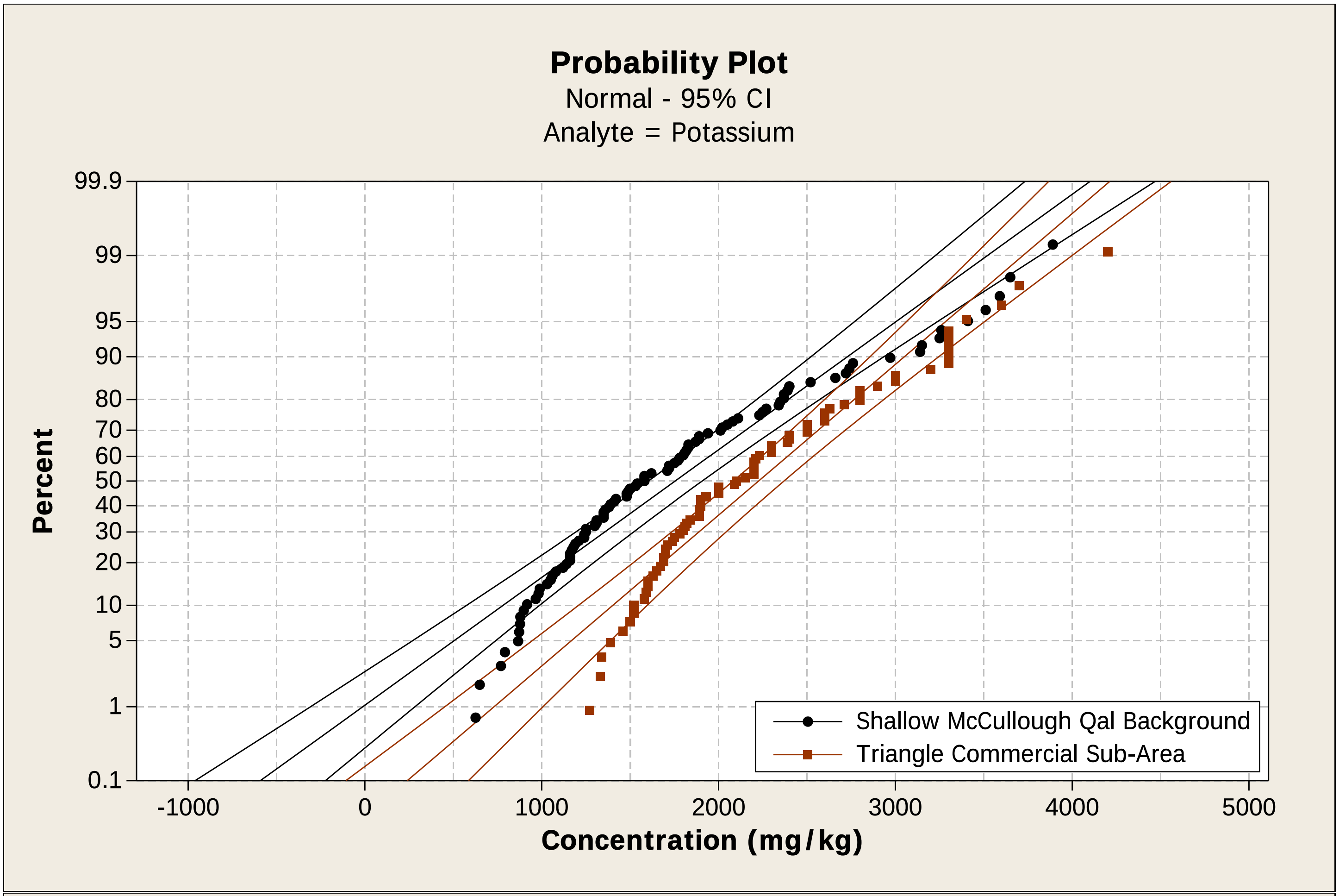

Boxplot
Analyte = Molybdenum
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
4
3
2
1
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

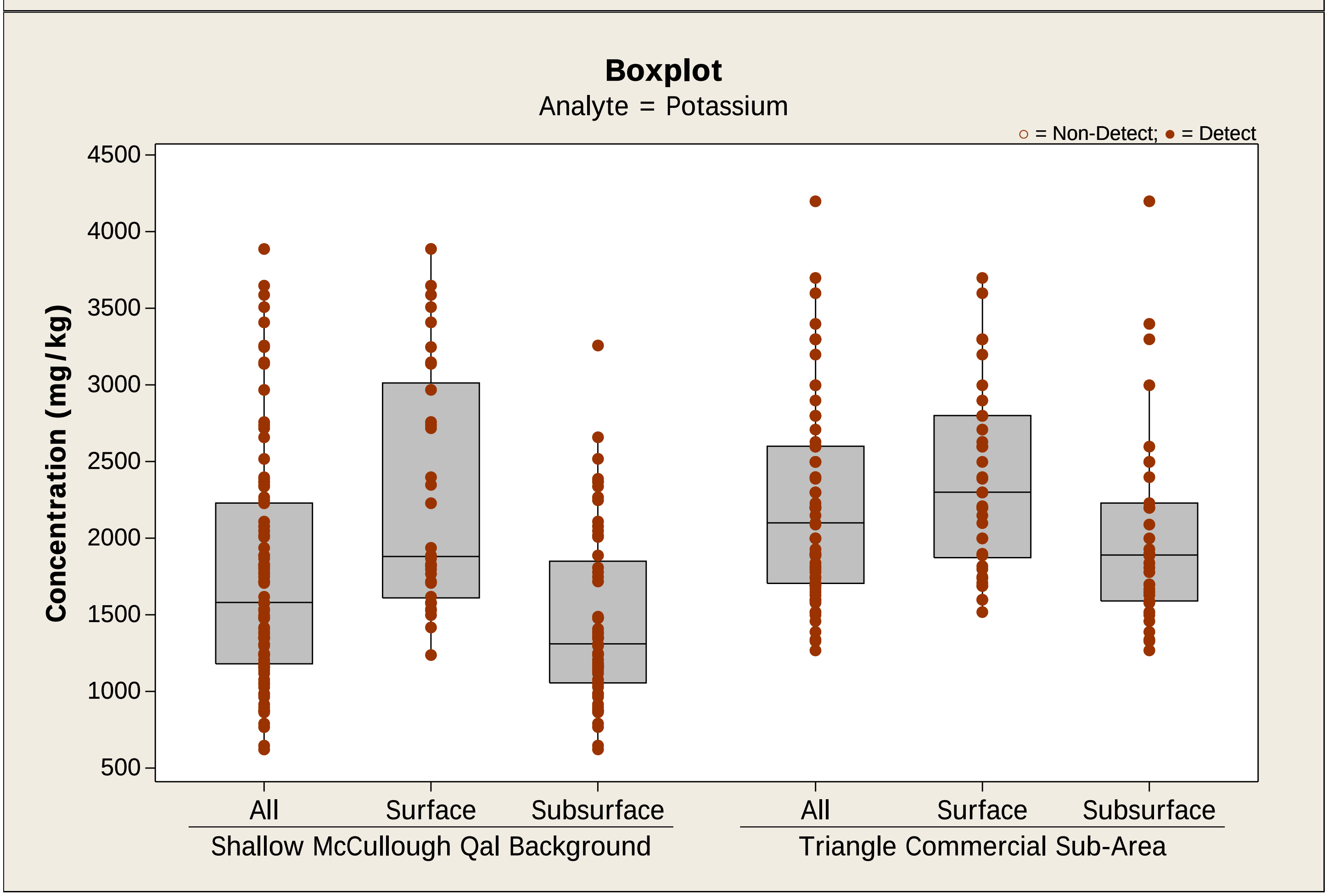


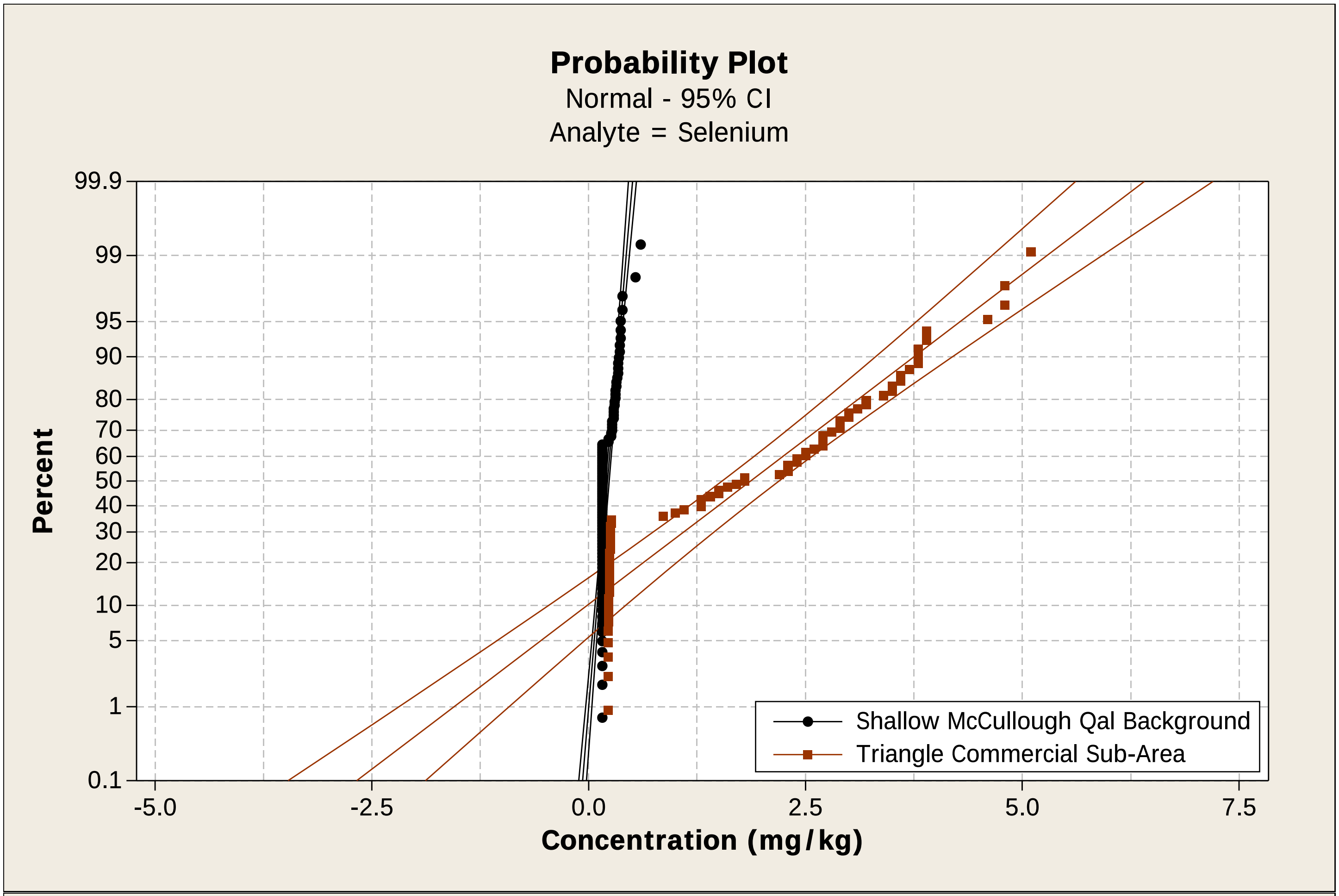
Probability Plot
Normal - 95% CI
Analyte = Nickel
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
25
50
75
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

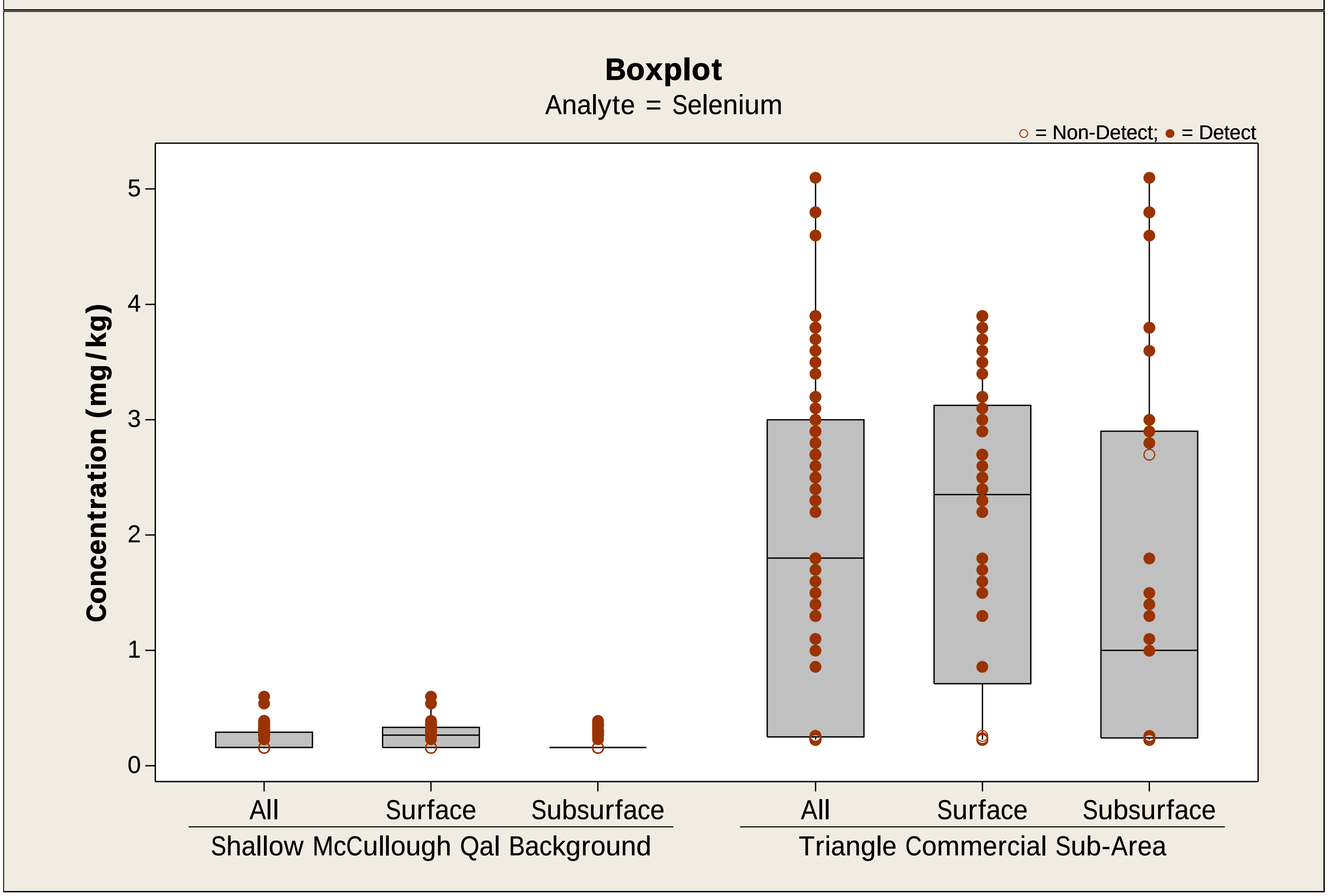


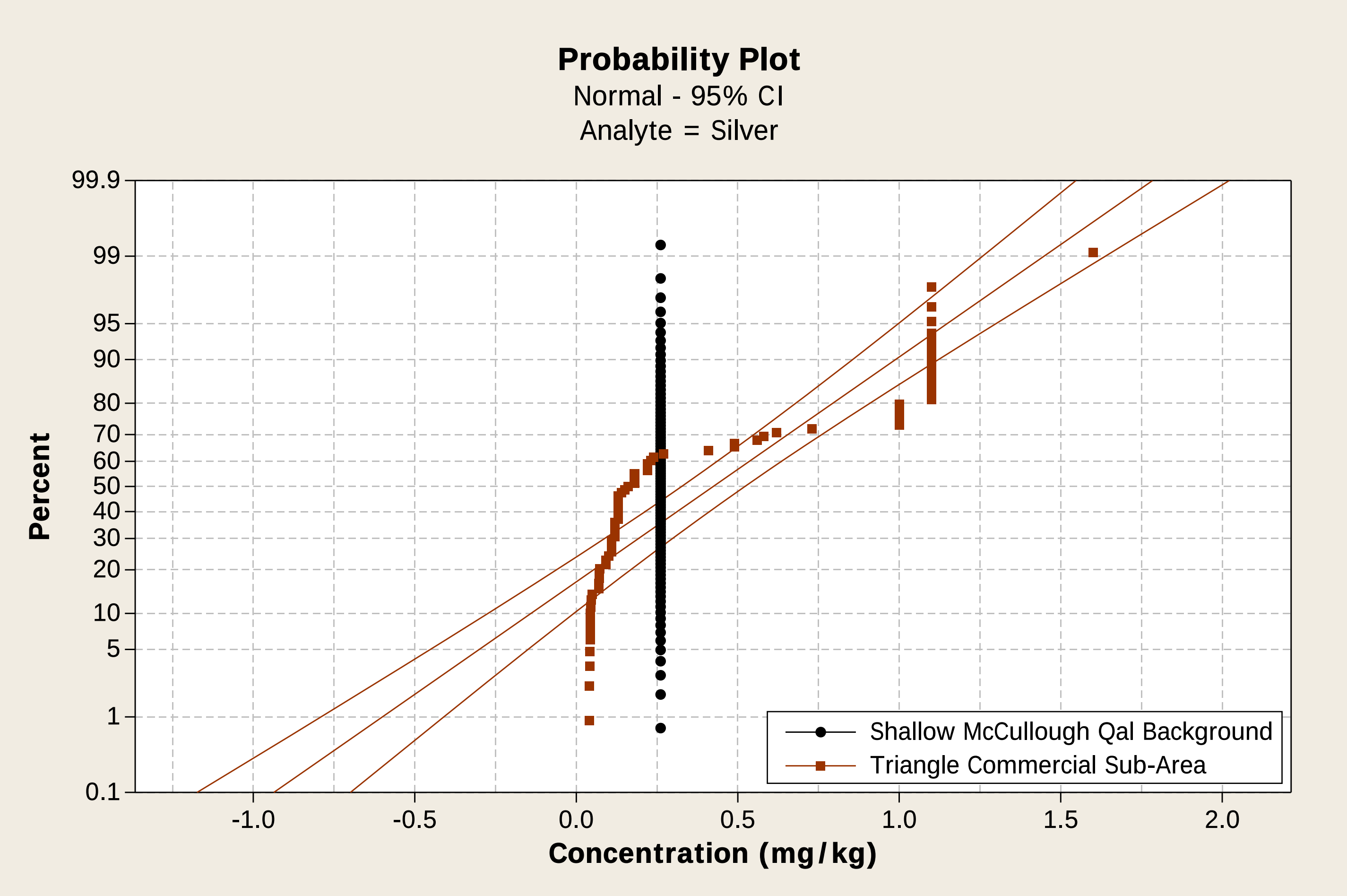
Boxplot
Analyte = Nickel
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
80
70
60
50
40
30
20
10
0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Potassium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-1000
0
1000
2000
3000
4000
5000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

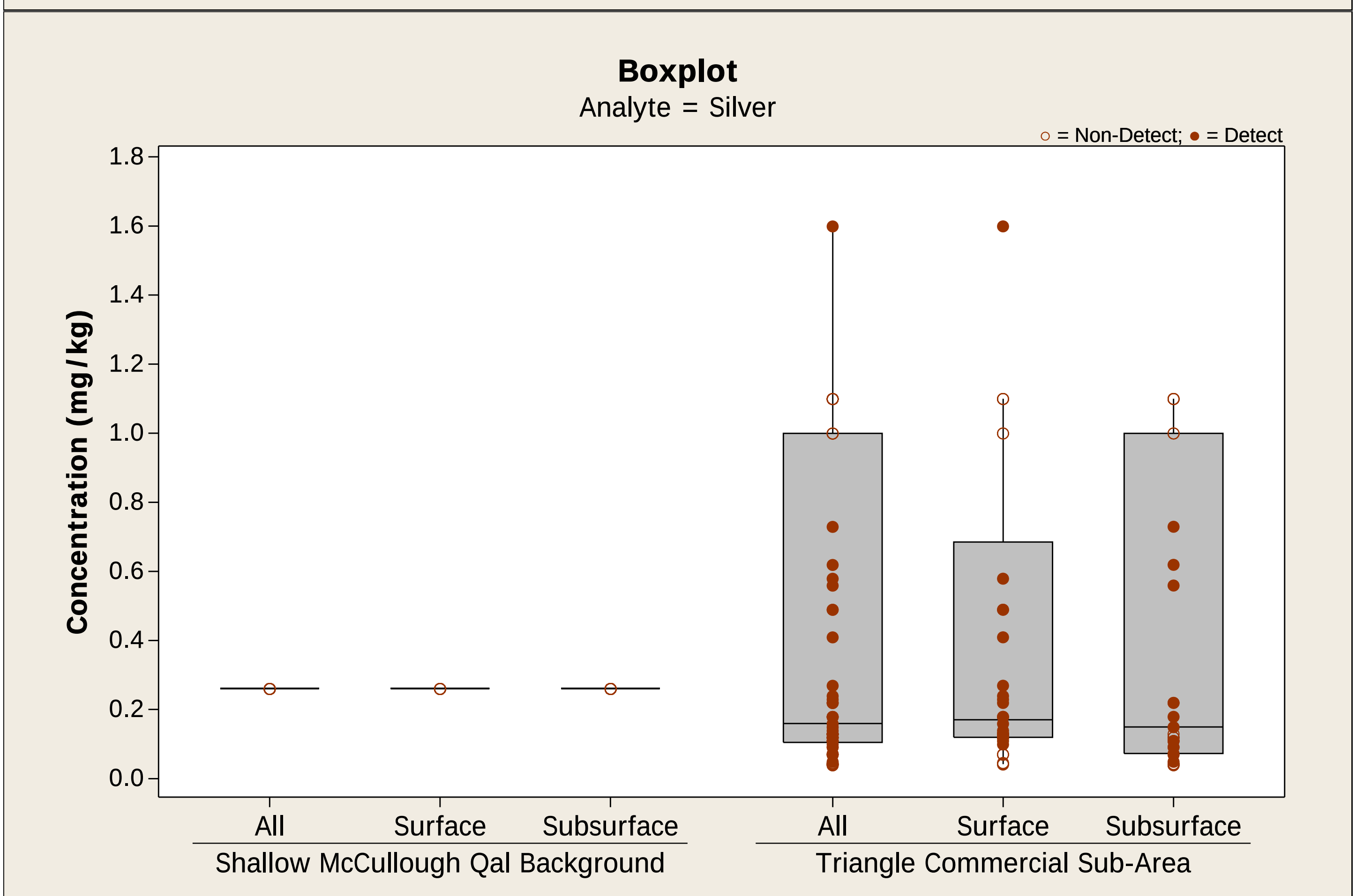

Boxplot
Analyte = Potassium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
4500
4000
3500
3000
2500
2000
1500
1000
500
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Selenium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-5.0
-2.5
0.0
2.5
5.0
7.5
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

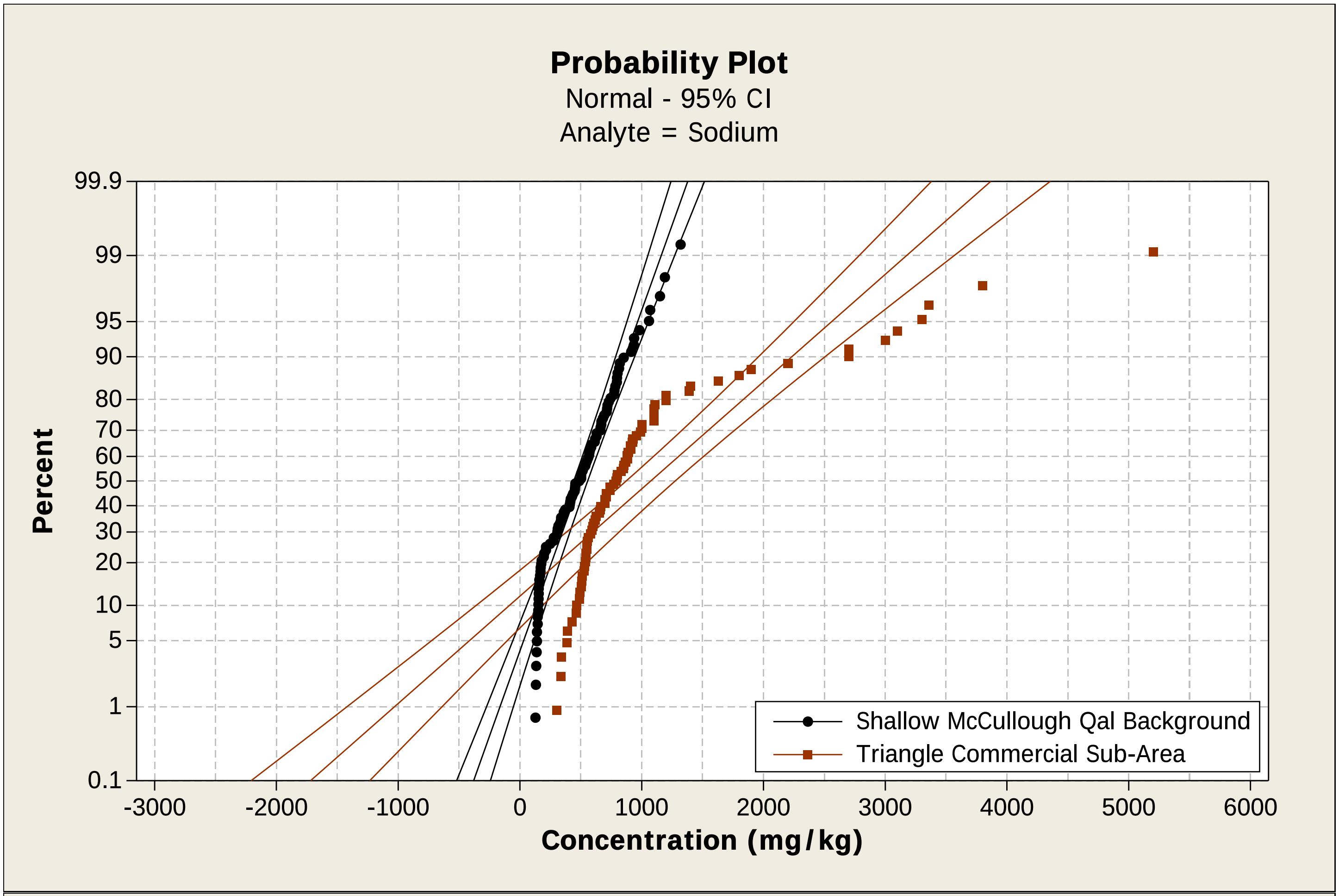

Boxplot
Analyte = Selenium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
5
4
3
2
1
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area



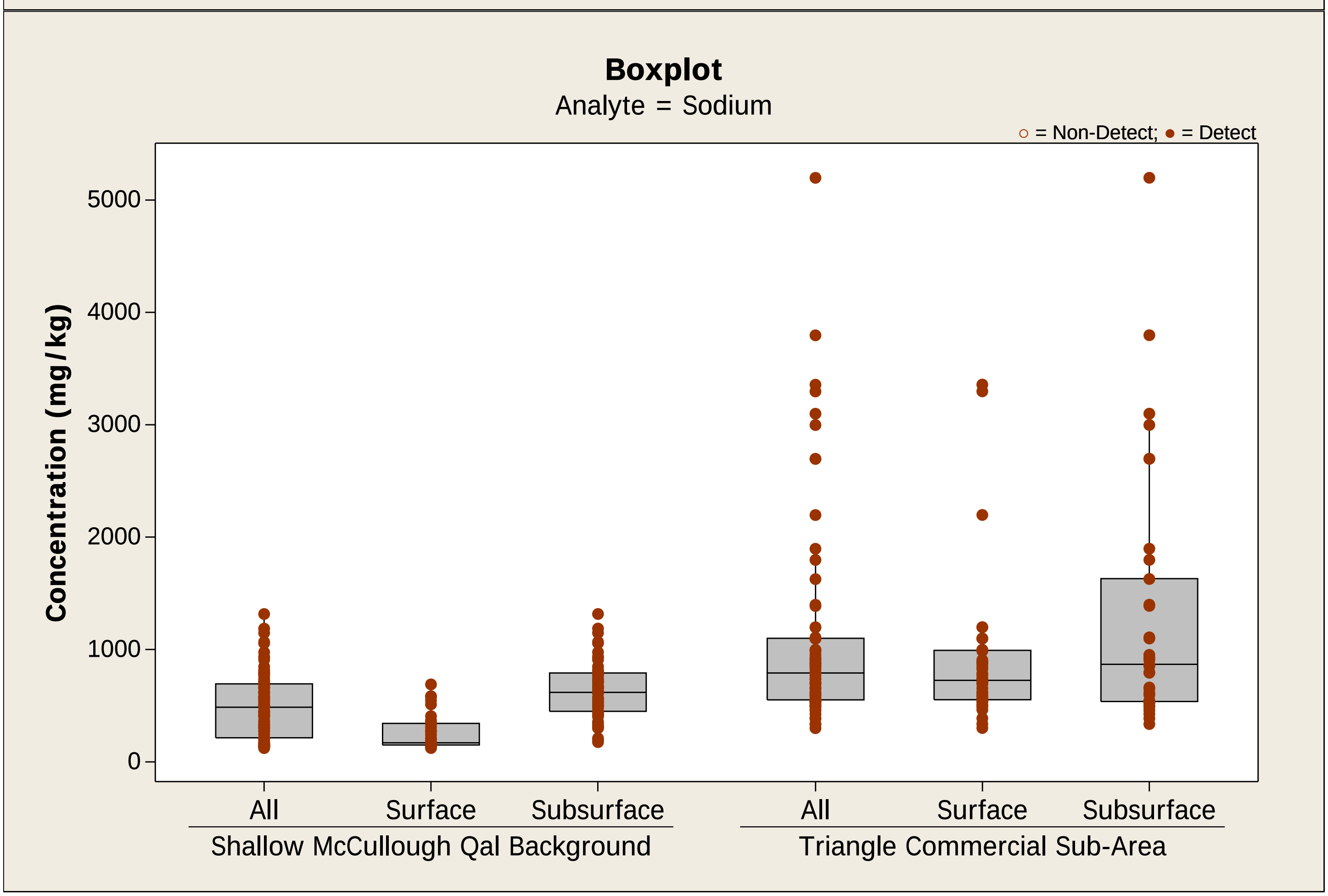
Probability Plot
Normal - 95% CI
Analyte = Silver
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



