EVALUATION OF CONTAMINATION AT THE AGENT ORANGE DIOXIN HOT SPOTS IN BIEN HOA, PHU CAT AND VICINITY, VIET NAM

Final Report

Prepared for:

Office of the National Committee 33,
Ministry of Natural Resource and Environment
Ha Noi, Viet Nam

and

UNDP
Ha Noi, Viet Nam

Prepared by:

Viet Nam – Russia Tropical Centre
Ha Noi, Viet Nam

with Technical Support Provided by:

Hatfield Consultants
West Vancouver, Canada

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The Viet Nam – Russia Tropical Research Centre (VRTC) / Vietnamese Ministry of Defense executed and implemented the project, and prepared this report, under the direction of Dr. Do Ngoc Lanh. VRTC staff who played key roles in the project included:

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1.0 BACKGROUND

1.1 AGENT ORANGE USE IN VIET NAM

During the US-Viet Nam war, American and ARVN military forces released over 72 million litres of herbicide into the environment of southern Viet Nam in a code-named mission called Operation Ranch Hand that extended from 1961 to 1971. The majority of the chemicals sprayed were Agent Orange in order to destroy forest cover and food crops. Vietnamese were exposed to these chemicals during the actual spraying, and it is suspected on a regular basis for the past 30+ years, primarily through contact with soils, sediments, dust and food products near former US military infrastructure/bases.

In the past decade, several studies have been undertaken by Vietnamese and international scientists to verify the extent of dioxin contamination at a number of US bases in southern Viet Nam. The military history and present environmental conditions related to dioxin contamination have been documented at key dioxin hotspots in Viet Nam, including Da Nang, Bien Hoa, Phu Cat, Pleiku, Nha Trang, Can Tho, and Tan Son Nhut (Dwernychuk *et al*. 2002; Hatfield Consultants and 10-80 Division 2006; 2007).

Previous studies concluded that the former US installations at Da Nang, Bien Hoa, and Phu Cat are the most contaminated of the airbases studied and should be considered significant dioxin 'hot spots', with recommendations to initiate remediation of soils as soon as possible (Dwernychuk 2005; Dwernychuk *et al.* 2002; Hatfield Consultants and 10-80 Division 2006; 2007). Situated in close proximity to these airbases are significant numbers of people who, in some way, may be in contact with contaminated soils, sediments, dust and/or food that may have originated on these former US airbases. Concern for the health of local people is of primary concern. As a result, it is critical that the pathways of dioxin transfer to people are understood, and measures are taken to prevent human contamination.

Dioxin hot spots exist today in Viet Nam, and are potentially contaminating human populations living in close proximity to these locations. The most significant hot spots have been identified, but we recognize that others may also exist which have not yet been identified. However, Bien Hoa, Da Nang and Phu Cat require immediate remediation. These hot spots have very high dioxin levels due to storage, use and spillage of Agent Orange during the American War, and the fact that these were key military airbases for implementing Operation Ranch Hand (Dwernychuk 2005; Dwernychuk *et al*. 2002; Hatfield Consultants and 10-80 Division 1998; 2000; 2006; 2007).

Hot spots that exist today include those areas where Agent Orange was spilled, applied by truck-mounted and back-pack sprayers, including intensive perimeter spraying of bases, and washed out of aircraft spray tanks, thereby adding high levels of dioxin to soils - levels that were significantly higher than that resulting from aerial spray applications. For example, on the Bien Hoa Airbase in the early 1970s, from spills of herbicide occurred, including 25,000 litres of Agent Orange (US DOD, 2007). This event contributed significantly to the establishment of Bien Hoa as a present-day dioxin hot spot.

The Vietnamese government is working with haste to contain the dioxin-contaminated areas near/on former US airbases labeled as hot spots. Dioxin contamination on the Da Nang airbase has received considerable international press following the discovery of significant contamination on the airbase and in local populations (especially in people fishing in Sen Lake adjacent to the airbase) (Hatfield Consultants and 10-80 Division 2007). Less attention has been paid to dioxin assessment at Bien Hoa and Phu Cat, until the present study was commissioned by UNDP.

Although approximately 12% of southern Viet Nam was sprayed during Operation Ranch Hand, only very limited areas are considered highly toxic due to dioxin contamination, specifically airbases used by the US military (Dwernychuk *et al*., 2002). As dioxin in soil may remain toxic for many decades, and possibly over a century, it is crucial that contaminated sites are identified and remediation measures implemented ultimately to protect the health of local Vietnamese.

Viet Nam requires international assistance to address site-specific Agent Orange/dioxin contamination throughout the country. It is hoped that efforts will be adopted by the international community to address the dioxin issue in Viet Nam, and assist its people to live safely in those areas that were ravaged by the wartime herbicide, Agent Orange.

1.2 PROJECT GOALS AND OBJECTIVES

The current project focused on undertaking dioxin assessments at Phu Cat and Bien Hoa Airbases, with the goal to:

- Assess the impacts of risk of dioxin on the environment and people in the vicinity of these Hotspots;
- Formulate appropriate technological solutions for eventual clean-up;
- Develop an overall plan and budget for implementation and monitoring of clean-up activities; and
- Provide capacity building and training in all of the above.

1.3 DESCRIPTION OF PHU CAT AND BIEN HOA AIRBASES

Phu Cat

Phu Cat Airfield was an important US military airbase and Ranch Hand site during the American war, and is currently used for both civil and military purposes today. There was confirmed herbicide storage, loading and plane washing at Phu Cat; run-off from the herbicide wash area eventually enters into a series of small lakes (Lakes A, B and C) used by local inhabitants for raising fish and waterfowl. Due to known dioxin contamination, a ban on food consumption from the lake was implemented in 2002. In an attempt to remediate the contaminated runoff from the airstrip, the Vietnamese military built a concrete remediation structure downstream of the main airbase run-off area in 2002. Population density around the lake and airfield is limited to a small number of airbase workers and local residents.

Vietnamese sampling programs have focused on the east-central portion of Phu Cat Airbase, as well as downstream Lakes A, B and C, into which drainage flows from the Airbase. Prior to conducting the current survey, approximately 50 samples were analyzed to date by VRTC at Phu Cat Airbase. Additional information on dioxin/furan concentrations in perimeter areas outside Phu Cat Airbase is provided by Hatfield and 10-80 Division (2007).

According to US Military data provided to Viet Nam in 2007, the main storage area for Agent Orange and other herbicides at Phu Cat was in the southeast corner of the Airbase. Records indicate 17,000 drums of Agent Orange, 9,000 drums of Agent White, and 2,900 drums of Agent Blue were stored at Phu Cat (US DOD, 2007). There are a number of drainage canals in the east-central area of the airbase (flowing east from the former washing area to Lakes A, B and C). Given that residents are now farming in the area immediately east of Phu Cat Airbase, assessment of dioxin/furan concentrations at this site is high priority.

Bien Hoa

Bien Hoa airfield (Dong Nai Province) was the primary airbase for Ranch Hand activities in southern Viet Nam. Previous residual herbicide studies in the Bien Hoa area suggest very high dioxin contamination (Schechter *et al.* 2001, 2002; Hatfield Consultants and 10-80 Division 2007). Run-off from the airfield is suspected to have contaminated the communes downstream of the airbase. This fact, combined with the relatively high population density, results in the Bien Hoa area being placed high on the priority list for human health risk due to dioxin contamination.

Recent data provided by the US military to Viet Nam indicates that over 98,000 45-gallon barrels of Agent Orange, 45,000 barrels of Agent White, and 16,000 barrels of Agent Blue were stored/used at Bien Hoa (US DOD, 2007). Over 11,000 barrels of herbicide were transferred from Bien Hoa under Operation Pacer Ivy in 1970. Vietnamese information, and previous sampling programs, focused on assessment and mitigation of dioxin impacts in the south-central portion of Bien Hoa Airbase, as well as in downstream lakes (i.e., Airbase Lake, Bien Hung Lake). A number of soil and sediment samples have been analyzed to date by VRTC at Bien Hoa Airbase. Additional information on dioxin/furan concentrations in perimeter areas outside Bien Hoa Airbase is provided by Hatfield and 10-80 Division (2007).

US military data provided in 2007 suggests that the main storage area for Agent Orange and other herbicides at Bien Hoa was in the south-west corner of the Airbase; until this survey was undertaken, Vietnamese researchers had not yet sampled in this location. There is also another location in the south-central area of the Airbase, which appears to have a similar substrate and chemical odour found at the former storage area in Da Nang; this area receives drainage from the former storage area at Bien Hoa.

Given that Bien Hoa is densely populated outside the Airbase (approximately 1 million people live in the city), assessment of dioxin/furan concentrations at this site is high priority. Soils throughout the Bien Hoa area are now heavily

disturbed due to remediation efforts ongoing at the Airbase (9,000 m^3 of soil have been remediated out of 43,000 m^3 targeted for clean-up), and through rapid urban development immediately south of the Airbase.

2.0 METHODS

2.1 SAMPLING PROCEDURES AND SAMPLING SITES

Sampling procedures followed those undertaken in previous Hatfield and Vietnamese studies conducted in Viet Nam (e.g., Hatfield and 10-80 Division 2007; Dwernychuk *et al*. 2002; see Bibliography for complete reference list). According to the project agreement, only soils and sediments were sampled; all samples were collected in duplicate, with one sample kept in Viet Nam, and one sample sent to the international laboratory. Soils were collected from a variety of depths, but most were between 0-10 cm, 10-30 cm and 30-60 cm (maximum 100 cm); sediments were collected using a stainless steel dredge and/or spatula.

According to the agreement between the Office of Committee 33, UNDP technical consultants and Vietnam-Russia Tropical Center (VRTC), VRTC was responsible for analyzing and reporting dioxin and furan concentrations in 100 soil and sediment samples (55 samples from Bien Hoa airbase and 45 samples from Phu Cat airbase). The international laboratory (AXYS Analytical Services Ltd., Canada [AXYS]) was assigned 50 samples for analyses; 20 of these were duplicate samples that were analyzed by both laboratories ("parallel measurements").

Samples were collected from areas formally used for storage, transport and loading of Agent Orange and other herbicides during the US-Viet Nam conflict, and were selected as representative samples of these respective areas. Sampling locations, including GPS coordinates, are provided in Appendix A1. Samples were analyzed for dioxin and furan concentrations; TEQ concentrations were calculated as the sum of 17 toxic congeners which have been assigned Toxicity Equivalency Factors (TEF) by WHO (2005).

The tables included in this report provide results from both laboratories; results from AXYS are indicated with an asterisk. Where duplicate samples were analyzed by both laboratories, the AXYS results are presented in parentheses after the VRTC results.

Sampling sites and the number of samples collected at Bien Hoa and Phu Cat Airbases were determined based on the following:

- Results of previous dioxin surveys conducted on during Projects Z1 and Z3 by VRTC and Office of the National Committee 33 (Office 33);
- Results from the pre-field survey (survey conducted prior to the sampling campaign), which included collection of information on site characteristics, topography, hydrometeorological conditions, drainage patterns, etc.;

- Results of a meeting held between key project participants (MOD advisory board, Office 33 and Hatfield). The Vietnam-Russian Tropical Research Centre (VRTC) staff, specialists from Office 33 and Hatfield Consultants, and staff from Center for Demining Technology, High Command of Engineers, Vietnamese Ministry of Defense (MOD), implemented the sample collection program in January 2008.

A total of 79 samples, including 67 soil samples and 12 sediment samples, were collected at the Phu Cat Airbase (Figure 2.2). A total of 125 samples, including 114 soil samples and 11 sediment samples, were collected at Bien Hoa Airbase (Figure 2.1).

High-resolution satellite imagery was used for identification of field sites, and for reporting purposes. VRTC and Office 33 obtained QuickBird imagery for Bien Hoa and Phu for the sampling program. Final plotting of sampling locations and dioxin concentration data was performed by Hatfield. Figure 2.1 and Figure 2.2 illustrate the sampling sites at Bien Hoa and Phu Cat Airbases, respectively. Historical data from sampling conducted by Hatfield and 10-80 Division (2005) are also included in the figures and results section.

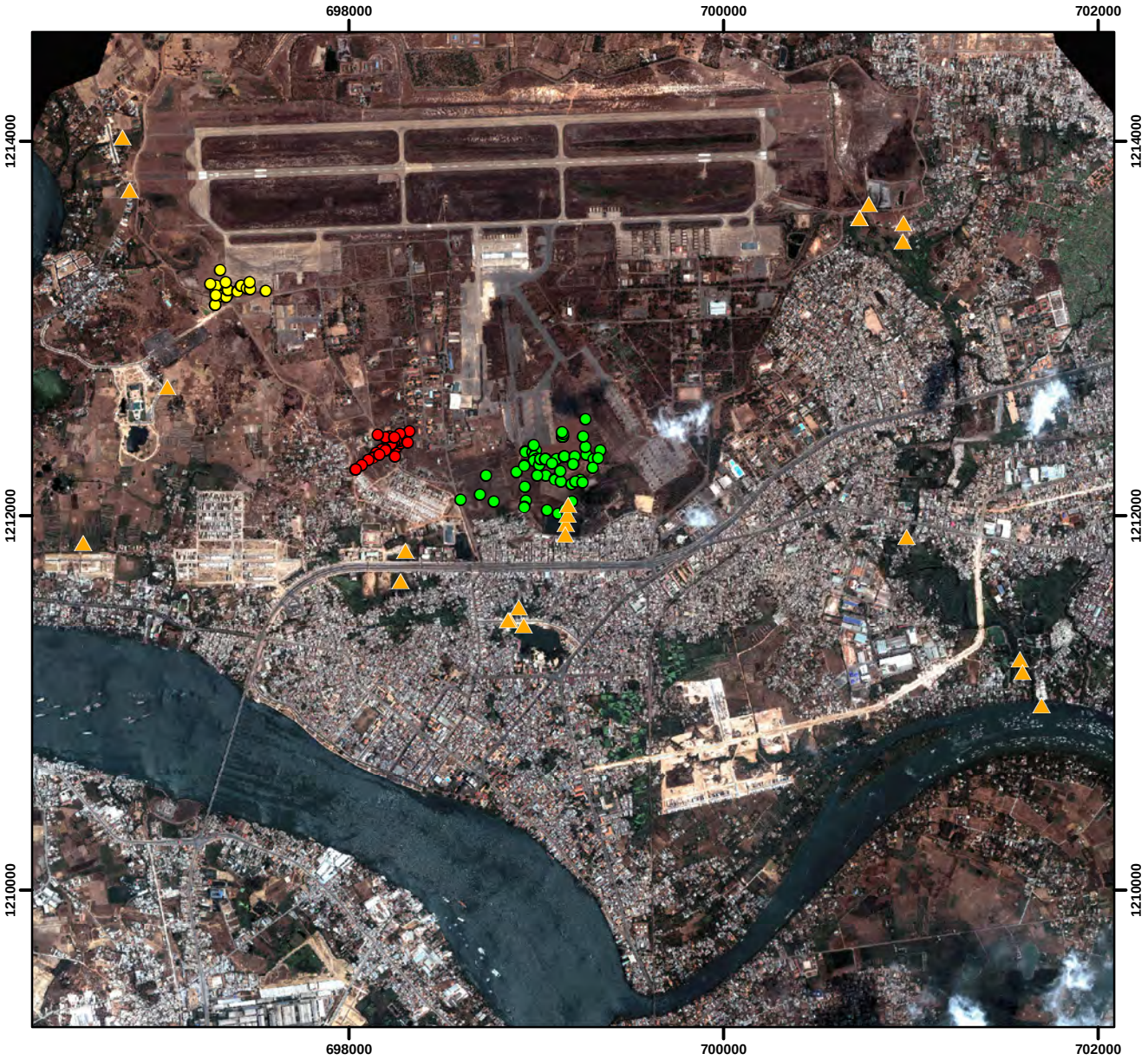
2.2 LABORATORY ANALYSIS

Soil and sediment samples were analyzed by VRTC using 45 TQSB 01:2007 method; this method was developed based on EPA method (EPA 8280A) with small modifications, and is described in Appendix A2. The method is used for the analysis of PCDD/PCDF on low-resolution gas chromatography mass spectrometry (GC-MS) instruments.

AXYS analytical procedures and results are also presented in Appendix A3. All soil and sediment samples tested for polychlorinated dibenzo-*p*-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) were spiked with C-labelled surrogate standards (tetrachlorodioxin, tetrachlorofuran, pentachlorodioxin, pentachlorofuran, hexachlorodioxin, hexachlorofuran, heptachlorodioxin heptachlorofuran, and octachlorodioxin) prior to analysis. Soil samples were soxhlet extracted. Samples were liquid/liquid extracted by shaking with solvent. All extracts were subject to a series of chromatographic cleanup steps prior to analysis for PCDDs and PCDFs by high-resolution gas chromatography with high-resolution mass spectrometric detection (HRGC/HRMS).

The AXYS laboratory quality assurance/quality control (QA/QC) program included matrix specific method recovery studies, verification of standard solution accuracy against recognized standard reference solutions, analysis of certified reference materials, and participation in interlaboratory comparison programs.

Figure 2.1 Dioxin/Furan Sampling Locations Bien Hoa, Viet Nam, January 2008 with historical data from 2004 & 2005.



LEGEND

- Historical data 2004-2005 (Hatfield Consultants Ltd. and 10-80 Division, 2006)
- Z1 Area
- Pacer Ivy Area
- Southwest Airbase corner

Viet Nam

Hatfield CONSULTANTS

0 0.25 0.5 1 Km

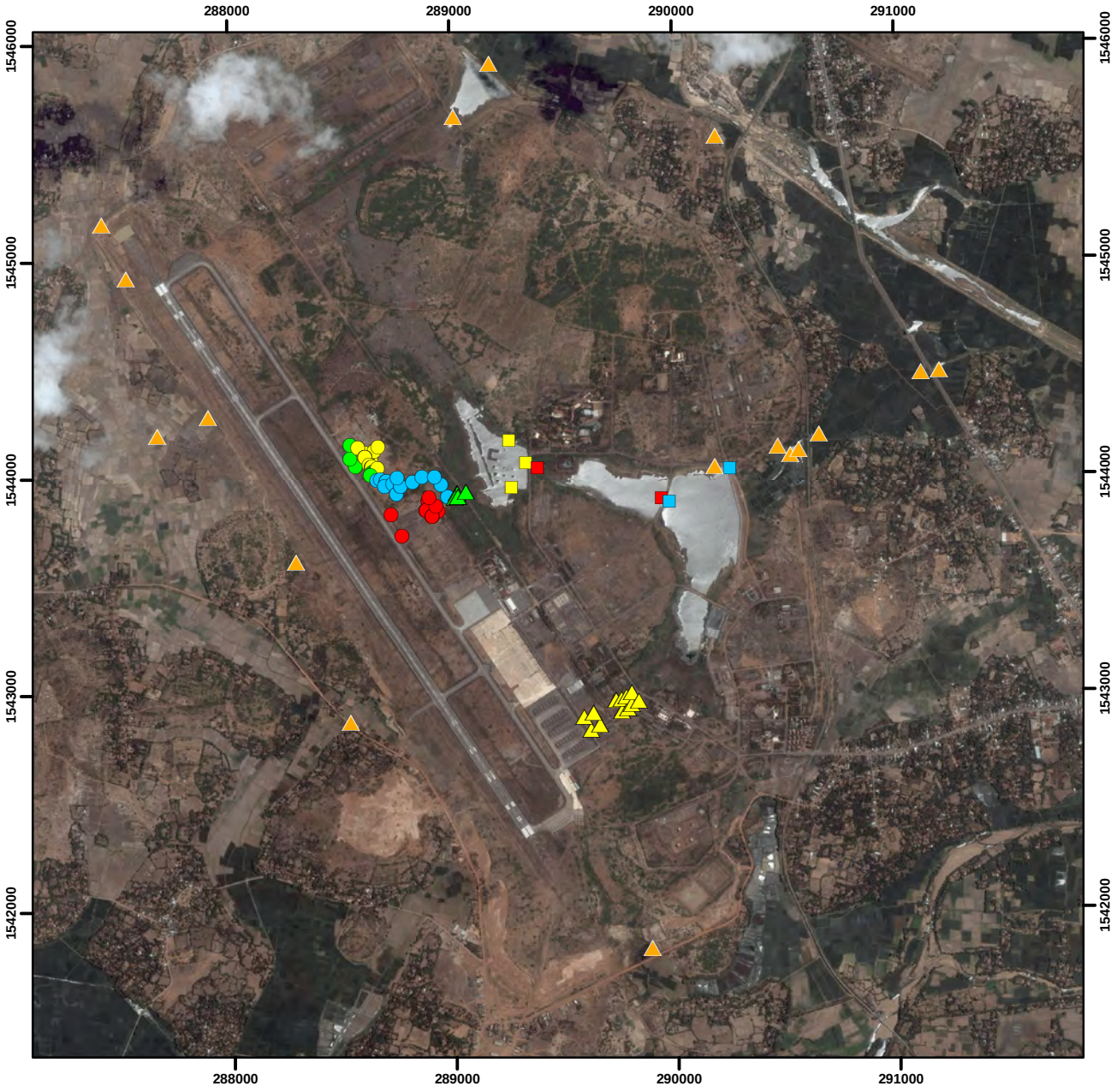
Scale: 1:35,000

Data Source: Quickbird
Projection: UTM Zone 49 North
Datum: WGS 84

N

K:\Data\Project\UNDP1391\GIS_MXD\UNDP1391_BienHoa_1_All_Sites_20090218.mxd

Figure 2.2 Dioxin/Furan Sampling Locations Phu Cat, Viet Nam, January 2008 with historical data from 2004 & 2005.