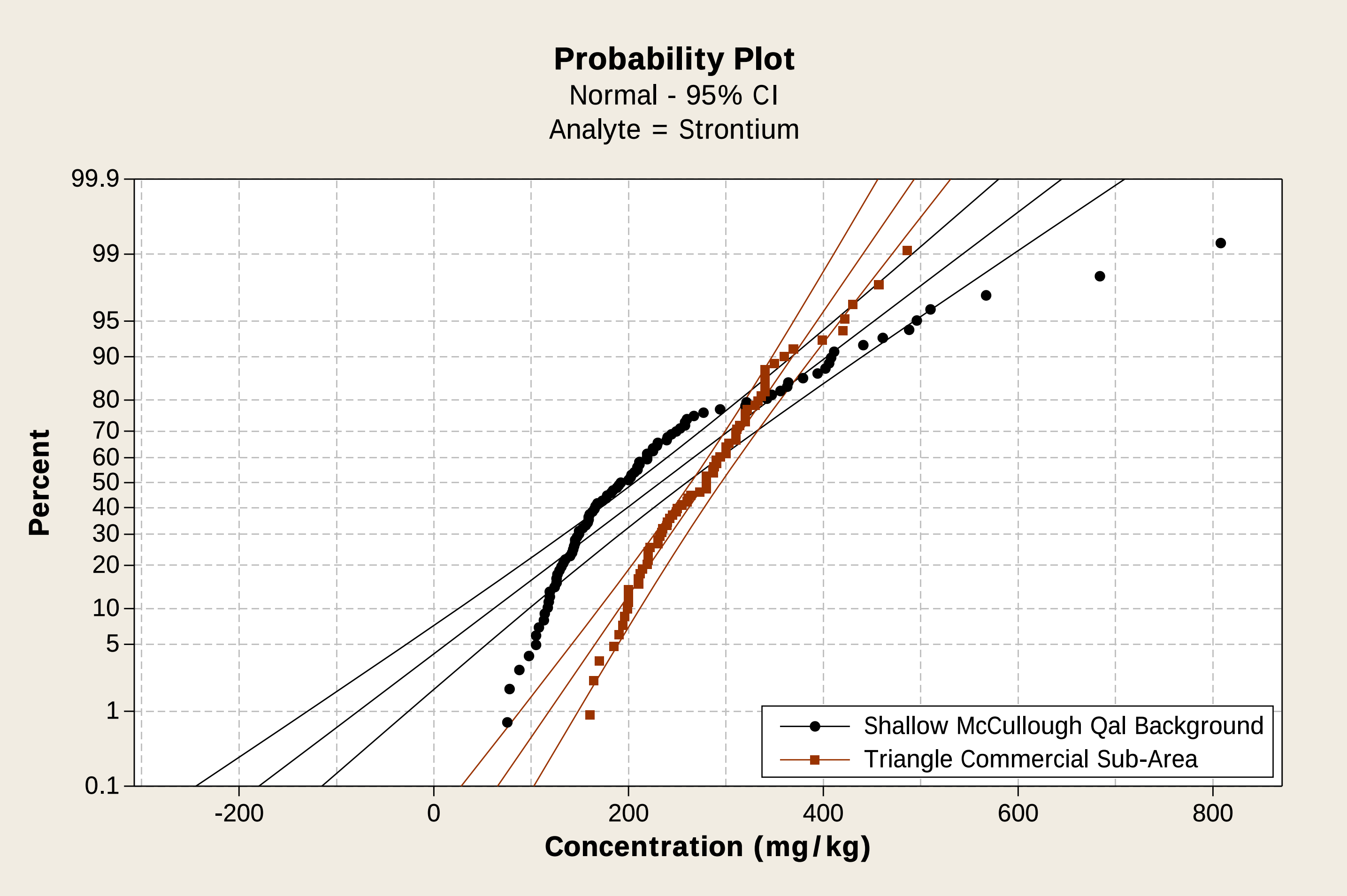
Boxplot
Analyte = Silver
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



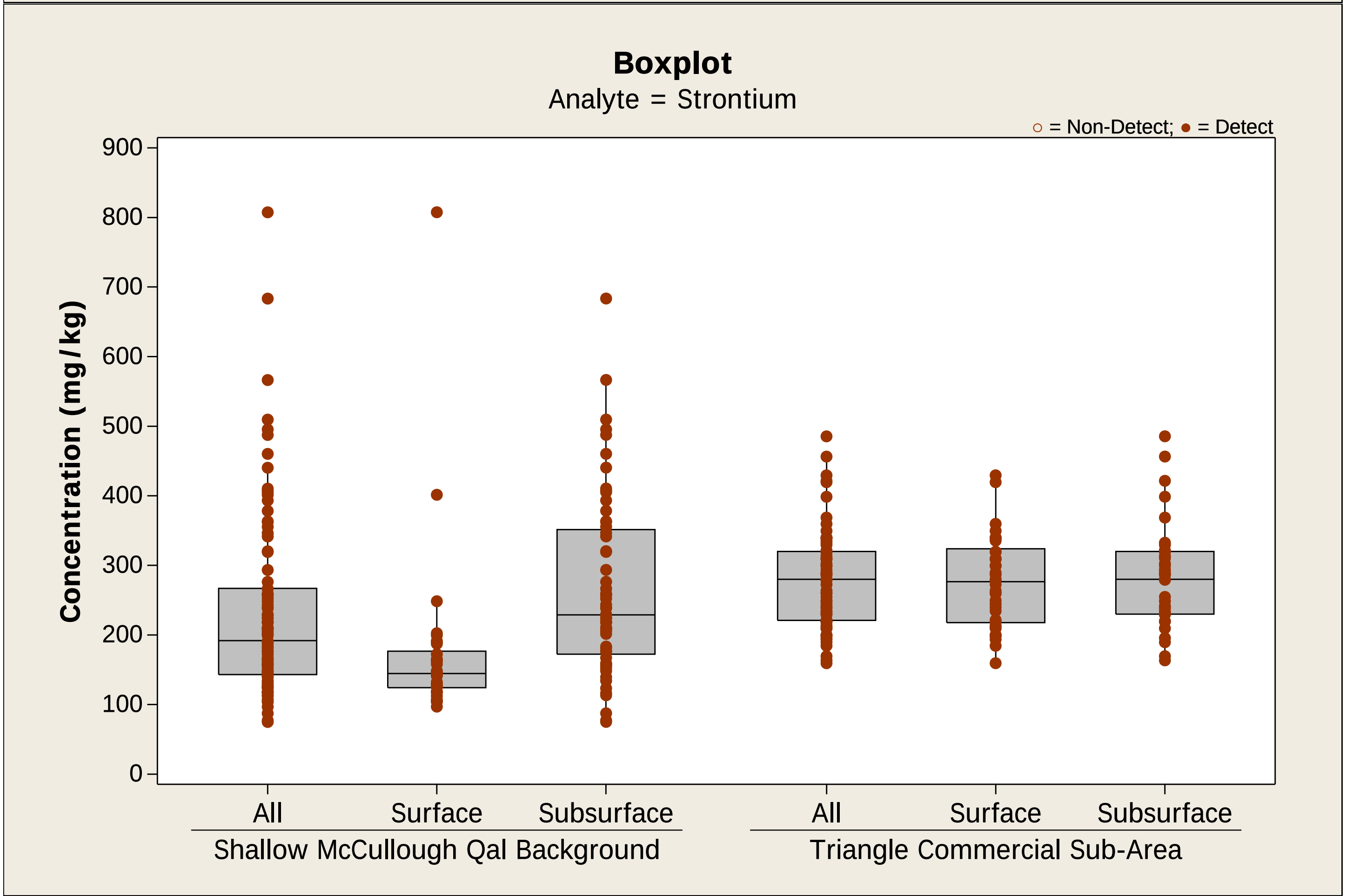
Probability Plot
Normal - 95% CI
Analyte = Sodium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-3000
-2000
-1000
0
1000
2000
3000
4000
5000
6000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



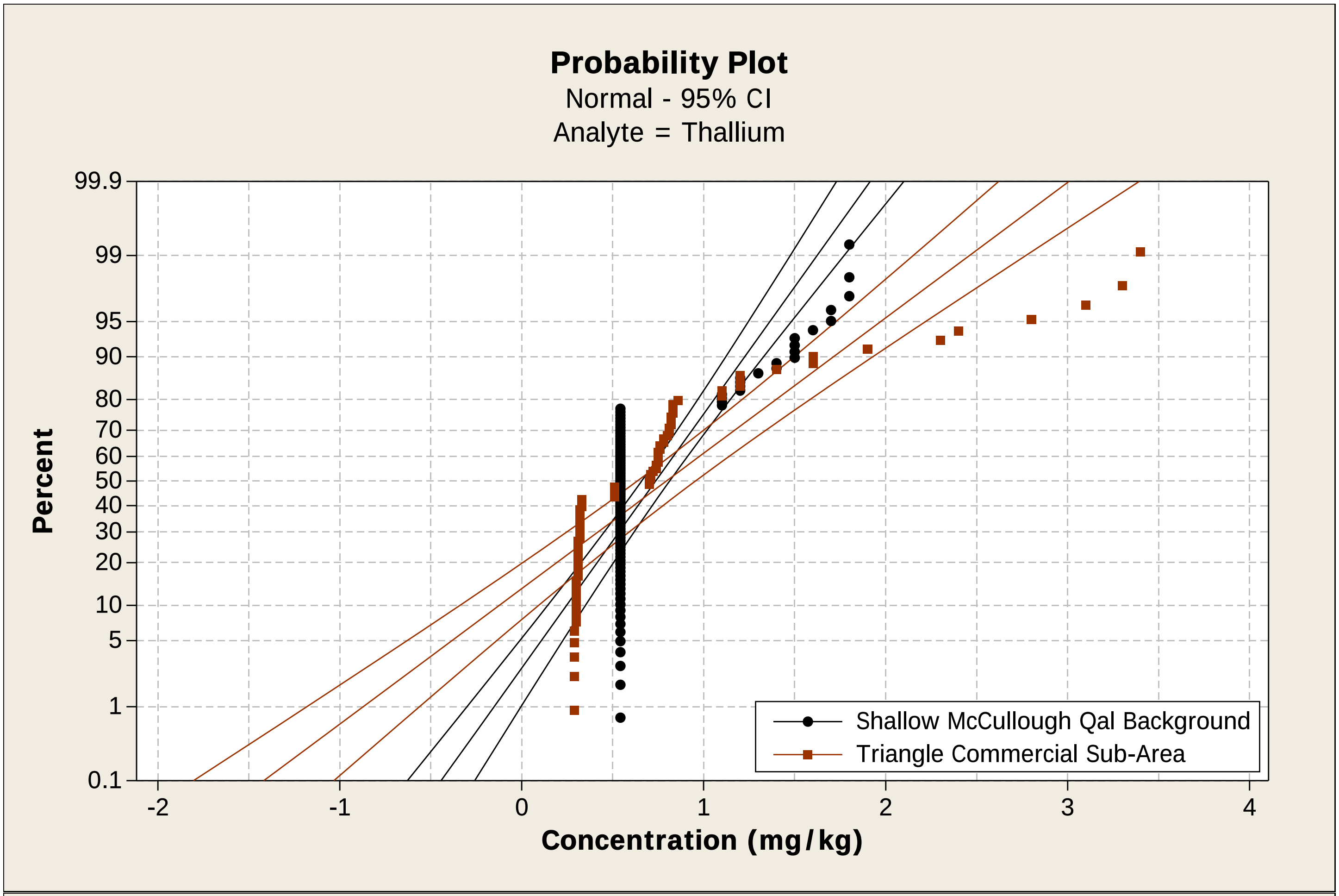
Boxplot
Analyte = Sodium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
5000
4000
3000
2000
1000
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area



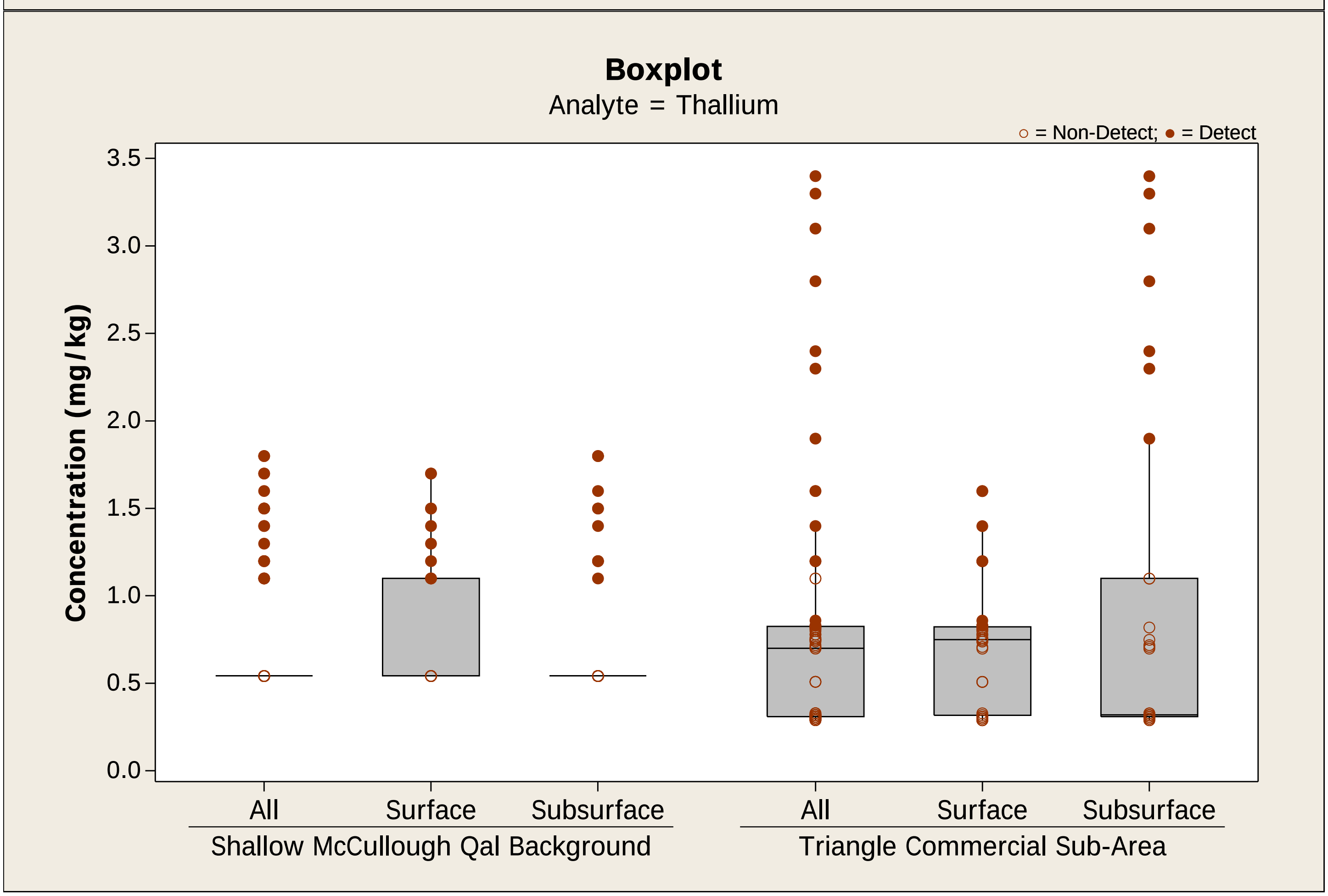
Probability Plot
Normal - 95% CI
Analyte = Strontium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-200
0
200
400
600
800
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



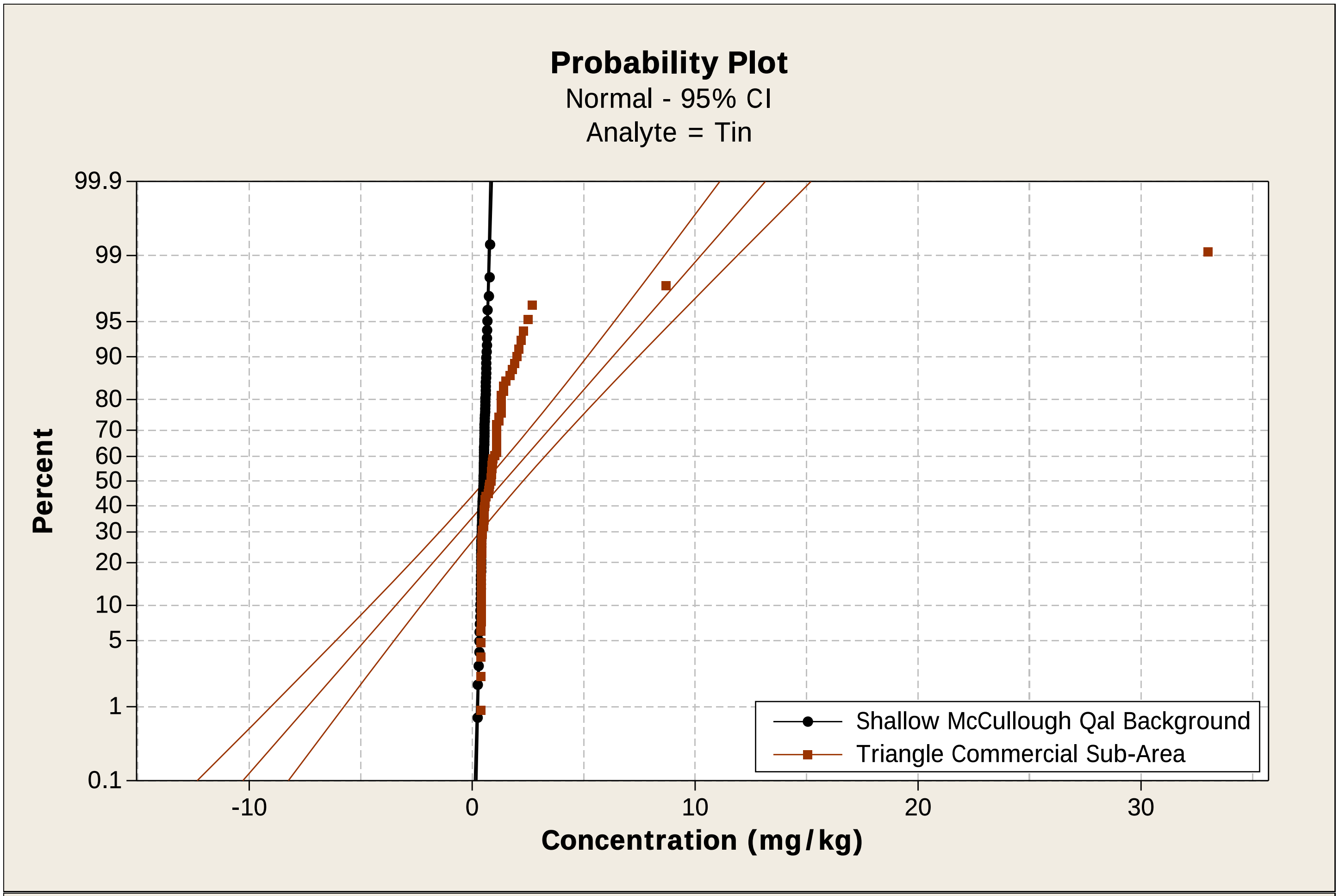
Boxplot
Analyte = Strontium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
900
800
700
600
500
400
300
200
100
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area

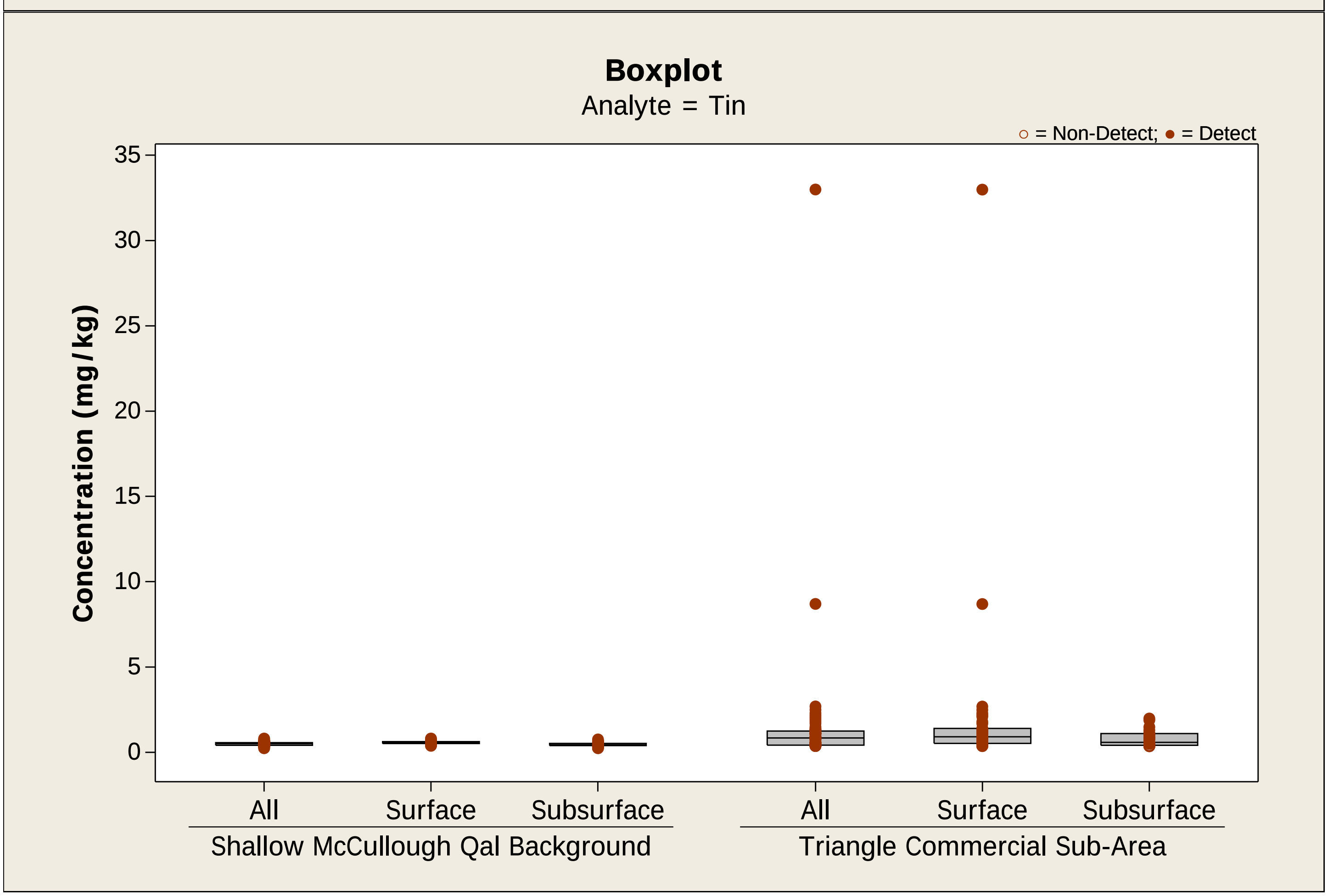


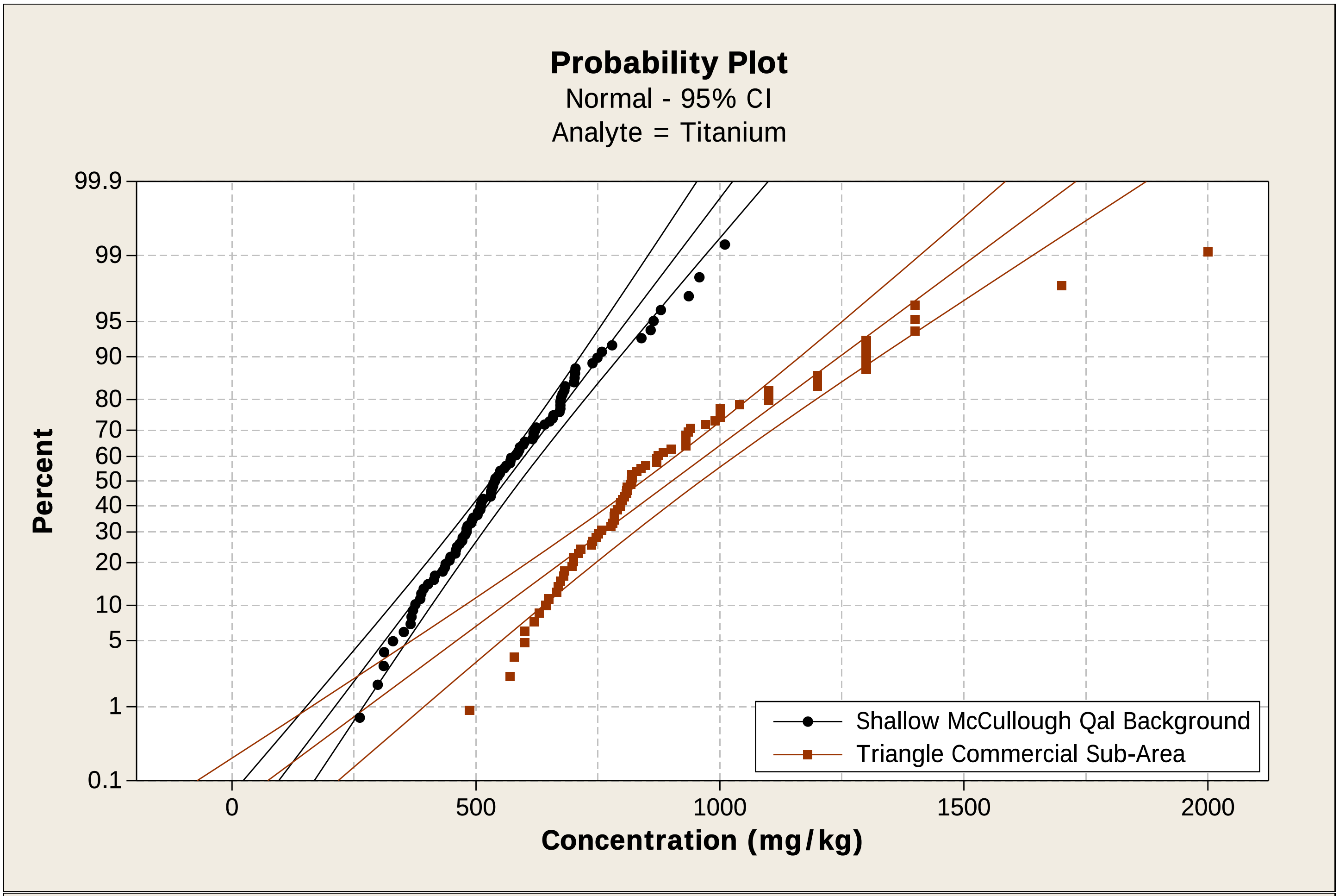
Probability Plot
Normal - 95% CI
Analyte = Thallium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-2
-1
0
1
2
3
4
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



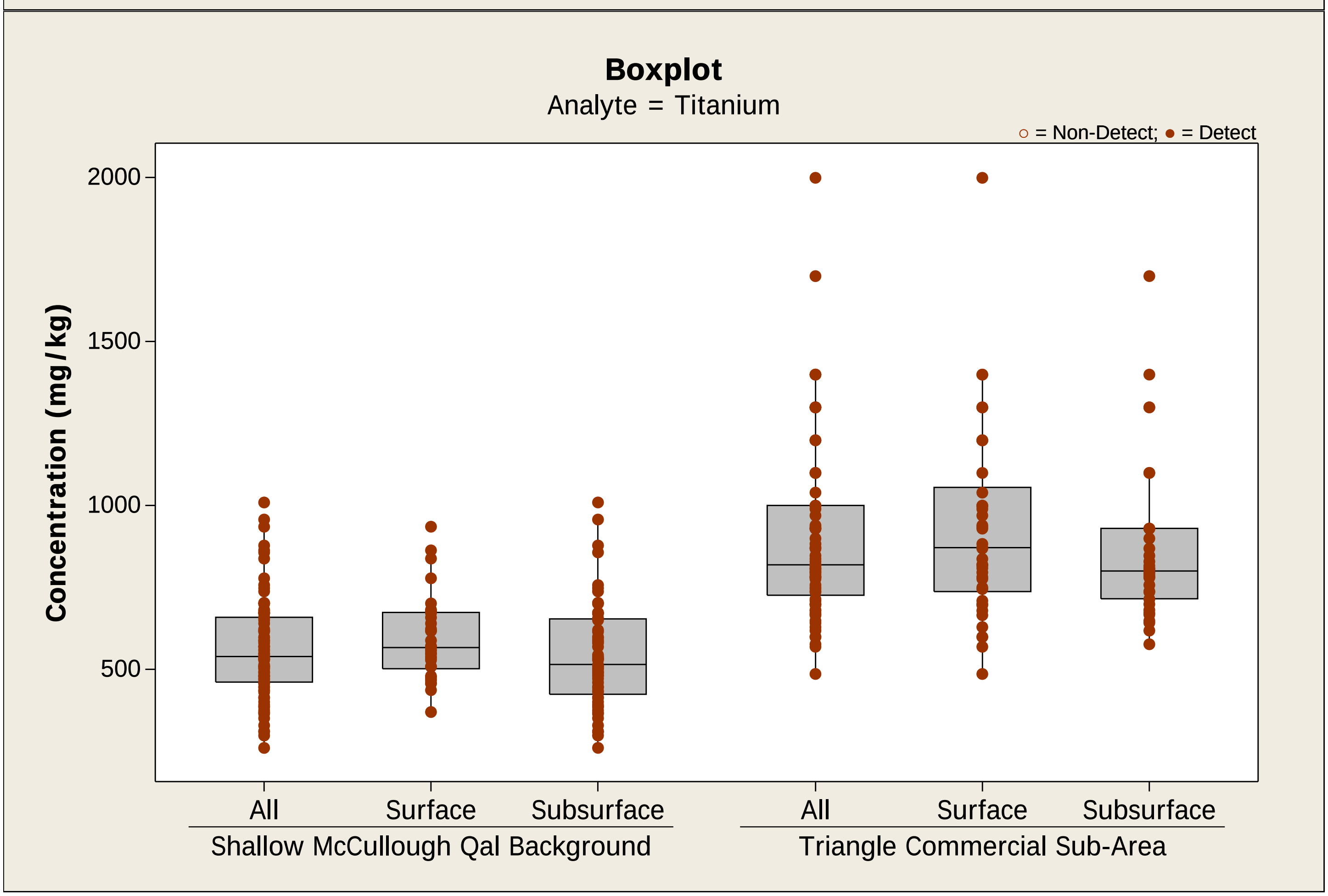
Boxplot
Analyte = Thallium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Tin
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-10
0
10
20
30
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