LEGEND

- **Historical data from 2004 and 2005** (Hatfield Consultants Ltd. and 10-80 Division, 2006)
- **Southeast corner of Airbase**
- **Lake A**
- **Lake B**
- **Lake C**
- **Sedimentation Tank**
- **Former Loading Area**
- **Former Storage Area**
- **Buffer Zone**
- **Former Washing Area**

Viet Nam

Hatfield CONSULTANTS

0 0.25 0.5 1 km

Scale 1:30,000

Data Source: Quickbird
Projection: UTM Zone 49 North
Datum: WGS 84

K:\Data\Project\UNDP1391\GIS_MXD\UNDP1391_PhuCat_1_AllSites_20090218.mxd

The accuracy of 2,3,7,8-TCDD in the standard solutions used for analysis was verified against NIST SRM 1614 (National Institute of Standards & Technology–Standard Reference Material 1614); the accuracy of other 2,3,7,8-substituted PCDD and PCDF congeners was verified against a standard reference solution characterized by interlaboratory testing (12 independent labs). The program of interlaboratory testing includes participation in studies organized by the University of Umea, the WHO, QUASIMEME (inter-laboratory performance study: Quality Assurance of Information for Marine Environmental Monitoring in Europe), and Environment Canada encompassing sediment, tissue, milk, and blood samples.

AXYS samples were analyzed in batches alongside QC samples. Each analysis batch included a laboratory blank to demonstrate acceptable laboratory background levels, a spiked matrix reference sample to demonstrate analyte recoveries, and a duplicate sample (sample size permitting) to demonstrate the analytical precision achieved. The results for the batch QC samples must fall within predefined acceptance limits for the sample data to be accepted. On-going evaluation of QC sample data was conducted to ensure the analytical system was operating in a state of control. As part of their QA/QC program, AXYS will periodically perform 'duplicate' analyses on a sample from a given analytical run if the number of individual analyses is greater than 10. This is done to confirm consistency in the analytical run.

Total toxic equivalents (TEQ) for each sample analyzed were calculated in the laboratory using the revised World Health Organization (WHO) Toxic Equivalency Factors (TEFs) for PCDDs and PCDFs (Van den Berg *et al.*, 1998). For non-detectable (ND) and NDR (chromatographic peak was detected, but did not meet quantification criteria) designations, half the detection limit of the sample was used in the total TEQ calculation.

3.0 RESULTS AND DISCUSSION

3.1 SAMPLES COLLECTED AND ANALYZED

A complete list of all samples collected during this project, including GPS coordinates of sampling locations, is provided in Appendix A1. Table 3.1 and Table 3.2 indicate samples analyzed at VRTC and AXYS Analytical Services, for Phu Cat and Bien Hoa, respectively.

In total, VRTC analyzed 100 samples (45 samples from Phu Cat Airbase and 55 samples from Bien Hoa Airbase), and AXYS analyzed 50 samples (17 samples from Phu Cat Airbase and 33 samples from Bien Hoa Airbase). Parallel analyses were conducted on 21 samples by VRTC and AXYS, for QA/QC purposes (8 samples from Phu Cat Airbase and 13 samples from Bien Hoa Airbase).

In the following section, data are reported on all polychlorinated dibenzo-*p*-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) recorded in soil and sediment samples. These data are further summarized into 2,3,7,8-TCDD concentrations, TEQs and %TCDD of TEQ. All raw AXYS data, in the form of laboratory analysis sheets, are presented in Appendix A3.

Table 3.1 Soil and Sediment Samples from Phu Cat Airbase, Viet Nam, Analyzed by VRTC and AXYS.

No.	Location	Samples Analyzed by VRTC	Samples Analyzed by AXYS	Samples for Parallel Analysis
1	Former Storage Area: ▪ Analyzed by VRTC: 9 ▪ Analyzed by AXYS: 4 ▪ Parallel analysis: 2	08VNPC 001 08VNPC 002-2 08VNPC 003 08VNPC 004 08VNPC 010 08VNPC 011 08VNPC 012 08VNPC 012-2 08VNPC 014-2	08VNPC 001 08VNPC 002 08VNPC 012 08VNPC 014-1	08VNPC 001 08VNPC 012
2	Former Loading Area: ▪ Analyzed by VRTC: 5 ▪ Analyzed by AXYS: 3 ▪ Parallel analysis: 1	08VNPC 006 08VNPC 007 08VNPC 008 08VNPC 018 08VNPC 018-2	08VNPC 017 08VNPC 018 08VNPC 020	08VNPC 018
3	Former Washing Area: ▪ Analyzed by VRTC: 9 ▪ Analyzed by AXYS: 3 ▪ Parallel analysis: 1	08VNPC 023 08VNPC 024-2 08VNPC 025 08VNPC 026 08VNPC 027 08VNPC 040 08VNPC 041 08VNPC 050 08VNPC 051	08VNPC 024 08VNPC 026	08VNPC 026
4	Buffer Area: ▪ Analyzed by VRTC: 5 ▪ Analyzed by AXYS: 1 ▪ Parallel analysis: 1	08VNPC 016 08VNPC 021 08VNPC 046 08VNPC 052 08VNPC 053	08VNPC 052	08VNPC 052
5	Sedimentation tank: ▪ Analyzed by VRTC: 4 ▪ Analyzed by AXYS: 1 ▪ Parallel analysis: 1	08VNPC 055 08VNPC 056 08VNPC 057 08VNPC 058	08VNPC 056 08VNPC 059	08VNPC 056
6	Lake A ▪ Analyzed by VRTC: 2 ▪ Analyzed by AXYS: 1 ▪ Parallel analysis: 1	08VNPC 061 08VNPC 062	08VNPC 061	08VNPC 061

Table 3.1 (Cont'd.)

No.	Location	Samples Analyzed by VRTC	Samples Analyzed by AXYS	Samples for Parallel Analysis
7	Lake B ▪ Analyzed by VRTC: 1 ▪ Analyzed by AXYS: 1	08VNPC 064	08VNPC 063	
8	Lake C	08VNPC 065		
9	Southeast Airbase Corner: ▪ Analyzed by VRTC: 9 ▪ Analyzed by AXYS: 3 ▪ Parallel analysis: 1	08VNPC 029 08VNPC 030 08VNPC 031 08VNPC 032 08VNPC 033 08VNPC 034 08VNPC 036 08VNPC 037 08VNPC 039	08VNPC 031 08VNPC 035 08VNPC 038	08VNPC 031
	Total	**45**	**17**	**8**

Table 3.2 Soil and Sediment Samples from Bien Hoa Airbase, Viet Nam, Analyzed by VRTC and AXYS.

No.	Location	Samples Analyzed by VRTC	Samples Analyzed by AXYS	Samples Analyzed by Both Labs
1	South Airbase Corner: ▪ Analyzed by VRTC: 13 ▪ Analyzed by AXYS: 6 ▪ Parallel analysis: 3	08VNBH 068 08VNBH 074 08VNBH 076 08VNBH 077 08VNBH 085 08VNBH 087 08VNBH 088 08VNBH 088-2 08VNBH 088-4 08VNBH 091 08VNBH 097 08VNBH 099 08VNBH 112	08VNBH 067 08VNBH 084 08VNBH 087 08VNBH 088 08VNBH 088-3 08VNBH 097	08VNBH 087 08VNBH 088 08VNBH 097
2	Southwest Airbase Corner: ▪ Analyzed by VRTC: 11 ▪ Analyzed by AXYS: 6 ▪ Parallel analysis: 2	08VNBH 102 08VNBH 104 08VNBH 105 08VNBH 106 08VNBH 107 08VNBH 108 08VNBH 110 08VNBH 113 08VNBH 114 08VNBH 115 08VNBH 119	08VNBH 108 08VNBH 109 08VNBH 111 08VNBH 114 08VNBH 116 08VNBH 120	08VNBH 108 08VNBH 114
3	Z1 area: ▪ Analysis by VRTC: 7 ▪ Analyzed by AXYS: 4 ▪ Parallel analysis: 3	08VNBH 080 08VNBH 080-2 08VNBH 080-3 08VNBH 080-4 08VNBH 080-5 08VNBH 082 08VNBH 083	08VNBH 080-3 08VNBH 080-6 08VNBH 082 08VNBH 083	08VNBH 080-3 08VNBH 082 08VNBH 083

Table 3.2 (Cont'd.)

No.	Location	Samples Analyzed by VRTC	Samples Analyzed by AXYS	Samples Analyzed by Both Labs
4	Soil surrounding Z1 area: ▪ Analyzed by VRTC: 21 ▪ Analyzed by AXYS: 14 ▪ Parallel analysis: 4	08VNBH 122	08VNBH 123	08VNBH 139
		08VNBH 125	08VNBH 124	08VNBH 141-3
		08VNBH 127	08VNBH 126	08VNBH 145
		08VNBH 130	08VNBH 128	08VNBH 170
		08VNBH 134	08VNBH 132	
		08VNBH 136	08VNBH 135	
		08VNBH 137	08VNBH 139	
		08VNBH 139	08VNBH 141-3	
		08VNBH 141	08VNBH 143	
		08VNBH 141-3	08VNBH 145	
		08VNBH 141-6	08VNBH 148	
		08VNBH 142	08VNBH 150	
		08VNBH 143-3	08VNBH 162	
		08VNBH 145	08VNBH 170	
		08VNBH 147		
		08VNBH 149		
		08VNBH 153		
		08VNBH 161		
		08VNBH 163		
		08VNBH 166		
		08VNBH 170		
5	Ponds, lake surrounding Z1 area: ▪ Analyzed by VRTC: 3 ▪ Analyzed by AXYS: 3 ▪ Parallel analysis: 1	08VNBH 156	08VNBH 155	08VNBH 159
		08VNBH 158	08VNBH 157	
		08VNBH 159	08VNBH 159	
	Total	**55**	**33**	**13**

3.2 ANALYTICAL RESULTS

Detailed VRTC laboratory results are provided in Appendix 2, and AXYS results are presented in Appendix 3, including recovery results of internal standards.

The following background information and assumptions were used in order to evaluate the dioxin contamination situation at both Phu Cat and Bien Hoa Airbases:

- Results of previous dioxin surveys conducted by Vietnamese and international scientists (e.g., Projects Z1 and Z3, Hatfield and 10-80 Division [20005; 2007], as well as other related projects and sampling programs);
- Analytical results from the 100 samples analyzed by VRTC under the current program, as well as the 50 samples analyzed by AXYS. WHO-TEQ values are presented, which is calculated using 17 dioxin congeners; ND=1/2 DL was used; and
- The globally accepted TEQ maximum standard of 1,000 ppt (pg/g) in soil and 200 ppt (pg/g) in sediment was used for comparison with international guidelines for dioxin contamination.

3.2.1 Phu Cat Airbase

Seven areas were selected for additional evaluation of dioxin contamination in Phu Cat Airbase. These included:

- Former Storage Area;
- Former Loading Area;
- Buffer (Perimeter) Area;
- Former Washing Area;
- Water Treatment/Sedimentation Tanks;
- Lakes (Lake A, Lake B, and Lake C);
- Southeast Corner of the Airbase (site information provided by the US Department of Defense).

3.2.1.1 Former Storage Area

The former Storage Area comprises an area of 8,000 m^2; a concrete apron covers 3,000 m^2 of the total area (Plate 3.1). Previous surveys conducted by Vietnamese scientists (Project Z1) included analysis of 28 soil samples from 12 sites at the Former Storage Area. The average TEQ of the 12 surface soil samples analyzed by VRTC was 11,400 ppt, and the highest individual sample concentration was 49,500 ppt.

Eleven (11) samples were collected and analyzed from the former Storage Area at Phu Cat airbase under the current project (Table 3.3). Dioxin concentrations ranged from 345 pg/g to 236,000 pg/g TCDD. The highest dioxin concentration (sample 08VNPC002-2; 238,000 pg/g TEQ) was collected from beneath the concrete apron at the Former Storage Area, at a depth of 10-30 cm (Figure 3.1).

Most samples collected from the Storage Area exhibited dioxin levels exceeding 1,000 pg/g. TCDD represented over 97% of the TEQ in all samples analyzed, verifying the source as being Agent Orange.

During the rainy season, it is likely that dioxin-contaminated soils and sediments migrate downstream through the drainage ditch that surrounds the former Storage Area. One soil sample (08VNPC012) collected from within the drainage ditch exhibited a TEQ of 30,400 ppt. Downstream of the former Storage Area (samples 08VNPC014-1 and 14-2), dioxin levels were significantly lower, but remain elevated (1,810 ppt and 16,800 ppt TEQ, respectively). TEQ values for samples collected downstream of the storage area (depths of 0-10 cm and 10-30 cm) were 1,810 ppt and 16,800 ppt, respectively.

In conclusion, levels of dioxin in the former Storage Area remain extremely high, and are as much as several hundred times higher than internationally-accepted standards. Dioxin contamination results are comparable to those from Da Nang (Hatfield/Office 33, 2007), where over 365,000 ppt TCDD was recorded in samples collected. Containment and remediation of the former Storage Area at Phu Cat should be considered a high priority.

Table 3.3 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in the Former Storage Area, Phu Cat Airbase, Viet Nam.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNPC 001	Soil	0-10	36,400	37,000	98.4
2	08 VNPC 002*	Soil	0-10	73,100	74,500	98.1
3	08VNPC 002-2	Soil	10-30	236,000	238,000	99.2
4	08VNPC 003	Soil	0-10	4,100	4,280	95.8
5	08VNPC 004	Soil	0-10	3,430	3,590	95.5
6	08VNPC 010	Soil	0-10	7,300	7,520	97.1
7	08VNPC 011	Soil	0-10	345	352	98.1
8	08VNPC 012	Soil	0-10	30,000	30,400	98.7
9	08VNPC 012-2	Soil	10-30	549	564	97.3
10	08 VNPC 014-1*	Soil	0-10	1,760	1,810	97.2
11	08VNPC 014-2	Soil	10-30	16,500	16,800	98.2

* Samples analyzed by AXYS.

Plate 3.1 Former Storage Area Showing Concrete Apron, Phu Cat Airbase, Viet Nam.

3.2.1.2 Former Loading Area

The former Agent Orange Loading Area at Phu Cat Airbase (Plate 3.2) includes an area of 13,000 m^2, and is covered by a concrete pad. At the former Loading Area, seven (7) samples were collected for dioxin analysis (Table 3.4; Figure 3.1). 2,3,7,8-TCDD concentrations were significantly lower than at the former Storage Area, and ranged from 2.24 pg/g to 850 pg/g. Two (2) samples collected from the outlet drainage ditch in the Loading Area exhibited the highest concentrations: 840 pg/g TCDD for 08VNPC018 (0-10 cm) and 850 pg/g TCDD for 08VNPC018-2 (10-30 cm depth). Dioxin levels in other samples were much lower, suggesting that contamination is restricted to the drainage system at this site.

The dioxin levels in the collected samples from this area were all lower than globally acceptable maximum standard of 1,000 ppt (pg/g) in soil.

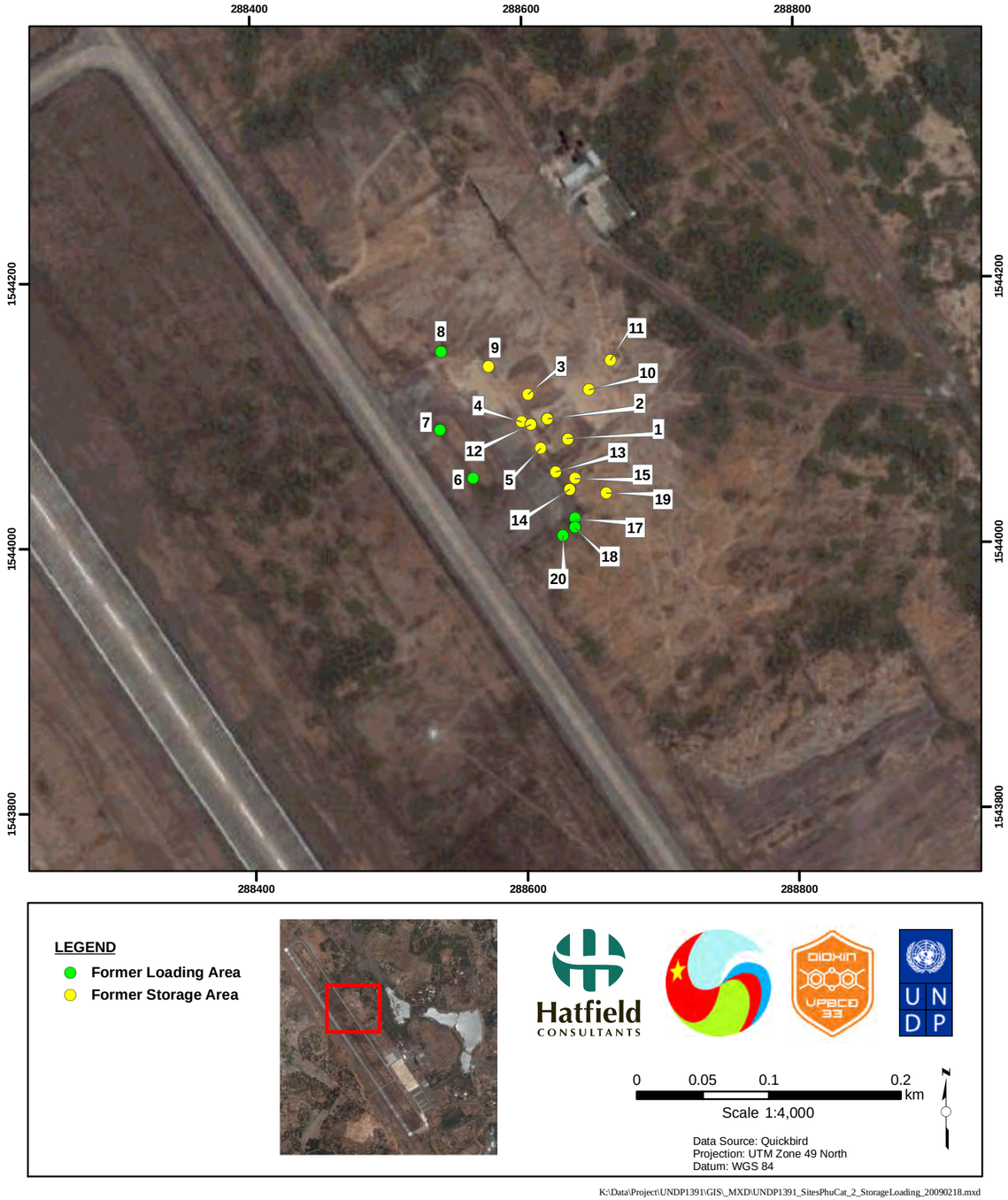
Table 3.4 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in the Former Loading Area, Phu Cat Airbase, Viet Nam.