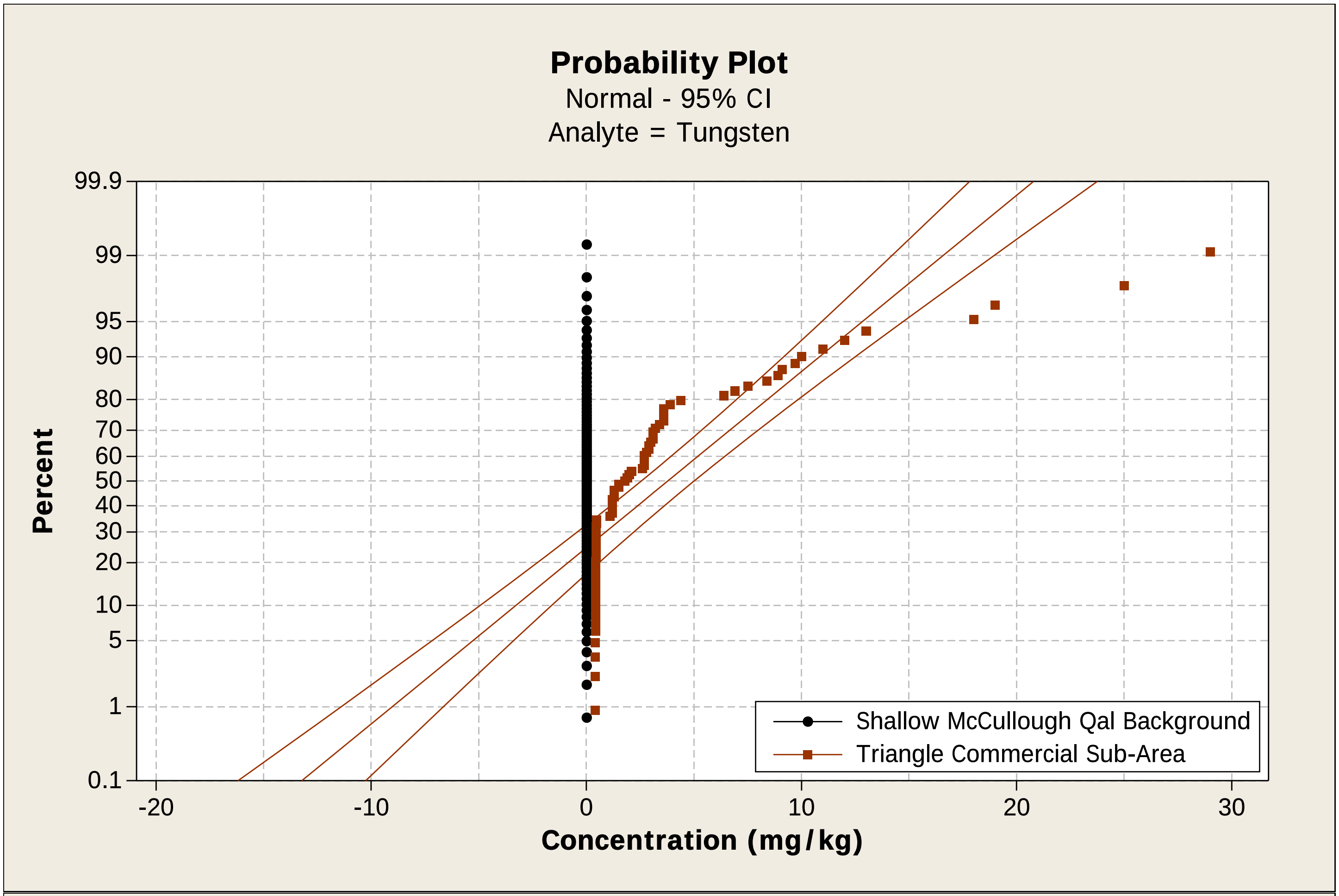

Boxplot
Analyte = Tin
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
35
30
25
20
15
10
5
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area



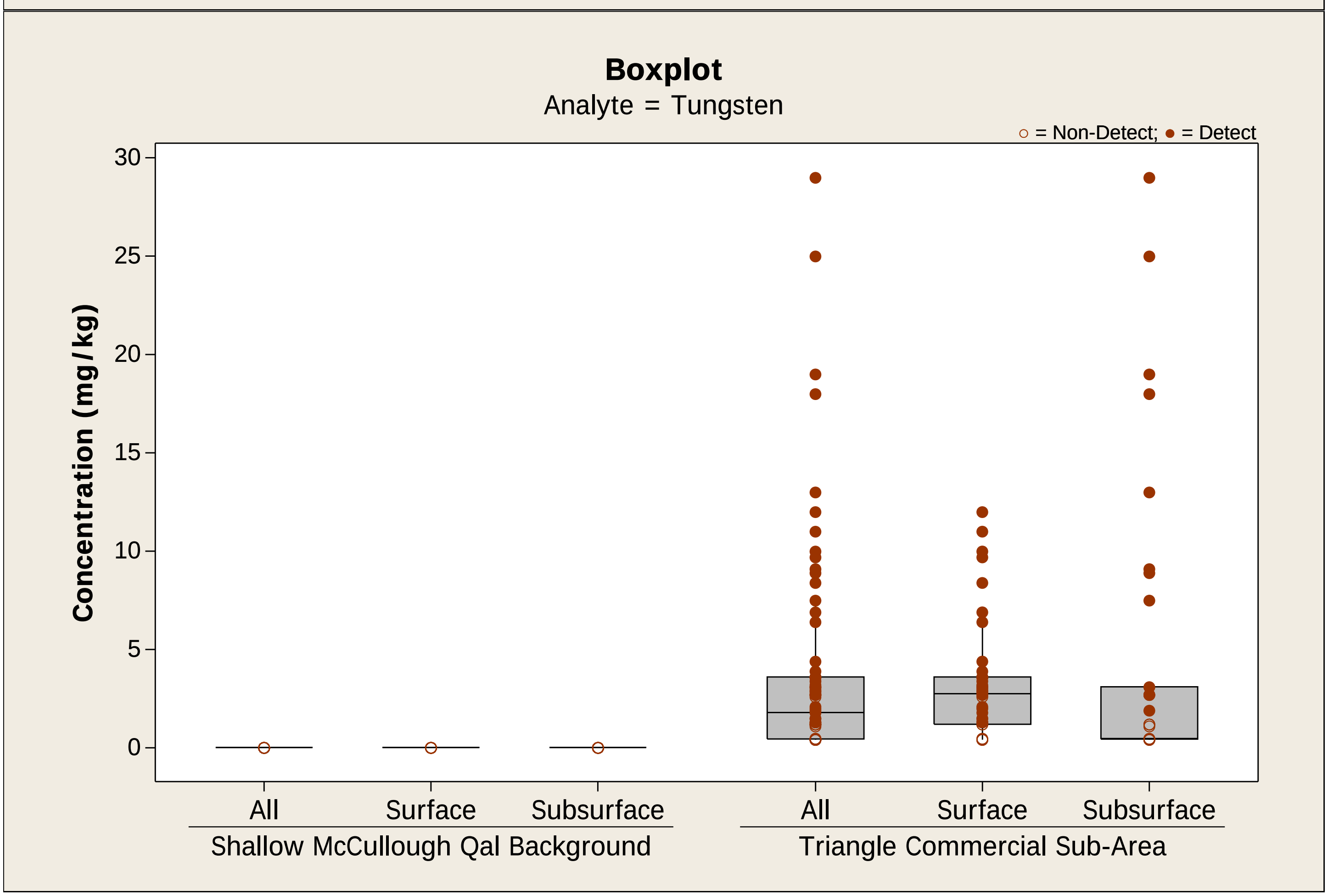
Probability Plot
Normal - 95% CI
Analyte = Titanium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0
500
1000
1500
2000
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



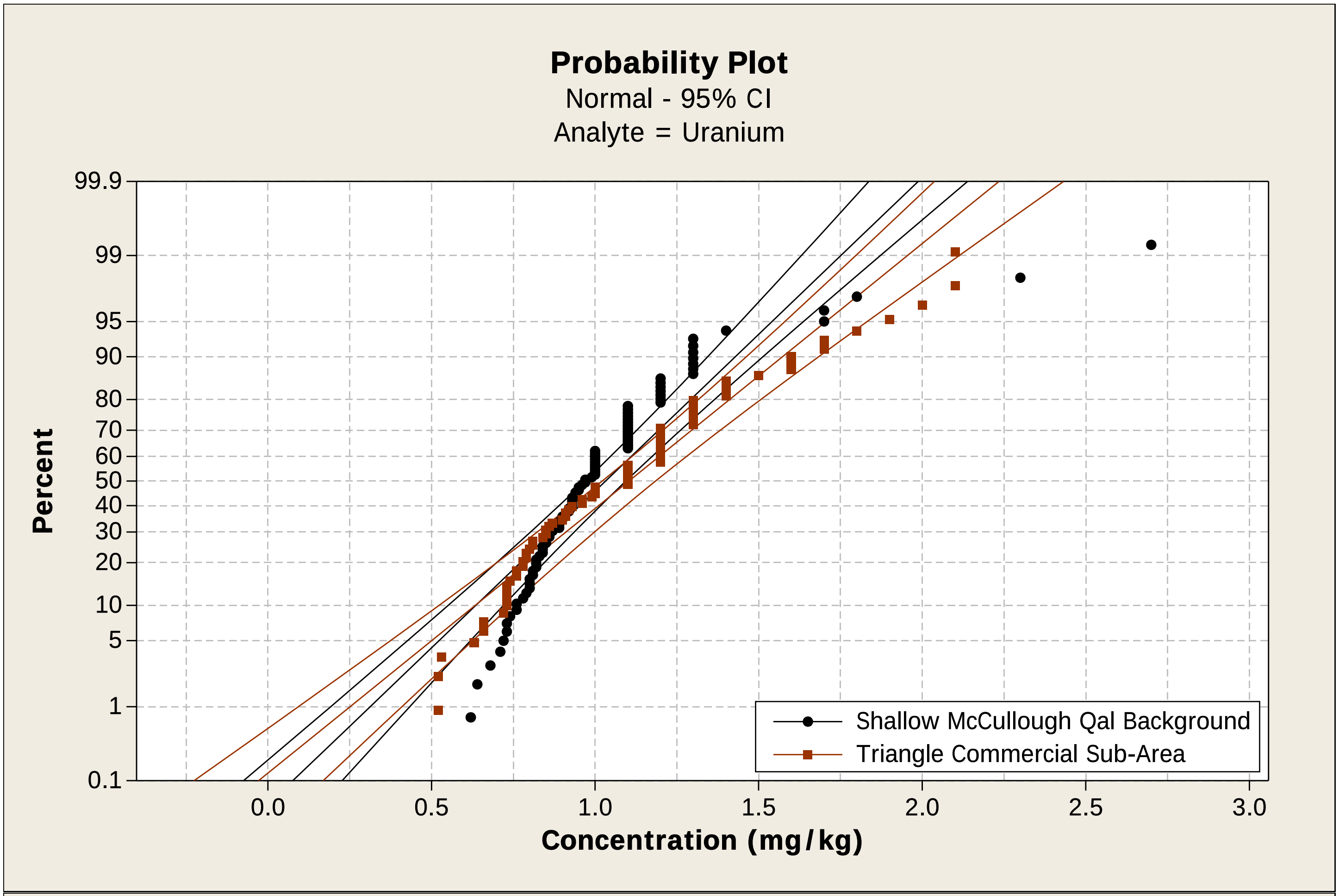
Boxplot
Analyte = Titanium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
2000
1500
1000
500
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area



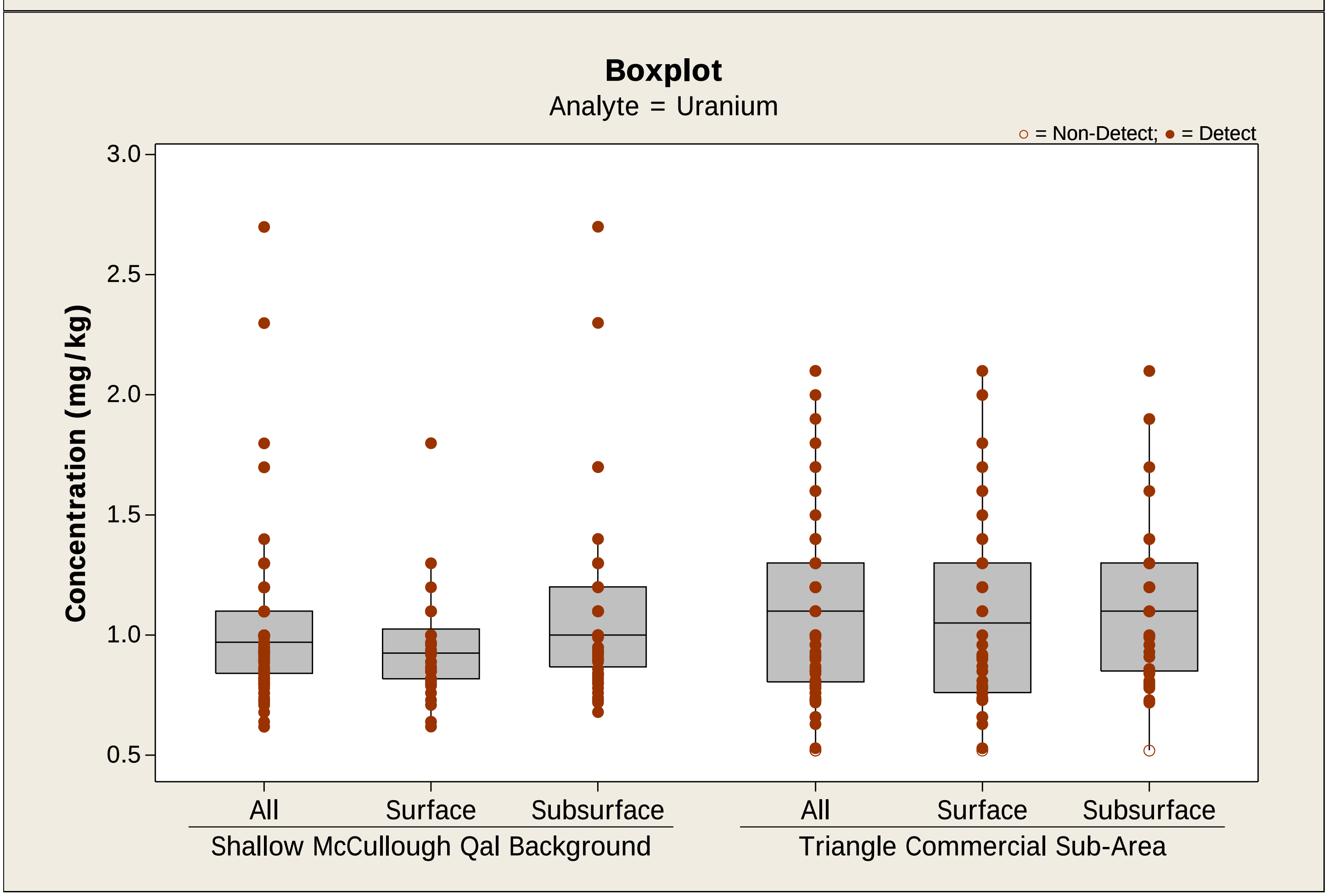
Probability Plot
Normal - 95% CI
Analyte = Tungsten
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-20
-10
0
10
20
30
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



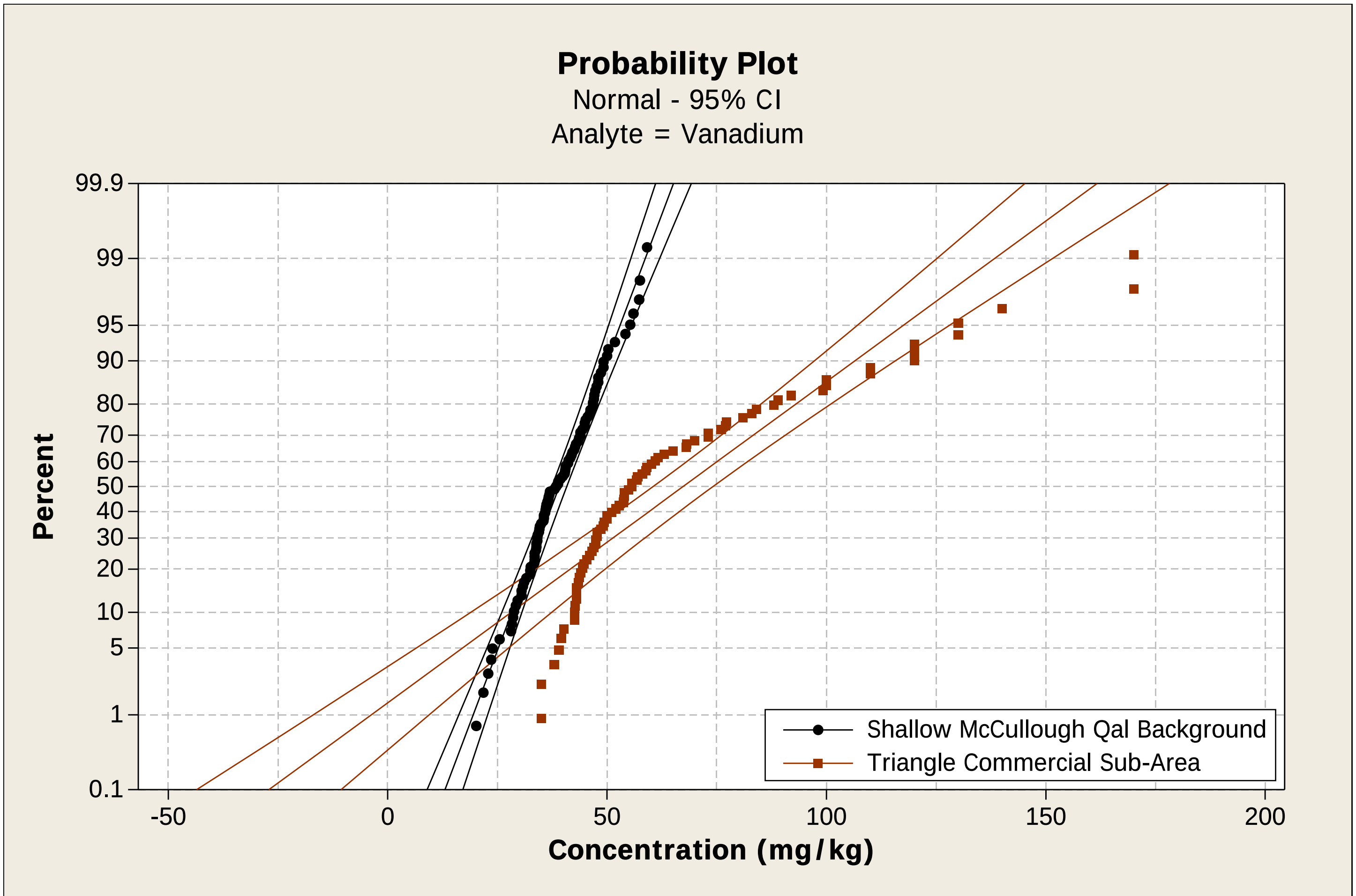
Boxplot
Analyte = Tungsten
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
30
25
20
15
10
5
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area

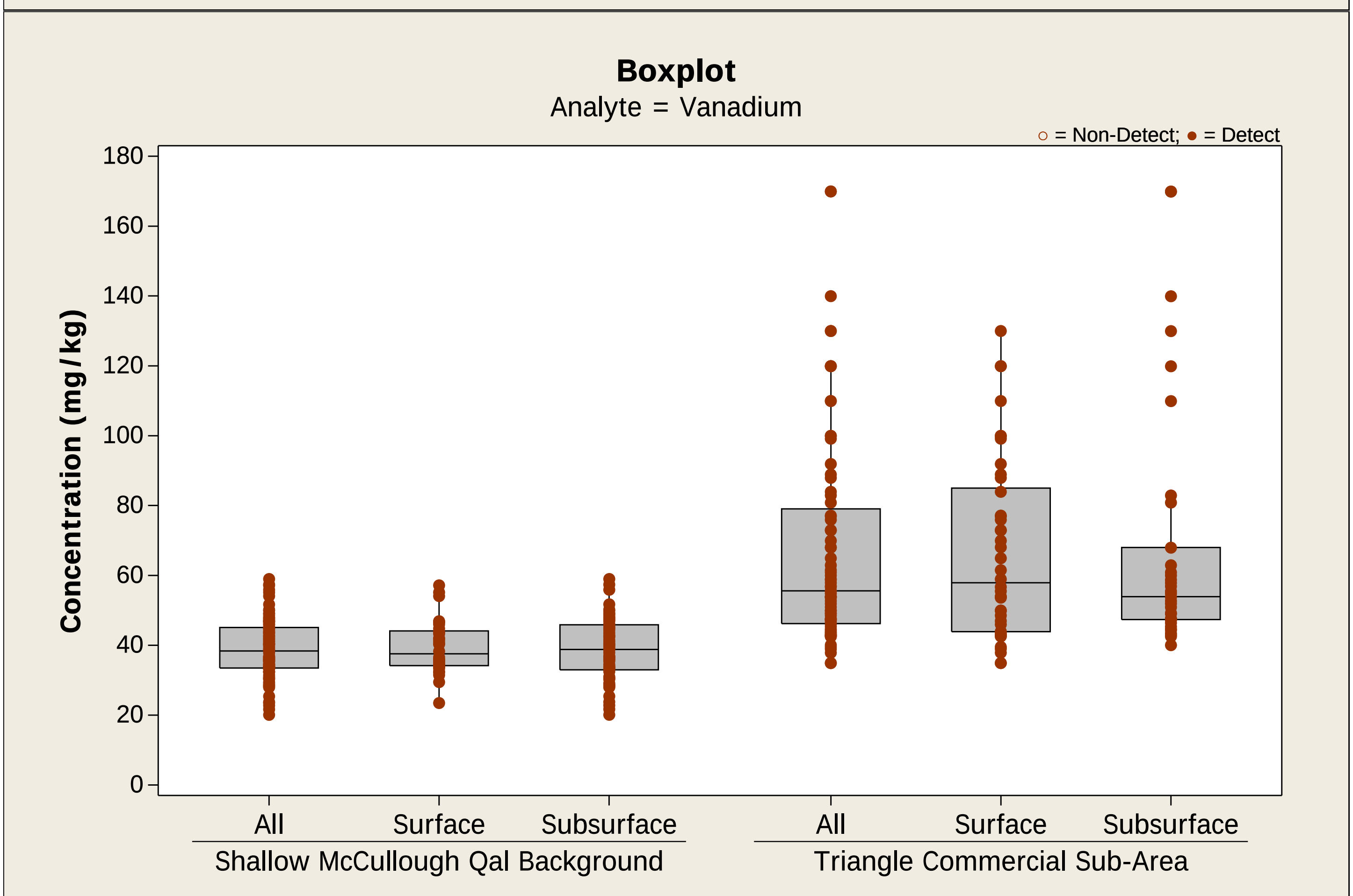


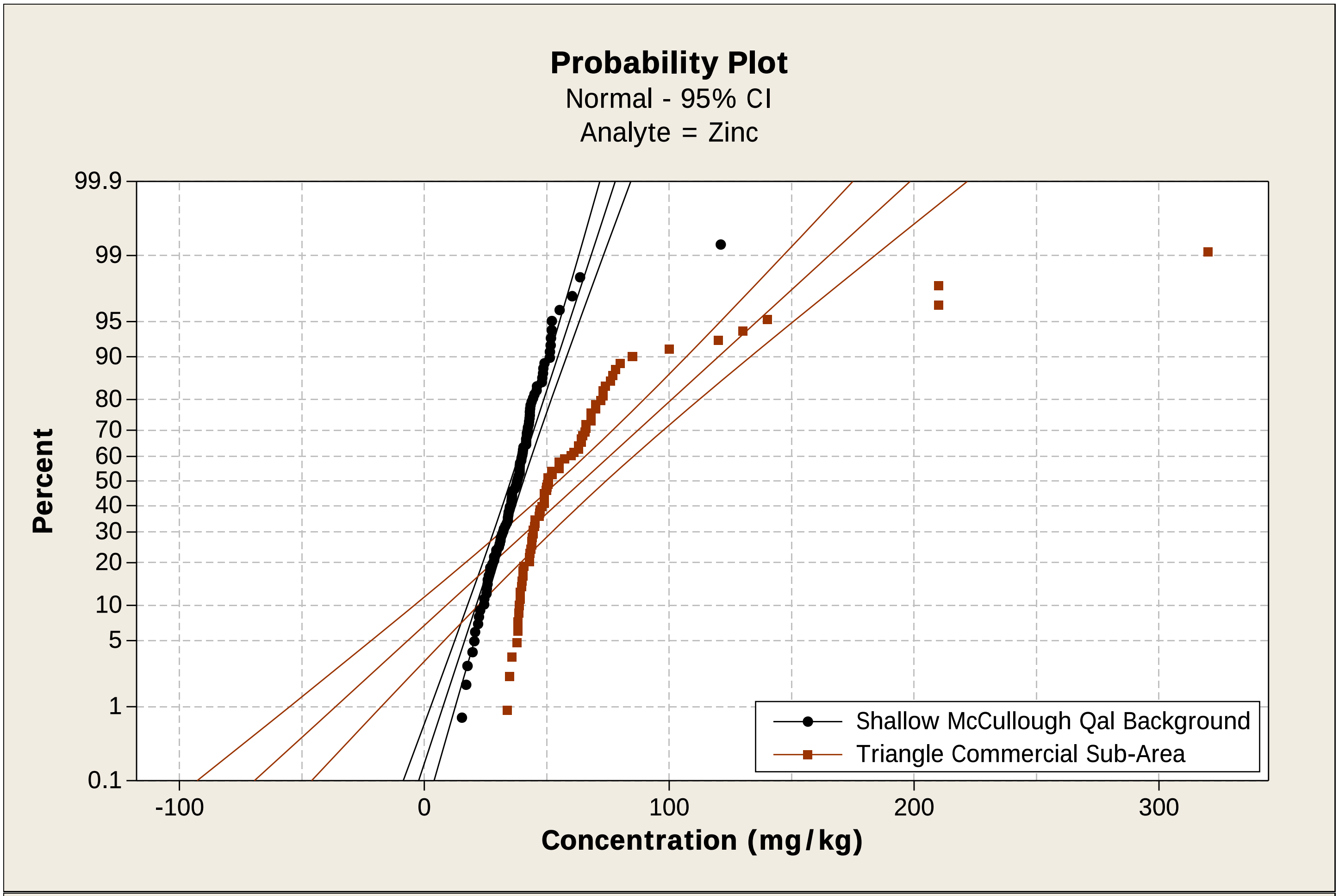
Probability Plot
Normal - 95% CI
Analyte = Uranium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

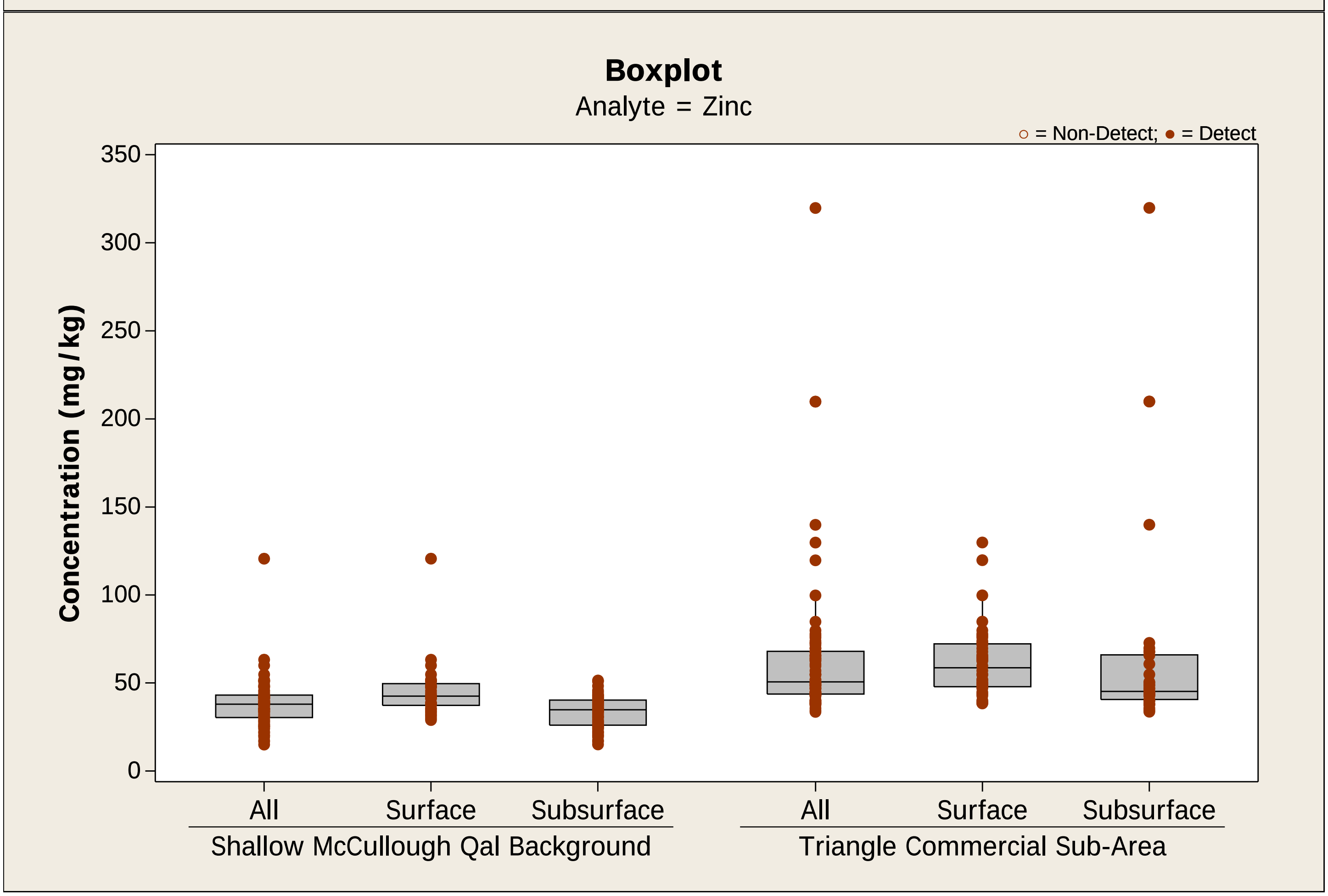


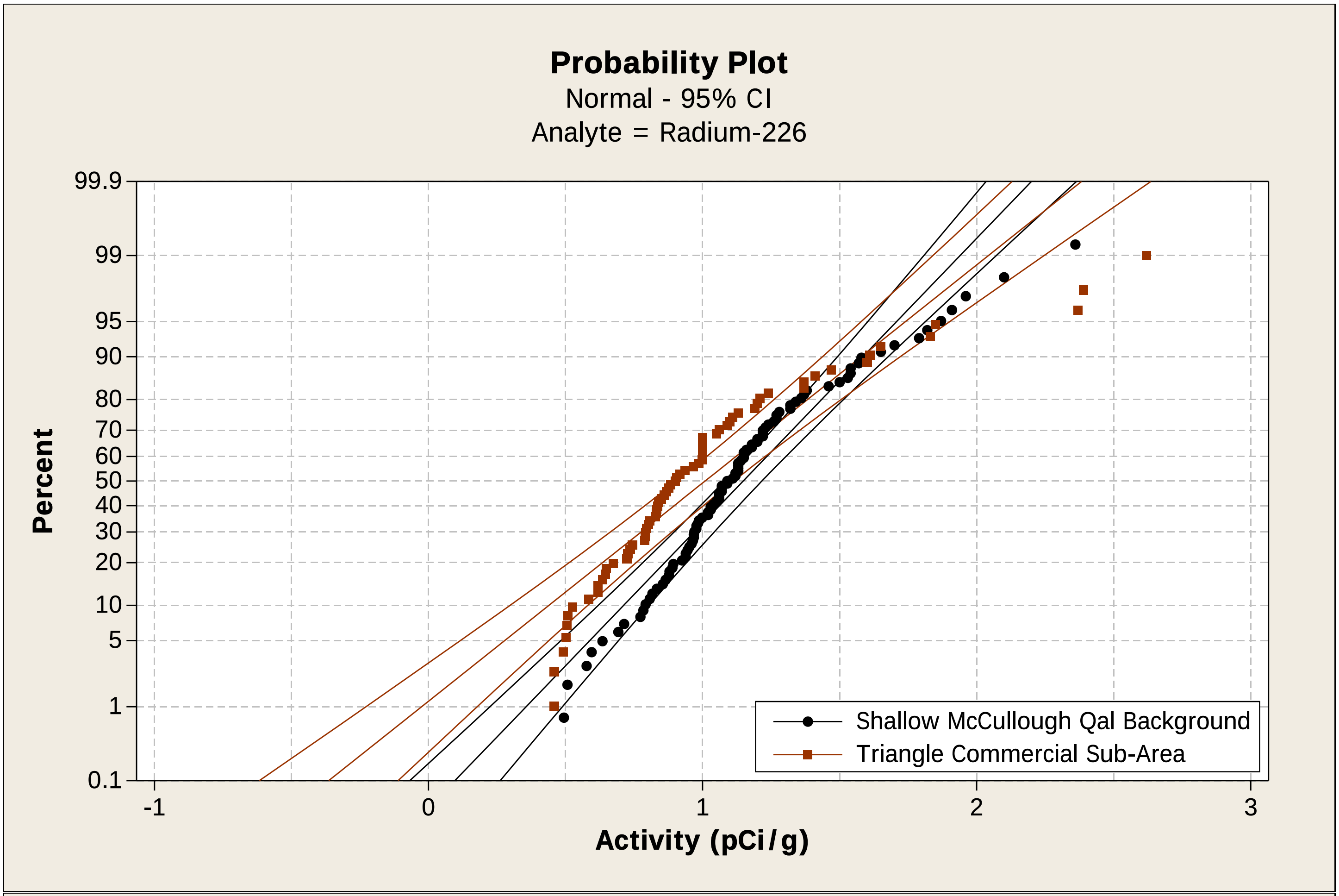
Boxplot
Analyte = Uranium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
3.0
2.5
2.0
1.5
1.0
0.5
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Vanadium
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-50
0
50
100
150
200
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

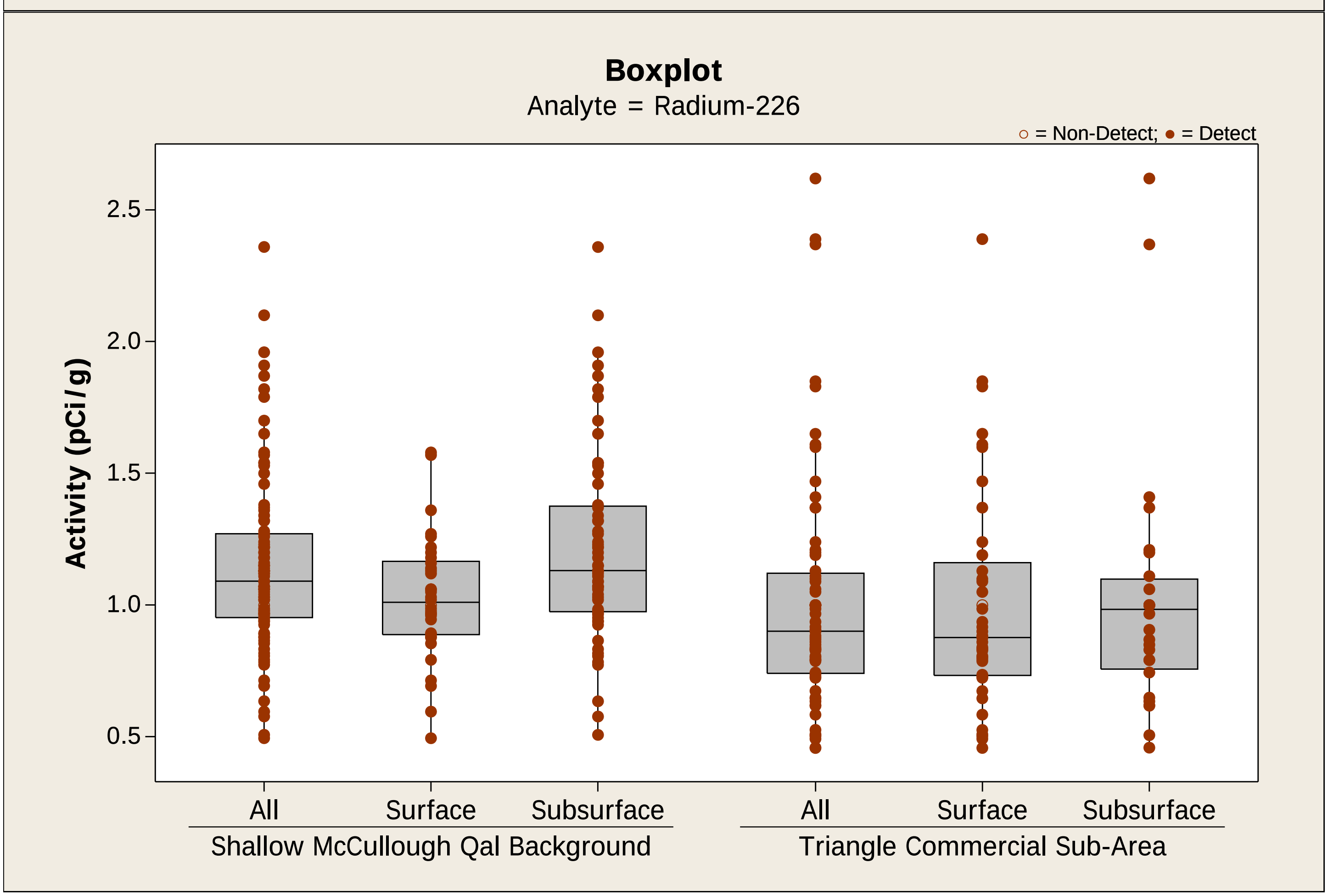

Boxplot
Analyte = Vanadium
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
180
160
140
120
100
80
60
40
20
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Zinc
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-100
0
100
200
300
Concentration (mg/kg)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

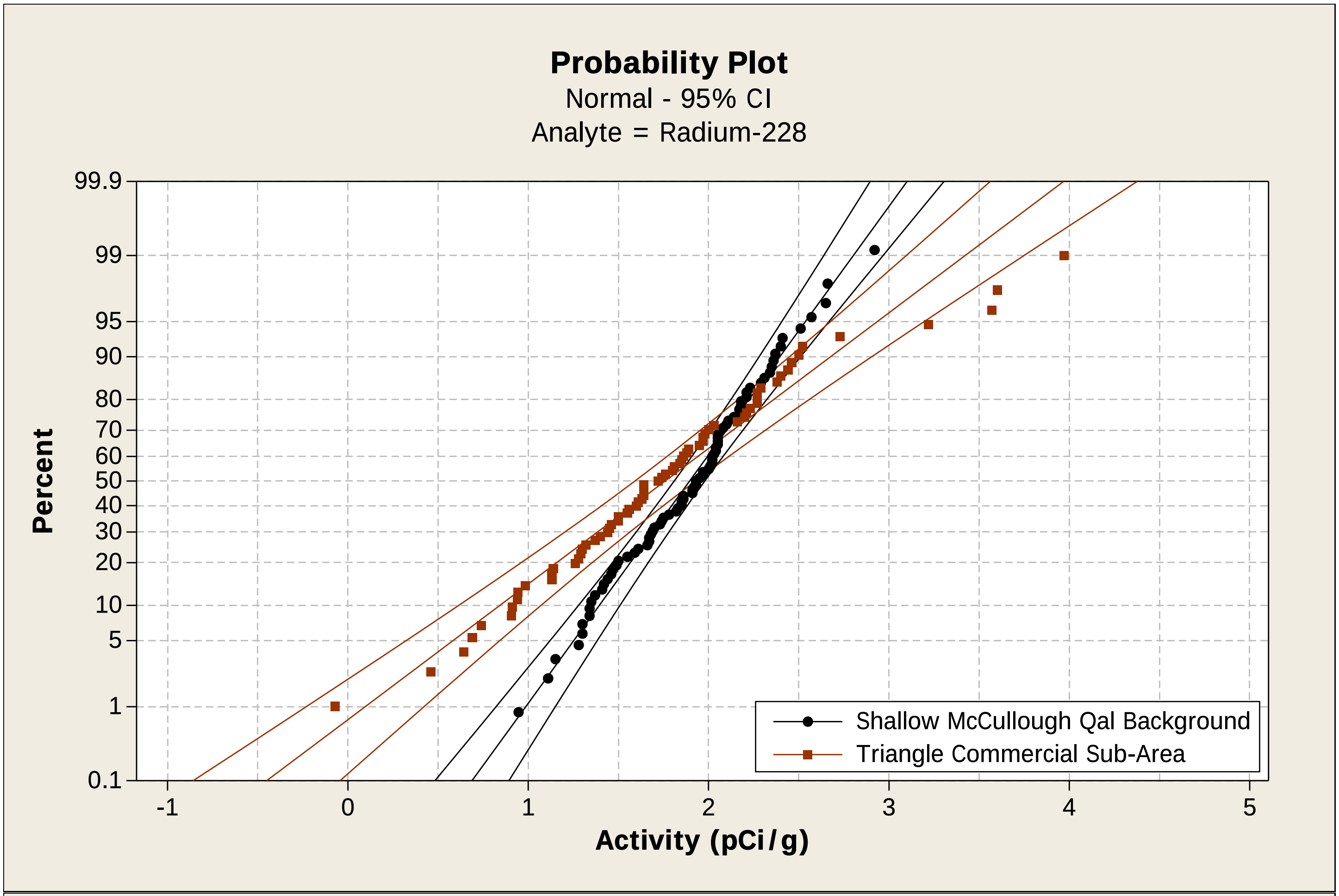

Boxplot
Analyte = Zinc
○ = Non-Detect; ● = Detect
Concentration (mg/kg)
350
300
250
200
150
100
50
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area



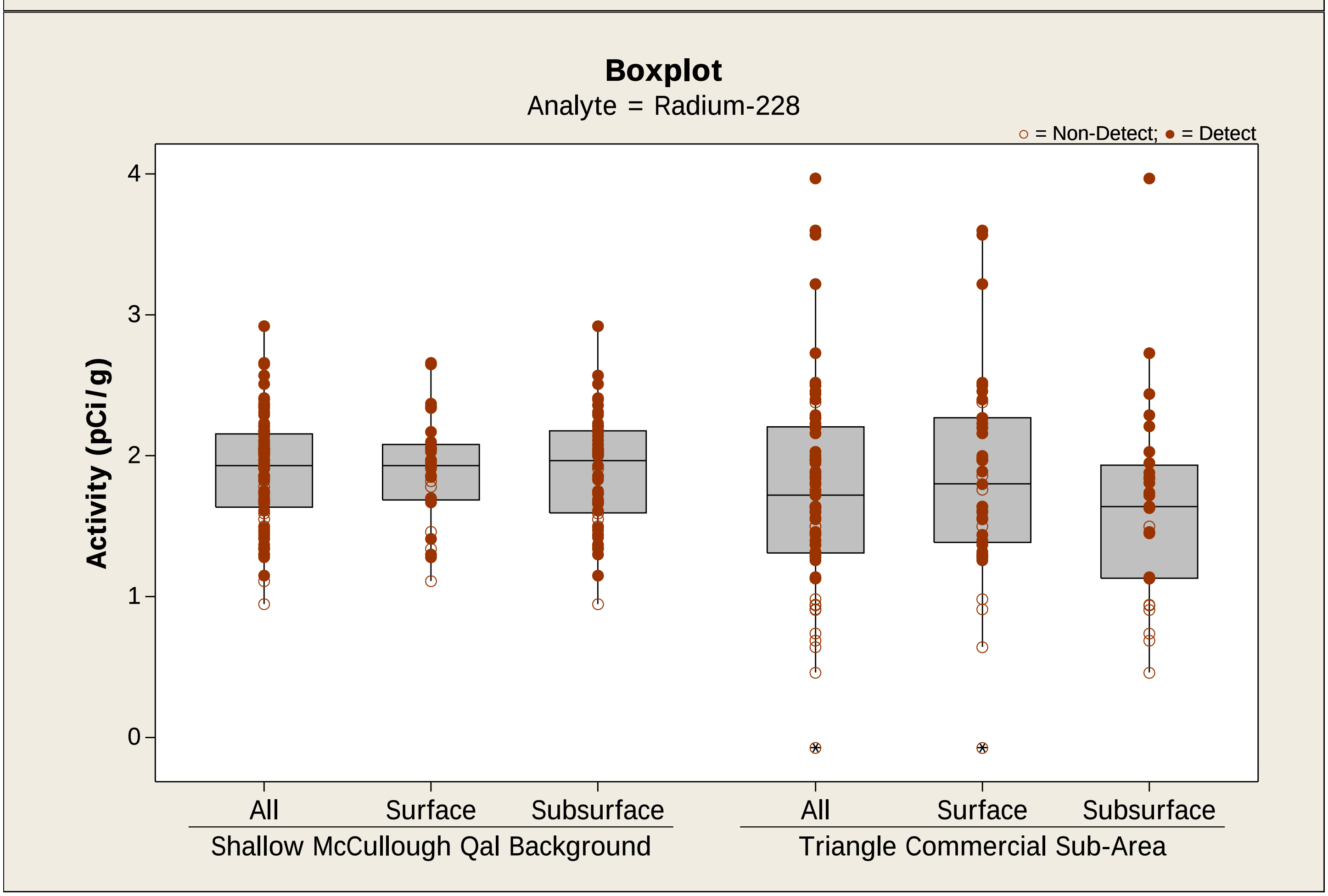
Probability Plot
Normal - 95% CI
Analyte = Radium-226
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-1
0
1
2
3
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



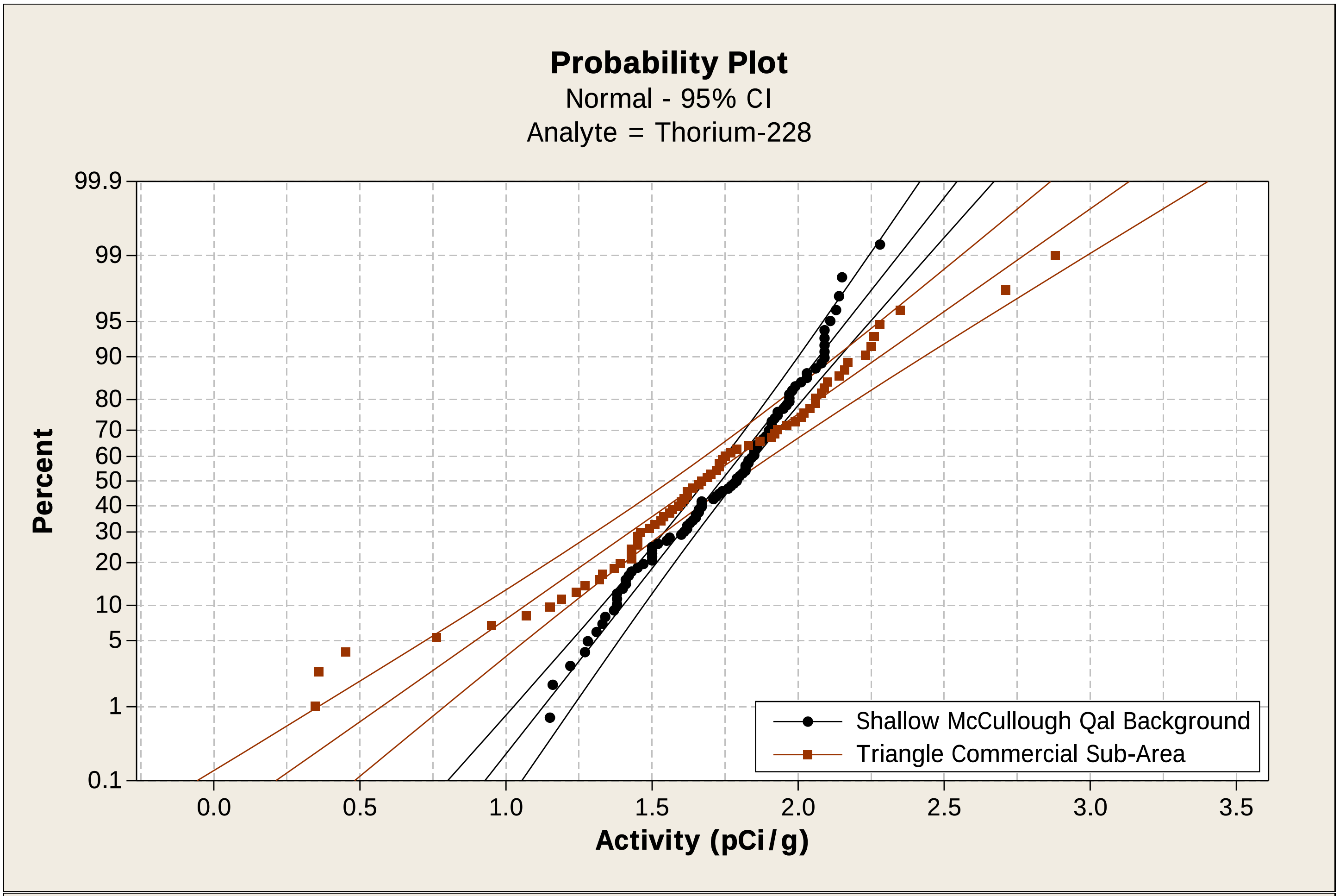
Boxplot
Analyte = Radium-226
○ = Non-Detect; ● = Detect
Activity (pCi/g)
2.5
2.0
1.5
1.0
0.5
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

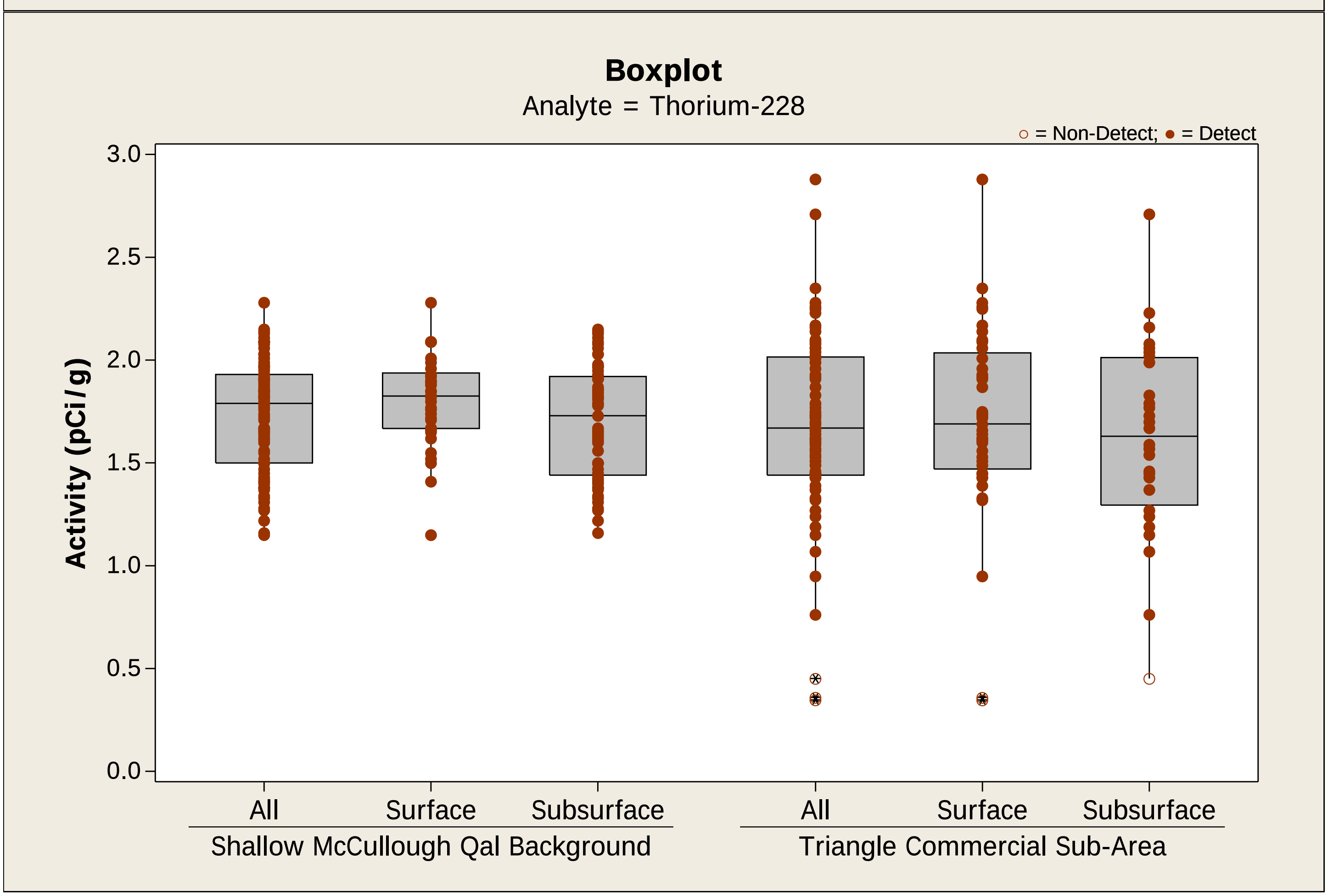


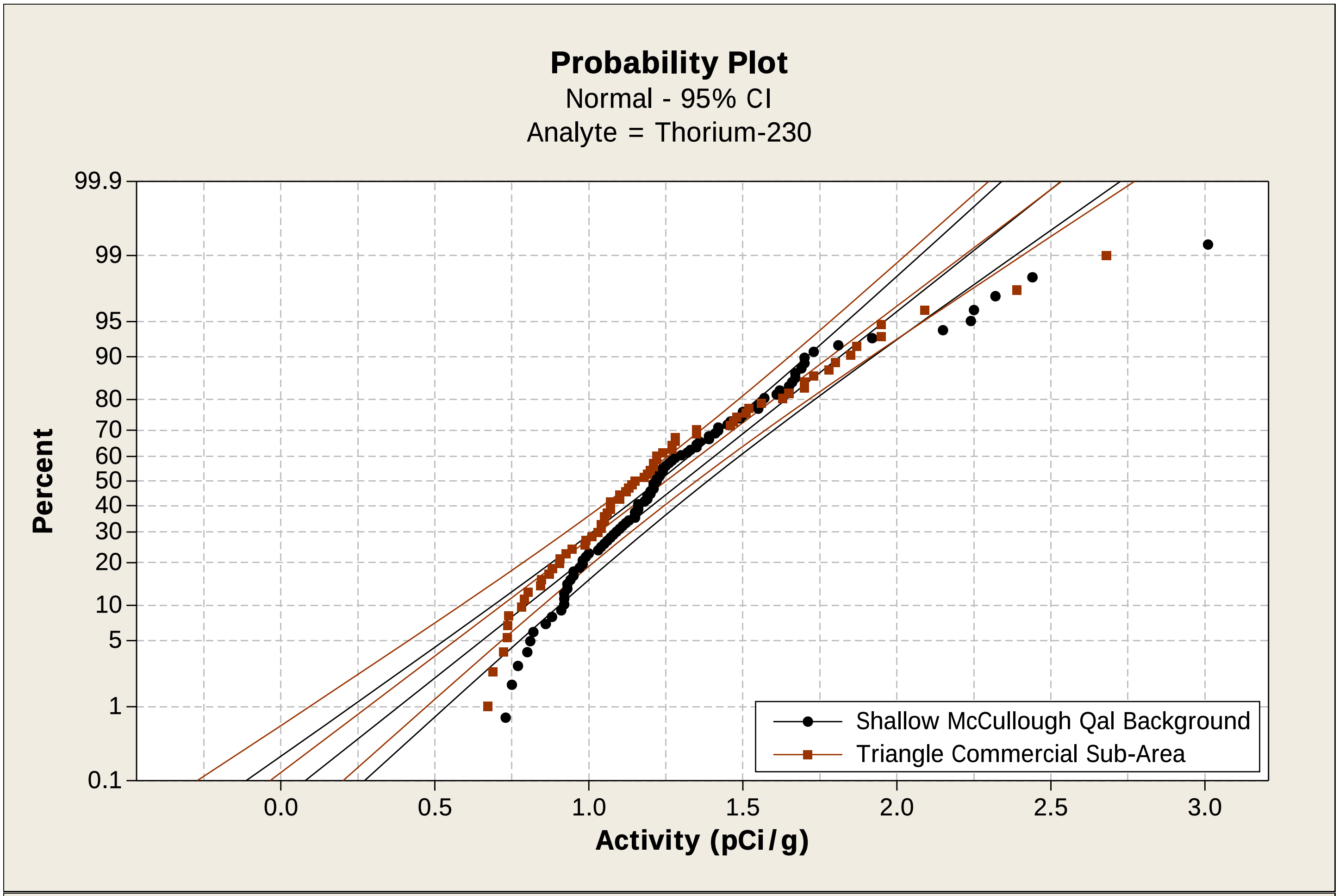
Probability Plot
Normal - 95% CI
Analyte = Radium-228
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-1
0
1
2
3
4
5
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