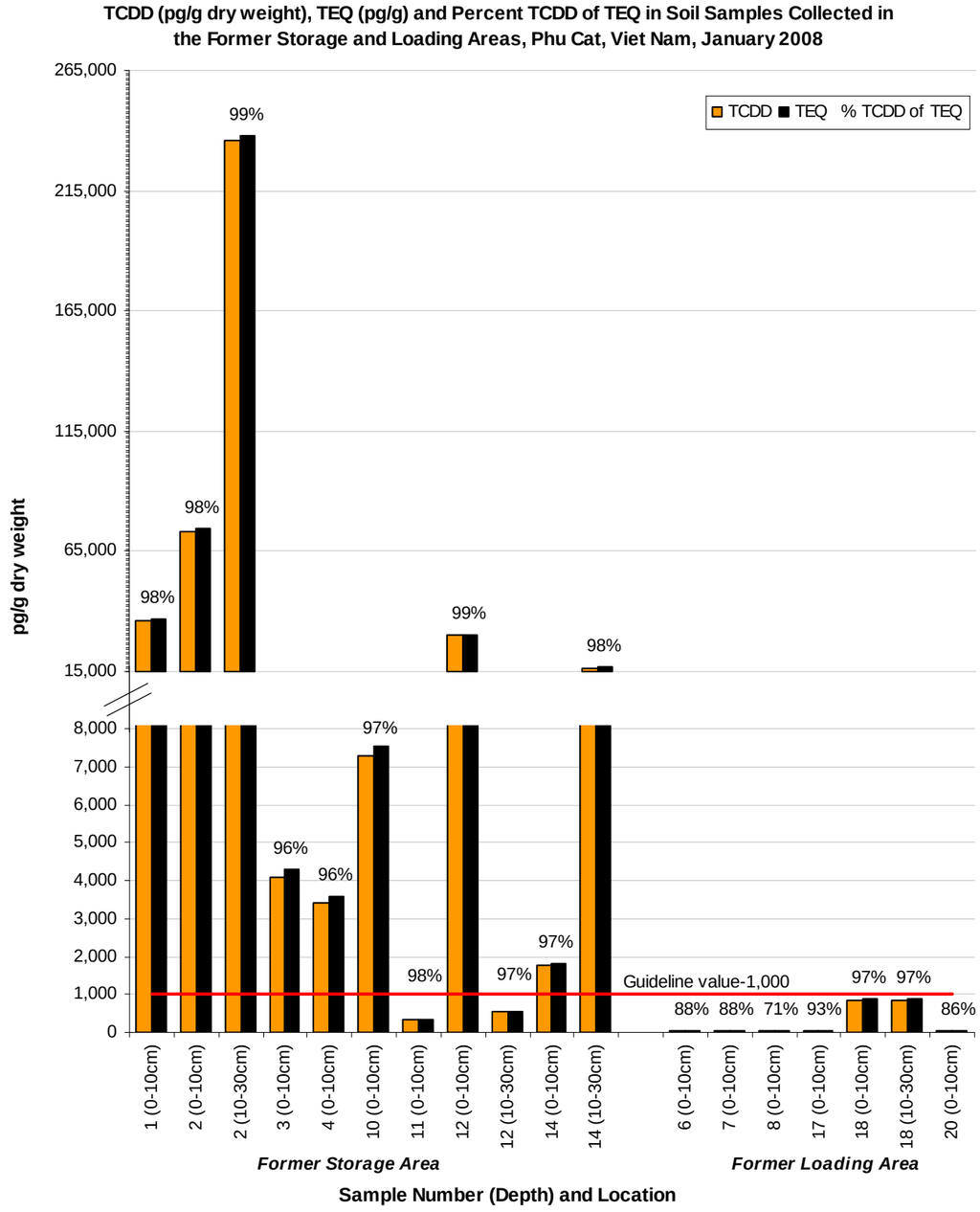
No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNPC 006	Soil	0-10	16.3	18.6	87.6
2	08VNPC 007	Soil	0-10	47.1	53.6	87.9
3	08VNPC 008	Soil	0-10	3.80	5.36	70.9
4	08 VNPC 017*	Soil	0-10	4.32	4.66	92.7
5	08VNPC 018	Soil	0-10	840	866	97.0
6	08VNPC 018-2	Soil	10-30	850	876	97.0
7	08 VNPC 020*	Soil	0-10	2.24	2.6	86.2

* Samples analyzed by AXYS.

Plate 3.2 Former Loading Area, Phu Cat Airbase, Viet Nam.

Figure 3.1 Soil Sampling Locations in Former Storage and Loading Areas, Phu Cat Airbase, Viet Nam, 2008.





3.2.1.3 Buffer (Perimeter) Zone

Covering an area of 110,000 m², the Buffer (Perimeter) Zone is a sloping hill area comprised of numerous natural gutters; the soil is characterized by low quantities of clay and humus. Previous surveys conducted by Vietnamese scientists (Project Z3) found an average TEQ level of 269 ppt (nine surface soil samples). However, there was a wide range in soil dioxin concentrations between samples analyzed (9 to 4,453 ppt TEQ).

VRTC analyzed all five (5) samples under the current program (Table 3.5); however, one duplicate sample was analyzed by AXYS for QA/QC purposes. Results indicate that sample 08VNPC016 (collected immediately down-slope of the Storage Area, at the edge of the Buffer Zone) exhibited the highest dioxin concentration (2,890 pg/g TCDD), indicating that dioxin-contaminated soil continues to migrate down-slope from this site (Figure 3.2). Sample site 08VNPC016 was collected from the same location as one sample from Project Z3, which exhibited a TEQ of 4,453 ppt. Results from Project Z3, and from the current study, suggest that dioxin contamination remains elevated in the Buffer Zone, particularly in areas adjacent to the former Storage Area. Percentage of TCDD in the TEQ was >80% for all but one sample (08VNPC052) collected in the Buffer Zone.

Table 3.5 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in the Buffer Zone, Phu Cat Airbase, Viet Nam.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNPC 016	Soil	0-10	2,890	2,950	98.0
2	08VNPC 021	Soil	0-10	894	909	98.4
3	08VNPC 046	Soil	0-10	103	109	94.3
4	08VNPC 052	Soil	0-10	0.50	1.50	33.3
5	08VNPC 053	Soil	0-10	28.6	33.3	85.9

Plate 3.3 Buffer (Perimeter) Zone, Phu Cat Airbase, Viet Nam.

3.2.1.4 Former Washing Area

Covering an area of 36,000 m^2, the former Washing Area is covered by an asphalt pad and was used for washing vehicles, aircraft, and other herbicide spraying devices (including C-123 Agent Orange spray planes) during the US-Vietnam war. Water from the former Washing Area flows via pipe down a steep gradient to Sedimentation Tanks and water treatment facilities.

Previous surveys conducted by Vietnamese scientists (Project Z3) included collection of samples from several sites below the asphalt cover. Dioxin levels in samples collected at depths of 0-30 cm and 30-60 cm were 18 ppt and 21 ppt I-TEQ, respectively.

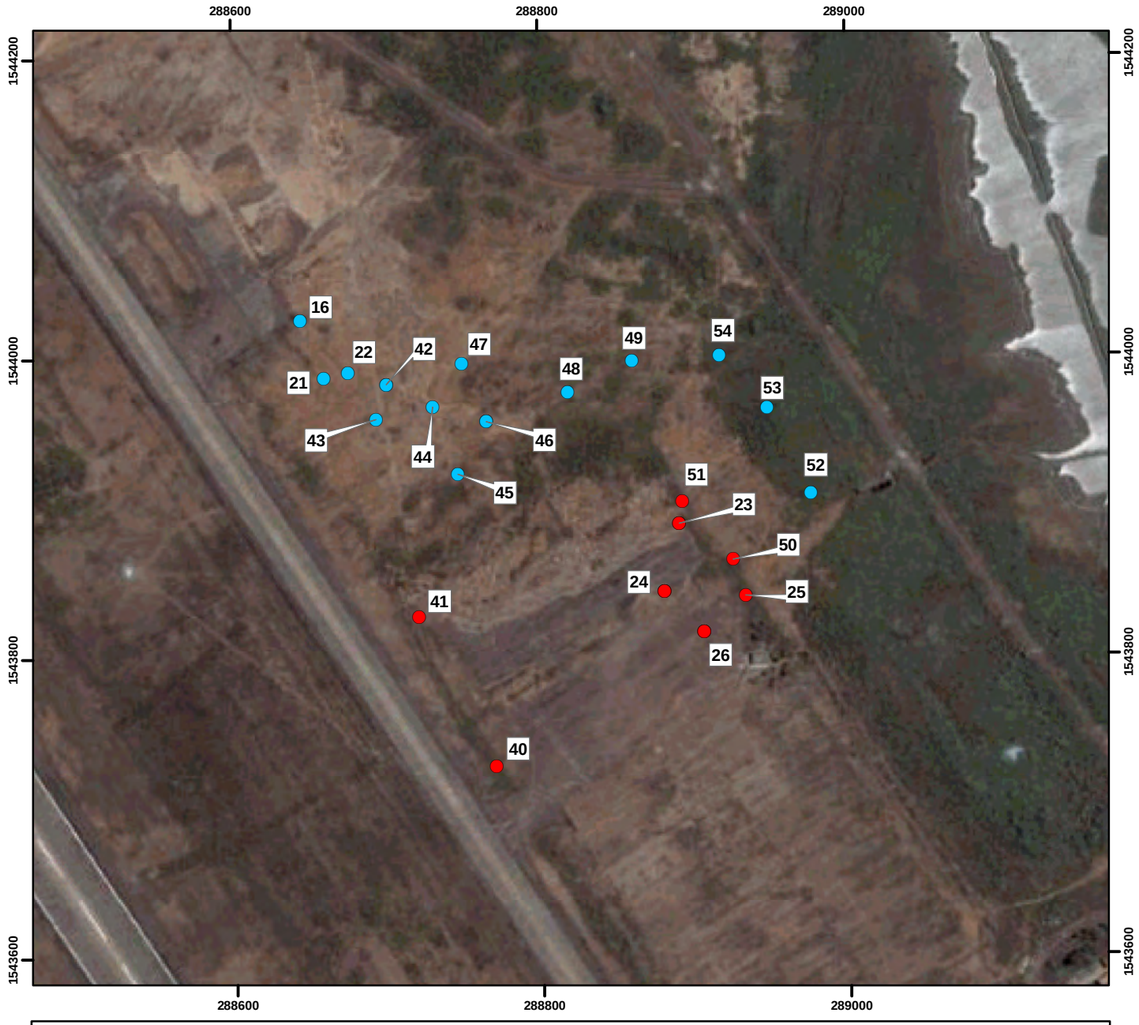
Nine samples from the former herbicide Washing Area were analyzed by VRTC, two samples were analyzed by AXYS and one sample was analyzed by both laboratories (Table 3.6). The dioxin analytical results indicate that 2,3,7,8-TCDD concentrations are low, ranging from 0.70 pg/g to 4.10 pg/g TCDD (Figure 3.2). Given the low dioxin concentrations, it appears that remediation is not required at this site.

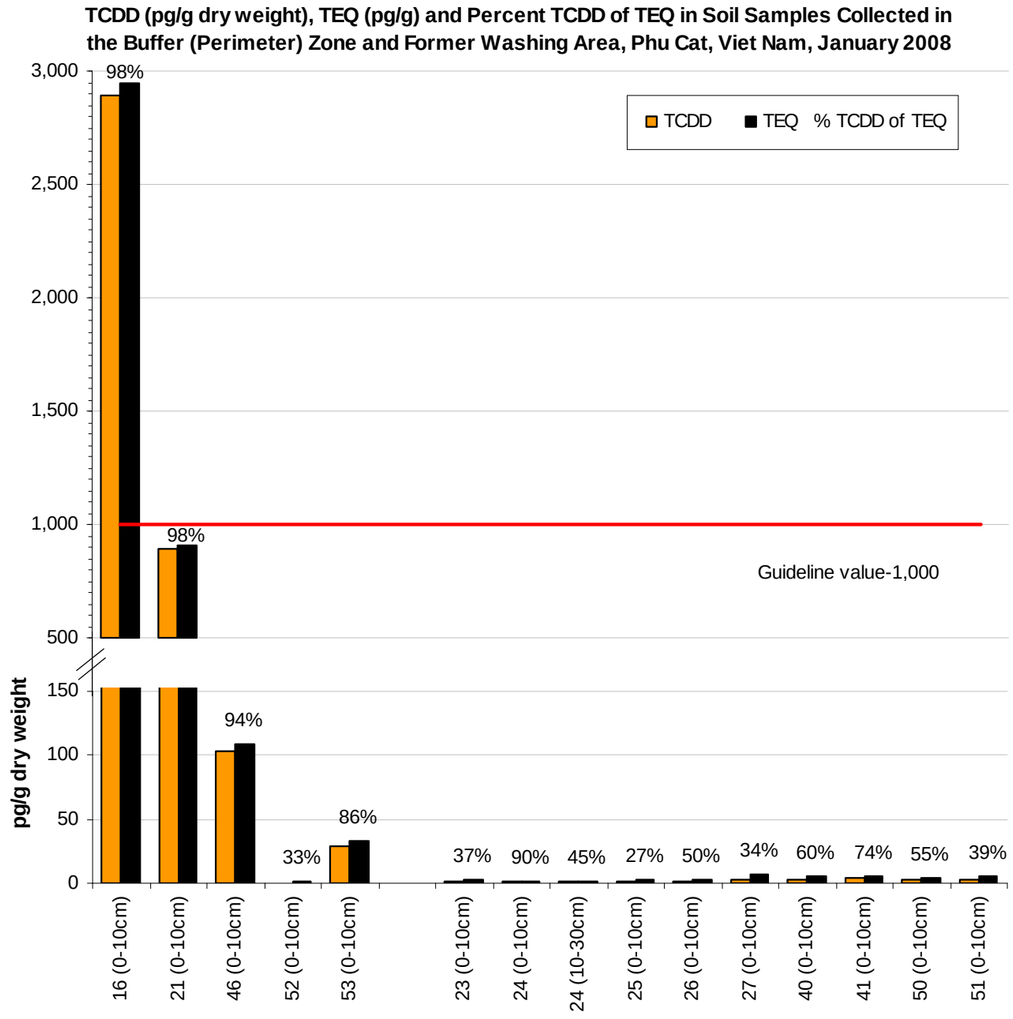
Table 3.6 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in the Former Washing Area, Phu Cat Airbase, Viet Nam.

No.	Sample Code	Sample Matrix	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNPC 023	Soil	0-10	1.00	2.74	36.5
2	08 VNPC 024*	Soil	0-10	1.67	1.85	90.3
3	08VNPC 024-2	Soil	10-30	0.90	2.02	44.6
4	08VNPC 025	Soil	0-10	0.70	2.56	27.3
5	08VNPC 026	Soil	0-10	1.20	2.38	50.4
6	08VNPC 027	Soil	0-10	2.10	6.23	33.7
7	08VNPC 040	Soil	0-10	2.90	4.85	59.8
8	08VNPC 041	Soil	0-10	4.10	5.53	74.1
9	08VNPC 050	Soil	0-10	2.40	4.33	55.4
10	08VNPC 051	Soil	0-10	2.30	5.86	39.2

* Samples analyzed by AXYS.

Figure 3.2 Soil Sampling Locations in Former Washing Area and Buffer (Perimeter) Zone, Phu Cat Airbase, January 2008.





3.2.1.5 Sedimentation Tanks

In 2002, as part of the Z3 Project, the Ministry of Defense (Chemistry Branch) constructed two sedimentation tanks to treat drainage waters collected downstream of the former Storage, Loading and Washing Areas at Phu Cat Airbase. Waters collected from the above three sites flow through the Buffer Zone before collection in the Sedimentation Tanks and eventual release into Lakes A, B and C.

VRTC analyzed four sediment samples, and AXYS analyzed one sample from the Sedimentation Tanks (Table 3.7). Two samples were duplicates, which were analyzed for QA/QC purposes. The results indicate that dioxin concentrations were generally low, ranging from 3.60 to 127 pg/g TEQ; the latter sample (08VNPC055) was collected from the Sedimentation Tank closest to the former Storage Area (Figure 3.3). However, over 90% of the TEQ was TCDD for samples analyzed from the water treatment basins.

Table 3.7 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Sediments from the Sedimentation Tanks, Phu Cat Airbase, Viet Nam.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNPC 055	Sediment	0-10	124	127	97.6
2	08VNPC 056	Sediment	0-10	77.4	81.3	95.2
3	08VNPC 057	Sediment	0-10	2.10	3.60	58.3
4	08VNPC 058	Sediment	0-10	109	122	89.3
5	08 VNPC 059*	Sediment	0-10	3.84	4.07	94.3

* Samples analyzed by AXYS.

3.2.1.6 Lakes A, B and C

Lakes A, B and C are the ultimate recipient of drainage water from the Phu Cat Airbase, once it passes through the Sedimentation Tanks and water treatment basin. Previous investigations under Project Z3 found average TEQ values in sediment samples in Lakes A, B, and C were 46 ppt (n = 10), 86 ppt (n = 5), and 6 ppt (n = 3).

Table 3.8 presents the analytical results for samples collected in this study. Four samples were analyzed by VRTC and one sample by AXYS; all were relatively low, ranging from 3.0 to 22.9 ppt TCDD (Figure 3.3). Fish were not sampled from this lake; future studies should include fish tissue analyses to confirm their suitability for human consumption and to ensure no risk to human health.

Table 3.8 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Sediments of Lakes A, B and C, Phu Cat Airbase, Viet Nam.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
I	**Lake A**					
1	08VNPC 061	Sediment	0-10	10.9	16.0	68.1
2	08VNPC 062	Sediment	0-10	22.9	33.7	68.0
II	**Lake B**					
1	08 VNPC 063*	Sediment	0-10	7.06	9.81	72.0
2	08VNPC 064	Sediment	0-10	7.1	11.3	62.8
III	**Lake C**					
1	08VNPC 065	Sediment	0-10	3.0	4.5	66.7

* Samples analyzed by AXYS.

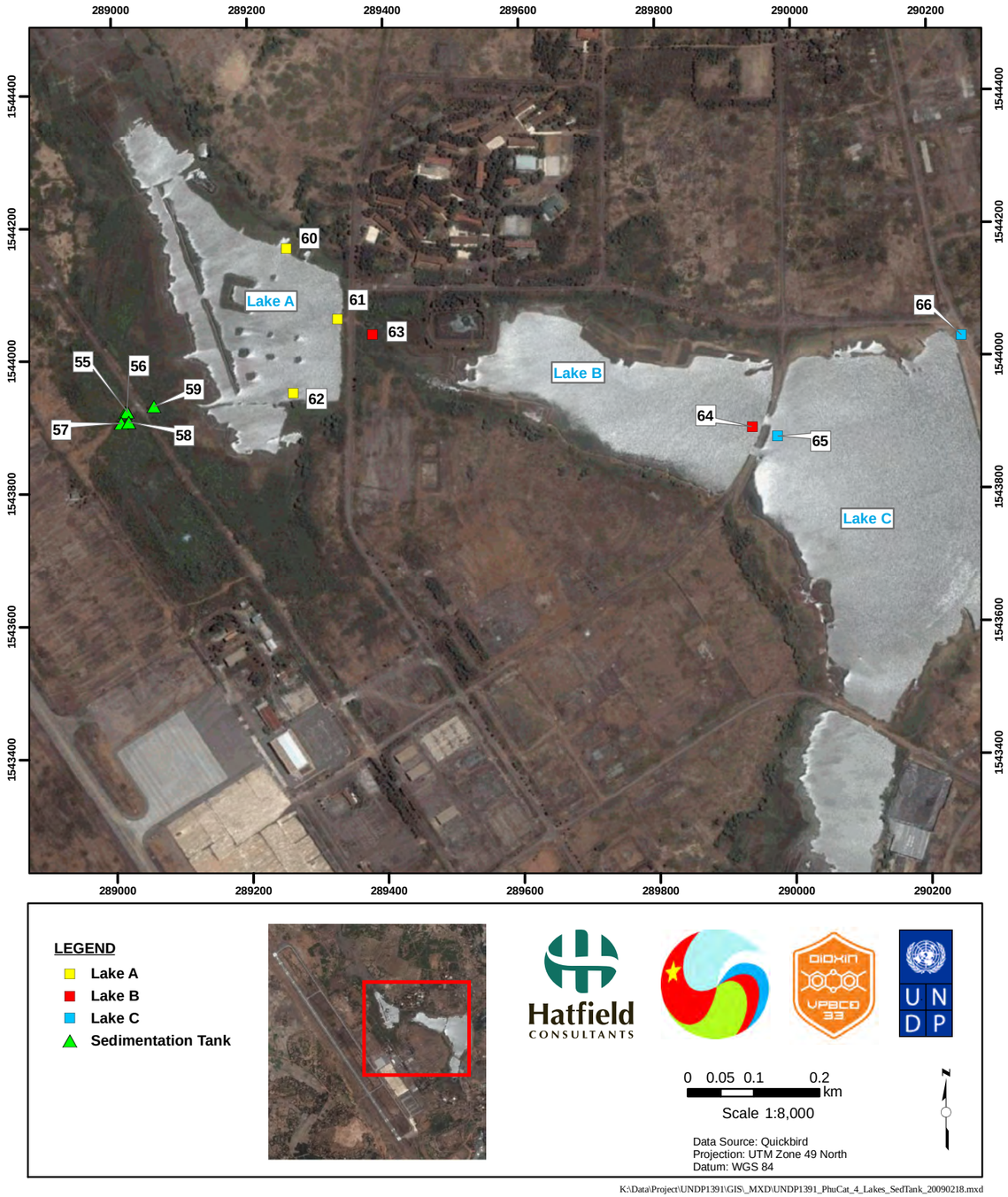
3.2.1.7 Southeast Airbase Corner

This area is located in the southeast portion of the Phu Cat airbase, close to the entrance of the airport; the site was recommended for analysis by the US Department of Defense (US DOD 2007). This site consists of 3 separate paved areas (A, B, and C), one of which is situated above a concrete bunker (Plates 4.4 and 4.5). The size of yards A, B and C are approximately 110,000 m^2, 90,000 m^2, and 158,000 m^2, respectively. Below those yards are former equipment storage areas, where abandoned electrical equipment was identified.

A total of 12 samples were collected at 12 stations (in each paved area, samples were collected in each of the 4 corners; Figure 3.3 and 3.4). VRTC analyzed 9 samples (3 samples from each paved area), and AXYS analyzed 3 samples (1 sample from each paved area).

The results indicate that 2,3,7,8-TCDD concentrations in all samples are low, ranging from 0.66 pg/g to 12.2 pg/g TCDD (5.63 to 236 pg/g TEQ) (Table 3.9). In all samples, the percentage of TCDD in the TEQ was also low (from 2.0% to 67.8%), indicating that other sources of dioxin contributed to the Total TEQ. Therefore, it is highly unlikely that this site was used as a storage or loading area for herbicides, as suggested by the US Department of Defense. Based on physical examination of the area, it is more likely to have been used as offices, accommodation, or for other purposes. Additional sample analyses, as well as mitigation measures regarding dioxin at this site, are unnecessary; the site does not require remediation.