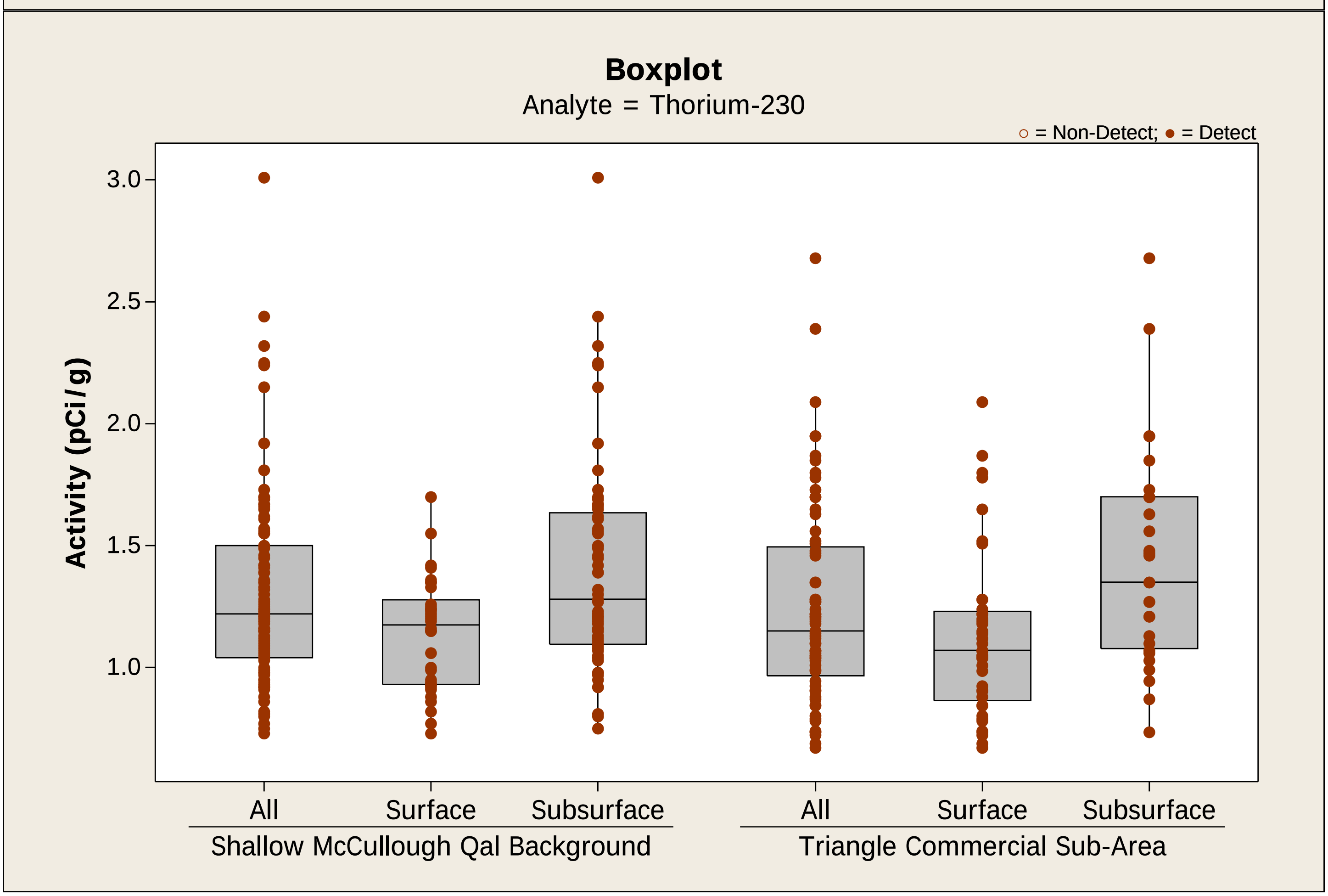


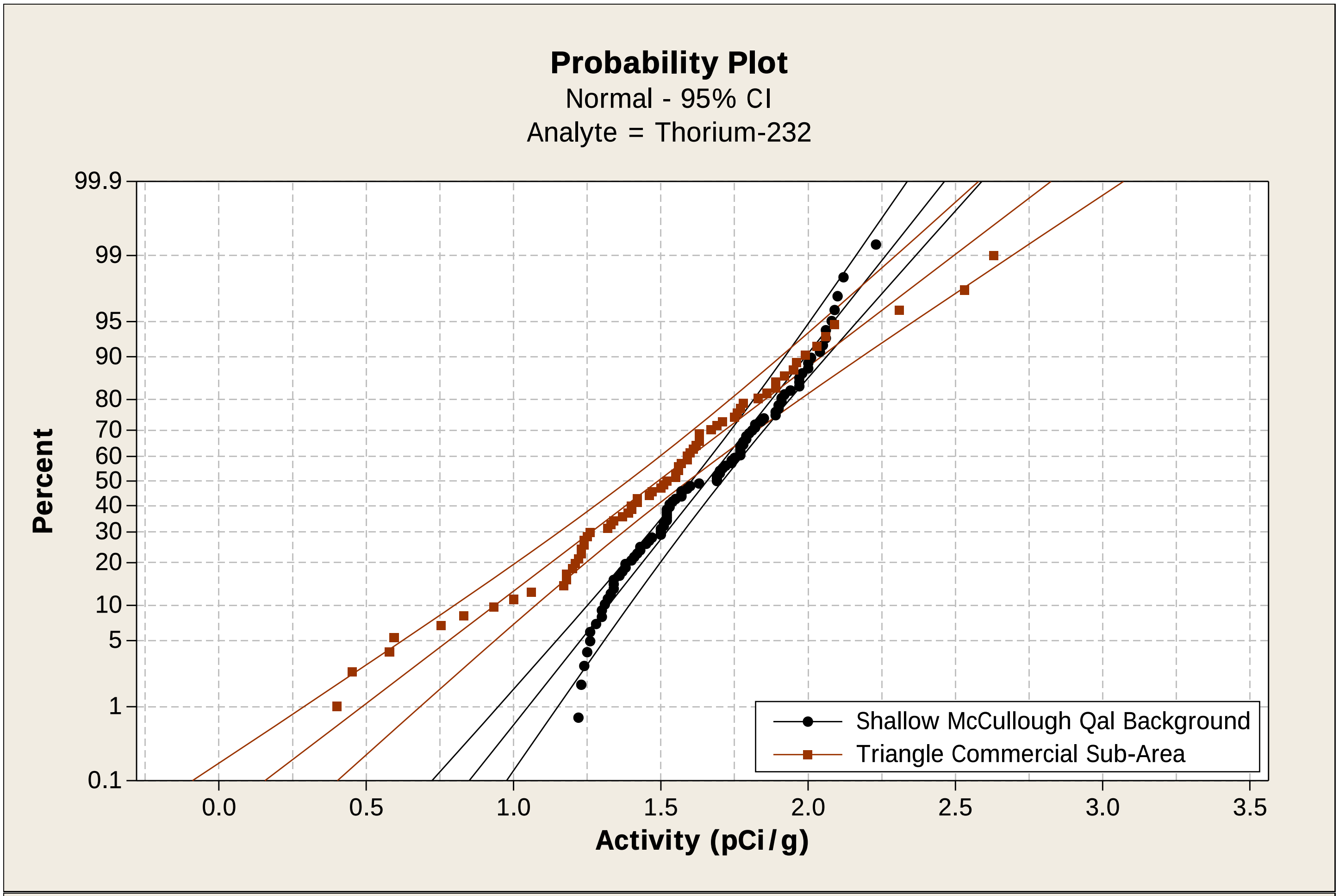
Boxplot
Analyte = Radium-228
○ = Non-Detect; ● = Detect
Activity (pCi/g)
4
3
2
1
0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Thorium-228
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

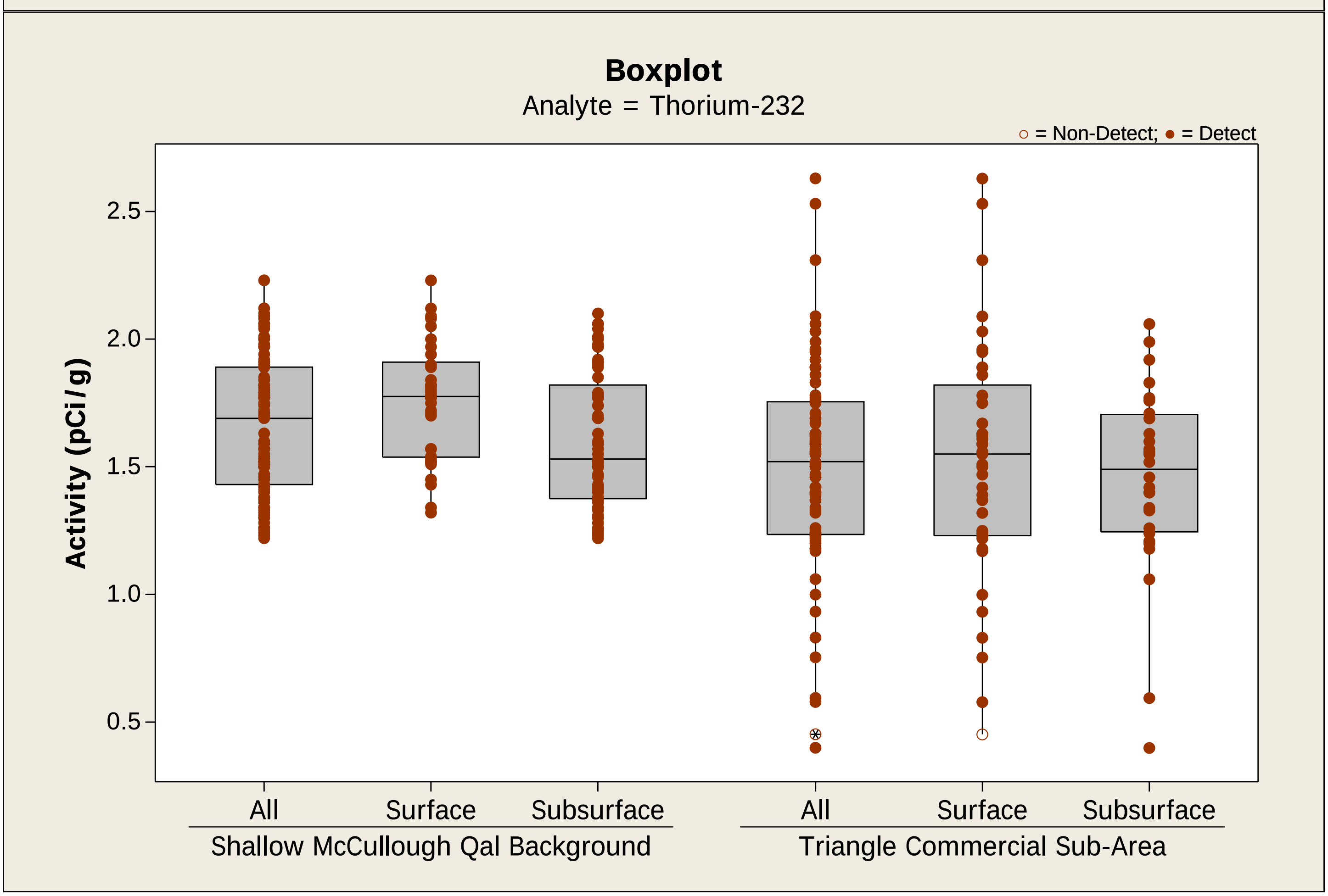

Boxplot
Analyte = Thorium-228
○ = Non-Detect; ● = Detect
Activity (pCi/g)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area


Probability Plot
Normal - 95% CI
Analyte = Thorium-230
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area

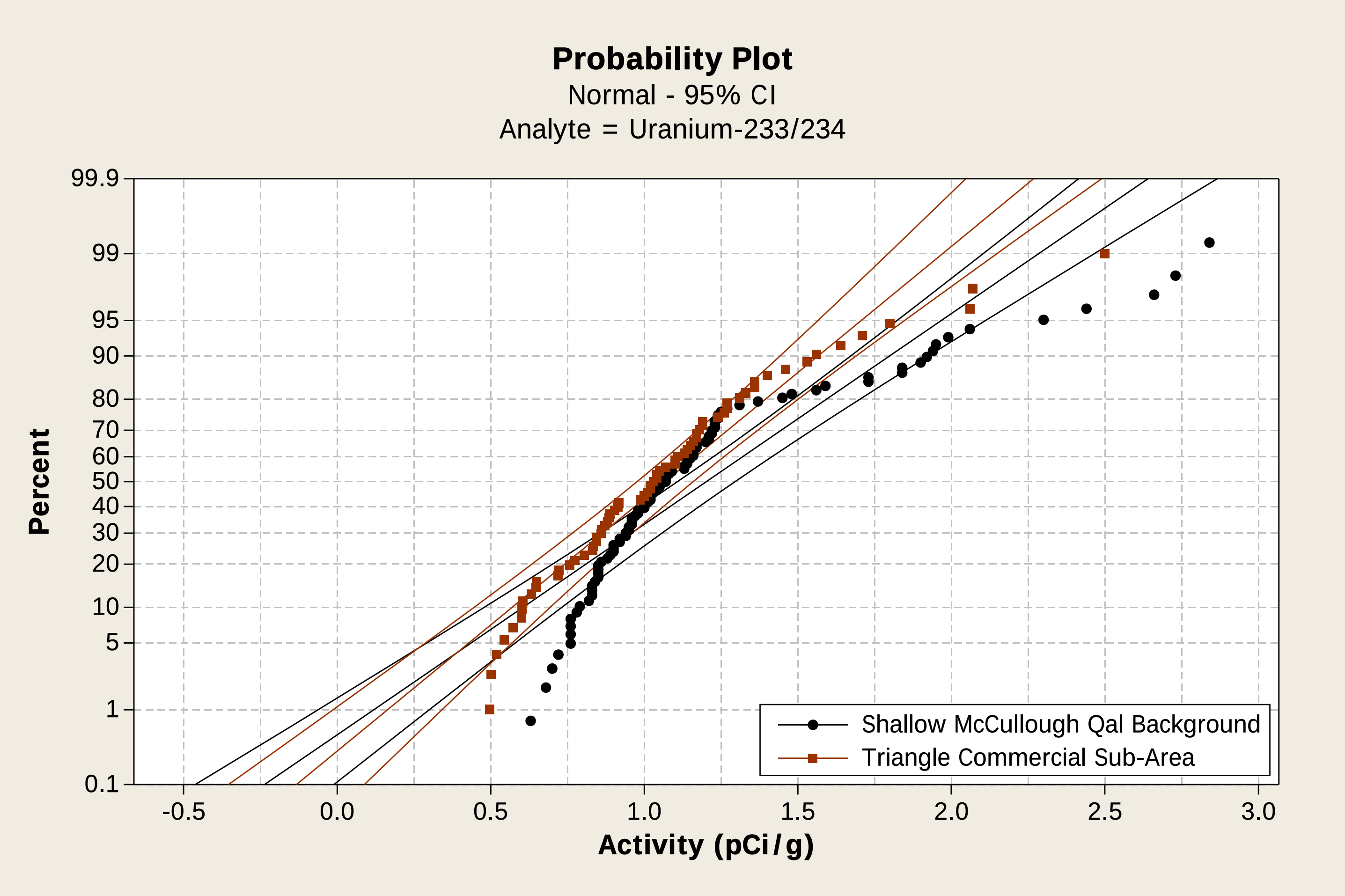

Boxplot
Analyte = Thorium-230
○ = Non-Detect; ● = Detect
Activity (pCi/g)
3.0
2.5
2.0
1.5
1.0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



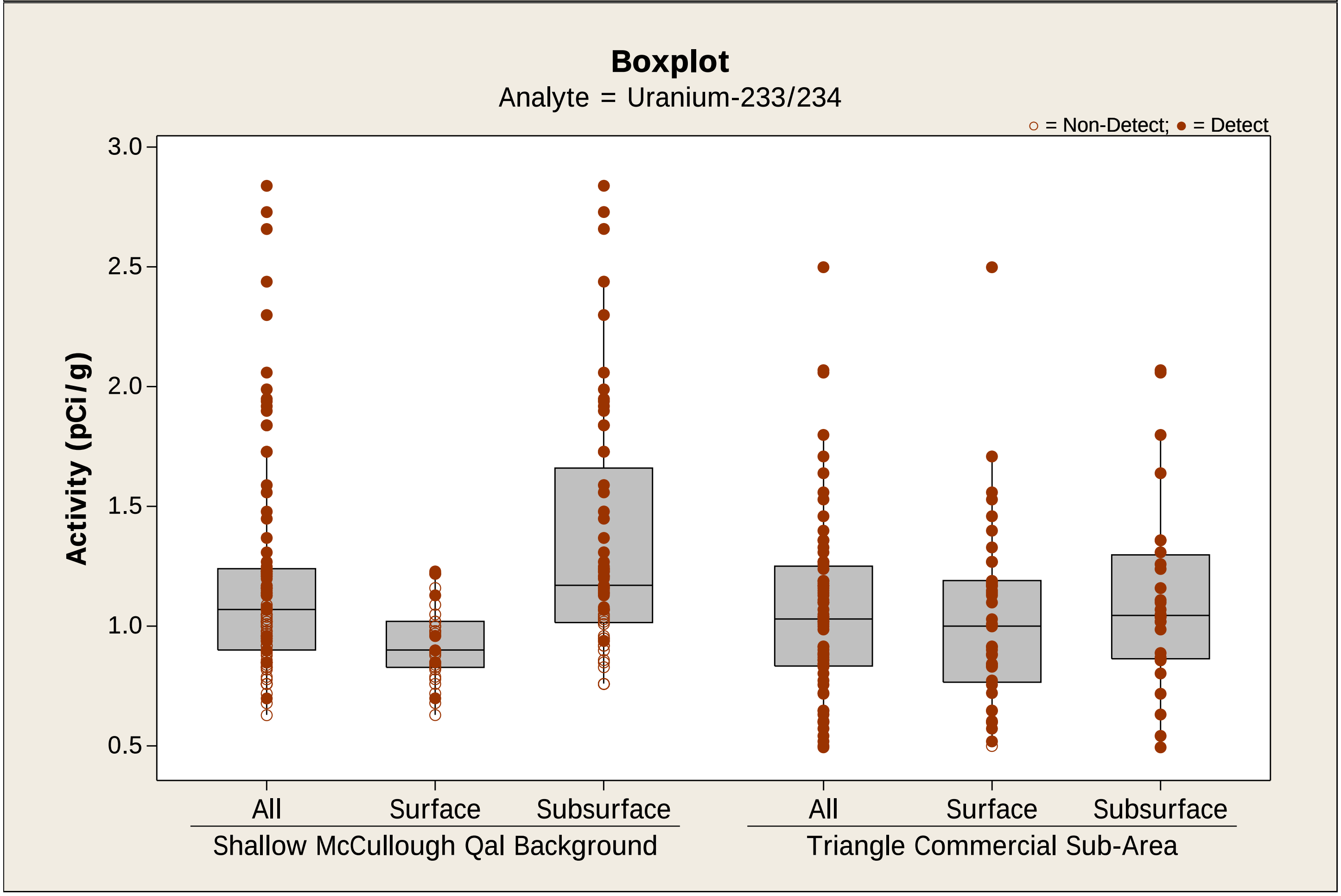
Probability Plot
Normal - 95% CI
Analyte = Thorium-232
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



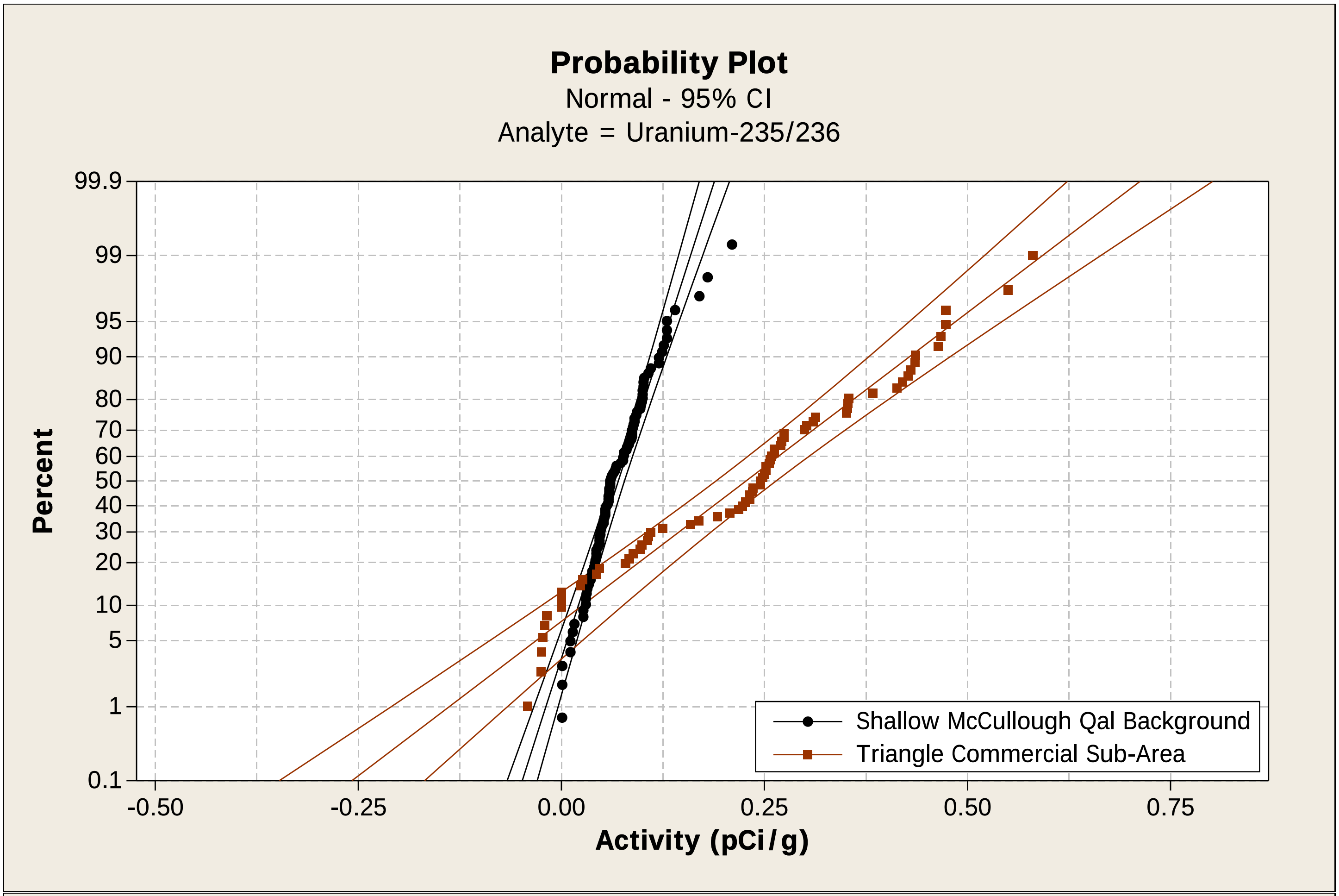
Boxplot
Analyte = Thorium-232
○ = Non-Detect; ● = Detect
Activity (pCi/g)
2.5
2.0
1.5
1.0
0.5
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



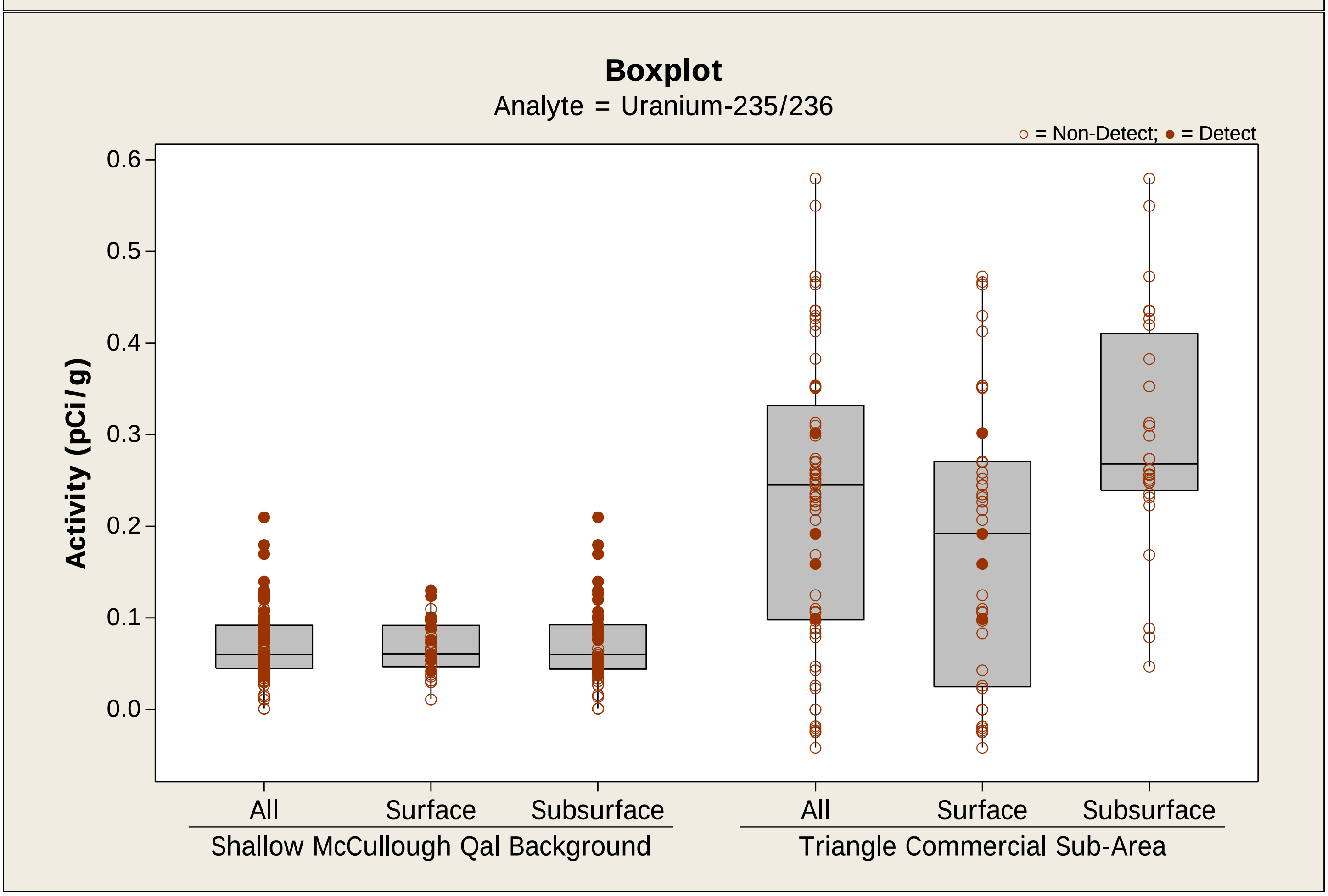
Probability Plot
Normal - 95% CI
Analyte = Uranium-233/234
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



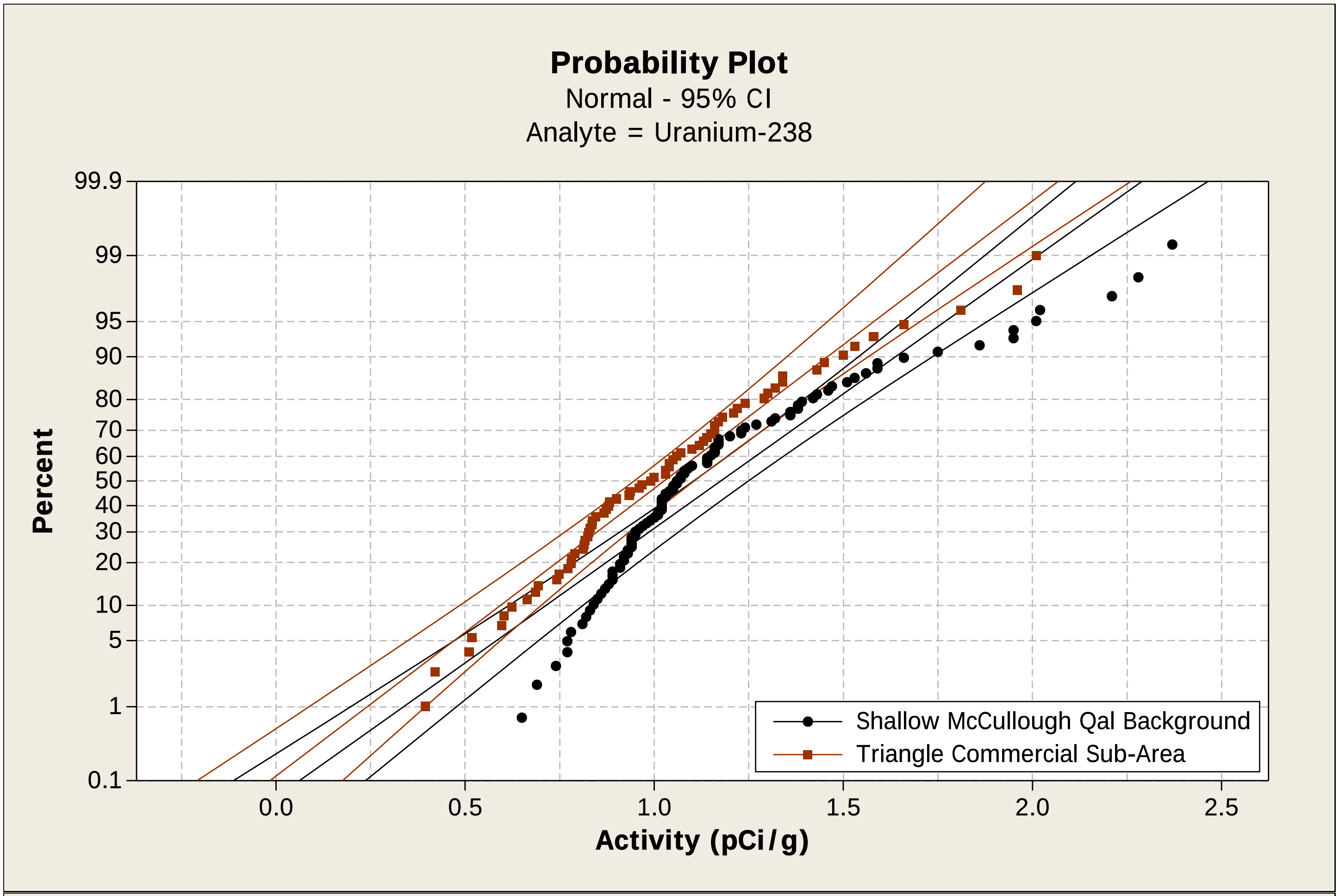
Boxplot
Analyte = Uranium-233/234
○ = Non-Detect; ● = Detect
Activity (pCi/g)
3.0
2.5
2.0
1.5
1.0
0.5
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



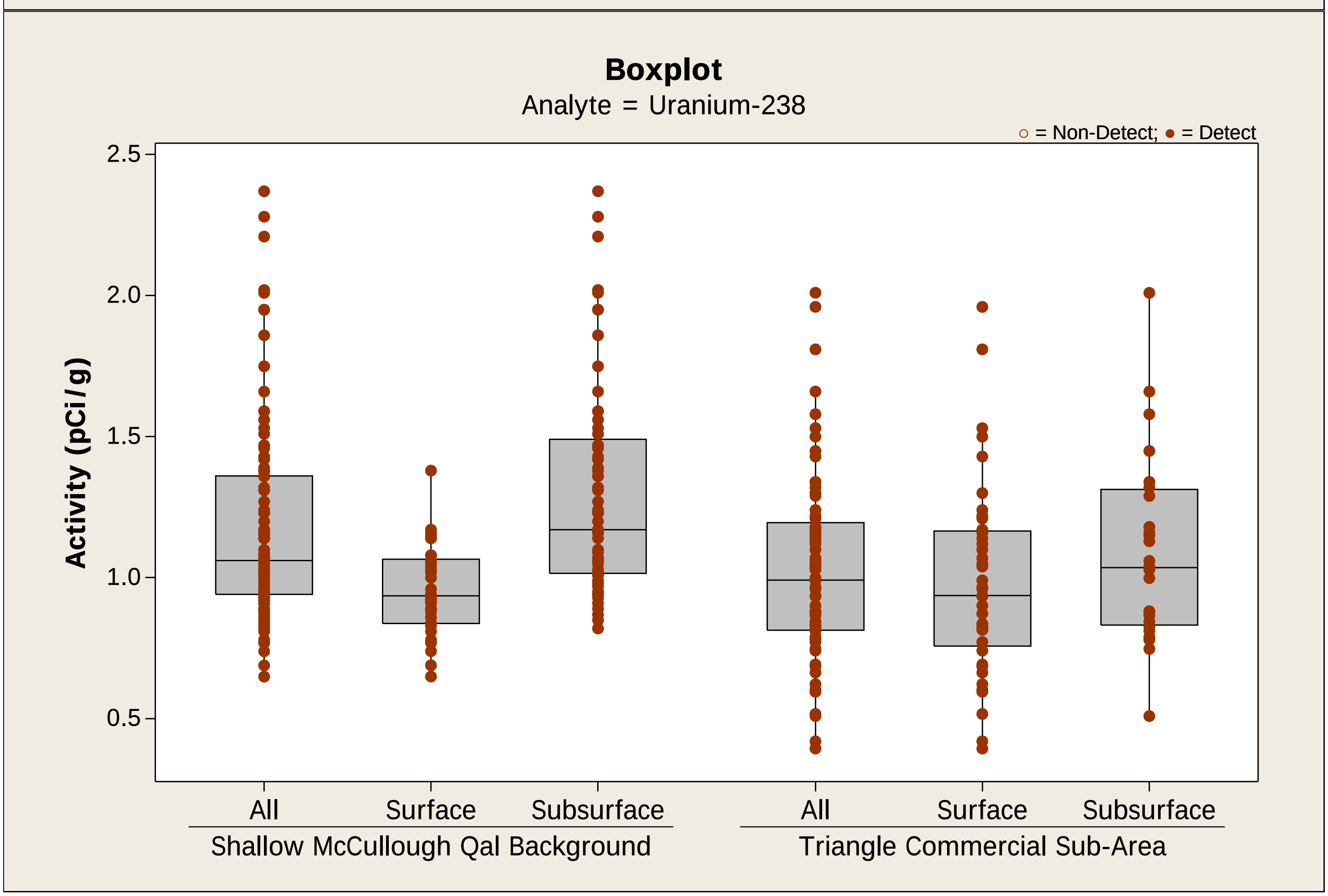
Probability Plot
Normal - 95% CI
Analyte = Uranium-235/236
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
-0.50
-0.25
0.00
0.25
0.50
0.75
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



Boxplot
Analyte = Uranium-235/236
○ = Non-Detect; ● = Detect
Activity (pCi/g)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
All
Surface
Subsurface
All
Surface
Subsurface
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



Probability Plot
Normal - 95% CI
Analyte = Uranium-238
Percent
99.9
99
95
90
80
70
60
50
40
30
20
10
5
1
0.1
0.0
0.5
1.0
1.5
2.0
2.5
Activity (pCi/g)
Shallow McCullough Qal Background
Triangle Commercial Sub-Area



Boxplot
Analyte = Uranium-238
○ = Non-Detect; ● = Detect
Activity (pCi/g)
2.5
2.0
1.5
1.0
0.5
All
Surface
Subsurface
Shallow McCullough Qal Background
All
Surface
Subsurface
Triangle Commercial Sub-Area

APPENDIX H

HUMAN HEALTH RISK ASSESSMENT CALCULATION SPREADSHEETS
(on the report CD in Appendix B)

APPENDIX I

METALS AND CHEMICALS OF POTENTIAL CONCERN INTENSITY PLOTS

LIST OF FIGURES (APPENDIX I)

- Triangle Commercial Sub-Area
- Site AOC3 Boundary
- Eastside Soil Sub-Areas
- Remediation Areas

- Non-Detect
- Detect < 1/10-Worker BCL
- >= 1/10-Worker BCL and < Max. Shallow Background (15,300 mg/kg)
- >= Max. Shallow Background and < Worker BCL (100,000 mg/kg)
- >= Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

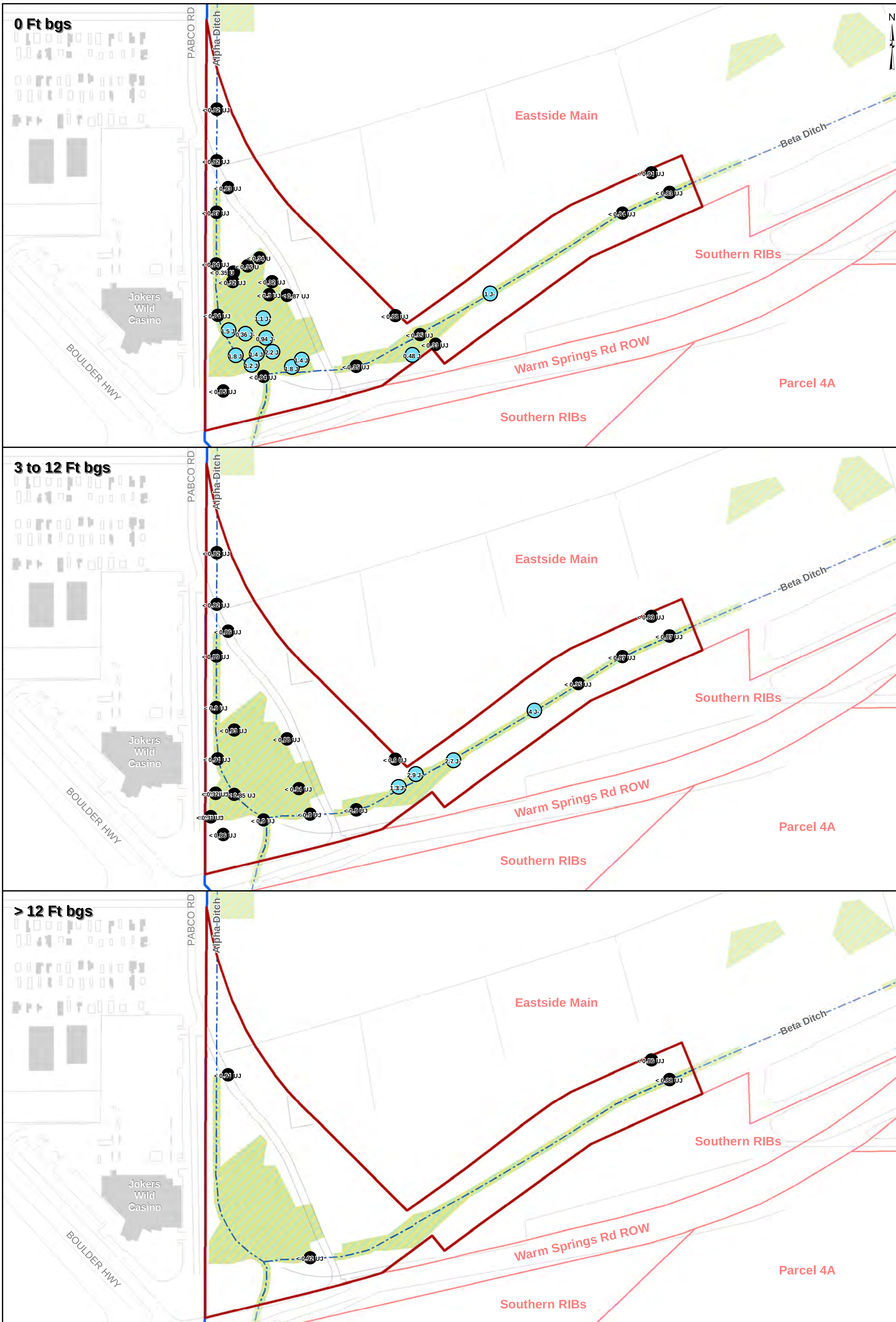
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-1

ALUMINUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (454 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

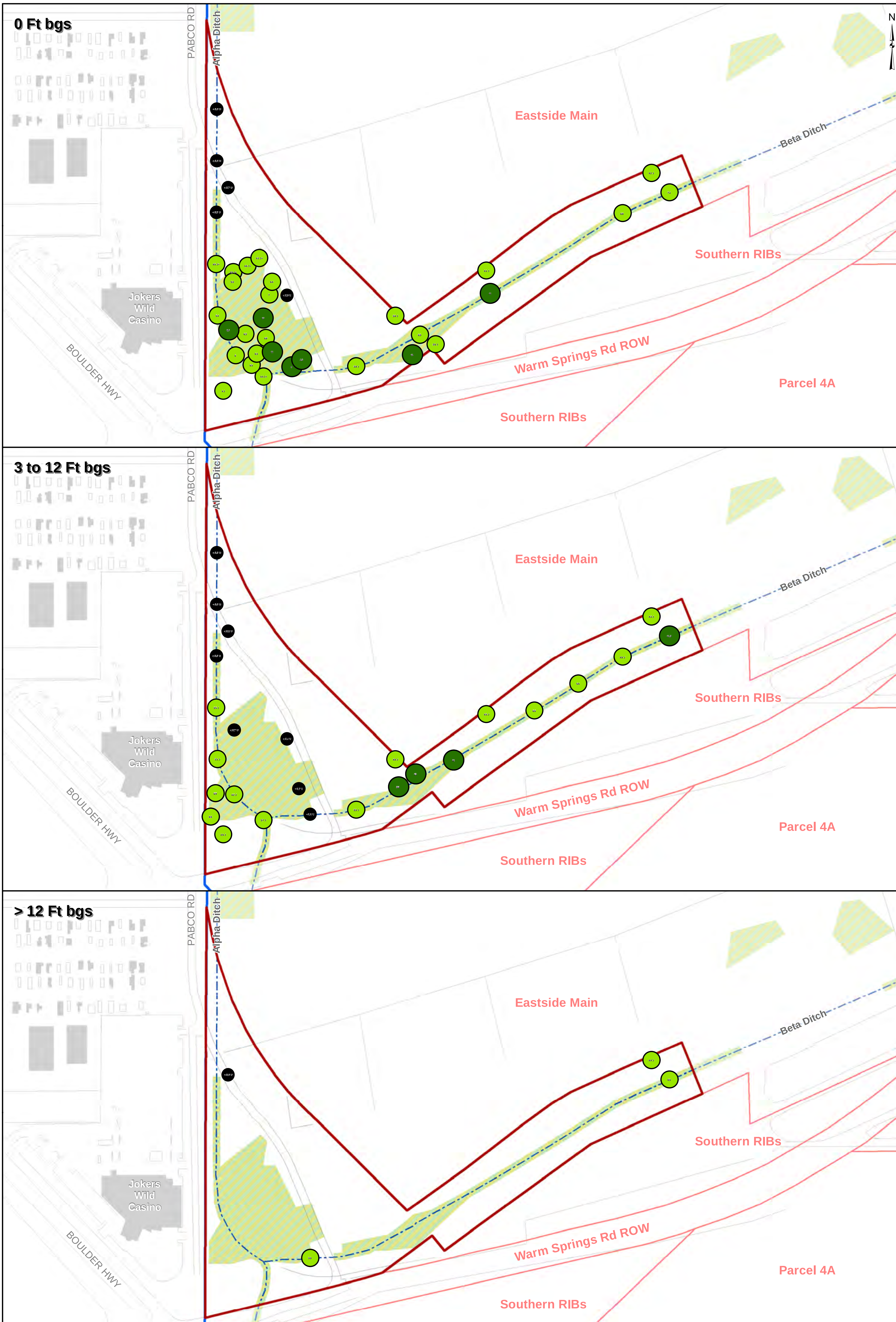
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-2

ANTIMONY SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < Worker BCL (1.77 mg/kg)
>= Worker BCL and < Max. Qal McCullough Background (7.2 mg/kg)
>= Max. Qal McCullough Background and < Max. Qal (All) Background
>= Max. Qal (All) Background (27.6 mg/kg)

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-3

ARSENIC SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by		Date	JOB No. 0064276
MKJ (ERM)	ERM	01/27/15	FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-4

BARIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by	Date	JOB No. 0064276
MKJ (ERM)	01/27/15	FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (2,230 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

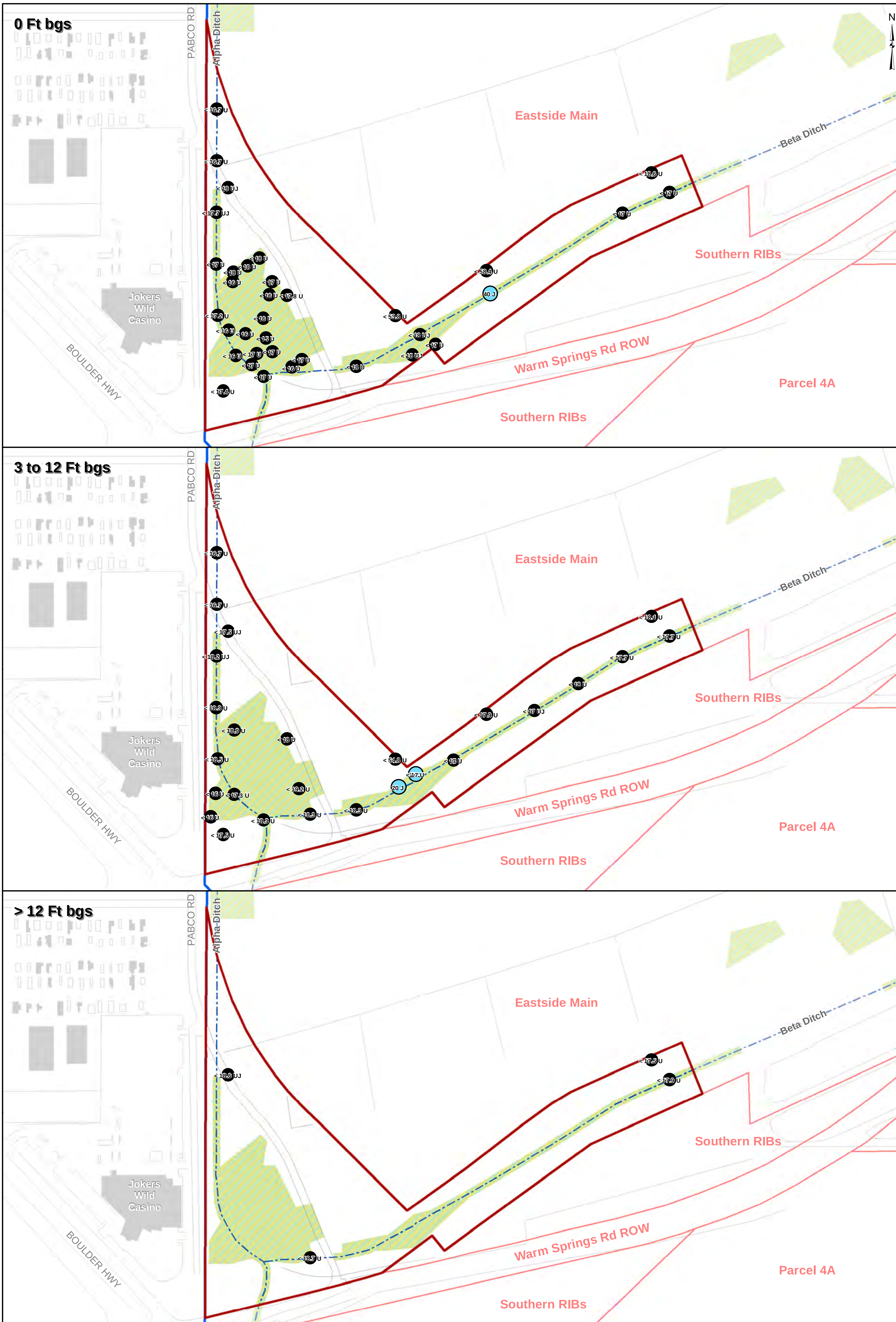
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-5

BERYLLIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

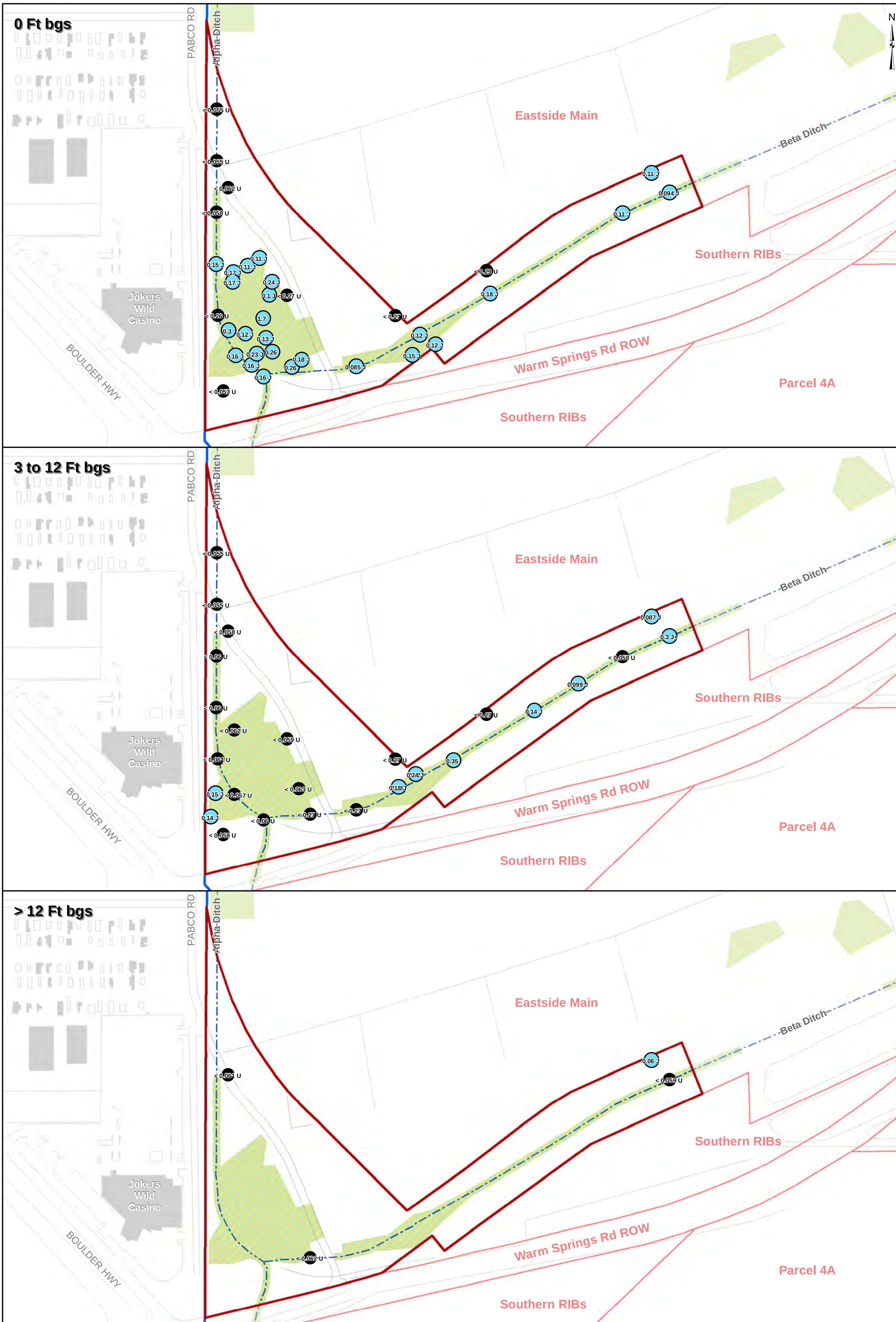
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-6

BORON SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by	Date	JOB No. 0064276
MKJ (ERM)	01/27/15	FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (1,110 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-7

CADMIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < Max. Shallow Background (82,800 mg/kg)
Eastside Soil Sub-Areas	>= Max. Shallow Background
Remediation Areas	

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-8

CALCIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

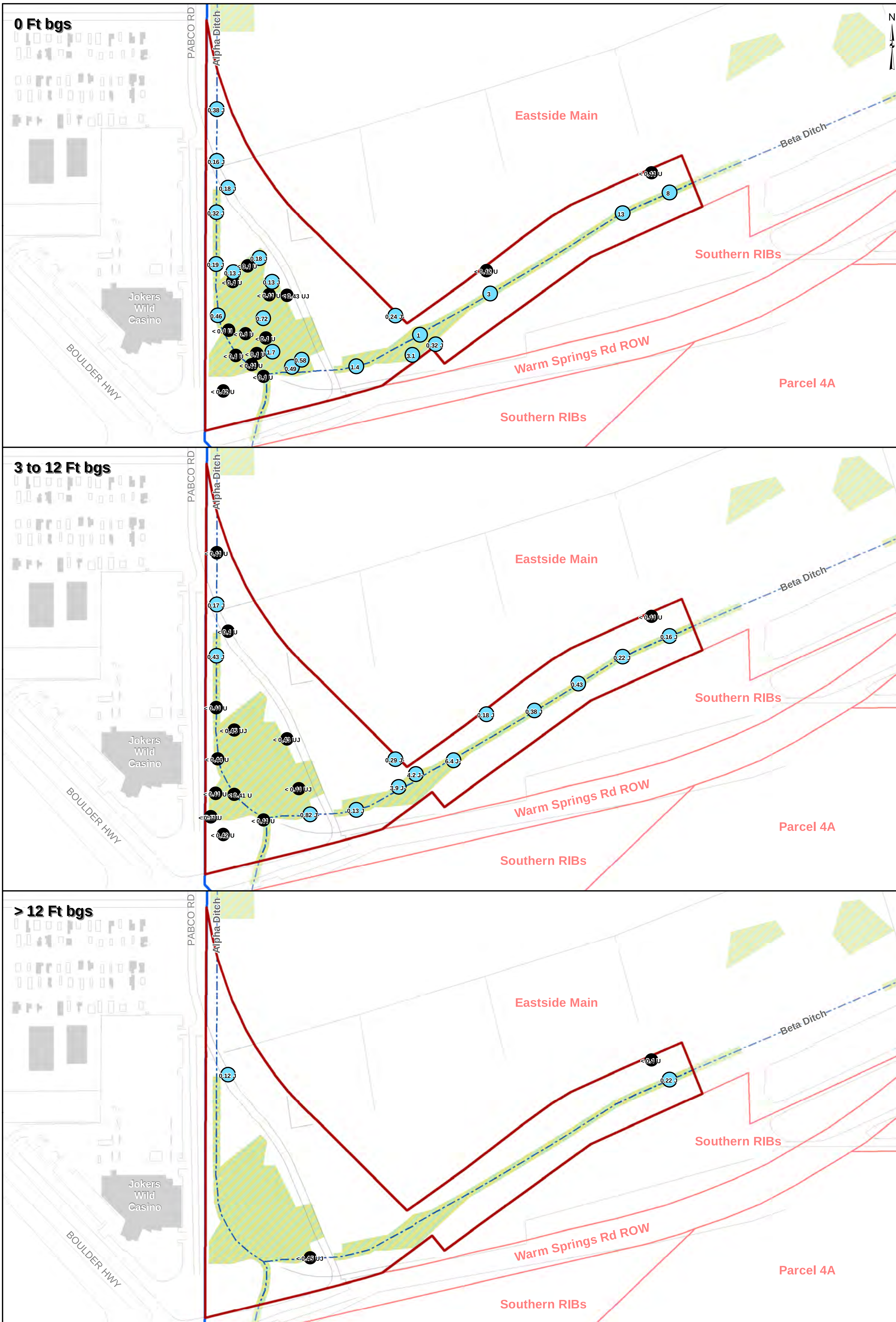
FIGURE I-9

CHROMIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15

JOB No. 0064276
FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (1,230 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-10

CHROMIUM (VI) SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (337 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-11

COBALT SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (42,200 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-12

COPPER SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Max. Shallow Background (19,700 mg/kg)
>= Max. Shallow Background and < Worker BCL (100,000 mg/kg)
>= Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-13

IRON SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Residential BCL

>= 1/10-Residential BCL and < Residential BCL (400 mg/kg)

>= Residential BCL and < 10x Residential BCL

>= 10x Residential BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-14

LEAD SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (2,270 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment.
Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-15

LITHIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Max. Shallow Background (17,500 mg/kg)
>= Max. Shallow Background and < Worker BCL (100,000 mg/kg)
>= Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-16

MAGNESIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (24,900 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

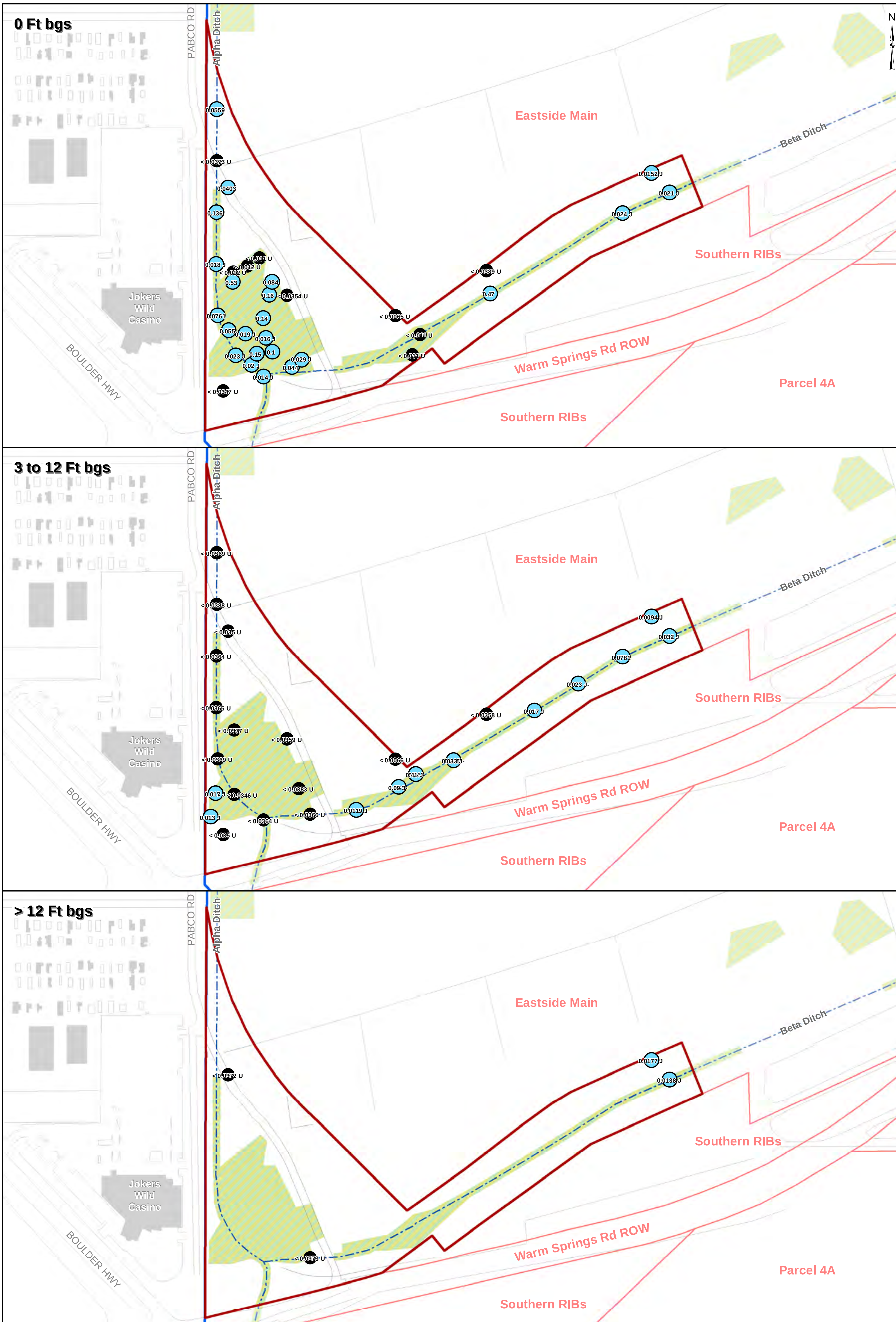
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-17

MANGANESE SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Legend	
Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (341 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