Figure 3.3 Sediment Sampling Locations in Lakes A, B and C and Sedimentation Tanks, Phu Cat Airbase, Viet Nam, January 2008.



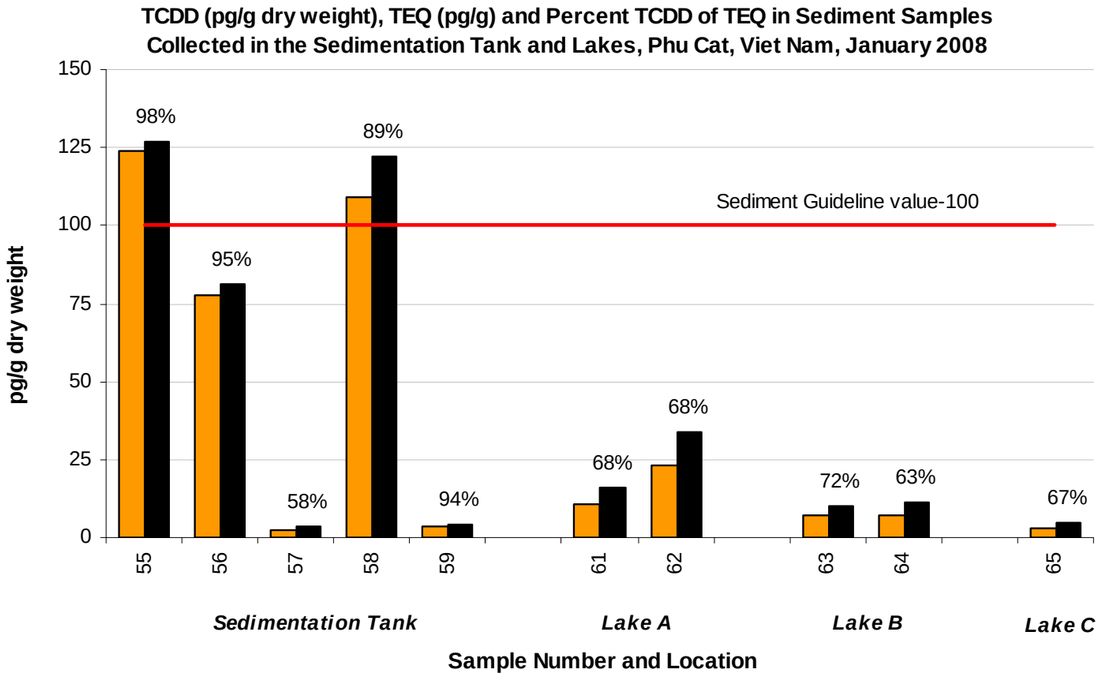


Figure 3.4 Soil Sampling Locations in the Southeast Corner, Phu Cat Airbase, Viet Nam, January 2008.

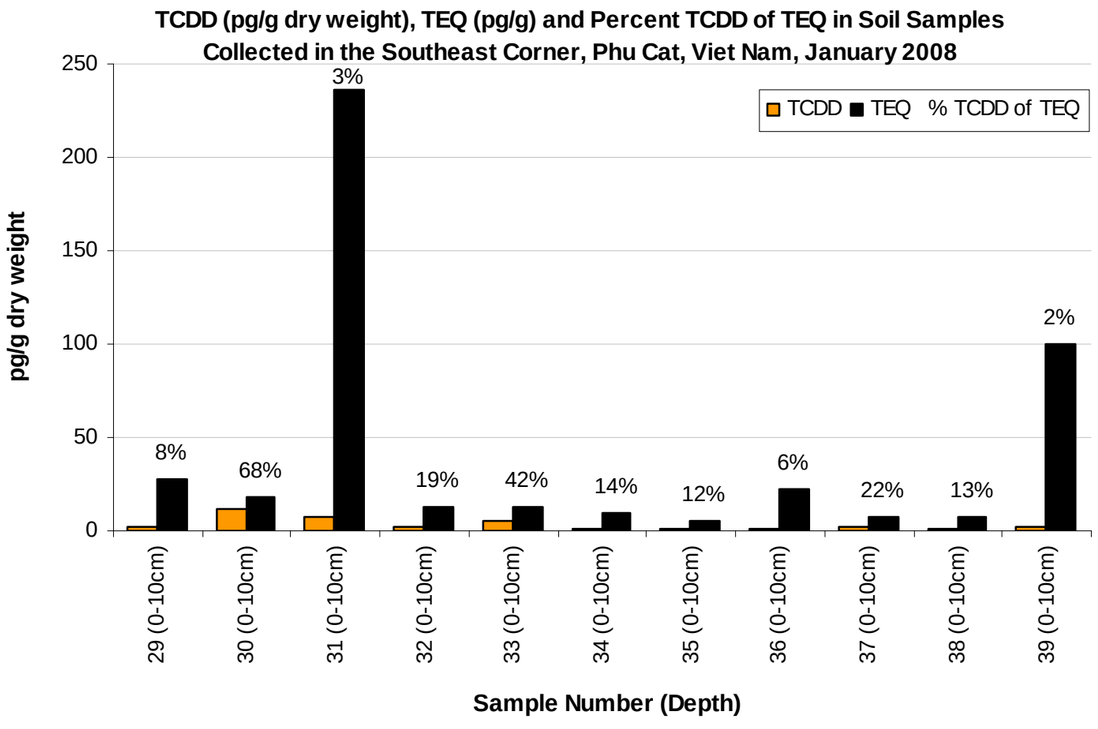


Plate 3.4 Southeast Phu Cat Airbase Corner (Area A).

Plate 3.5 Southeast Phu Cat Airbase Corner (Area B).

Table 3.9 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Soils Collected from the Southeast Corner of Phu Cat Airbase, Viet Nam.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNPC 029	Soil	0-10	2.20	27.6	8.0
2	08VNPC 030	Soil	0-10	12.2	18.0	67.8
3	08VNPC 031	Soil	0-10	7.50	236	3.2
4	08VNPC 032	Soil	0-10	2.40	12.4	19.4
5	08VNPC 033	Soil	0-10	5.10	12.3	41.5
6	08VNPC 034	Soil	0-10	1.30	9.40	13.8
7	08 VNPC 035*	Soil	0-10	0.66	5.63	11.8
8	08VNPC 036	Soil	0-10	1.40	22.7	6.2
9	08VNPC 037	Soil	0-10	1.70	7.83	21.8
10	08 VNPC 038*	Soil	0-10	0.93	7.07	13.1
11	08VNPC 039	Soil	0-10	2.00	99.6	2.0

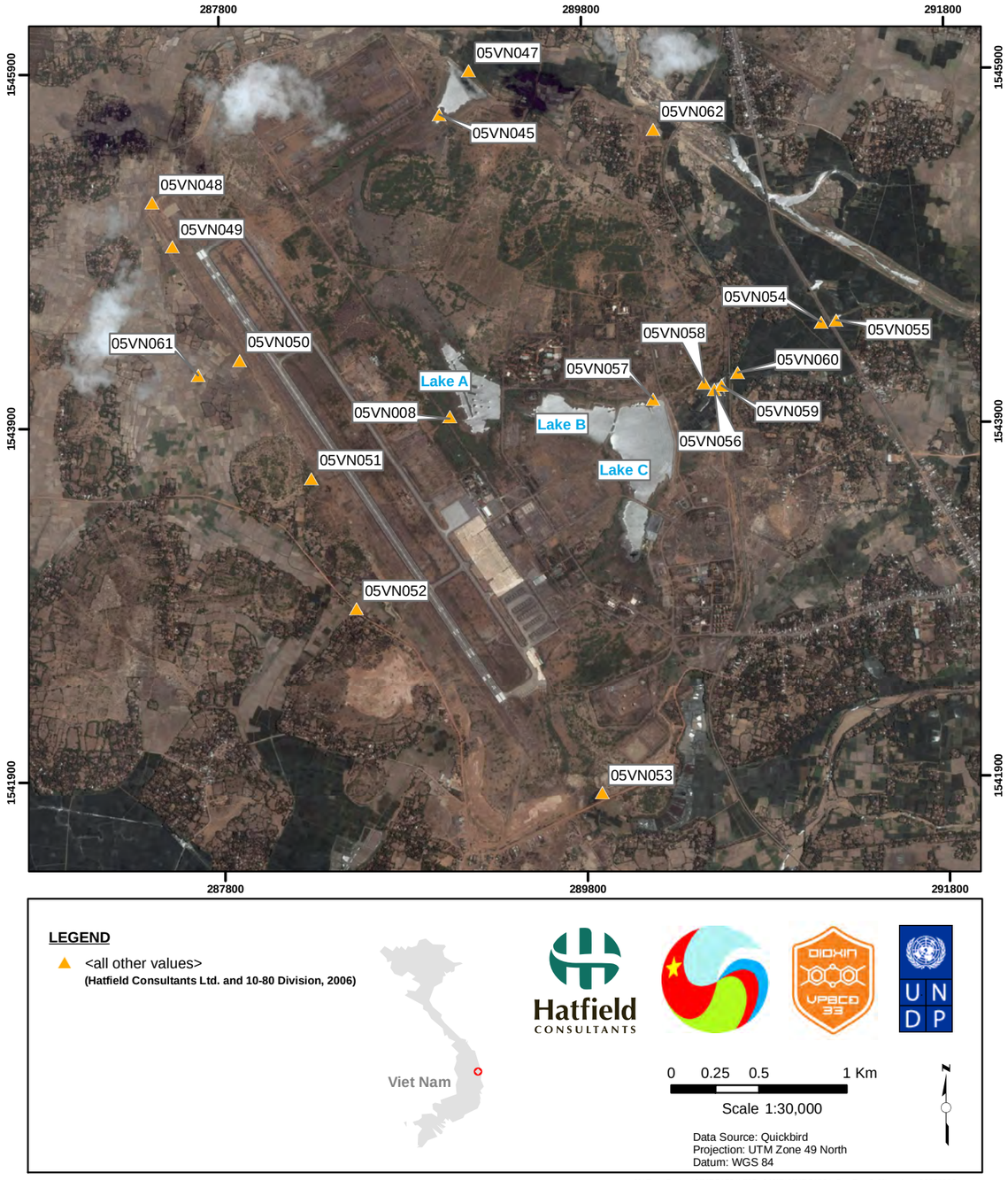
* Samples analyzed by AXYS.

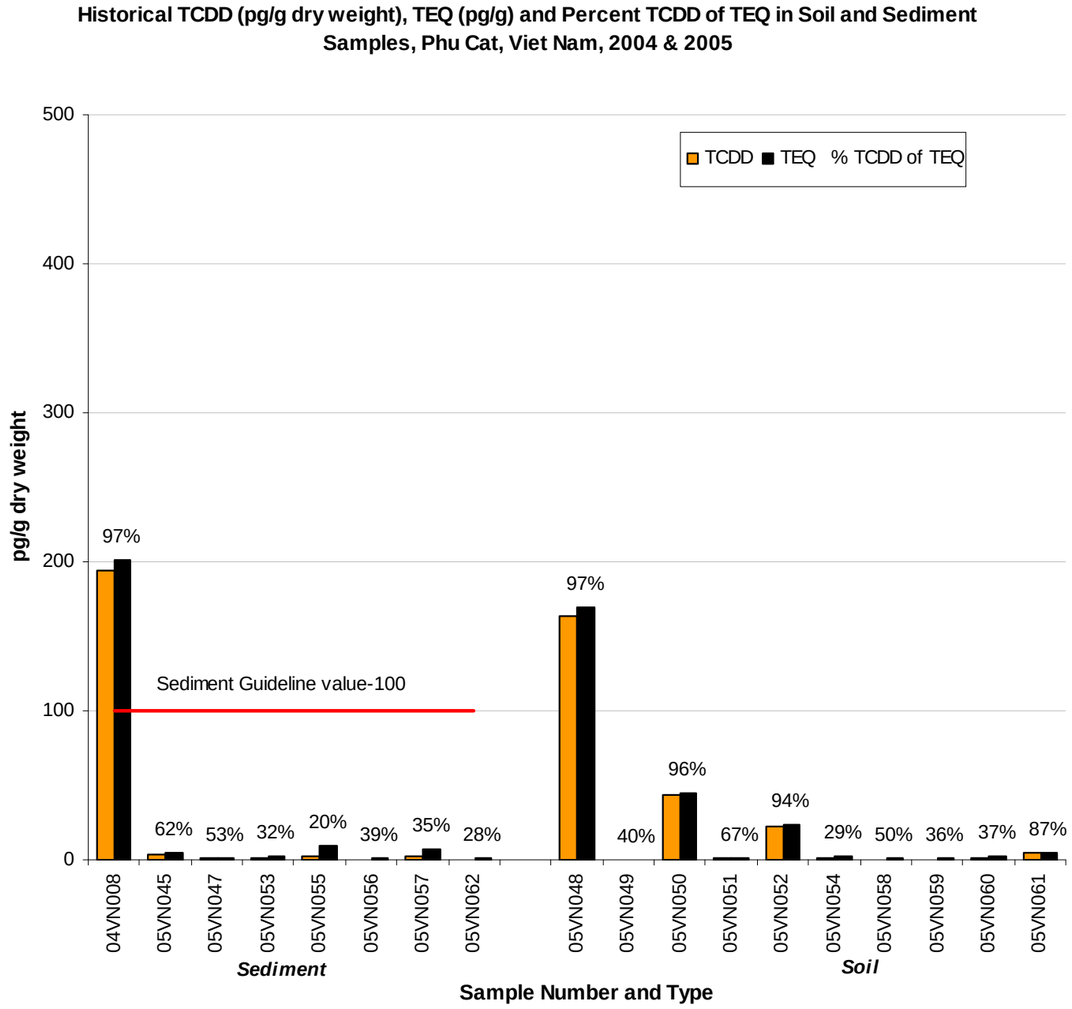
3.2.1.8 Historical results from outside the Phu Cat Airbase, 2004 & 2005.

Previous surveys conducted by Hatfield and 10-80 Division in 2004-2005 focused on areas outside Phu Cat Airbase. Three soil sites sampled (Sites 8, 48, and 50) exhibited elevated TCDD, with TEQs of 201 pg/g, 169 pg/g and 45.2 pg/g, respectively (Hatfield and 10-80 Division 2006). Relatively high percent TCDD of TEQ occurred at Sites 8, 48, and 50 (97%, 97%, and 96%, respectively; Figure 3.5). The top five sites all had relatively high percent TCDD of TEQ.

Other dioxin congeners and the furans were low and were not significant contributors to overall toxicity. The highest sediment TCDD level was recorded at Site 8 (194 pg/g). This location was downstream of a dioxin mitigation site established by Vietnamese authorities. This site was also downstream of the suspected Ranch Hand operational area on the base. Consequently, Site 8 sediments represent dioxins resulting from downstream flow of erosional components from the Ranch Hand zone near the runway. Runoff from this zone ultimately flows into South Lake, which is used for irrigation and aquaculture purposes. It is highly probable that villagers using the lake could be exposed to dioxin through exposure during work in the paddies, consumption of fish, and perhaps other food items. Sampling of foods in this region was not undertaken in the current study. Soil Site 48 exhibited a TCDD value of 164 pg/g. Given this area is well removed from the suspected Ranch Hand site, it is believed the high TCDD value is related to historical perimeter ground spraying of Agent Orange. Soil Sites 50 and 52 also had slightly elevated TCDD concentrations (43.2 and 22.4 pg/g, respectively).

Figure 3.5 Historical Soil and Sediment Sampling Locations, Phu Cat Airbase, Viet Nam, 2004 & 2005.





Many of the jurisdictional guidelines for soil are exceeded at Phu Cat, which would prompt action in several countries. Similarly, proposed sediment guidelines are exceeded, which would also promote some form of remediation action in these jurisdictions.

Conclusions: The US army used Phu Cat Airbase for Ranch Hand operations from 1968 to 1972. More than 30 years after the war, the assessment of contamination of dioxin at this Airbase was conducted through two projects: Project Z3 managed by the Vietnamese Ministry of Defense and the current study supported by UNDP. Analytical results showed that the former Storage Area in Phu Cat Airbase is still highly contaminated with dioxin; levels are comparable to those found in the main hot spot at Da Nang Airbase. Because the number of samples collected at the former Storage Area was limited in both projects, further sample collection and analysis for dioxins, as well as recommendations of effective dioxin-mitigation measures, are necessary.

3.2.2 Bien Hoa Airbase

At Bien Hoa airbase, samples were collected from the following areas:

- Southwest Corner of Airbase (also referred to as Newly Discovered Area - Site A);
- Pacer Ivy area, Southwest corner of Runway on the Airbase (Site B), as suggested by the US Department of Defense; and
- Site Z1 (Hotspot area) and the Perimeter of Z1 (including lowland areas and ponds/ditches in the south; Site C).

A total of 125 soil and/or sediment samples were collected in this study. Of these samples, VRTC analyzed 55 samples and AXYS analyzed 33 samples, including 13 samples analyzed by both laboratories for duplicate analyses.

3.2.2.1 Southwest Area of Airbase (Newly Discovered Area – Site A)

The Southwest Area of the Airbase was sampled as a result of new information provided to VRTC from US DOD (2007) regarding potential dioxin contamination from historical use of Agent Orange in the area; this site had not been sampled before the current study was conducted. Covering an area of 2,000 m^2, the dioxin-contaminated corner at the south end of the runway is an even and flat terrain, slightly sloping to the west (Plate 3.6). Run-off water (rainwater) carries dioxin from contaminated sites through the runway and residential areas to adjacent rice fields. Analytical results are presented in Table 3.10.

In this area, 39 soil samples were collected from 31 stations; samples were collected at several depths from surface to 1.5 m (sample 08VNBH088) (Figure 3.6). Of these 39 samples, 16 were selected for analysis: Vietnam-Russia Tropical Center analyzed 13 samples and AXYS analyzed 6 samples. Three of these samples were duplicates analyzed by both VRTC and AXYS.

Of 16 samples analyzed, five samples (08VNBH067, -068, -076, -084, and -085) exhibited TEQ concentrations greater than 1,000 pg/g TEQ; TCDD comprised

>98% of the TEQ in these samples. Sample 08VNBH084 exhibited a very high TCDD concentration (65,400 pg/g). The remaining 11 samples had lower dioxin concentrations; however, TCDD comprised 75.3% to 98% of the TEQ. These results clearly demonstrate that dioxin in the New Discovered Area originated from historical use of Agent Orange at the site. However, contamination in the Newly Discovered Area appears be limited to a relatively small area. Additional analyses are needed to further refine the area requiring remediation.

Table 3.10 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Soil Samples from the Southwest Airbase Corner, Bien Hoa Airbase.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08 VNBH 067*	Soil	0-10	1,890	1,920	98.4
2	08VNBH 068	Soil	0-10	1,380	1,400	98.6
3	08VNBH 074	Soil	0-10	439	449	97.8
4	08VNBH 076	Soil	0-10	1,530	1,540	99.4
5	08VNBH 077	Soil	0-10	70.5	74.0	95.3
6	08 VNBH 084*	Soil	0-10	65,400	65,500	99.8
7	08VNBH 085	Soil	0-10	1,980	2,000	99.0
8	08VNBH 087	Soil	0-10	428	440	97.3
9	08VNBH 088	Soil	0-10	71.5	78.3	91.3
10	08VNBH 088-2	Soil	10-30	15.9	19.0	83.7
11	08 VNBH 088-3*	Soil	30-60	NDR 12.6	4.12	-
12	08VNBH 088-4	Soil	60-90	3.40	5.40	63.0
13	08VNBH 091	Soil	0-10	214	245	87.3
14	08VNBH 097	Soil	0-10	9.5	12.8	74.2
15	08VNBH 099	Soil	0-10	132	140	94.3
16	08VNBH 112	Soil	0-10	30.4	42.8	71.0

* Samples analyzed by AXYS.

Plate 3.6 Southwest Area of Bien Hoa Airbase, Viet Nam (Site A).

3.2.2.2 Southwest Corner of Runway (Pacer Ivy Site Identified by the US Department of Defense – Site B)

The Pacer Ivy area (Site B) was recommended by the US Department of Defense for further investigation, given its historical use as a herbicide storage and re-drumming location. This area is located in the south-west corner of the Bien Hoa Airbase, close to the runway (Plate 3.7) (Figure 3.7). The current study was the first sampling program conducted in this area of Bien Hoa Airbase. Sampling sites covered an area of 150,000 m^2, including a concrete yard; the southwest of the concrete yard is a buffer zone sloping to surrounding drainage ditches, small creeks and ponds. Fish are grown and harvested in man-made ponds in this area.

At Site B, 19 soil and sediment samples were collected and 15 samples were analyzed; 11 samples were analyzed by VRTC, and 4 samples analyzed by AXYS, including 2 duplicate samples for QA/QC. Analytical results from VRTC and AXYS are presented in Table 3.11.