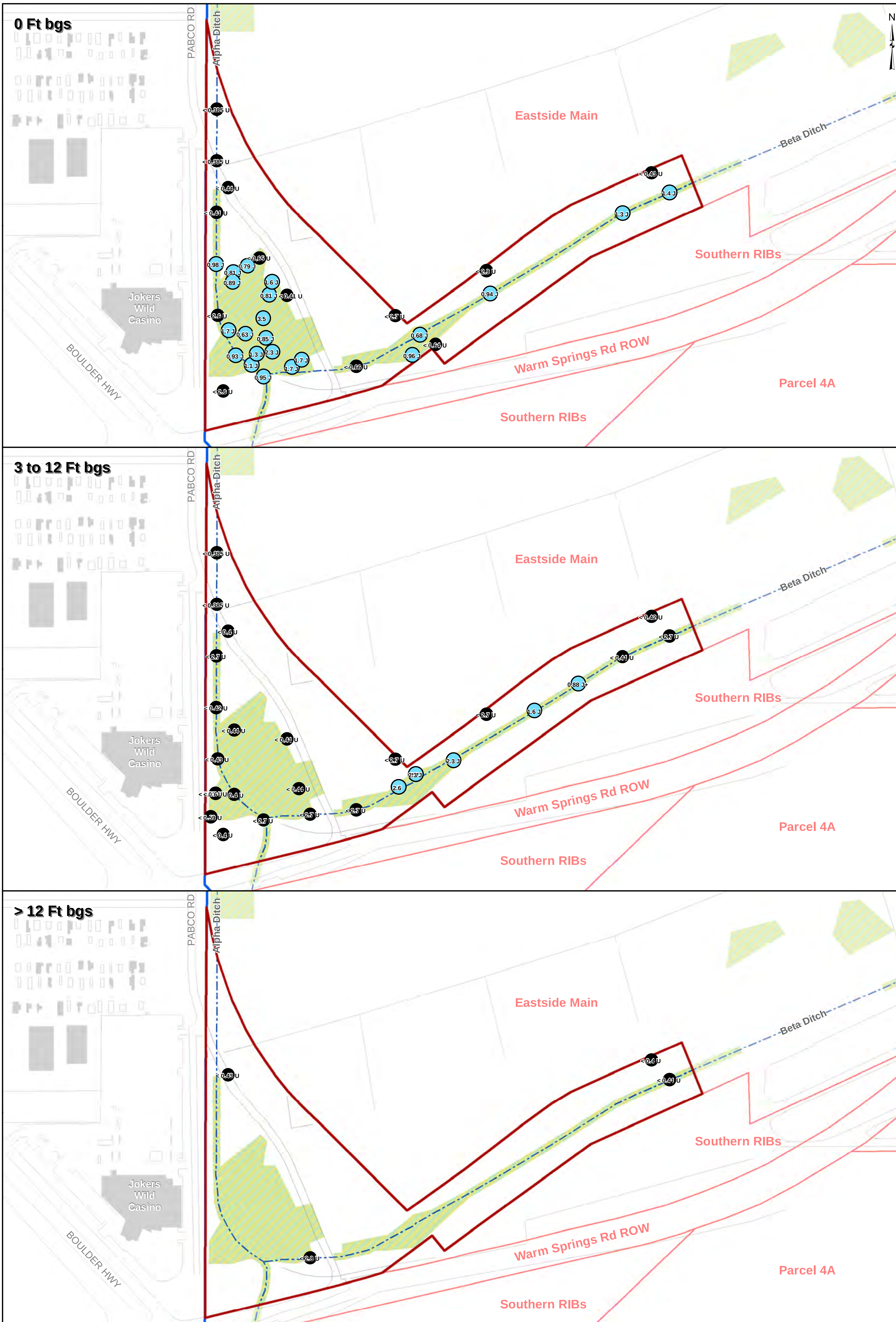
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-18

MERCURY SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (5,680 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-19

MOLYBDENUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (21,800 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-20

NICKEL SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < Max. Shallow Background (3,890 mg/kg)

>= Max. Shallow Background

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

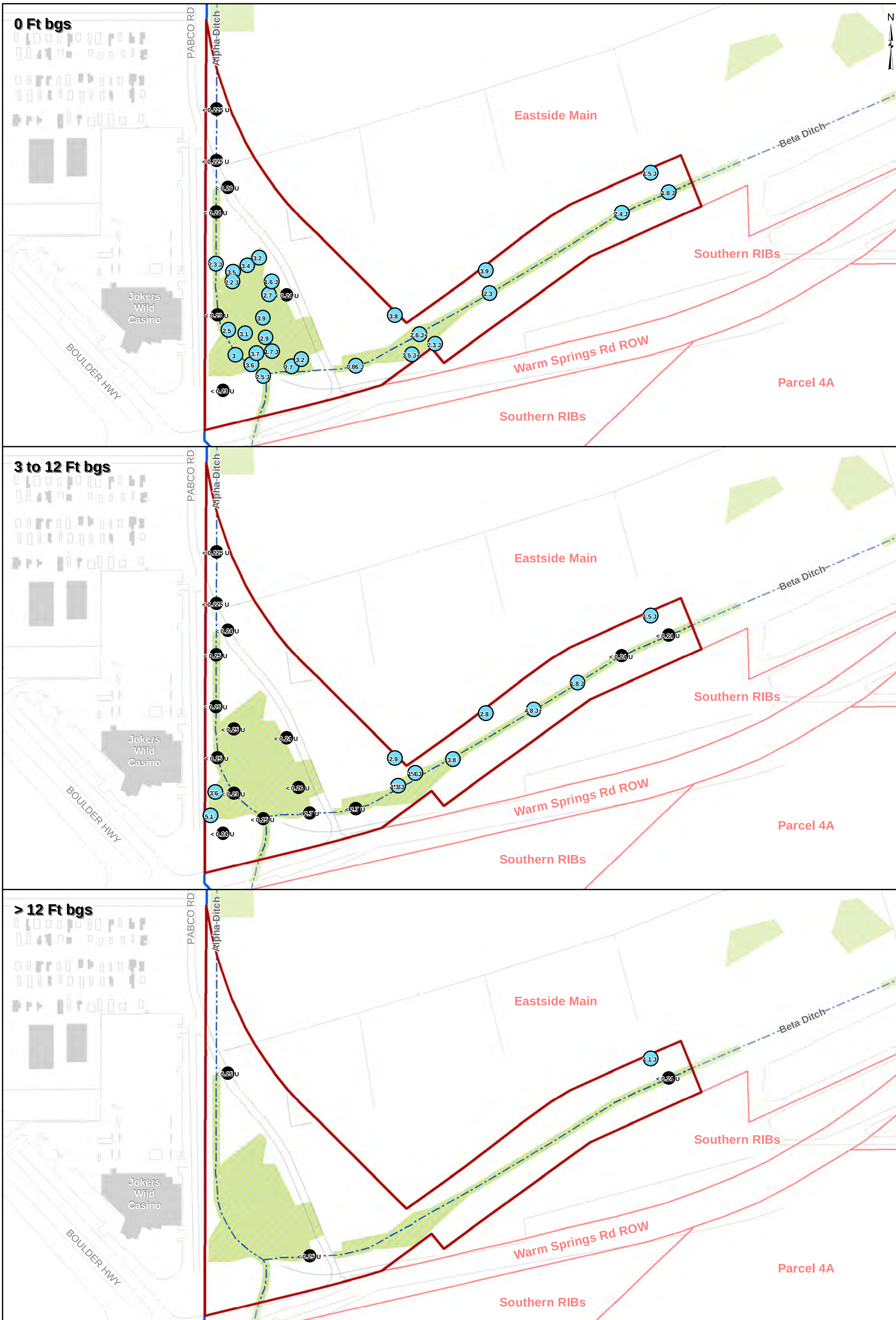
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-21

POTASSIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (5,680 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-22

SELENIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (5,680 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment.
Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-23

SILVER SOIL
RESULTS IN TRIANGLE
COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < Max. Shallow Background (1,320 mg/kg)

>= Max. Shallow Background

Note: Results shown are those used in the human health risk assessment.
Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-24

SODIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

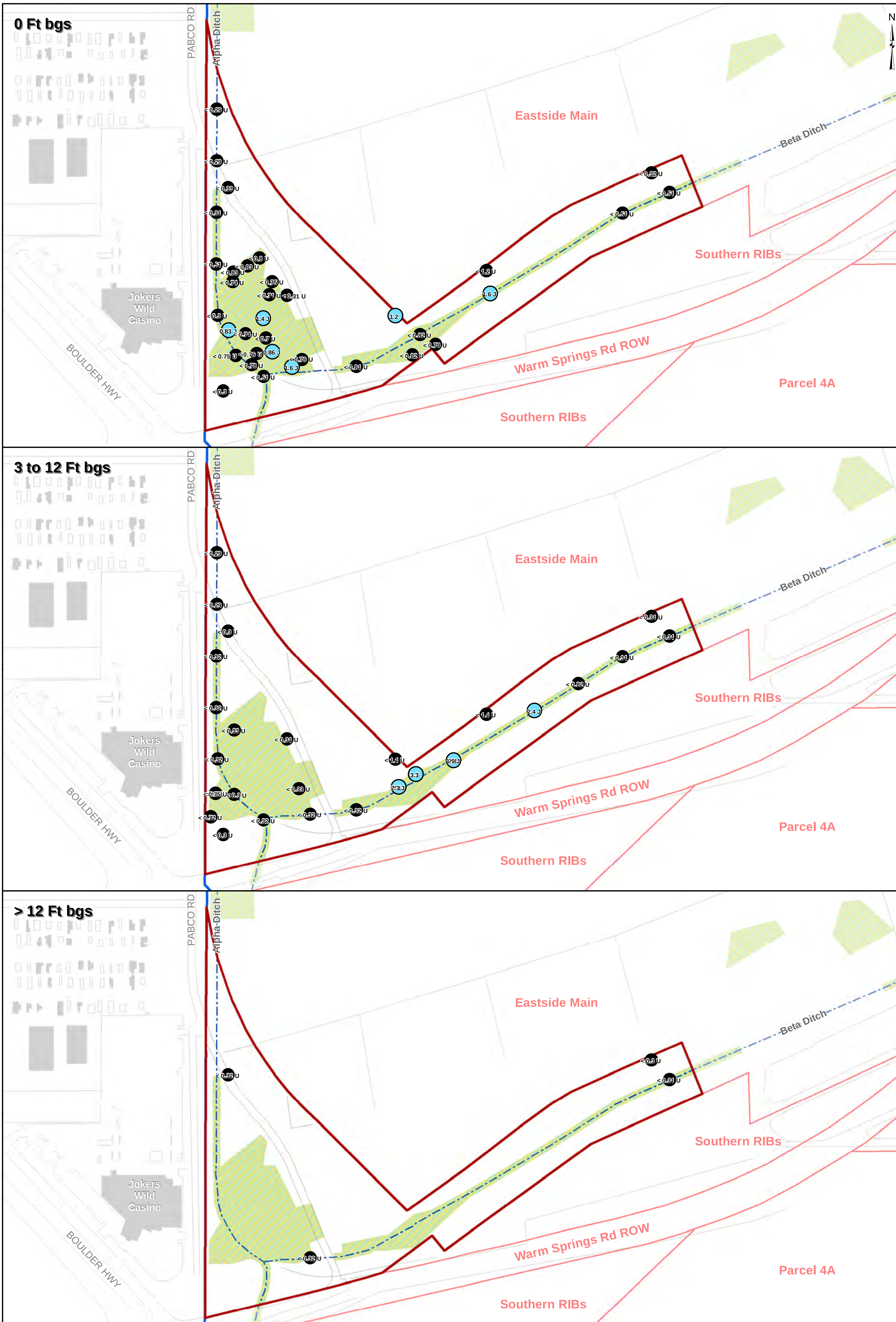
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-25

STRONTIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (74.9 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

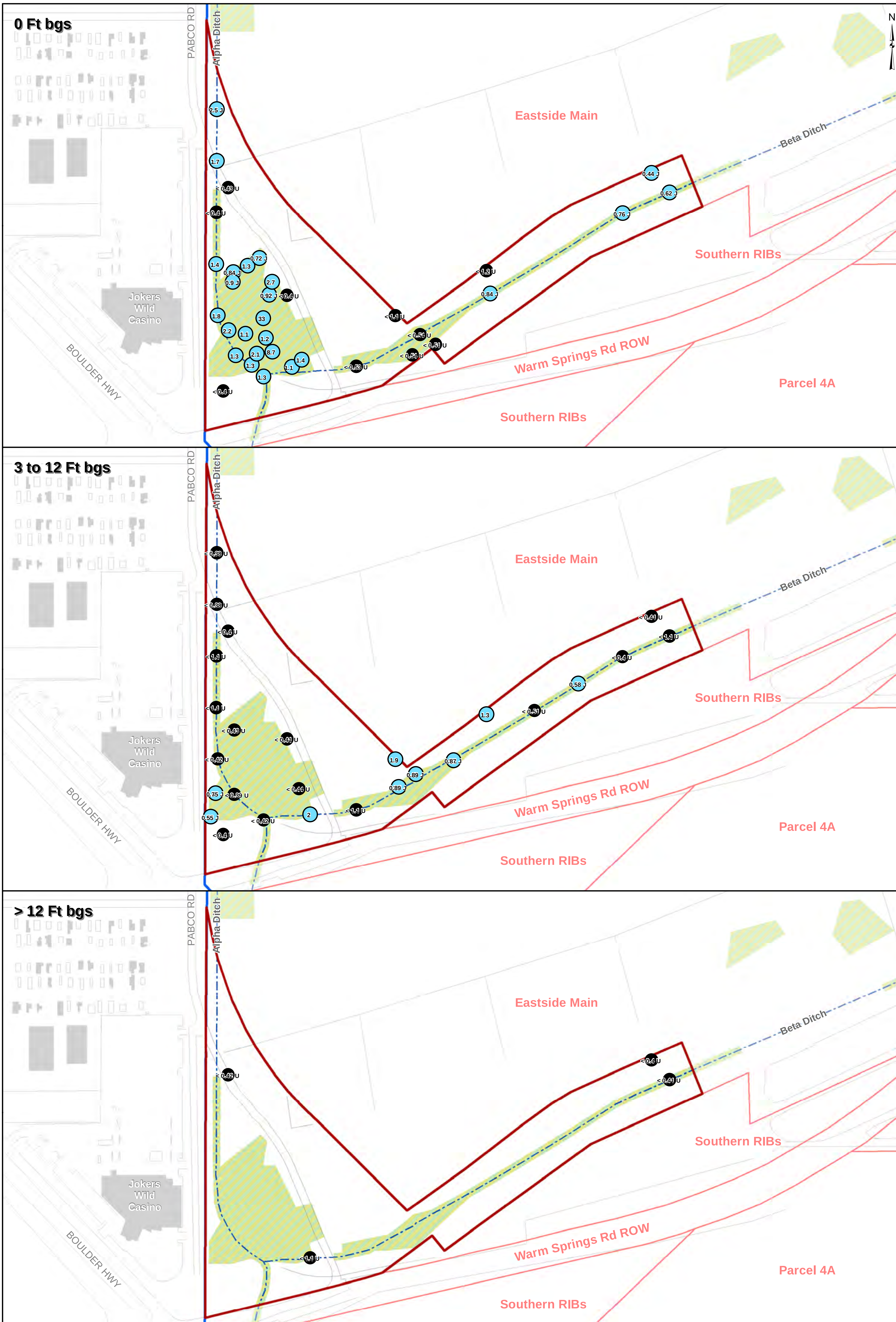
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-26

THALLIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-27

TIN SOIL
RESULTS IN TRIANGLE
COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

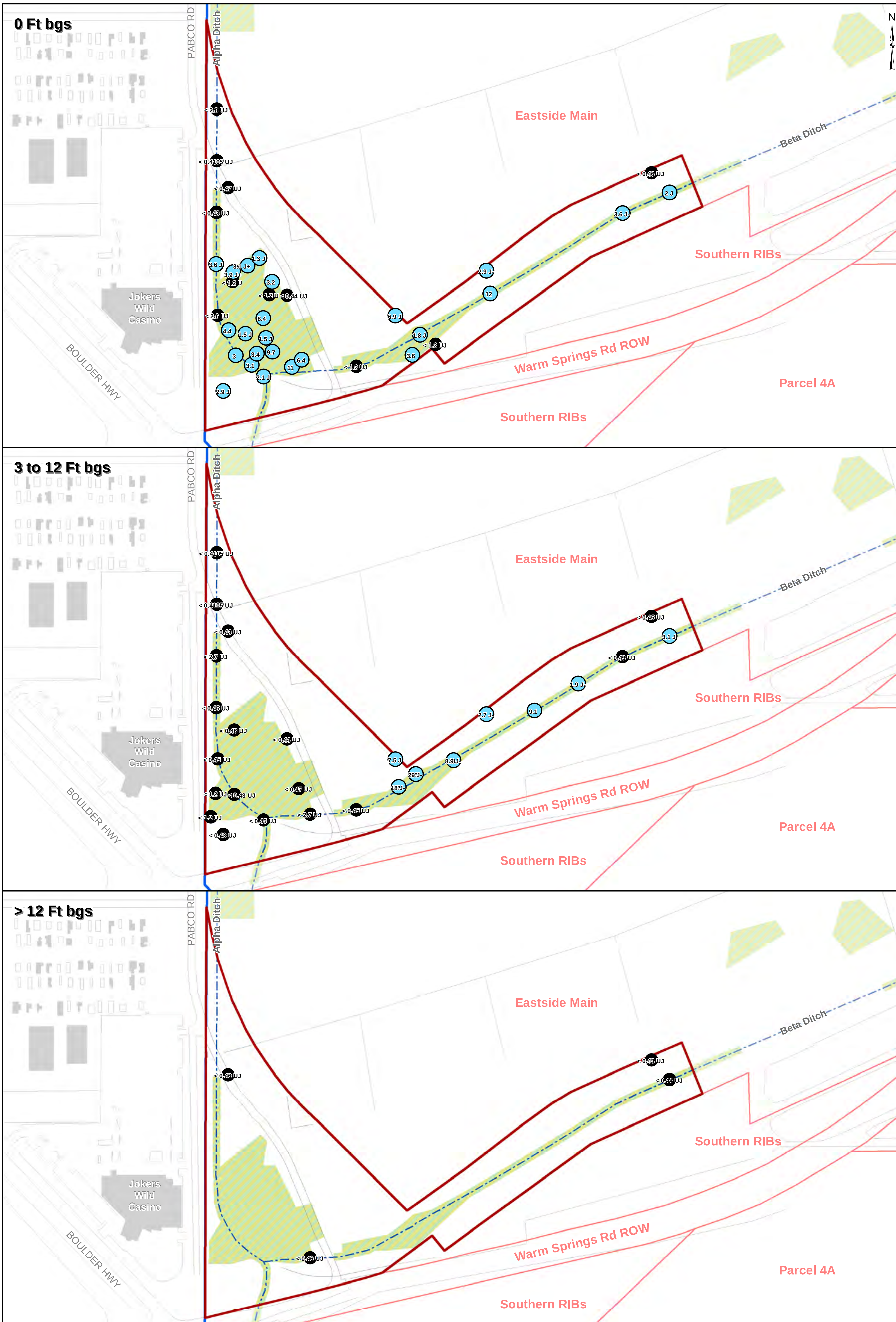
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-28

TITANIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



- Triangle Commercial Sub-Area
- Site AOC3 Boundary
- Eastside Soil Sub-Areas
- Remediation Areas

- Non-Detect
- Detect < 1/10-Worker BCL
- >= 1/10-Worker BCL and < Worker BCL (8,510 mg/kg)
- >= Worker BCL and < 10x Worker BCL
- >= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-29

TUNGSTEN SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (3,400 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-30

URANIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (5,680 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-31

VANADIUM SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by		Date	JOB No. 0064276
MKJ (ERM)	ERM	01/27/15	FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (100,000 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-32

ZINC SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area

Site AOC3 Boundary

Eastside Soil Sub-Areas

Remediation Areas

Non-Detect

Detect < 1/10-Worker BCL

>= 1/10-Worker BCL and < Worker BCL (7.81 mg/kg)

>= Worker BCL and < 10x Worker BCL

>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-33

4,4'-DDE SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by		Date	JOB No. 0064276
MKJ (ERM)	ERM	01/27/15	FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (7.81 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment.
Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-34

4,4'-DDT SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (69.9 mg/kg)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-35

ACETALDEHYDE SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (0.234 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

Benzo(a)pyrene is shown as representative of the PAH COPCs.

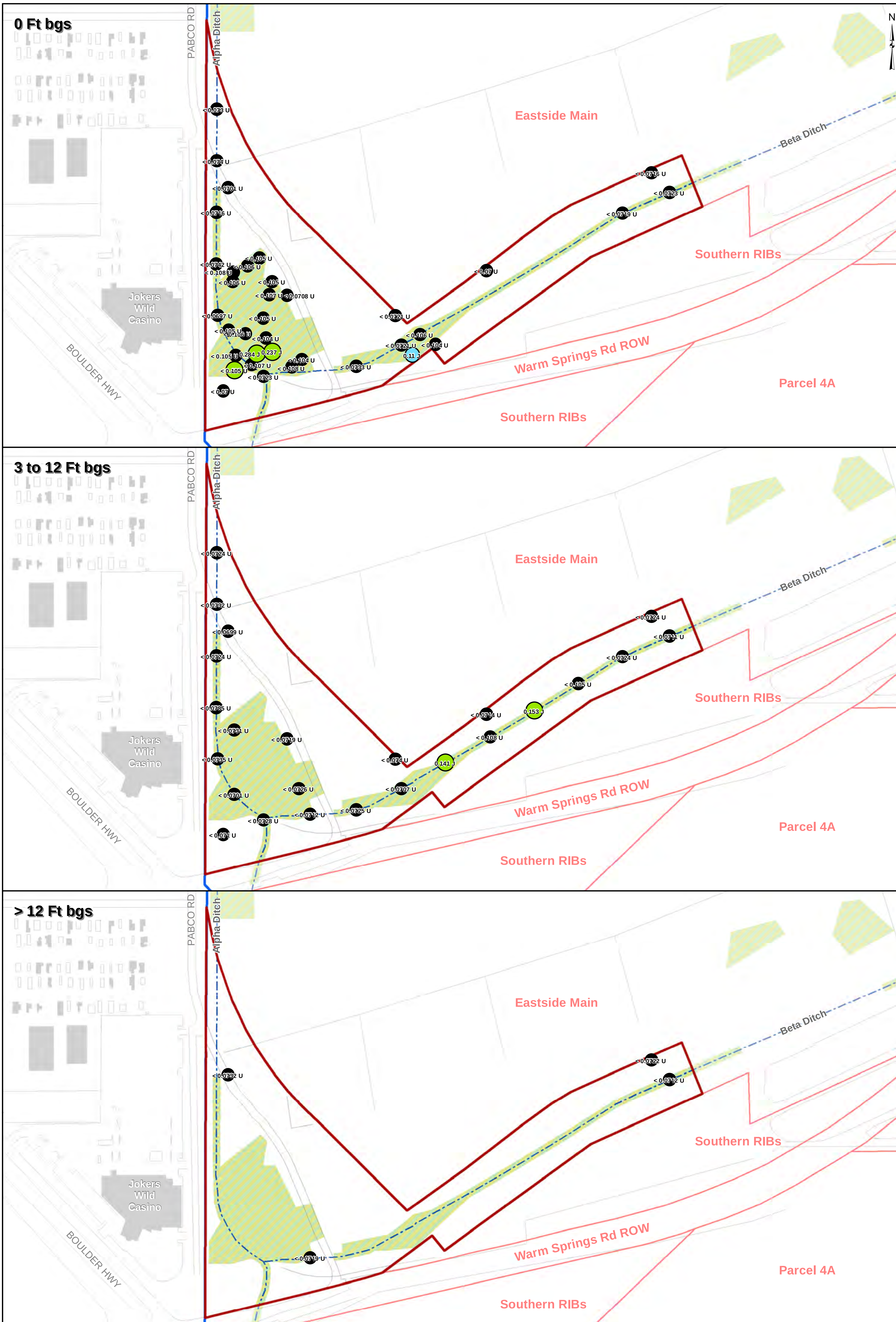
BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-36

BENZO(A)PYRENE SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD



Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

Non-Detect
Detect < 1/10-Worker BCL
>= 1/10-Worker BCL and < Worker BCL (1.2 mg/kg)
>= Worker BCL and < 10x Worker BCL
>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-37

HEXACHLOROBENZENE SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation COMPANY

Prepared by MKJ (ERM) | ERM | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area
Site AOC3 Boundary
Eastside Soil Sub-Areas
Remediation Areas

None Detected
1 Long Chrysotile Fiber
2-3 Long Chrysotile Fibers
4-7 Long Chrysotile Fibers or 1 Long Amphibole Fiber
>7 Long Chrysotile Fibers or 2-3 Long Amphibole Fibers

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

Results shown are for long fibers. No long amphibole fibers were detected in the human health risk assessment dataset.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-38

ASBESTOS SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

Triangle Commercial Sub-Area	Non-Detect
Site AOC3 Boundary	Detect < 1/10-Worker BCL
Eastside Soil Sub-Areas	>= 1/10-Worker BCL and < Worker BCL (1,000 ppt)
Remediation Areas	>= Worker BCL and < 10x Worker BCL
	>= 10x Worker BCL

Note: Results shown are those used in the human health risk assessment. Comparison values (BCLs, max. background) are presented in Table 3-4.

Although not a COPC in the human health risk assessment, TCDD TEQ is presented here because it is a primary chemical of interest for the project.

BMI Common Areas (Eastside)
Clark County, Nevada

FIGURE I-39

TCDD TEQ SOIL RESULTS IN TRIANGLE COMMERCIAL SUB-AREA

Basic Remediation Company

Prepared by MKJ (ERM) | Date 01/27/15 | JOB No. 0064276 | FILE: GIS/BRC/TRIANGLE_COMM/APPENDIX_I.MXD

APPENDIX J

VAPOR INTRUSION TIER 2 ASSESSMENT AND COMPARISON STUDY AREA RESULTS

(model files on the report CD in Appendix B)

LIST OF TABLES (APPENDIX J)

TABLE J-1
TIER 2 ASSESSMENT FOR THE TRIANGLE COMMERCIAL SUB-AREA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	USEPA VI SL[(1)]	AA-01 Aug. 2009	DM-1 Oct. 2009	POU3 Sep. 2009
1,1,1,2-Tetrachloroethane	µg/L	3.2	< 0.16 U	< 0.16 U	< 0.16 U
1,1,1-Trichloroethane	µg/L	200	< 0.088 U	< 0.088 U	< 0.088 U
1,1,2,2-Tetrachloroethane	µg/L	2.8	< 0.11 U	< 0.11 U	< 0.11 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	1500	< 0.12 U	< 0.12 U	< 0.12 U
1,1,2-Trichloroethane	µg/L	5	< 0.071 U	< 0.071 U	0.12 J
1,1-Dichloroethane	µg/L	6.6	0.1 J	< 0.083 U	0.84 J
1,1-Dichloroethene	µg/L	190	1.8	< 0.11 U	1.7
1,1-Dichloropropene	µg/L	--	< 0.068 U	< 0.068 U	0.32 J
1,2,3-Trichlorobenzene	µg/L	--	< 0.16 U	< 0.16 U	< 0.16 U
1,2,3-Trichloropropane	µg/L	22	< 0.23 U	< 0.23 U	< 0.23 U
1,2,4-Trichlorobenzene	µg/L	70	< 0.16 U	< 0.16 U	< 0.16 U
1,2,4-Trimethylbenzene	µg/L	29	< 0.062 U	< 0.062 U	< 0.062 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.2	< 0.2 U	< 0.2 U	< 0.2 U
1,2-Dichlorobenzene	µg/L	600	< 0.11 U	< 0.11 U	5.5
1,2-Dichloroethane	µg/L	5	< 0.05 U	< 0.05 U	< 0.05 U
1,2-Dichloroethene (total)	µg/L	--	< 0.21 U	< 0.21 U	1 J
1,2-Dichloropropane	µg/L	5	< 0.054 U	< 0.054 U	1.2
1,3,5-Trichlorobenzene	µg/L	--	< 0.12 U	< 0.12 U	< 0.12 U
1,3,5-Trimethylbenzene	µg/L	--	< 0.11 U	< 0.11 U	< 0.11 U
1,3-Dichlorobenzene	µg/L	--	< 0.081 U	< 0.081 U	0.6 J
1,3-Dichloropropane	µg/L	--	< 0.053 U	< 0.053 U	< 0.053 U
1,4-Dichlorobenzene	µg/L	75	< 0.11 U	< 0.11 U	1.1
2,2-Dichloropropane	µg/L	--	< 0.1 U	< 0.1 U	< 0.1 U
2-Chlorotoluene	µg/L	--	< 0.11 U	< 0.11 U	< 0.11 U
2-Hexanone	µg/L	8200	< 1.3 U	< 1.3 U	< 1.3 U
2-Nitropropane	µg/L	0.18	< 1.1 U	< 1.1 U	< 1.1 U
4-Chlorotoluene	µg/L	--	< 0.095 U	< 0.095 U	< 0.095 U
4-Methyl-2-pentanone	µg/L	NVT	< 0.32 U	< 0.32 U	< 0.32 U
Acetone	µg/L	NVT	< 0.42 U	< 0.42 U	< 0.42 U
Acetonitrile	µg/L	44000	< 4.2 U	< 4.2 UJ	< 4.2 UJ
Benzene	µg/L	5	< 0.06 U	< 0.06 U	0.16 J
Bromobenzene	µg/L	--	< 0.084 U	< 0.084 U	< 0.084 U
Bromodichloromethane	µg/L	80	< 0.098 U	< 0.098 U	26
Bromoform	µg/L	--	< 0.15 U	< 0.15 U	12
Bromomethane	µg/L	17	< 0.096 U	< 0.096 U	< 0.096 U
Carbon disulfide	µg/L	1200	< 0.52 U	< 0.52 U	< 0.52 U
Carbon tetrachloride	µg/L	5	< 0.073 U	< 0.073 U	25
Chlorobenzene	µg/L	410	< 0.06 U	< 0.06 U	0.7 J
Chlorobromomethane	µg/L	700	< 0.12 U	< 0.12 U	< 0.12 U

TABLE J-1
TIER 2 ASSESSMENT FOR THE TRIANGLE COMMERCIAL SUB-AREA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Chemical	Units	USEPA VI SL(1)	AA-01 Aug. 2009	DM-1 Oct. 2009	POU3 Sep. 2009
Chlorodibromomethane	µg/L	80	< 0.21 U	< 0.21 U	< 0.21 U
Chloroethane	µg/L	23000	< 0.085 U	< 0.085 U	< 0.085 U
Chloroform	µg/L	80	5.7	2.9	440 J
Chloromethane	µg/L	260	< 0.086 U	0.12 J+	< 0.086 U
cis-1,2-Dichloroethene	µg/L	70	< 0.14 U	< 0.14 U	0.88 J
cis-1,3-Dichloropropene	µg/L	4.2	< 0.099 U	< 0.099 U	< 0.099 U
Dibromomethane	µg/L	120	< 0.095 U	< 0.095 U	< 0.095 U
Dichlorodifluoromethane (Freon-12)	µg/L	7.4	< 0.058 UJ	< 0.058 U	< 0.058 U
Dichloromethane	µg/L	39	< 0.1 U	< 0.1 U	5.4
Dimethyl disulfide	µg/L	--	< 0.27 U	< 0.27 U	< 0.27 U
Ethanol	µg/L	--	< 85 U	< 85 UJ	< 85 U
Ethylbenzene	µg/L	700	< 0.11 U	< 0.11 U	< 0.11 U
Heptane	µg/L	--	< 0.12 U	< 0.12 U	< 0.12 U
Iodomethane	µg/L	--	< 0.091 U	< 0.091 U	< 0.091 U
Isopropylbenzene	µg/L	890	< 0.096 U	< 0.096 U	< 0.096 U
m,p-Xylenes	µg/L	360	< 0.19 U	< 0.19 U	< 0.19 U
Methyl ethyl ketone	µg/L	NVT	< 0.83 U	< 0.83 U	< 0.83 U
MTBE (Methyl tert-butyl ether)	µg/L	390	< 0.098 U	< 0.098 U	< 0.098 U
Naphthalene	µg/L	4	--	--	--
n-Butylbenzene	µg/L	--	< 0.12 U	< 0.12 U	< 0.12 U
Nonanal	µg/L	--	< 1.2 U	< 1.2 UJ	< 1.2 U
n-Propylbenzene	µg/L	2400	< 0.093 U	< 0.093 U	< 0.093 U
o-Xylene	µg/L	490	< 0.055 U	< 0.055 U	< 0.055 U
p-Isopropyltoluene	µg/L	--	< 0.11 U	< 0.11 U	< 0.11 U
sec-Butylbenzene	µg/L	--	< 0.085 U	< 0.085 U	< 0.085 U
Styrene	µg/L	9300	< 0.042 U	< 0.042 U	< 0.042 U
tert-Butylbenzene	µg/L	--	< 0.11 U	< 0.11 U	< 0.11 U
Tetrachloroethene	µg/L	5	73 J	0.16 J	9
Toluene	µg/L	19000	< 0.07 U	< 0.07 U	< 0.07 U
trans-1,2-Dichloroethene	µg/L	380	< 0.081 U	< 0.081 U	0.13 J
trans-1,3-Dichloropropene	µg/L	4.2	< 0.23 U	< 0.23 U	< 0.23 U
Trichloroethene	µg/L	5	0.3 J	< 0.091 U	3.8
Trichlorofluoromethane (Freon-11)	µg/L	180	< 0.11 U	< 0.11 U	< 0.11 U
Vinyl acetate	µg/L	9600	< 0.23 U	< 0.23 U	< 0.23 U
Vinyl chloride	µg/L	2	< 0.091 U	< 0.091 U	< 0.091 U
Xylenes (total)	µg/L	490	< 0.22 U	< 0.22 U	< 0.22 U

(1)Groundwater to indoor air vapor intrusion screening level from USEPA's May 2012 Vapor Intrusion Screening Level (VISL) Calculator (Risk = 1×10^{-6}).
NVT = Not sufficiently volatile and/or toxic to pose inhalation risk in selected exposure scenario for the indicated medium (from USEPA).

TABLE J-2
MEASURED SOIL PHYSICAL PROPERTIES FROM COMPARISON STUDY AREA
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter	Sample ID	Sample Depth	Result	Units
Dry Bulk Density	STA-4C-0-SO	0	1.61	g/cm^3
	STA-4C-2-SO	2	1.69	g/cm^3
	STA-4C-4-SO	4	1.9	g/cm^3
	STA-4C-6-SO	6	1.76	g/cm^3
	STA-4C-8-SO	8	1.78	g/cm^3
	STA-4C-10-SO	10	1.84	g/cm^3
Percent Moisture	STA-4C-0-SO	0	3.9	percent
	STA-4C-0-SO	0	6.9	percent
	STA-4C-2-SO	2	3.6	percent
	STA-4C-2-SO	2	3.8	percent
	STA-4C-4-SO	4	2.8	percent
	STA-4C-4-SO	4	3.7	percent
	STA-4C-6-SO	6	3	percent
	STA-4C-6-SO	6	4.4	percent
	STA-4C-8-SO	8	4.7	percent
	STA-4C-8-SO	8	5.5	percent
	STA-4C-10-SO	10	4.4	percent
	STA-4C-10-SO	10	6.8	percent
Porosity	STA-4C-0-SO	0	39.9	percent
	STA-4C-2-SO	2	36.3	percent
	STA-4C-4-SO	4	28.8	percent
	STA-4C-6-SO	6	34.6	percent
	STA-4C-8-SO	8	32.9	percent
	STA-4C-10-SO	10	30.4	percent
Particle Density	STA-4C-0-SO	0	2.676	g/cm^3
	STA-4C-2-SO	2	2.658	g/cm^3
	STA-4C-4-SO	4	2.663	g/cm^3
	STA-4C-6-SO	6	2.696	g/cm^3
	STA-4C-8-SO	8	2.659	g/cm^3
	STA-4C-10-SO	10	2.652	g/cm^3

TABLE J-3
COMPARISON STUDY AREA JOHNSON AND ETTINGER MODEL INPUT VALUES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter	Value	Source
Interval 1 (0-5 feet)		
Depth Below grade to bottom of enclosed floor space (cm)	15	Default
Depth to Soil Vapor Sample (ft)	5 or 10	Sample Specific
Average Soil Temperature (C)	16.67	Site-specific
Stratum Thickness (cm)	152.4	Site-specific
Interval 1 Dry Bulk Density (g/cm^3)	1.73	Site-specific Average
Interval 1 Total Porosity (unitless)	0.35	Site-specific Average
Interval 1 Water-Filled Porosity (unitless)	0.070	Site-specific Average
Interval 2 (5-10 feet)		
Stratum Thickness (cm)	152.4	Site-specific
Vadose Zone Dry Bulk Density (g/cm^3)	1.79	Site-specific Average
Vadose Zone Total Porosity (unitless)	0.33	Site-specific Average
Vadose Zone Water-Filled Porosity (unitless)	0.068	Site-specific Average
Building Characteristics		
Enclosed space floor thickness (cm)	10	Default
Soil-building pressure differential (g/cm-s^2)	40	Default
Enclosed space floor length (cm)	1,000	Default
Enclosed space floor width (cm)	1,000	Default
Enclosed space floor are (cm^2)	1.0 E+6	Default
Enclosed space height (cm)	244	Default
Enclosed space volume (cm^3)	2.4 E+8	Default
Floor-wall seam crack width (cm)	0.1	Default
Indoor air exchange rate (1/hr)	0.50	Default (from Cal/EPA)

TABLE J-4
COMPARISON STUDY AREA SURFACE FLUX TO INDOOR AIR EQUATION INPUT VALUES
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Parameter	Abbrev.	Value	Units	Reference
Foundation crack fraction	η	0.01	unitless	ASTM 2000
Enclosed space volume/infiltration area ratio, residential	L_r	200	cm	ASTM 2000
Enclosed space air exchange rate, residential	ER_r	12	1/day	ASTM 2000

TABLE J-5
MEASURED AND MODELED SOIL GAS, SURFACE FLUX, AND INDOOR AIR RESULTS FOR CHLOROFORM
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Location	Sample	Soil Vapor Sample Depth	Method	Measured Soil Vapor Conc. (ug/m^3)	Modeled Indoor Air Conc. from Soil Vapor (ug/m^3)	Measured Surface Flux (ug/m^2-min)	Crack Fraction (unitless)	Volume:Area Ratio (m)	Air Exchange Rate (l/min)	Modeled Indoor Air Conc. from Measured Surface Flux (ug/m^3)
4C	STA-4C-5	5	TO-15	137.3	0.117	*<0.013 U*	0.01	2	0.00833	ND
4C	STA-4C-5	5	TO-15 SIM	135.91 J	0.058	0.0067	0.01	2	0.00833	0.0040
4C	STA-4C-5B	5	TO-15	*<0.26 U*	ND	*<0.013 U*	0.01	2	0.00833	ND
4C	STA-4C-5B	5	TO-15 SIM	*<0.026 U*	ND	0.0067	0.01	2	0.00833	0.0040
4C	STA-4C-10	10	TO-15	239.03	0.086	*<0.013 U*	0.01	2	0.00833	ND
4C	STA-4C-10	10	TO-15 SIM	250.45 J	0.090	0.0067	0.01	2	0.00833	0.0040
4CR	STA-4CR-5	5	TO-15	146.62	0.063	*<0.013 U*	0.01	2	0.00833	ND
4CR	STA-4CR-5	5	TO-15 SIM	43.537 J	0.019	0.0074	0.01	2	0.00833	0.0044
4CR	STA-4C-5-DUP	5	TO-15	153.94	0.066	*<0.013 U*	0.01	2	0.00833	ND
4CR	STA-4C-5-DUP	5	TO-15 SIM	147.947 J	0.063	0.0080	0.01	2	0.00833	0.0048
4CR	STA-4CR-10	10	TO-15	184.85	0.066	*<0.013 U*	0.01	2	0.00833	ND
4CR	STA-4CR-10	10	TO-15 SIM	246.687 J	0.088	0.0074	0.01	2	0.00833	0.0044
4CR	STA-4C-10-DUP	10	TO-15	213.93	0.077	*<0.013 U*	0.01	2	0.00833	ND
4CR	STA-4C-10-DUP	10	TO-15 SIM	225.465 J	0.081	0.0080	0.01	2	0.00833	0.0048
4E	STA-4E-5	5	TO-15	302.65	0.129	0.0154 J	0.01	2	0.00833	0.0092
4E	STA-4E-5	5	TO-15 SIM	49.718 J	0.021	0.0260	0.01	2	0.00833	0.016
4E	STA-4E-10	10	TO-15	402.61	0.144	0.0154 J	0.01	2	0.00833	0.0092
4E	STA-4E-10	10	TO-15 SIM	274.322 J	0.098	0.0260	0.01	2	0.00833	0.016
4N	STA-4N-5	5	TO-15	125.18	0.053	0.0146 J	0.01	2	0.00833	0.0088
4N	STA-4N-5	5	TO-15 SIM	32.201 J	0.014	0.0185 J	0.01	2	0.00833	0.011
4N	STA-4N-10	10	TO-15	278.35	0.100	0.0146 J	0.01	2	0.00833	0.0088
4N	STA-4N-10	10	TO-15 SIM	*<0.201 UJ*	ND	0.0185 J	0.01	2	0.00833	0.011
4S	STA-4S-5	5	TO-15	103.16	0.044	*<0.013 U*	0.01	2	0.00833	ND
4S	STA-4S-5	5	TO-15 SIM	110.502 J	0.047	0.0026 J	0.01	2	0.00833	0.0016
4S	STA-4S-10	10	TO-15	225.84	0.081	*<0.013 U*	0.01	2	0.00833	ND
4S	STA-4S-10	10	TO-15 SIM	197.818 J	0.071	0.0026 J	0.01	2	0.00833	0.0016
4W	STA-4W-5	5	TO-15	111.38	0.048	*<0.013 U*	0.01	2	0.00833	ND
4W	STA-4W-5	5	TO-15 SIM	145.454 J	0.062	0.0123	0.01	2	0.00833	0.0074
4W	STA-4W-10	10	TO-15	111.77	0.040	*<0.013 U*	0.01	2	0.00833	ND
4W	STA-4W-10	10	TO-15 SIM	139.903 J	0.050	0.0123	0.01	2	0.00833	0.0074

TABLE J-6
CHLOROFORM RESIDENTIAL INDOOR AIR RISKS FROM SURFACE FLUX AND SOIL GAS MEASUREMENTS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Site	Chloroform Residential Indoor Air Risks			Indoor Air Concentration (ug/m^3)	Sampling Method
	Sample Location	HQ	ILCR		
Side-by-Side Comparison Study	STA-4C-5	0.0008	8 E-7	1.2 E-1	Soil Gas
	STA-4C-5 (SIM)	0.0004	4 E-7	5.8 E-2	Soil Gas
	STA-4C-5B	--	--	ND	Soil Gas
	STA-4C-5B (SIM)	--	--	ND	Soil Gas
	STA-4C-10	0.0006	6 E-7	8.6 E-2	Soil Gas
	STA-4C-10 (SIM)	0.0006	6 E-7	9.0 E-2	Soil Gas
	STA-4CR-5	0.0004	4 E-7	6.3 E-2	Soil Gas
	STA-4CR-5 (SIM)	0.00013	1 E-7	1.9 E-2	Soil Gas
	STA-4C-5-DUP	0.0004	4 E-7	6.6 E-2	Soil Gas
	STA-4C-5-DUP (SIM)	0.0004	4 E-7	6.3 E-2	Soil Gas
	STA-4CR-10	0.0005	4 E-7	6.6 E-2	Soil Gas
	STA-4CR-10 (SIM)	0.0006	6 E-7	8.8 E-2	Soil Gas
	STA-4C-10-DUP	0.0005	5 E-7	7.7 E-2	Soil Gas
	STA-4C-10-DUP (SIM)	0.0005	5 E-7	8.1 E-2	Soil Gas
	STA-4E-5	0.0009	8 E-7	1.3 E-1	Soil Gas
	STA-4E-5 (SIM)	0.00014	1 E-7	2.1 E-2	Soil Gas
	STA-4E-10	0.0010	9 E-7	1.4 E-1	Soil Gas
	STA-4E-10 (SIM)	0.0007	6 E-7	9.8 E-2	Soil Gas
	STA-4N-5	0.0004	4 E-7	5.3 E-2	Soil Gas
	STA-4N-5 (SIM)	0.00009	9 E-8	1.4 E-2	Soil Gas
	STA-4N-10	0.0007	7 E-7	1.0 E-1	Soil Gas
	STA-4N-10 (SIM)	--	--	ND	Soil Gas
	STA-4S-5	0.0003	3 E-7	4.4 E-2	Soil Gas
	STA-4S-5 (SIM)	0.0003	3 E-7	4.7 E-2	Soil Gas
	STA-4S-10	0.0006	5 E-7	8.1 E-2	Soil Gas
	STA-4S-10 (SIM)	0.0005	5 E-7	7.1 E-2	Soil Gas
	STA-4W-5	0.0003	3 E-7	4.8 E-2	Soil Gas
	STA-4W-5 (SIM)	0.0004	4 E-7	6.2 E-2	Soil Gas
	STA-4W-10	0.00027	3 E-7	4.0 E-2	Soil Gas
	STA-4W-10 (SIM)	0.0003	3 E-7	5.0 E-2	Soil Gas

TABLE J-6
CHLOROFORM RESIDENTIAL INDOOR AIR RISKS FROM SURFACE FLUX AND SOIL GAS MEASUREMENTS
HUMAN HEALTH RISK ASSESSMENT AND CLOSURE REPORT FOR TRIANGLE COMMERCIAL SUB-AREA
BMI COMMON AREAS (EASTSIDE), CLARK COUNTY, NEVADA

Site	Chloroform Residential Indoor Air Risks			Indoor Air Concentration (ug/m^3)	Sampling Method
	Sample Location	HQ	ILCR		
Side-by-Side Comparison Study	STA-4C	0.000027	3 E-8	4.0 E-3	Surface Flux
	STA-4CR	0.000030	3 E-8	4.4 E-3	Surface Flux
	STA-4C-DUP	0.000033	3 E-8	4.8 E-3	Surface Flux
	STA-4E	0.00011	1 E-7	1.6 E-2	Surface Flux
	STA-4N	0.000075	7 E-8	1.1 E-2	Surface Flux
	STA-4S	0.000011	1 E-8	1.6 E-3	Surface Flux
	STA-4W	0.000050	5 E-8	7.4 E-3	Surface Flux

Side-by-Side Comparison Study	Minimum Risk	0.000011	1 E-8	1.6 E-3	Surface Flux
	Minimum Risk	0.000094	9 E-8	1.4 E-2	Soil Gas
	Maximum Risk	0.00011	1 E-7	1.6 E-2	Surface Flux
	Maximum Risk	0.00098	9 E-7	1.4 E-1	Soil Gas

HQ = Hazard Quotient
ILCR = Incremental Lifetime Cancer Risk

APPENDIX K

LEGAL DESCRIPTION OF THE TRIANGLE COMMERCIAL SUB-AREA

ATKINS

Atkins North America, Inc.
2270 Corporate Circle, Suite 200
Henderson, Nevada 89074-7755

Telephone: 702.263.7275
Fax: 702.263.7200

www.atkinsglobal.com/northamerica

LEGAL DESCRIPTION
NFA – PARCEL TRIANGLE COMMERCIAL

LOCATED IN THE NORTH HALF (N 1/2) OF SECTION 7, TOWNSHIP 22 SOUTH, RANGE 63 EAST, M.D.M., CITY OF HENDERSON, CLARK COUNTY, NEVADA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 7; THENCE SOUTH 0°13'38" WEST, 359.52 FEET TO THE POINT OF BEGINNING, SAME BEING THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 1280.00 FEET, A RADIAL LINE TO SAID BEGINNING BEARS SOUTH 82°31'26" WEST; THENCE ALONG SAID CURVE TO THE LEFT THROUGH A CENTRAL ANGLE OF 39°02'28", AN ARC LENGTH OF 872.18 FEET; THENCE SOUTH 44°23'56" EAST, 549.97 FEET; THENCE NORTH 54°29'39" EAST, 279.15 FEET; THENCE NORTH 52°24'53" EAST, 276.70 FEET; THENCE NORTH 53°39'38" EAST, 143.53 FEET; THENCE NORTH 58°44'11" EAST, 87.06 FEET; THENCE NORTH 66°01'20" EAST, 470.36 FEET; THENCE SOUTH 21°57'16" EAST, 210.54 FEET; THENCE SOUTH 65°12'51" WEST, 475.14 FEET; THENCE SOUTH 53°46'33" WEST, 533.29 FEET; THENCE SOUTH 53°20'49" WEST, 168.83 FEET; THENCE NORTH 39°42'10" WEST, 74.85 FEET; THENCE SOUTH 55°55'02" WEST, 243.16 FEET; THENCE SOUTH 76°48'45" WEST, 285.99 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 1750.00 FEET, A RADIAL LINE TO SAID BEGINNING BEARS SOUTH 19°54'05" EAST; THENCE ALONG SAID CURVE TO THE RIGHT THROUGH A CENTRAL ANGLE OF 3°39'55", AN ARC LENGTH OF 111.95 FEET; THENCE NORTH 16°14'10" WEST, 5.00 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 1745.00 FEET, A RADIAL LINE TO SAID BEGINNING BEARS SOUTH 16°14'11" EAST; THENCE ALONG SAID CURVE TO THE RIGHT THROUGH A CENTRAL ANGLE OF 1°24'30", AN ARC LENGTH OF 42.89 FEET; THENCE NORTH 14°11'09" WEST, 19.35 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 1725.00 FEET, A RADIAL LINE TO SAID BEGINNING BEARS SOUTH 14°51'00" EAST; THENCE ALONG SAID CURVE TO THE RIGHT THROUGH A CENTRAL ANGLE OF 1°19'43", AN ARC LENGTH OF 40.00 FEET; THENCE SOUTH 14°11'09" EAST, 19.34 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 1745.00 FEET, A RADIAL LINE TO SAID BEGINNING BEARS SOUTH 13°30'53" EAST; THENCE ALONG SAID CURVE TO THE RIGHT THROUGH A CENTRAL ANGLE OF 0°19'38", AN ARC LENGTH OF 9.97 FEET;

THENCE SOUTH 76°48'45" WEST, 207.50 FEET; THENCE NORTH 0°13'38" EAST, 1558.02 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 841,197 SQUARE FEET (19.31 ACRES), MORE OR LESS, AS DETERMINED BY COMPUTER METHODS.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS LEGAL DESCRIPTION IS GRID NORTH AS DEFINED BY THE NEVADA COORDINATE SYSTEM OF 1983(NC83) EAST ZONE (2701).

TRIANGLE COMMERCIAL
Point of Beginning : North: 20876.1023' East: 16753.6436'

Segment #1 : Curve
Length: 872.18' Radius: 1280.00'
Delta: 39°02'28" Tangent: 453.79'
Chord: 855.41' Course: S26° 59' 48"E
Course In: N82° 31' 26"E Course Out: S43° 28' 58"W
RP North: 21042.6458' East: 18022.7627'
End North: 20113.9039' East: 17141.9458'

Segment #2 : Line
Course: S44° 23' 56"E Length: 549.97'
North: 19720.9554' East: 17526.7353'

Segment #3 : Line
Course: N54° 29' 39"E Length: 279.15'
North: 19883.0846' East: 17753.9819'

Segment #4 : Line
Course: N52° 24' 53"E Length: 276.70'
North: 20051.8584' East: 17973.2549'

Segment #5 : Line
Course: N53° 39' 38"E Length: 143.53'
North: 20136.9097' East: 18088.8716'

Segment #6 : Line
Course: N58° 44' 11"E Length: 87.06'
North: 20182.0932' East: 18163.2915'

Segment #7 : Line
Course: N66° 01' 20"E Length: 470.36'
North: 20373.2398' East: 18593.0605'

Segment #8 : Line
Course: S21° 57' 16"E Length: 210.54'
North: 20177.9702' East: 18671.7738'

Segment #9 : Line
Course: S65° 12' 51"W Length: 475.14'
North: 19978.7788' East: 18240.4063'

Segment #10 : Line
Course: S53° 46' 33"W Length: 533.29'
North: 19663.6325' East: 17810.1959'

Segment #11 : Line

Course: S53° 20' 49"W Length: 168.83'
North: 19562.8461' East: 17674.7497'

Segment #12 : Line
Course: N39° 42' 10"W Length: 74.85'
North: 19620.4332' East: 17626.9350'

Segment #13 : Line
Course: S55° 55' 02"W Length: 243.16'
North: 19484.1684' East: 17425.5432'

Segment #14 : Line
Course: S76° 48' 45"W Length: 285.99'
North: 19418.9235' East: 17147.0968'

Segment #15 : Curve
Length: 111.95' Radius: 1750.00'
Delta: 3°39'55" Tangent: 55.99'
Chord: 111.93' Course: S71° 55' 53"W
Course In: N19° 54' 05"W Course Out: S16° 14' 10"E
RP North: 21064.4146' East: 16551.3962'
End North: 19384.2086' East: 17040.6894'

Segment #16 : Line
Course: N16° 14' 10"W Length: 5.00'
North: 19389.0072' East: 17039.2920'

Segment #17 : Curve
Length: 42.89' Radius: 1745.00'
Delta: 1°24'30" Tangent: 21.45'
Chord: 42.89' Course: S74° 28' 04"W
Course In: N16° 14' 11"W Course Out: S14° 49' 41"E
RP North: 21064.4108' East: 16551.3905'
End North: 19377.5229' East: 16997.9711'

Segment #18 : Line
Course: N14° 11' 09"W Length: 19.35'
North: 19396.2828' East: 16993.2290'

Segment #19 : Curve
Length: 40.00' Radius: 1725.00'
Delta: 1°19'43" Tangent: 20.00'
Chord: 40.00' Course: S75° 48' 52"W
Course In: N14° 51' 00"W Course Out: S13° 31' 17"E
RP North: 21063.6634' East: 16551.1319'
End North: 19386.4802' East: 16954.4488'

Segment #20 : Line

Course: S14° 11' 09"E Length: 19.34'
North: 19367.7299' East: 16959.1884'

Segment #21 : Curve
Length: 9.97' Radius: 1745.00'
Delta: 0°19'38" Tangent: 4.98'
Chord: 9.97' Course: S76° 38' 56"W
Course In: N13° 30' 53"W Course Out: S13° 11' 15"E
RP North: 21064.4108' East: 16551.3905'
End North: 19365.4286' East: 16949.4919'

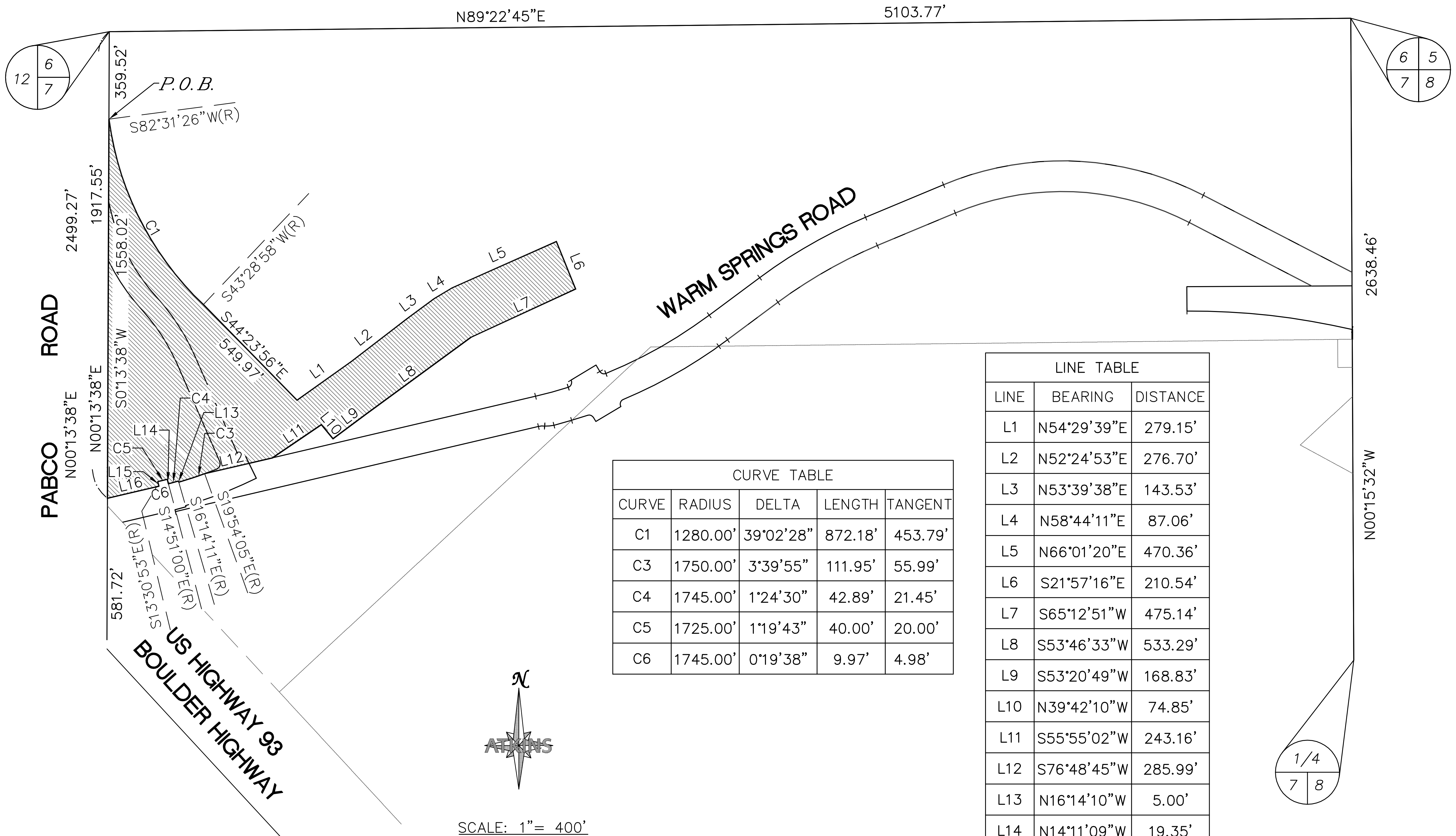
Segment #22 : Line
Course: S76° 48' 45"W Length: 207.50'
North: 19318.0897' East: 16747.4627'

Segment #23 : Line
Course: N0° 13' 38"E Length: 1558.02'
North: 20876.1023' East: 16753.6436'

Perimeter: 6684.78' Area: 841,197 Sq. Ft.

NFA PARCEL TRIANGLE COMMERCIAL EXHIBIT

A PORTION OF SECTION 7, TOWNSHIP 22 SOUTH, RANGE 63 EAST, M.D.M.,
CITY OF HENDERSON, CLARK COUNTY, NEVADA,



SCALE: 1"= 400'

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	TANGENT
C1	1280.00'	39°02'28"	872.18'	453.79'
C3	1750.00'	3°39'55"	111.95'	55.99'
C4	1745.00'	1°24'30"	42.89'	21.45'
C5	1725.00'	1°19'43"	40.00'	20.00'
C6	1745.00'	0°19'38"	9.97'	4.98'

LINE TABLE

LINE	BEARING	DISTANCE
L1	N54°29'39"E	279.15'
L2	N52°24'53"E	276.70'
L3	N53°39'38"E	143.53'
L4	N58°44'11"E	87.06'
L5	N66°01'20"E	470.36'
L6	S21°57'16"E	210.54'
L7	S65°12'51"W	475.14'
L8	S53°46'33"W	533.29'
L9	S53°20'49"W	168.83'
L10	N39°42'10"W	74.85'
L11	S55°55'02"W	243.16'
L12	S76°48'45"W	285.99'
L13	N16°14'10"W	5.00'
L14	N14°11'09"W	19.35'
L15	S14°11'09"E	19.34'
L16	S76°48'45"W	207.50'

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