Analyses indicated that two samples, 08VNBH104 and 08VNBH105, collected west of the contaminated area down-slope of the runway, have high concentrations of dioxin: 2,000 pg/g and 22,300 pg/g TCDD, respectively. Soil samples collected to the west and the south of the runway exhibited lower levels of dioxin. Following the slope of the area and runoff direction, sediment samples were collected in surrounding ponds, lakes and ditches downstream of the site. Dioxin levels in samples 08VNBH108 (1,090 ppt TEQ), 08VNBH109 (2,780 ppt TEQ), 08VNBH110 (1,500 ppt TEQ), and VNBH111 (5,970 ppt TEQ) were significantly higher than the Vietnamese and internationally accepted guidelines. Percentage of TCDD in the TEQ in several samples was >90%, indicating Agent Orange was the most likely source of dioxin contamination in this area.

The South Airbase Corner contains complicated terrain with numerous fishponds and lakes. Contamination varied significantly in the different areas sampled in this study, and appears to concentrate in drainage areas downstream (e.g., samples 08VNBH108 to 111). Unfortunately, only a small number of samples were collected at Site B during this study. Additional sampling is needed to clarify the contamination status at this location, and to determine the scope and scale of required dioxin mitigation measures.

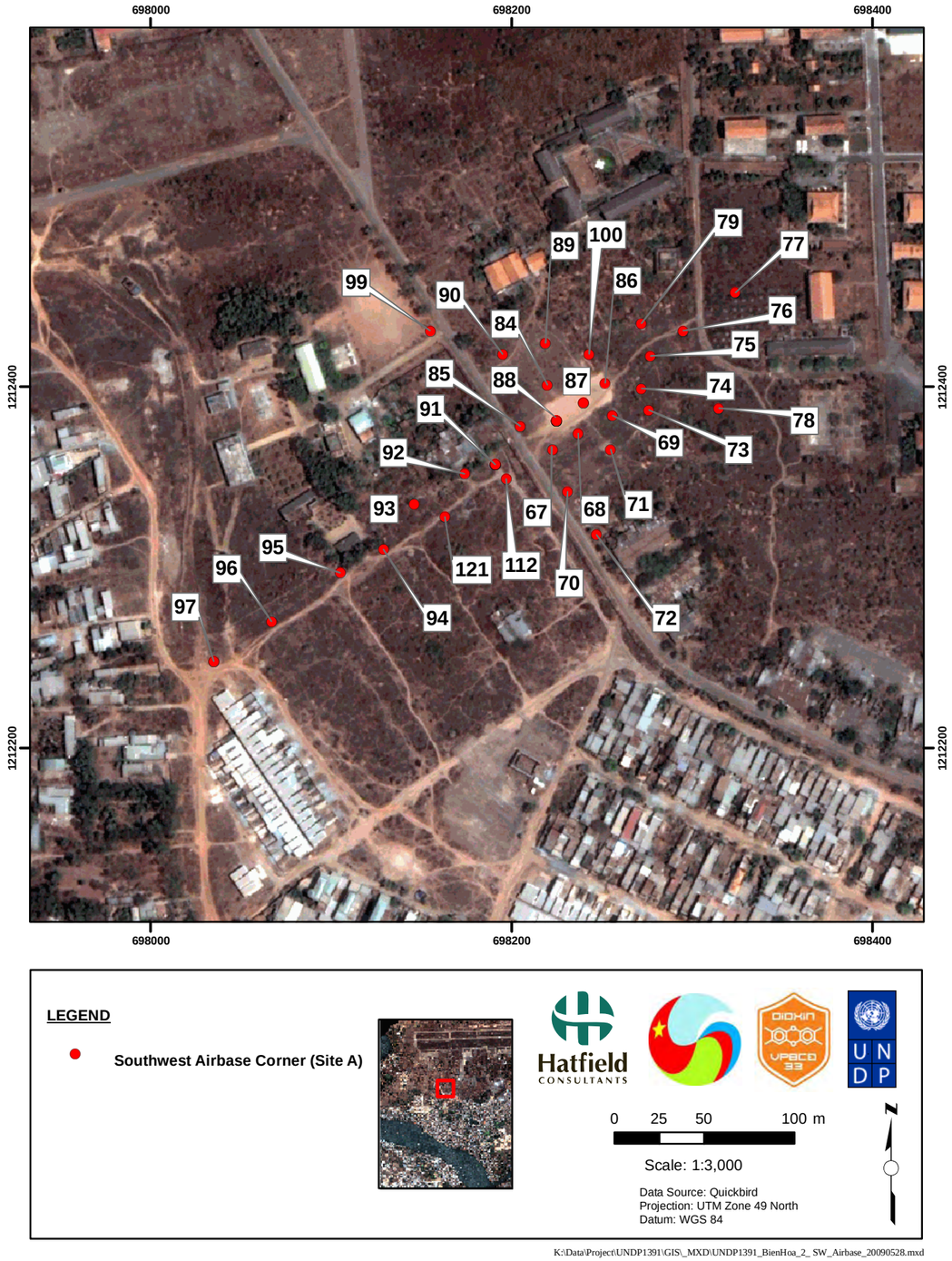
Plate 3.7 The Southwest Corner of the Runway (Pacer Ivy Site Identified by the US Department of Defense – Site B) on Bien Hoa Airbase, Viet Nam.

Table 3.11 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Soil/Sediment Samples Collected at the Southwest Corner of Runway (Pacer Ivy Site Identified by the US Department of Defense – Site B), Bien Hoa Airbase.

No.	Sample Code	Sample ID	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNBH 102	Soil	0-10	29.2	80.3	36.4
2	08VNBH 104	Soil	0-10	2,000	2,040	98.0
3	08VNBH 105	Soil	0-10	22,300	22,800	97.8
4	08VNBH 106	Soil	0-10	140	147	95.2
5	08VNBH 107	Soil	0-10	489	556	87.9
6	08VNBH 108	Sediment	0-10	1,030	1,090	94.5
7	08 VNBH 109*	Sediment	0-10	2,650	2,780	95.3
8	08VNBH 110	Sediment	0-10	1,400	1,500	93.3
9	08 VNBH 111*	Sediment	0-10	5,810	5,970	97.3
10	08VNBH 113	Soil	0-10	68.7	92.9	74.0
11	08VNBH 114	Soil	0-10	467	516	90.5
12	08VNBH 115	Soil	0-10	1.00	780	0.13
13	08 VNBH 116*	Soil	0-10	844	894	94.4
14	08VNBH 119	Soil	0-10	70.1	217	32.3
15	08 VNBH 120*	Soil	0-10	221	289	76.5

* Samples analyzed by AXYS.

Figure 3.6 Soil Sampling Locations in the Southwest Airbase Corner (Site A), Bien Hoa Airbase, January 2008.



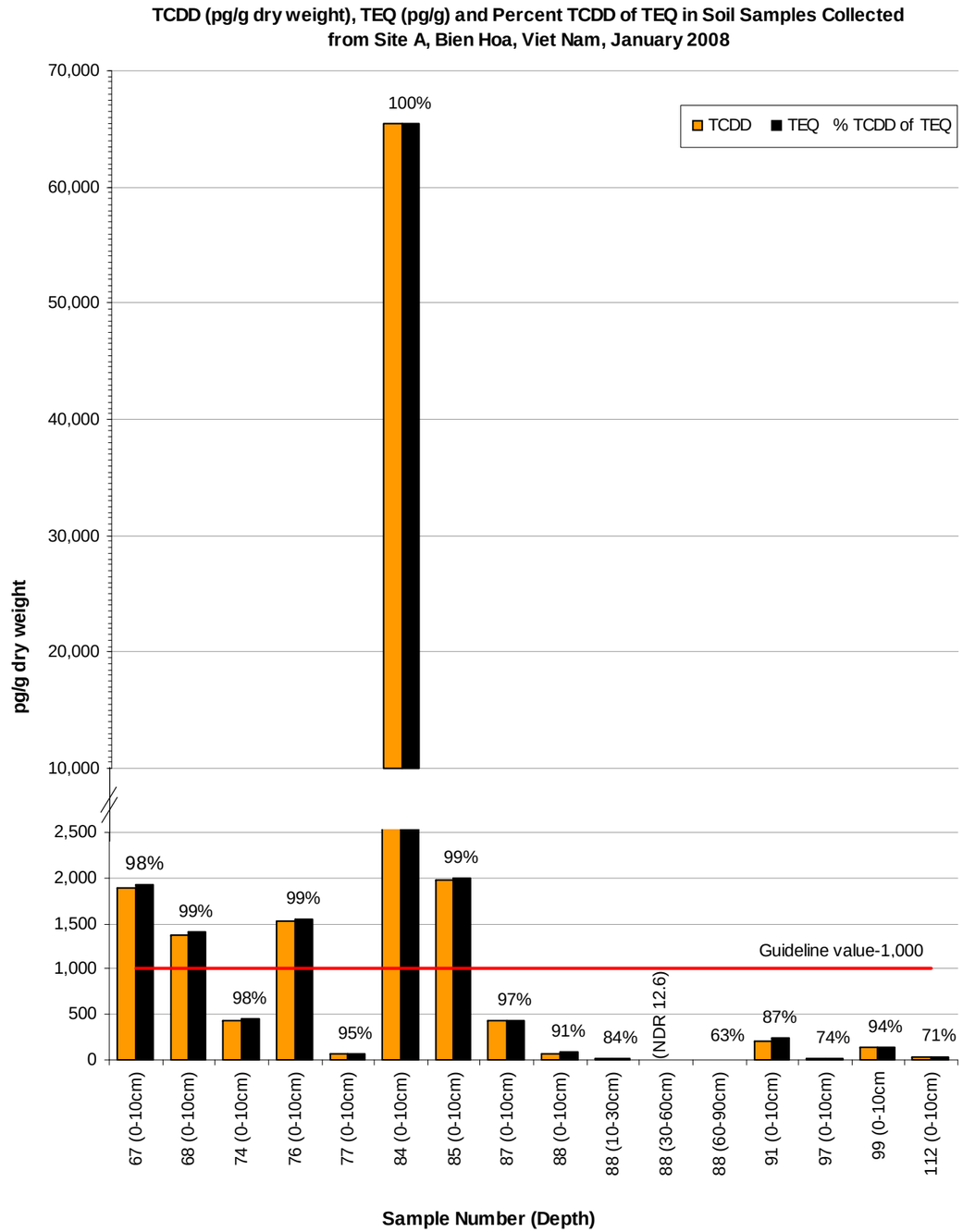
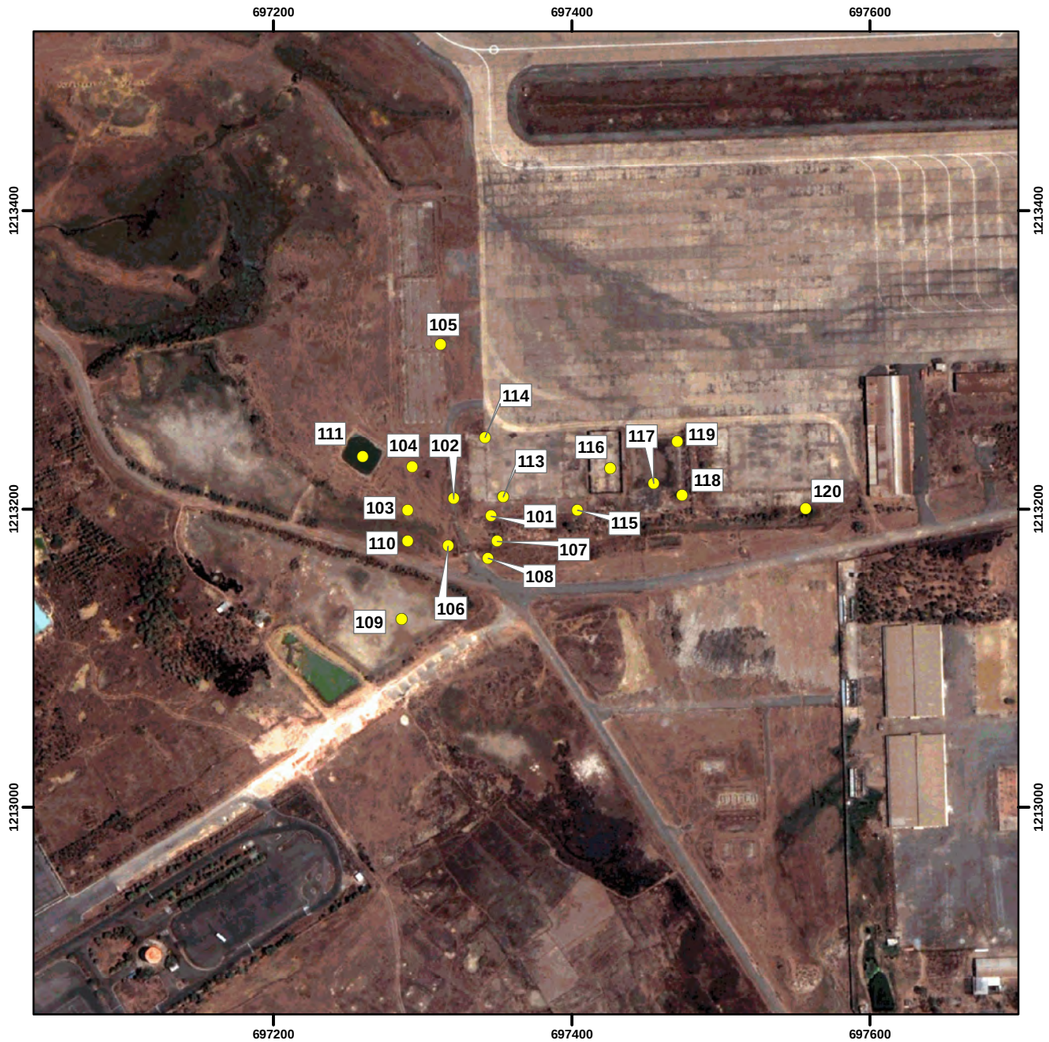
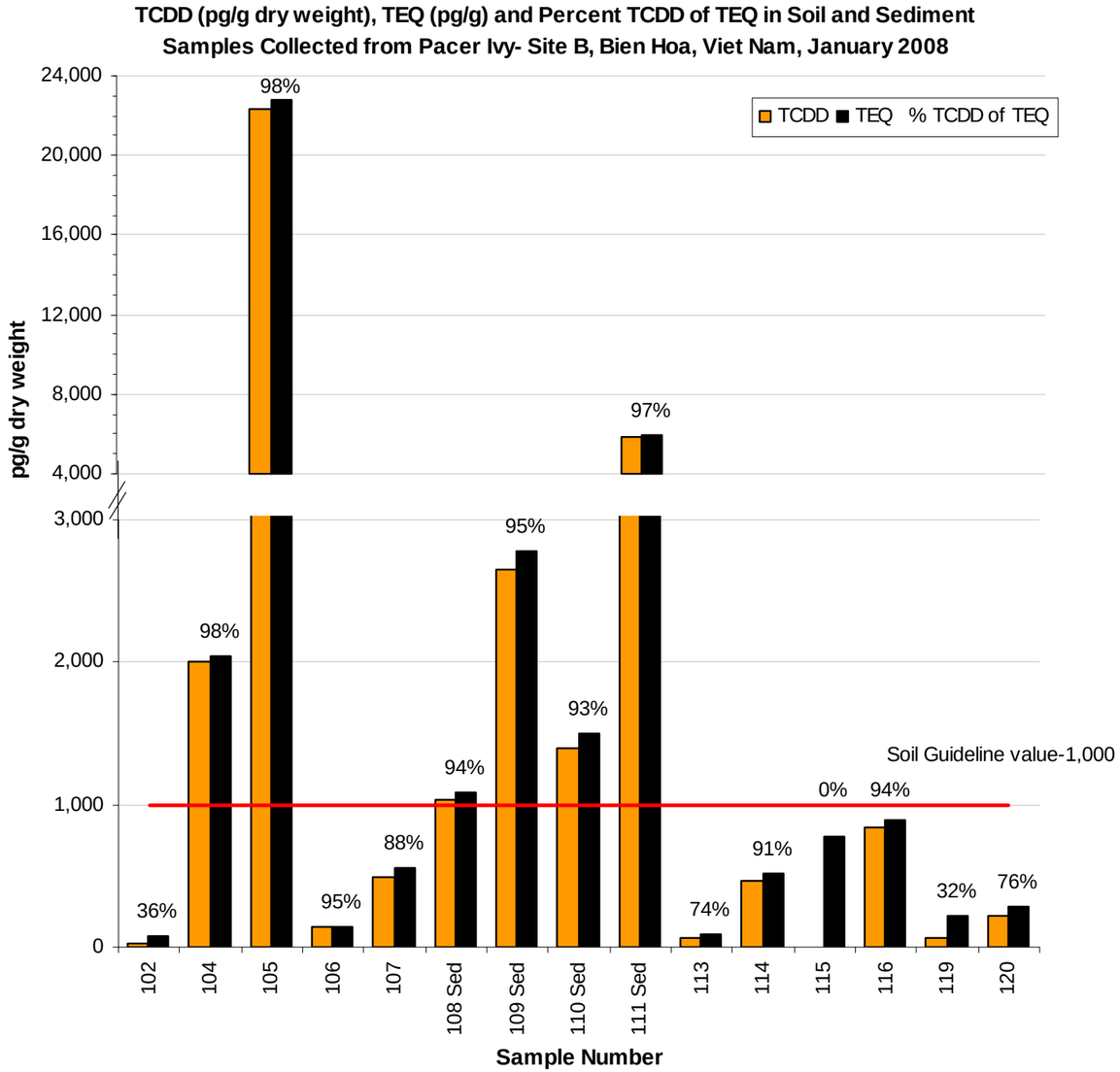


Figure 3.7 Soil and Sediment Sampling Locations Southwest Corner of Runway (Pacer Ivy Site Identified by the US Department of Defense – Site B), Bien Hoa Airbase, January 2008.





3.2.2.3 Z1 Area

Z1 Area was selected for the Agent Orange/dioxin contamination study by the Vietnamese Ministry of Defense (MOD). Located in the south-central area of Bien Hoa Airbase, Z1 is highly contaminated with dioxin, given that it was the main storage area for Agent Orange, Blue and White herbicides at Bien Hoa; during the US – Viet Nam war, large herbicide storage tanks were present at this location, and the area surrounding Site Z1 was subject to spillage (Figure 3.8). At least four times between December 1969 and March 1970, major spills occurred in the environment in this area; approximately 25,000 litres of Agent Orange and 2,500 Agent White were released to the environment (US DOD, 2007).

The site is currently being remediated, including construction of drainage ditches and containment of contaminated soils; the MOD remediation program covers an area of approximately 43,000 m^2.

A number of samples were collected in this study below the former Ranch Hand herbicide storage tank area (Table 3.12). Eight samples were taken from three locations at the remediated site; core samples were collected in 30 cm increments to a depth of 180 cm. Core sample 08VNBH080 was collected below the site of the former Agent Orange containment tank; core sample 08VNBH082 was collected below the former Agent Blue containment tank, and core sample 08VNBH083 was collected below the former Agent White containment tank.

Results of core sample 08VNBH080 demonstrate that TCDD concentration generally increased with depth: in the 0-30 cm fraction, the TCDD concentration was 36,800 pg/g; at 30-60 cm, 144,000 pg/g; at 60-90 cm, 259,000 pg/g; 90-120 cm, 215,300 pg/g; 120-150 cm is 26,200 pg/g; and in the fraction 150-180 cm, 184,000 pg/g. These results demonstrate that dioxin migrated deep into soils in this area, and suggest extremely high concentrations of herbicide were used in the area. TCDD comprised over 98% of the TEQ in all samples from this area.

The highest level of dioxin (262,000 ppt TEQ) was recorded at a depth of 60-90 cm. Sample 08VNBH080-6 (analyzed by AXYS) exhibited a dioxin level of 185,000 ppt TEQ. These results confirm that dioxin penetrated below a depth of 1.8 m at this site. Treatment measures therefore must be undertaken below depths of 1.8 m; dioxin may continue to penetrate down to the deeper soil layers and possibly result in the contamination of groundwater.

The sample collected below the Agent Blue containment tank (08VNBH082) exhibited a dioxin level of 49,100 ppt TEQ; furthermore, the sample collected below the Agent White containment tank (08VNBH083) had a dioxin level of 109 ppt WHO-TEQ. Although soils in Z1 area are currently being treated, the high levels recorded in this study emphasize the need for periodic monitoring of dioxin levels to confirm the effectiveness of the treatment mechanisms, as well as to prevent the spread of toxic chemicals/dioxin into the receiving environment (there are a number of fish ponds downstream of the Z1 Area).

Table 3.12 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Soil Samples Collected from Z1 Area, Bien Hoa Airbase.

No.	Sample ID	Sample Matrix	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNBH 080	Soil	0-30	36,800	37,500	98.1
2	08VNBH 080-2	Soil	30-60	144,000	146,000	98.7
3	08VNBH 080-3	Soil	60-90	259,000	262,000	99.0
4	08VNBH 080-4	Soil	90-120	215,000	217,000	99.0
5	08VNBH 080-5	Soil	120-150	26,200	26,400	99.3
6	08 VNBH 080-6*	Soil	150-180	184,000	185,000	99.5
7	08VNBH 082	Soil	0-10	48,600	49,100	99.0
8	08VNBH 083	Soil	0-10	99.7	109	91.5

* Samples analyzed by AXYS.

3.2.2.4 Perimeter (Vicinity) of Z1 Area (Site C)

The perimeter (downstream) of the Z1 area receives drainage from the hot spot site, and there are a number of ponds and lakes used for aquaculture. The area has changed significantly since the remediation efforts have been implemented (Plate 3.8). Specifically, rainwater from the Z1 Area no longer flows to Bien Hoa Lake and other lakes inside the Airbase. Following initial remediation efforts, rainwater now flows to the Dong Nai River via newly dug ditches. With the aim of identifying possible other areas containing high levels of dioxin outside and downstream of the Z1 Area, a total of 52 soil samples from 43 sites on the perimeter of the Z1 Area were collected (Figure 3.8). VRTC analyzed 21 samples and AXYS analyzed 10 samples; of these, 8 samples were analyzed by both laboratories for comparison. Analytical results are presented in Table 3.13.

At 08VNBH141, samples were collected from 5 depths (surface to 1.5 m). Six (6) sediment samples were collected from ponds and lakes situated on the airbase, located down-slope of Site Z1.

In general, samples collected from the landfill area of the Z1 Area exhibited a wide range of dioxin concentrations. Dioxin levels ranged from 22.6 ppt TEQ (08VNBH150) to 13,300 ppt TEQ (08VNBH170). Samples collected southwest of the Z1 Area exhibited elevated levels of dioxin (sample 08VNBH123, 1,330 ppt TEQ); in sample 08VNBH141-3, dioxin levels at the depth of 30-60 cm were 8,310 ppt, demonstrating that deeper soil layers are of concern in this area.

Down-slope of the contaminated area, results indicated that samples collected from the area south and south-west of the Z1 containment area have levels of dioxin, which were higher than samples collected from the area east and north of the landfill. Sediment samples taken from the drainage ditch which receives water from the Z1 Area (08VNBH125) exhibited a concentration of 2,010 pg/g

TCDD (96.4% of the TEQ was TCDD). Mitigation measures are required for lakes in this area, to ensure that dioxins do not enter aquatic organisms and subsequently into the human food chain.

An area of 43,000 m^2 has been contained by MOD to date. Perimeter soils near the Z1 site generally exhibited dioxin levels less than 1,000 pg/g, except those collected from lowland areas, including the drainage ditches in the area. Site C, which includes ponds/lakes and lowland areas south of Z1, exhibited relatively high levels of dioxin. Unfortunately, this site was not extensively sampled in this study, and thus the contamination status has not been clearly defined. Preliminary data collected in this study suggest that sediment in all ponds/lakes must be treated/mitigated to reduce potential risk exposure to the human population. Additional sample collection in the Z1 Area is recommended to monitor the effectiveness of mitigation measures over time.

Plate 3.8 Vicinity of Z1 Area, Including Drainage Ditches to Downstream to the Ponds and Lakes, Bien Hoa Airbase, Viet Nam.

Table 3.13 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Soils in the Perimeter of the Z1 Area.

No.	Sample ID	Sample Matrix	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08VNBH 122	Soil	0-10	194	223	87.2
2	08 VNBH 123*	Soil	0-10	1310	1,330	98.5
3	08 VNBH 124*	Soil	0-10	387	395	98.0
4	08VNBH 125	Soil	0-10	2010	2,090	96.2
5	08 VNBH 126*	Soil	0-10	70.8	74	95.7
6	08VNBH 127	Soil	0-10	65.8	70.4	93.5
7	08 VNBH 128*	Soil	0-10	850	879	96.7
8	08VNBH 130	Soil	0-10	566	589	96.1
9	08 VNBH 132*	Sediment	0-10	405	413	98.1
10	08VNBH 134	Soil	0-10	41.1	48.3	85.1
11	08 VNBH 135*	Soil	0-10	2,620	2,670	98.1
12	08VNBH 136	Soil	0-10	67.4	72.9	92.5
13	08VNBH 137	Soil	0-10	396	411	96.4
14	08VNBH 139	Soil	0-10	20.0	26.3	76.0
15	08VNBH 141	Soil	0-10	742	753	98.5
16	08VNBH 141-3	Soil	30-60	8,240	8,310	99.2
17	08VNBH 141-6	Soil	120-150	11.8	22.2	53.2
18	08VNBH 142	Soil	0-10	31.3	40.7	76.9
19	08 VNBH 143*	Soil	0-10	84.1	113	74.4
20	08VNBH 143-3	Soil	30-60	3.80	6.15	61.8
21	08VNBH 145	Soil	0-10	81.8	94.4	86.7
22	08VNBH 147	Soil	0-10	236	259	91.1
23	08 VNBH 148*	Soil	0-10	29.5	31.5	93.7
24	08VNBH 149	Soil	0-10	94.3	106	89.0
25	08 VNBH 150*	Soil	0-10	19.6	22.6	86.7
26	08VNBH 153	Soil	0-10	738	757	97.5
27	08VNBH 161	Soil	0-10	311	323	96.3
28	08 VNBH 162*	Soil	0-10	393	442	88.9
29	08VNBH 163	Soil	0-10	17.4	25.3	68.8
30	08VNBH 166	Soil	0-10	80.9	98.0	82.6
31	08VNBH 170	Soil	0-10	12,400	13,300	93.2

* Samples analyzed by AXYS.

3.2.2.5 Ponds and Lakes Surrounding Z1 Area

A number of ponds, lakes, and other aquatic habitats are located approximately 300 m south of the Z1 Area (Plate 3.9) (Figure 3.8). At present, those ponds and lakes are used for fish and vegetable cultivation. Prior to the implementation of remediation efforts, rainwater carried toxic chemicals from the Z1 Area, including dioxins, into these ponds and lakes, including Bien Hung Lake outside of Bien Hoa Airbase.

Plate 3.9 Ponds and Lakes Downstream (South) of the Z1 Area, Bien Hoa Airbase, Viet Nam.

Previous surveys conducted by Vietnamese scientists reported that the average TEQ level in 14 collected sediment samples was 355 ppt; the range of TEQ values in six sediment samples collected from Lake No. 2 was 674 ppt (ranging from 134 ppt to 1,735 ppt).

Analytical results of three sediment samples analyzed by VRTC and two sediment samples analyzed by AXYS are presented in Table 3.14, and Figure 3.8.

Table 3.14 Dioxin (2,3,7,8-TCDD and TEQ; pg/g) Concentrations in Sediment Samples Collected in Ponds and Lakes Downstream of the Z1 Area.

No.	Sample ID	Sample Matrix	Depth (cm)	2,3,7,8-TCDD (pg/g = ppt)	WHO-TEQ (pg/g = ppt) ND =1/2DL	2,3,7,8-TCDD /WHO-TEQ (T%)
1	08 VNBH 155*	Sediment	0-10	2,200	2,240	98.2
2	08VNBH 156	Sediment	0-10	15.2	20.9	72.7
3	08 VNBH 157*	Sediment	0-10	1,740	1,790	97.2
4	08VNBH 158	Sediment	0-10	18.0	22.0	81.8
5	08VNBH 159	Sediment	0-10	727	756	96.2

* Samples analyzed by AXYS.

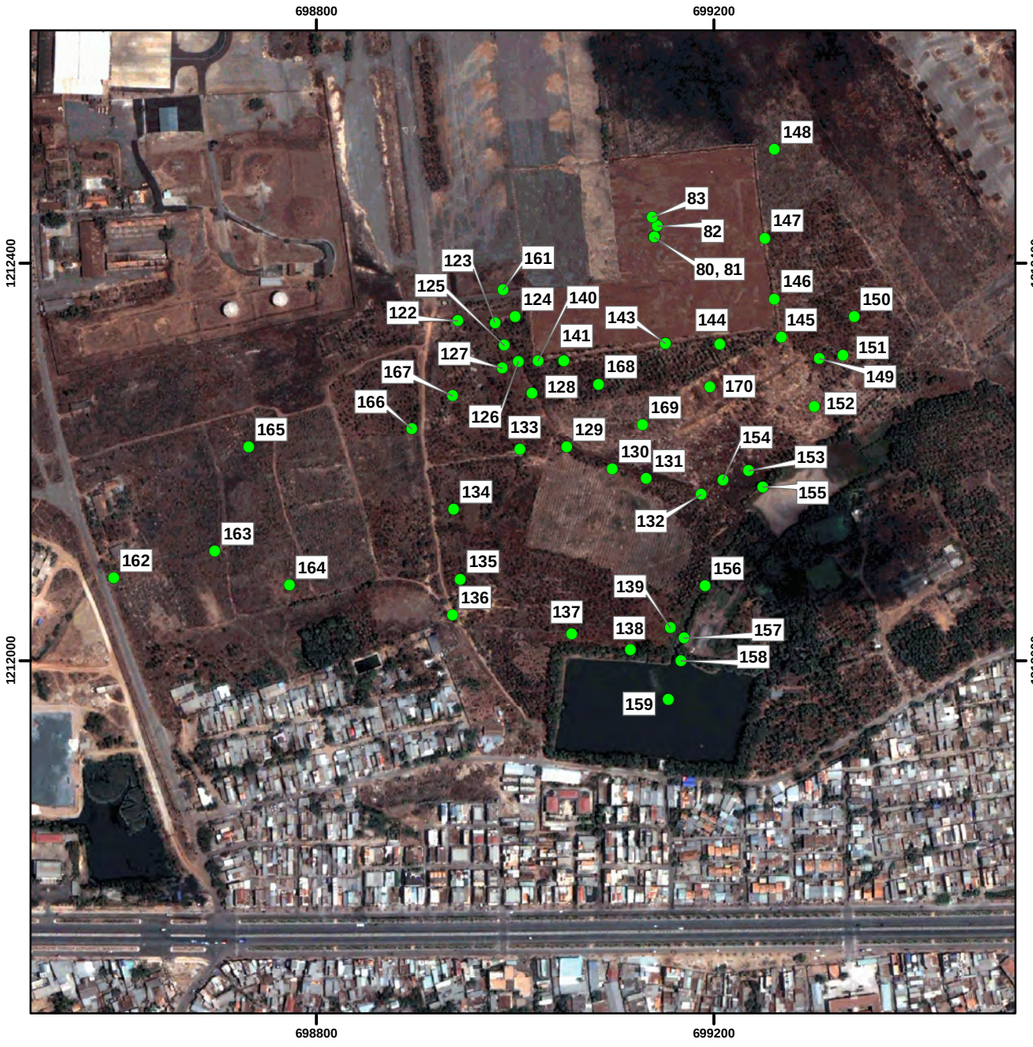
The highest dioxin level was recorded in sample 08VNBH155 (2,240 ppt TEQ), which was collected from a fishpond, and in sample 08VNBH157 (1,790 TEQ) from a nearby aquatic habitat. Other sediment samples (08VNBH156 and 08VNBH158) were collected from drainage ditches, which are connected to the fishponds; these samples contained relatively low levels of dioxin (20.9 ppt and 22.0 ppt TEQ, respectively).

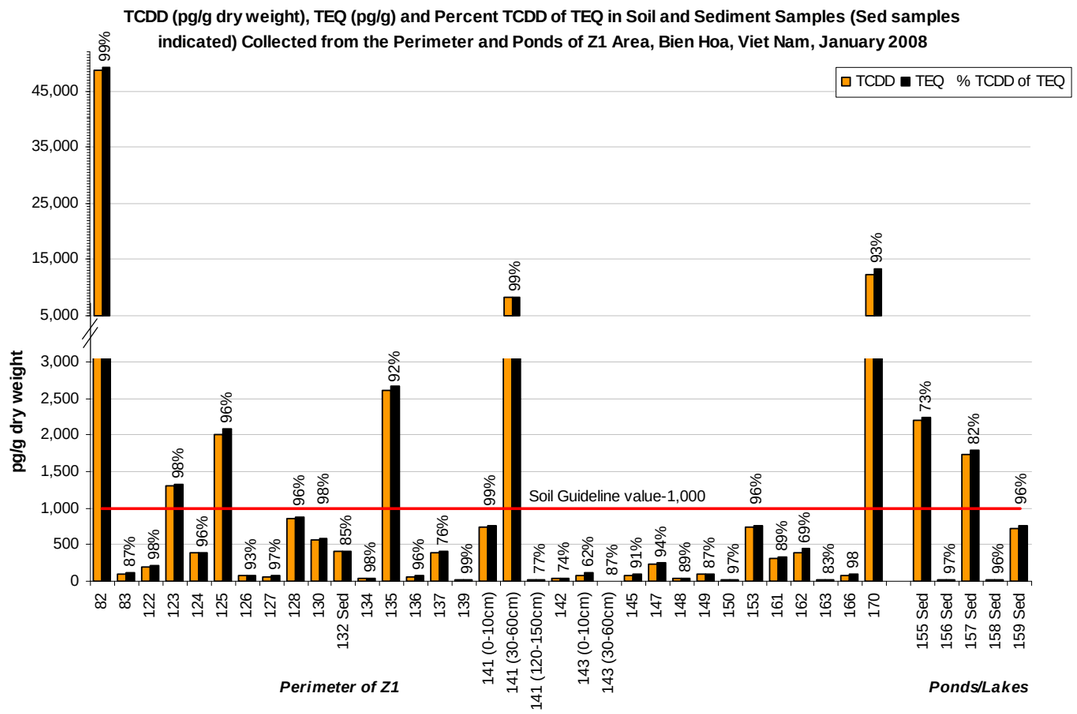
Additional collection of samples at this area is suggested in order to have a more complete picture of the contamination situation; of key concern is the high potential for dioxin entering aquatic food items, and risks to human health from ingestion of contaminated fish and other animals.

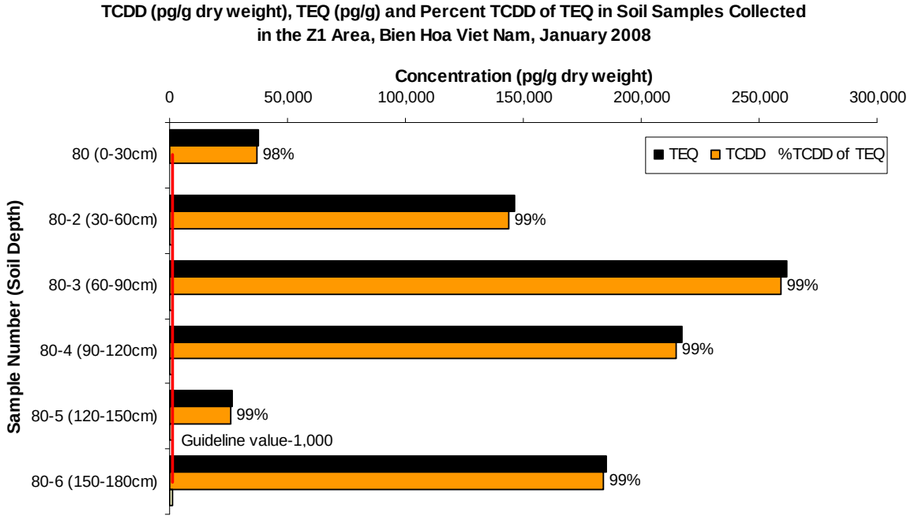
3.2.2.6 Historical results from outside the Bien Hoa Airbase, 2004 & 2005

Hatfield and 10-80 Division (2006) collected samples outside Bein Hoa Airbase in 2004 and 2005 (Figure 3.9). The highest soil TCDD concentration was recorded at Site 89, 392 pg/g, with a resulting TEQ of 425 pg/g (92% TCDD of TEQ; Figure 3.9) (Hatfield and 10-80 Division 2006). The highest sediment dioxin value was recorded at Site 78, (797 pg/g TCDD and 833 pg/g TEQ). Over 96% of the TEQ was TCDD, clearly indicating Agent Orange as the source. Sites 89 and 78 are located in two geographically separate regions near the Bien Hoa airbase suggesting extensive contamination in different areas outside the Airbase. The origin of the contamination at these aforementioned sites is likely the herbicide storage area.

Figure 3.8 Soil and Sediment Sampling Locations in the Perimeter and Ponds/Lakes of the Z1 Area, Bien Hoa Airbase, Viet Nam, January 2008.







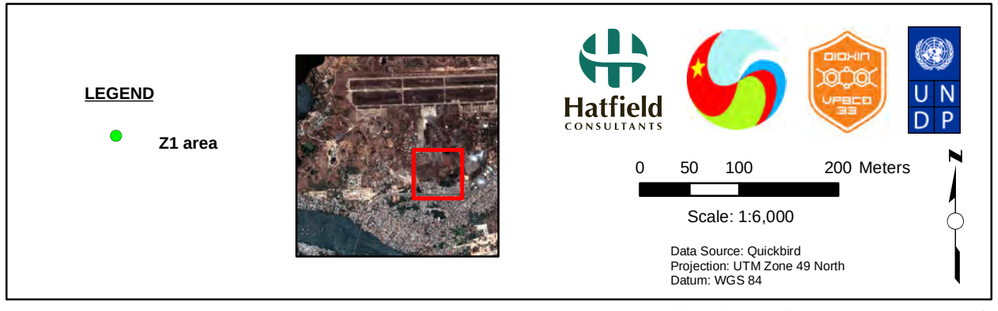


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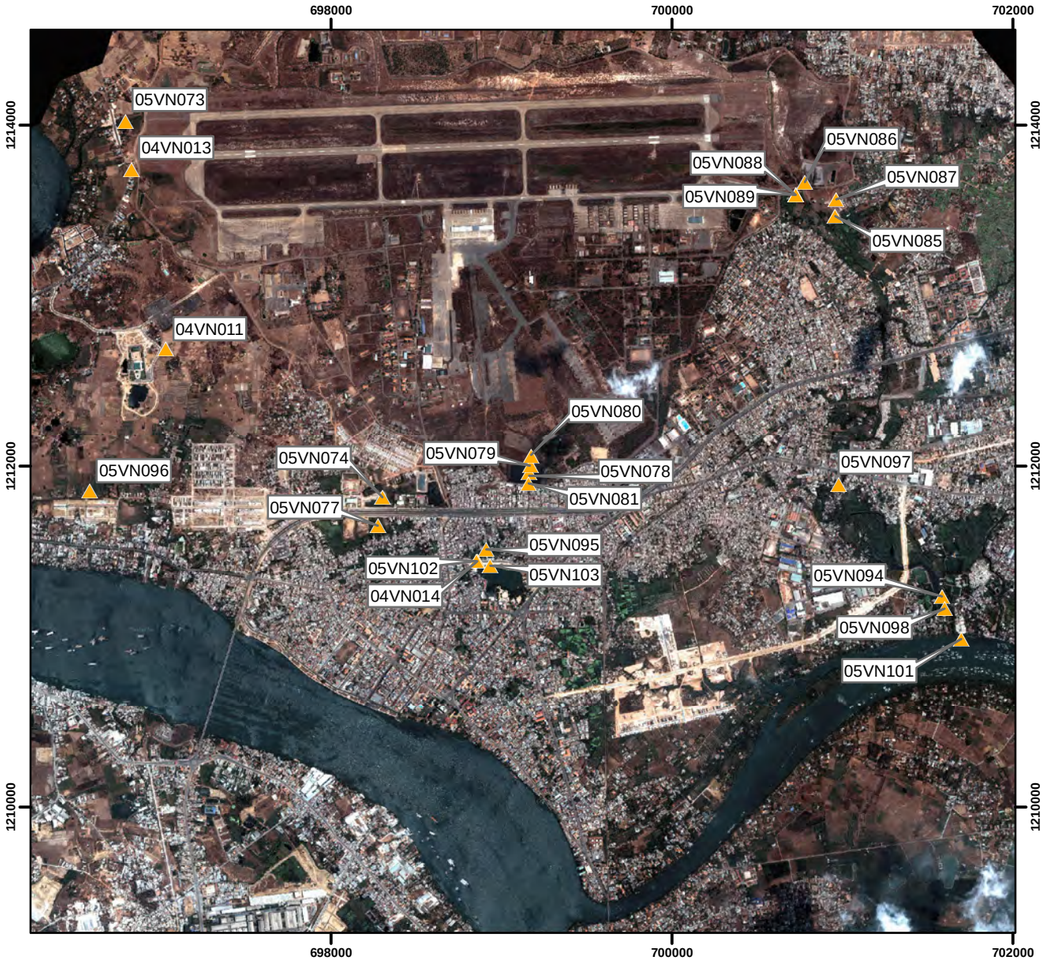
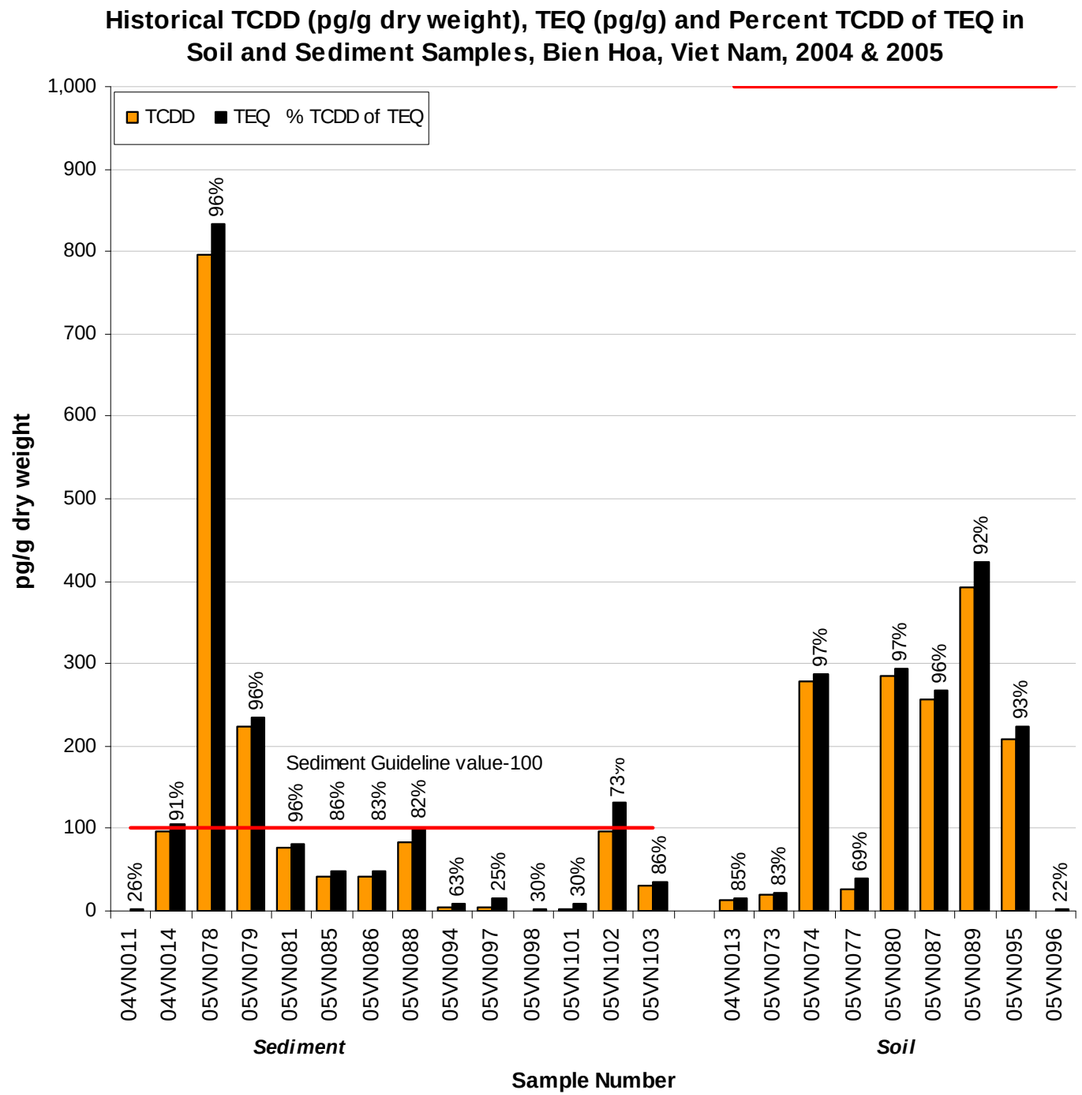
Figure 3.9 Historical Soil and Sediment Sampling Locations, Bien Hoa Airbase, Viet Nam, 2004 & 2005.





LEGEND

▲ **Historical data 2004-2005**
(Hatfield Consultants Ltd. and 10-80 Division, 2006)

Viet Nam

0 0.25 0.5 1 Km

Scale: 1:35,000

Data Source: Quickbird
Projection: UTM Zone 49 North
Datum: WGS 84

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Sites 85, 86, 87, 88, and 89 all exhibited dioxin in levels >40 pg/g TCDD (and greater than 80% TCDD of TEQ). A number of sites situated near South (S) Base Lake and Bien Hung Lake also exhibited elevated dioxin levels. The TCDD level in sediments from this area ranged from 31.1 pg/g TCDD (86% TCDD of TEQ) to 797 pg/g TCDD (96% TCDD of TEQ; 833 pg/g TEQ).

Schecter *et. al.* (2001) reported sediment dioxin in Bien Hung Lake 1 and Bien Hung Lake 2. There is no information in their publication as to the location of these lakes or of the samples collected. It is assumed that our South Base Lake may be either Bien Hung Lake 1 or 2. Nevertheless, Schecter *et. al.* (2001) reported 177 pg/g TCDD as the highest value from both lakes. In the Hatfield and 10-80 Division (2006) study, 797 pg/g TCDD (Site 78) was the highest value recorded. The other sediment value from South Base Lake was 224 pg/g TCDD. The highest soil TCDD in the South Base Lake area was recorded at Site 80, 284 pg/g TCDD (97% TCDD of 294 pg/g TEQ).

Schecter *et. al.* (2001) also reported a soil TCDD level from the Bien Hoa Airbase area of greater than 1 million pg/g. However, the exact origin of the sample is not known by the senior author (pers. comm.). Two distinct TCDD "groupings" (i.e., east end of the runway and South Base/Bien Hung Lakes) have very high percent TCDD of TEQ values. These data indicate high Agent Orange involvement in the soils and sediment contamination outside the Bien Hoa airbase. The Bien Hoa airbase and vicinity can be classified as a significant dioxin hot spot.

Conclusions: A number of surveys have been conducted at Bien Hoa Airbase in the past, mostly by Vietnamese scientists and MOD personnel (e.g., Project Z1). Extremely high historical values of dioxin have been recorded at this site (>1 million ppt by Schechter [2001] – sampling location unknown). Containment efforts undertaken to date clearly have reduced contamination levels, but more work remains to be done to ensure effective mitigation of the site. The extent of contamination is widespread, and there remains concern regarding downstream migration of dioxin-contaminated soils and sediments into nearby watercourses. The area is complex in terms of topography and hydrology, making it difficult to effectively contain all historical contamination. Additional sample sites are recommended in the perimeter (southwest) of the Z1 Area, in ponds and lakes inside the Airbase, and southwest of the runway.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This report presents results of a total of 150 dioxin analyses conducted from samples collected from Bien Hoa and Phu Cat airbases in Viet Nam, in January 2008. VRTC Analyzed 55 samples collected from Bien Hoa and 45 samples from Phu Cat; AXYS analyzed 33 samples from Bien Hoa and 17 samples from Phu Cat. Twenty (20) duplicate samples were analyzed by both laboratories for QA/QC purposes.

Some general conclusions may be made:

1. The number of sampling locations and dioxin analyses performed (n=130) was adequate for determining the approximate extent of dioxin contamination at both Bien Hoa and Phu Cat airbases. However, additional sampling will be required to refine the exact extent and depth of contamination at both locations.

2. A preliminary review of QA/QC results from duplicate samples indicates mostly consistent results between the two laboratories. At Phu Cat, all TCDD concentrations were higher as reported by VRTC relative to AXYS. At Ben Hoa, most VRTC TCDD values were lower. However, a detailed QA/QC review remains to be completed for analyses conducted under this project.

Conclusions regarding Phu Cat Airbase:

1. Dioxin concentrations in the Storage Area remain extremely high (to 236,000 pg/g TCDD), and are comparable to those found at Bien Hoa and Da Nang. Soil in this area should be permanently contained or treated immediately to reduce risk of exposure for Airbase workers and populations living downstream of the Airbase;

2. In the Loading and Washing Areas, dioxin concentrations were considerably lower, and do not represent a threat to human health or the environment. Additional sampling from these sites is not required;

3. Samples collected from the Perimeter (Buffer) Area, including the sedimentation tank, Lakes A, B, and C, all revealed low levels of dioxin. Therefore, additional collection of samples, as well as mitigation measures, for this area are likely unnecessary;

4. Nine samples collected from the area recommended for investigation by the US Department of Defense (southeast Airbase Corner) contained low levels of dioxin and a low percentage of TCDD in samples (less than 50%). These results indicate that Agent Orange was likely not used extensively in this area; during the American war, this area was used for offices, army barracks and recreation purposes; and

5. Sampling and analysis of aquatic organisms, especially fish, should be undertaken in Lakes A, B and C to determine if there is any human health risk from consumption of these organisms.

Conclusions regarding Bien Hoa Airbase:

1. Dioxin concentrations remain extremely high (up to 185,000 ppt) in the Airbase. Several areas exhibit dioxin levels above the internationally accepted standard of 1,000 ppt TCDD in soils; this includes the Newly Discovered Southwest Area (Site A), Pacer Ivy (Southwest Area) near the Runway (Site B), Z1 Area and vicinity (especially the area southwest of the landfill), and ponds and lakes downstream of the containment area. Therefore, mitigation measures for each of these areas are needed to reduce potential exposure of the human population;

2. Dioxin contamination was verified in the New Discovered Area (Site A), which is of concern, given its proximity to the local population. Appropriate dioxin containment measures need to be determined for this area;

3. Significant dioxin contamination was confirmed in samples collected from the Pacer Ivy (SW Airbase) Area (Site B). This site was sampled for the first time under the current study, following information provided by the US Department of Defense. High dioxin levels found in this study confirm this area was used for herbicide spray operations during the US-Vietnam war. The sampling effort in this area was limited under the current study (11 samples); given the size of the area and potential for migration of contamination into downstream water courses, additional samples collection and analysis is recommended to assess the extent of contamination;

4. The Hotspot area (Site Z1) exhibited the highest levels of dioxins, as expected, given the historical use of Agent Orange and other herbicides at this site. However, these soils are in the process of being contained, and mitigation measures are being implemented by MOD to reduce further migration of dioxin-contaminated soils and sediments from this area. Dioxin has penetrated deep into the soils (more than 180 cm) below the former Agent Orange contained tank;

5. Samples collected from the Z1 perimeter area surrounding the containment site exhibited high levels of dioxin, which were above acceptable guidelines (1,000 pg/g). In particular, samples collected from lowland areas down-slope of Site Z1, including drainage ditches, ponds and lakes in the south end of the airbase (Site C), continue to exhibit high levels of dioxin. Soil and sediment from these areas need to be contained/treated in order to ensure that aquatic organisms and the human population are not at risk from dioxin contamination. We

recommend that more samples be analyzed to determine the volume of contaminated soil and sediment which requires treatment; and

6. Sampling and analysis of aquatic organisms, especially fish, should be undertaken in all lakes and ponds in Bien Hoa Airbase, and outside the Airbase, to determine if there is any human health risk from consumption of these organisms.

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APPENDICES

Appendix A1

Samples Collected from Bien Hoa and Phu Cat

Table A1.1 List of samples collected at Phu Cat Airbase.

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
I	**Former Storage Area**					
1	08VNPC001	Soil	0-10	11.1.2008	288626	1544094
2	08VNPC002	Soil	0-10	11.1.2008	288617	1544095
3	08VNPC002-2	Soil	10-30	11.1.2008	288617	1544095
4	08VNPC003	Soil	0-10	11.1.2008	288603	1544114
5	08VNPC004	Soil	0-10	11.1.2008	288598	1544093
6	08VNPC005	Soil	0-10	11.1.2008	288612	1544073
7	08VNPC009	Soil	0-10	11.1.2008	288574	1544135
8	08VNPC010	Soil	0-10	11.1.2008	288648	1544117
9	08VNPC011	Soil	0-10	12.1.2008	288664	1544139
10	08VNPC012	Soil	0-10	12.1.2008	288605	1544091
11	08VNPC012-2	Soil	10-30	12.1.2008	288605	1544091
12	08VNPC012-3	Soil	30-60	12.1.2008	288605	1544091
13	08VNPC012-4	Soil	60-80	12.1.2008	288605	1544091
14	08VNPC013	Soil	0-10	12.1.2008	288623	1544055
15	08VNPC014-1	Soil	0-10	12.1.2008	288633	1544042
16	08VNPC014-2	Soil	10-30	12.1.2008	288633	1544042
17	08VNPC014-3	Soil	30-60	12.1.2008	288633	1544042
18	08VNPC014-4	Soil	60-90	12.1.2008	288633	1544042
19	08VNPC015	Soil	0-10	12.1.2008	288637	1544050
II	**Former Loading Area**					
1	08VNPC006	Soil	0-10	11.1.2008	288562	1544051
2	08VNPC007	Soil	0-10	11.1.2008	288538	1544087
3	08VNPC008	Soil	0-10	11.1.2008	288539	1544146
4	08VNPC017	Soil	0-10	12.1.2008	288637	1544020
5	08VNPC018	Soil	0-10	12.1.2008	288637	1544013
6	08VNPC018-2	Soil	10-30	12.1.2008	288637	1544013
7	08VNPC019	Soil	0-10	12.1.2008	288660	1544039
8	08VNPC020	Soil	0-10	12.1.2008	288628	1544007
III	**Buffer Area**					
1	08VNPC016	Soil	0-10	12.1.2008	288644	1544025
2	08VNPC021	Soil	0-10	12.1.2008	288659	1543986
3	08VNPC022	Soil	0-10	12.1.2008	288675	1543990
4	08VNPC042	Soil	0-10	13.1.2008	288700	1543982

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
5	08VNPC042-2	Soil	0-30	13.1.2008	288700	1543982
6	08VNPC043	Soil	0-10	13.1.2008	288693	1543959
7	08VNPC044	Soil	0-10	13.1.2008	288730	1543967
8	08VNPC045	Soil	0-10	13.1.2008	288746	1543922
9	08VNPC046	Soil	0-10	13.1.2008	288765	1543957
10	08VNPC046-2	Soil	0-30	13.1.2008	288765	1543957
11	08VNPC047	Soil	0-10	13.1.2008	288749	1543996
12	08VNPC048	Soil	0-10	13.1.2008	288818	1543976
13	08VNPC049	Soil	0-10	13.1.2008	288860	1543997
14	08VNPC052	Soil	0-10	13.1.2008	288976	1543908
15	08VNPC053	Soil	0-10	13.1.2008	288948	1543965
16	08VNPC054	Soil	0-10	13.1.2008	288917	1544000
IV	**Former Washing Area**					
1	08VNPC023	Soil	0-10	12.1.2008	288890	1543888
2	08VNPC023-2	Soil	10-30	12.1.2008	288890	1543888
3	08VNPC024	Soil	0-10	12.1.2008	288880	1543843
4	08VNPC024-2	Soil	10-30	12.1.2008	288880	1543843
5	08VNPC025	Soil	0-10	12.1.2008	288933	1543840
6	08VNPC026	Soil	0-10	12.1.2008	288906	1543816
7	08VNPC026-2	Soil	10-30	12.1.2008	288906	1543816
8	08VNPC027	Soil	0-10	12.1.2008	288934	1543808
9	08VNPC040	Soil	0-10	13.1.2008	288770	1543727
10	08VNPC041	Soil	0-10	13.1.2008	288720	1543827
11	08VNPC050	Soil	0-10	13.1.2008	288925	1543864
12	08VNPC051	Soil	0-10	13.1.2008	288892	1543903
V	**Sedimentation tank**					
1	08VNPC055	Sludge	0-10	13.1.2008	289017	1543922
2	08VNPC056	Sludge	0-10	13.1.2008	289020	1543923
3	08VNPC057	Sludge	0-10	13.1.2008	289011	1543906
4	08VNPC058	Sludge	0-10	13.1.2008	289022	1543908
5	08VNPC059	Sludge	0-10	13.1.2008	289059	1543931
VI	**Lake A**					
1	08VNPC060	Sludge	0-10	13.1.2008	289256	1544167
2	08VNPC061	Sludge	0-10	13.1.2008	289331	1544060
3	08VNPC062	Sludge	0-10	13.1.2008	289265	1543949

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
VII	**Lake B**					
1	08VNPC063	Sludge	0-10	13.1.2008	289382	1544037
2	08VNPC064	Sludge	0-10	13.1.2008	289984	1543993
VIII	**Lake C**					
1	08VNPC065	Sludge	0-10	13.1.2008	289984	1543993
2	08VNPC066	Sludge	0-10	13.1.2008	290249	1544030
IX	**Southeast Airbase Corner**					
1	08VNPC028	Soil	0-10	12.1.2008	289617	1542827
2	08VNPC029	Soil	0-10	12.1.2008	289657	1542850
3	08VNPC030	Soil	0-10	12.1.2008	289586	1542890
4	08VNPC031	Soil	0-10	12.1.2008	289627	1542906
5	08VNPC032	Soil	0-10	13.1.2008	289728	1542963
6	08VNPC033	Soil	0-10	13.1.2008	289757	1542913
7	08VNPC034	Soil	0-10	13.1.2008	289754	1542970
8	08VNPC035	Soil	0-10	13.1.2008	289782	1542925
9	08VNPC036	Soil	0-10	13.1.2008	289777	1542980
10	08VNPC037	Soil	0-10	13.1.2008	289801	1542946
11	08VNPC038	Soil	0-10	13.1.2008	289800	1542998
12	08VNPC039	Soil	0-10	13.1.2008	289832	1542960

Table A1.2 List of samples collected at Bien Hoa Airbase

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
I	**South Airbase Corner**					
1	08VNBH067	Soil	0-10	16.1.2008	698223	1212365
2	08VNBH068	Soil	0-10	16.1.2008	698237	1212374
3	08VNBH069	Soil	0-10	16.1.2008	698256	1212384
4	08VNBH070	Soil	0-10	16.1.2008	698231	1212342
5	08VNBH071	Soil	0-10	16.1.2008	698255	1212365
6	08VNBH072	Soil	0-10	16.1.2008	698247	1212318
7	08VNBH073	Soil	0-10	16.1.2008	698276	1212387
8	08VNBH074	Soil	0-10	16.1.2008	698272	1212399
9	08VNBH075	Soil	0-10	16.1.2008	698277	1212417
10	08VNBH076	Soil	0-10	16.1.2008	698295	1212431
11	08VNBH077	Soil	0-10	16.1.2008	698324	1212452
12	08VNBH078	Soil	0-10	16.1.2008	698315	1212388
13	08VNBH079	Soil	0-10	16.1.2008	698272	1212435
14	08VNBH084	Soil	0-10	16.1.2008	698220	1212401
15	08VNBH085	Soil	0-10	16.1.2008	698205	1212378
16	08VNBH086	Soil	0-10	16.1.2008	698252	1212402
17	08VNBH087	Soil	0-10	16.1.2008	698240	1212391
18	08VNBH088	Soil	0-10	17.1.2008	698225	1212381
19	08VNBH088-2	Soil	10-30	17.1.2008	698225	1212381
20	08VNBH088-3	Soil	30-60	17.1.2008	698225	1212381
21	08VNBH088-4	Soil	60-90	17.1.2008	698225	1212381
22	08VNBH088-5	Soil	90-120	17.1.2008	698225	1212381
23	08VNBH088-6	Soil	120-150	17.1.2008	698225	1212381
24	08VNBH089	Soil	0-10	16.1.2008	698219	1212424
25	08VNBH090	Soil	0-10	16.1.2008	698195	1212418
26	08VNBH091	Soil	0-10	16.1.2008	698191	1212357
27	08VNBH091-2	Soil	10-30	17.1.2008	698191	1212357
28	08VNBH091-3	Soil	30-60	17.1.2008	698191	1212357
29	08VNBH091-4	Soil	60-90	17.1.2008	698191	1212357
30	08VNBH092	Soil	0-10	16.1.2008	698174	1212352
31	08VNBH093	Soil	0-10	16.1.2008	698146	1212335
32	08VNBH094	Soil	0-10	17.1.2008	698129	1212310
33	08VNBH095	Soil	0-10	17.1.2008	698105	1212297
34	08VNBH096	Soil	0-10	17.1.2008	698067	1212270
35	08VNBH097	Soil	0-10	17.1.2008	698035	1212248

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
36	08VNBH099	Soil	0-10	17.1.2008	698155	1212431
37	08VNBH100	Soil	0-10	17.1.2008	698243	1212418
38	08VNBH112	Soil	0-10	17.1.2008	698197	1212349
39	08VNBH121	Soil	0-10	17.1.2008	698163	1212328
II	**Southwest Airbase Corner**					
1	08VNBH101	Soil	0-10	17.1.2008	697346	1213195
2	08VNBH102	Soil	0-10	17.1.2008	697321	1213207
3	08VNBH103	Soil	0-10	17.1.2008	697290	1213199
4	08VNBH104	Soil	0-10	17.1.2008	697293	1213228
5	08VNBH105	Soil	0-10	17.1.2008	697312	1213310
6	08VNBH106	Soil	0-10	17.1.2008	697317	1213175
7	08VNBH107	Soil	0-10	17.1.2008	697350	1213178
8	08VNBH108	Sludge	0-10	17.1.2008	697344	1213167
9	08VNBH109	Sludge	0-10	17.1.2008	697286	1213126
10	08VNBH110	Sludge	0-10	17.1.2008	697290	1213178
11	08VNBH111	Sludge	0-10	17.1.2008	697260	1213235
12	08VNBH113	Soil	0-10	17.1.2008	697354	1213208
13	08VNBH114	Soil	0-10	17.1.2008	697342	1213248
14	08VNBH115	Soil	0-10	17.1.2008	697404	1213199
15	08VNBH116	Soil	0-10	17.1.2008	697426	1213227
16	08VNBH117	Soil	0-10	17.1.2008	697455	1213217
17	08VNBH118	Soil	0-10	17.1.2008	697474	1213209
18	08VNBH119	Soil	0-10	17.1.2008	697471	1213245
19	08VNBH120	Soil	0-10	17.1.2008	697557	1213200
III	**Z1 Area**					
1	08VNBH080	Soil	0-30	16.1.2008	699140	1212426
2	08VNBH080-2	Soil	30-60	16.1.2008	699140	1212426
3	08VNBH080-3	Soil	60-90	16.1.2008	699140	1212426
4	08VNBH080-4	Soil	90-120	16.1.2008	699140	1212426
5	08VNBH080-5	Soil	120-150	16.1.2008	699140	1212426
6	08VNBH080-6	Soil	150-180	16.1.2008	699140	1212426
7	08VNBH081	Soil	0-10	16.1.2008	699140	1212426
8	08VNBH082	Soil	0-10	19.1.2008	699143	1212437
9	08VNBH083	Soil	0-10	19.1.2008	699138	1212446

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
IV	**Vicinity of Z1 Area**					
1	08VNBH122	Soil	0-10	18.1.2008	698942	1212342
2	08VNBH123	Soil	0-10	18.1.2008	698980	1212340
3	08VNBH124	Soil	0-10	18.1.2008	699000	1212346
4	08VNBH125	Soil	0-10	18.1.2008	698989	1212317
5	08VNBH126	Soil	0-10	18.1.2008	699003	1212301
6	08VNBH126-2	Soil	0-30	18.1.2008	699003	1212301
7	08VNBH127	Soil	0-10	18.1.2008	698987	1212294
8	08VNBH128	Soil	0-10	18.1.2008	699017	1212269
9	08VNBH129	Soil	0-10	18.1.2008	699052	1212215
10	08VNBH130	Soil	0-10	18.1.2008	699098	1212193
11	08VNBH131	Soil	0-10	18.1.2008	699132	1212183
12	08VNBH132	Sludge	0-10	18.1.2008	699187	1212167
13	08VNBH133	Soil	0-10	18.1.2008	699005	1212213
14	08VNBH134	Soil	0-10	18.1.2008	698938	1212152
15	08VNBH135	Soil	0-10	18.1.2008	698945	1212082
16	08VNBH136	Soil	0-10	18.1.2008	698937	1212046
17	08VNBH137	Soil	0-10	18.1.2008	699057	1212027
18	08VNBH138	Soil	0-10	18.1.2008	699116	1212011
19	08VNBH139	Soil	0-10	18.1.2008	699156	1212033
20	08VNBH140	Soil	0-10	18.1.2008	699023	1212302
21	08VNBH141	Soil	0-10	18.1.2008	699049	1212302
22	08VNBH141-2	Soil	10-30	18.1.2008	699049	1212302
23	08VNBH141-3	Soil	30-60	18.1.2008	699049	1212302
24	08VNBH141-4	Soil	60-90	18.1.2008	699049	1212302
25	08VNBH141-5	Soil	90-120	18.1.2008	699049	1212302
26	08VNBH141-6	Soil	120-150	18.1.2008	699049	1212302
27	08VNBH142	Soil	0-10	18.1.2008	699108	1212300
28	08VNBH143	Soil	0-10	19.1.2008	699151	1212319
29	08VNBH143-2	Soil	10-30	19.1.2008	699151	1212319
30	08VNBH143-3	Soil	30-60	19.1.2008	699151	1212319
31	08VNBH143-4	Soil	60-90	19.1.2008	699151	1212319
32	08VNBH144	Soil	0-10	19.1.2008	699206	1212318
33	08VNBH145	Soil	0-10	19.1.2008	699268	1212325
34	08VNBH146	Soil	0-10	19.1.2008	699261	1212364

No.	Sample code	Sample matrix	Depth (cm)	Collecting date	North latitude	East longitude
35	08VNBH147	Soil	0-10	19.1.2008	699251	1212425
36	08VNBH148	Soil	0-10	19.1.2008	699261	1212514
37	08VNBH149	Soil	0-10	19.1.2008	699306	1212304
38	08VNBH150	Soil	0-10	19.1.2008	699341	1212346
39	08VNBH151	Soil	0-10	19.1.2008	699330	1212307
40	08VNBH152	Soil	0-10	19.1.2008	699301	1212255
41	08VNBH153	Soil	0-10	19.1.2008	699235	1212191
42	08VNBH154	Soil	0-10	19.1.2008	699209	1212182
43	08VNBH161	Soil	0-10	19.1.2008	698988	1212373
44	08VNBH162	Soil	0-10	19.1.2008	698596	1212083
45	08VNBH163	Soil	0-10	19.1.2008	698698	1212110
46	08VNBH164	Soil	0-10	19.1.2008	698773	1212076
47	08VNBH165	Soil	0-10	19.1.2008	698732	1212215
48	08VNBH166	Soil	0-10	19.1.2008	698896	1212233
49	08VNBH167	Soil	0-10	19.1.2008	698937	1212266
50	08VNBH168	Soil	0-10	19.1.2008	699084	1212278
51	08VNBH169	Soil	0-10	19.1.2008	699128	1212237
52	08VNBH170	Soil	0-10	19.1.2008	699196	1212275
V	**Ponds, lakes surrounding Z1 Area**					
1	08VNBH155	Sludge	0-10	19.1.2008	699249	1212175
2	08VNBH156	Sludge	0-10	19.1.2008	699191	1212075
3	08VNBH157	Sludge	0-10	19.1.2008	699170	1212023
4	08VNBH158	Sludge	0-10	19.1.2008	699167	1212000
5	08VNBH159	Sludge	0-10	19.1.2008	699154	1211961
6	08VNBH160	Sludge	0-10	19.1.2008	699164	1211951

Appendix A2

VRTC Methods and Results

A2.0 SAMPLE ANALYSIS – VRTC

A2.1 SUMMARY OF THE ANALYTICAL METHOD FOR PCDD/PCDFS USING GC/LRMS (BASED ON US-EPA METHOD 8280A)

Basically, method EPA 8280A of the US-EPA (The analysis of Polychlorinated Dibenzo-p-Dioxin and Polychlorinated dibenzofuran by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry - HRGC/LRMS) is used with slight modifications. Hereafter, major steps and modifications of the analytical procedure are briefly described.

Soil and sediment were air-dried in clear room, ground and sieve for particulates less than 1mm diameter. Xg of sample was added with Internal standard before Soxhlet extraction using Toluene for 16h. The extract volume was reduced by Rotary vacuum evaporator and n-Hexane was added for solvent exchange with Toluene. Clean-up standard $^{37}Cl_4$-2,3,7,8-TCDD was also added before clean-up steps. Subsequently, the liquor was cleaned up by acid solution, base solution, silica gel column. The faction containing PCDD/PCDFs was eluted in activated carbon column (FAS-MD; Made in Russia) and Aluminum oxide column u. The liquor after Aluminum oxide column was evaporated under nitrogen stream to about 3ml and transferred to micro vial. Then 20µL dodecane and recovery standards were added and the solvent was further evaporated down to 20µl. For GC/MS analysis, 2µl of the final solution was injected into SPL/SPLS injection port of HRGC/LCMS.

Parameters of the GC/LRMS analysis are described as follows:

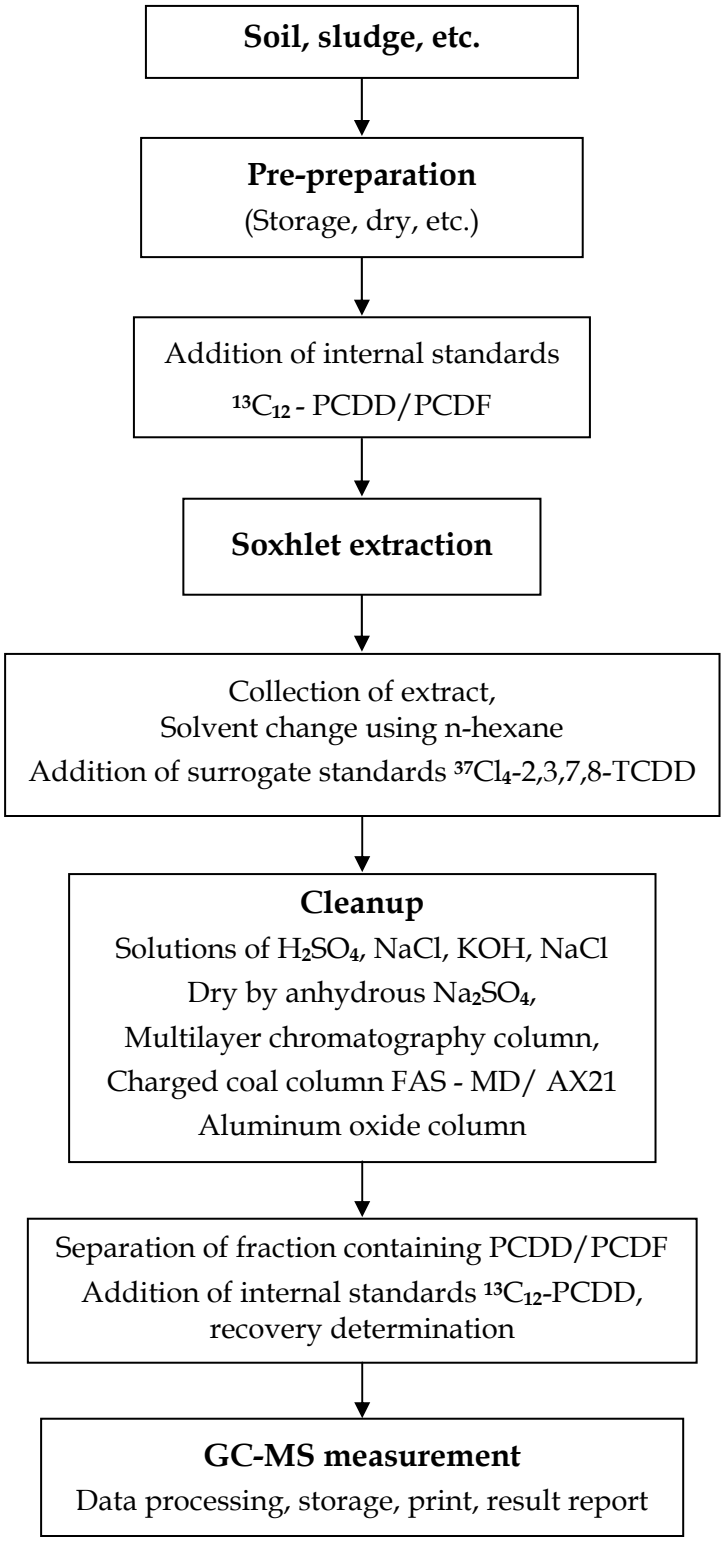
- GC/LRMS of Agilen, model GC HP6890/ MSD5972A
- Column BPX-DXN from SGE (60m x 0.25mm id)
- Temperature program: start at 130°C hold for 1min; increase with 15°C/min to 210°C, then with 3°C/min to 310°C and further increase with 5°C/min to 320°C and hold until OCDD appears.

Procedure for quality control including resolution of separation column, correlation with the initial calibration curve, ratio of isotope ions, equipment sensitivity, retention time, repeatability of analytical batch, accuracy, etc was done in accordance with guideline of EPA 8280A. Besides, VRTC also participated and gained good results in the international inter-laboratory program for dioxin and furan analysis which was co-organized by UNEP and IntercalAB.

A2.2 ANALYTICAL PROCEDURES

20g soil and sludge samples were analyzed by VRTC using 45 TQSB 01:2007 method. This method was developed based on EPA method (EPA 8280A) with small modifications. The method is used for the analysis of PCDD/PCDF on GC/low resolution MS. The method is briefly described in Figure A2.1. Details are indicated in the Report on the regulation of sample analysis.

Figure A2.1 Analytical procedure for PCDD/PCDF in environmental solid matrix using method 45 TQSB 01:2007.



A2.3 CALCULATION

A2.3.1 Concentration of individual PCDD/PCDF

The reported concentration of each PCDD/PCDF congener is calculated using the following equation:

$$C_n = \frac{m_{is} \times \left(S_n^1 + S_n^2\right)}{W \times \left(S_{is}^1 + S_{is}^2\right) \times RF_n}$$

C_n: Concentration of unlabeled PCDD/PCDF found in the sample

$m_{is:}$ amount of appropriate internal standard added to the sample prior to extraction.

W: weight of sample extracted in grams

S_n^1, S_n^2 và S_{is}^1, S_{is}^2**:** integrated ion abundances (peak areas) of the quantitation ions of the congener of interest and the appropriate internal standard.

RF_n: Calculated relative response factor from calibration solution CC3. RF_n is calculated as follows:

$$RF_n = \frac{\left(A_n^1 + A_n^2\right) \times Q_{is}}{\left(A_{is}^1 + A_{is}^2\right) \times Q_n}$$

A_n^1, A_n^2 và A_{is}^1, A_{is}^2**:** integrated areas of the quantitation ions of the congener of interest and the appropriate internal standard

Q_n, Q_{is}: amount of each PCDD/PCDF and internal standard

A2.3.2 Recovery

Calculate the percent recovery for each internal standard and the cleanup standard as follow:

$$R_{is}(\%) = \frac{(S_{is}^1 + S_{is}^2) \times m_{rs}}{(S_{rs}^1 + S_{rs}^2) \times RF_{is} \times m_{is}} \times 100$$

S_{is}^1, S_{is}^2 và S_{rs}^1, S_{rs}^2**:** integrated ion abundances (peak areas) of the quantitation ions of the internal standard of interest and the appropriate recovery standard.

A2.3.3 Estimated Detection Limit (EDL)

Estimated detection limits of individual 2,3,7,8-PCDD/PCDF congeners in each sample are calculated when both the quantification ions have the S/N values < 2.5 at the expected retention time of those ions. The estimated detection limits are calculated as follows:

$$EDL = \frac{2{,}5 \times m_{is} \times \left(H_n^1 + H_n^2\right) \times D}{W \times \left(H_{is}^1 + H_{is}^2\right) \times RF_n}$$

H_n^1, H_n^2: The peak heights of the noise for both of quatitation ions of the PCDD/PCDF of interest

H_{is}^1, H_{is}^2: The peak heights of both the quatitation ions of the appropriate internal standards

A2.3.4 Estimated Maximum Possible Concentration (EMPC)

Estimated Maximum Possible Concentration is calculated for PCDD/PCDF that are characterized by a response with an S/N of at least 2.5 for both the quantitation ions and meet all of the identification criteria except the ion abundance ratio criteria or when a peak representing a PCDPE has been detected.

A2.3.5 Toxicity equivalent (TEQ)

TEQs are derived from a toxicity weighting system that converts all mixture components to a single value normalized to the toxicity of 2,3,7,8-TCDD. The TEQ-WHO_{98} refers to the 1998 WHO update to the previously established TEFs for dioxins, furans, and dioxin-like PCBs (Table 2.3.13, Appendix A2). TEQ is calculated as follows:

$$TEQ = \sum_{n1} \left[C_{PCDDi} \times TEFi\right] + \sum_{n2} \left[C_{PCDFi} \times TEFi\right]$$

TEQ: Toxicity equivalent of 2,3,7,8-TCDD;

C_{PCDDi}: Concentration of PCDD congener;

C_{PCDDi}: Concentration of PCDF congener.

TEQ level of PCDD/PCDF is reported in three forms:

- WHO-$TEQ_{Lowerbound}$: TEQ level obtained from detection congeners, level of non-detection congener is referred as 0;

- WHO-$TEQ_{Upperbound}$: Maximum TEQ level possibly detected in sample, detection level was used for calculation of non-detection congener;
- WHO-TEQ, ND=1/2DL: TEQ level obtained from detection congeners, ½ detection level was used for calculation of non-detection congener.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 01/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08VNPC 001**	Lab Sample ID:	**08VNPC 001**
Matrix:	Soil	Sample Data Filename:	V-1669, V-1669A
Sample Size (dry):	0.63 g	Instrument ID:	HRGC-LRMS
% Moisture:	9.5	GC Column ID:	BPX-DXN
% Matrix Sample:	71.0	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	10-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-37

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		36356	36356	36356
1,2,3,7,8-PeCDD	1		441.6	441.6	441.6
1,2,3,4,7,8-HxCDD	0.1	ND	< 30	0	3.0
1,2,3,6,7,8-HxCDD	0.1	ND	< 30	0	3.0
1,2,3,7,8,9-HxCDD	0.1	ND	< 30	0	3.0
1,2,3,4,6,7,8-HpCDD	0.01		240.4	2.404	2.404
OCDD	0.0001		460	0.046	0.046
2,3,7,8-TCDF	0.1		1440	144	144
1,2,3,7,8-PeCDF	0.05	ND	< 20	0	1.0
2,3,4,7,8-PeCDF	0.5		42.4	21.2	21.2
1,2,3,4,7,8-HxCDF	0.1	ND	< 30	0	3.0
1,2,3,6,7,8-HxCDF	0.1	ND	< 30	0	3.0
1,2,3,7,8,9-HxCDF	0.1	ND	< 30	0	3.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 30	0	3.0
1,2,3,4,6,7,8-HpCDF	0.01		129.1	1.291	1.291
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 30	0	0.3
OCDF	0.0001	ND	< 50	0	0.005
TOTAL TEQ				**37000**	**37000**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.3	98.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	85.6	^{13}C-1,2,3,6,7,8-HxCDD	88.9
^{13}C-2,3,7, 8-TCDD	85.5	^{13}C-1,2,3,4,6,7,8-HpCDD	88.4
^{37}Cl-2,3,7,8-TCDD	85.5	^{13}C-OCDD	83.9

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
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Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 02/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08VNPC 002-2**	Lab Sample ID:	**08VNPC 002-2**
Matrix:	Soil	Sample Data Filename:	V-1623
Sample Size (dry):	10 g	Instrument ID:	HRGC-LRMS
% Moisture:	6.1	GC Column ID:	BPX-DXN
% Matrix Sample:	66.2	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	19-May-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		235924	235924	235924
1,2,3,7,8-PeCDD	1		1555	1555	1555
1,2,3,4,7,8-HxCDD	0.1		139.5	13.95	13.95
1,2,3,6,7,8-HxCDD	0.1		1.372	137.2	137.2
1,2,3,7,8,9-HxCDD	0.1		522	52.2	52.2
1,2,3,4,6,7,8-HpCDD	0.01		6088	60.88	60.88
OCDD	0.0001		10270	1.027	1.027
2,3,7,8-TCDF	0.1		1987	198.7	198.7
1,2,3,7,8-PeCDF	0.05		63.1	3.16	3.16
2,3,4,7,8-PeCDF	0.5		235	117.5	117.5
1,2,3,4,7,8-HxCDF	0.1		140.8	14.08	14.08
1,2,3,6,7,8-HxCDF	0.1		41.2	4.12	4.12
1,2,3,7,8,9-HxCDF	0.1		41.1	4.11	4.11
2,3,4,6,7,8-HxCDF	0.1		61.4	6.14	6.14
1,2,3,4,6,7,8-HpCDF	0.01		986	9.86	9.86
1,2,3,4,7,8,9-HpCDF	0.01		21.5	0.215	0.215
OCDF	0.0001		458	0.046	0.046
TOTAL TEQ				**238000**	**238000**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.1	99.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.3	^{13}C-1,2,3,6,7,8-HxCDD	87.3
^{13}C-2,3,7, 8-TCDD	100.2	^{13}C-1,2,3,4,6,7,8-HpCDD	74.0
^{37}Cl-2,3,7,8-TCDD	357.9	^{13}C-OCDD	72.0

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 03/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 003**	Lab Sample ID:	**08 VNPC 003**
Matrix:	Soil	Sample Data Filename:	V-1675
Sample Size (dry):	1.16 g	Instrument ID:	HRGC-LRMS
% Moisture:	6.9	GC Column ID:	BPX-DXN
% Matrix Sample:	77.0	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	11-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-38

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		4096	4096	4096
1,2,3,7,8-PeCDD	1		140.4	140.4	140.4
1,2,3,4,7,8-HxCDD	0.1	ND	< 10	0	1.0
1,2,3,6,7,8-HxCDD	0.1	NDR	# 25	0	2.5
1,2,3,7,8,9-HxCDD	0.1	NDR	# 50.7	0	5.07
1,2,3,4,6,7,8-HpCDD	0.01		103.6	1.036	1.036
OCDD	0.0001		578	0.058	0.058
2,3,7,8-TCDF	0.1		306	30.6	30.6
1,2,3,7,8-PeCDF	0.05	ND	< 10	0	0.5
2,3,4,7,8-PeCDF	0.5	NDR	# 16	0	8.0
1,2,3,4,7,8-HxCDF	0.1	ND	< 10	0	1.0
1,2,3,6,7,8-HxCDF	0.1	ND	< 10	0	1.0
1,2,3,7,8,9-HxCDF	0.1	ND	< 10	0	1.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 10	0	1.0
1,2,3,4,6,7,8-HpCDF	0.01		99.5	0.995	0.995
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 10	0	0.1
OCDF	0.0001	NDR	# 87	0	0.01
TOTAL TEQ				**4270**	**4290**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.0	95.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	83.8	^{13}C-1,2,3,6,7,8-HxCDD	81.3
^{13}C-2,3,7, 8-TCDD	84.2	^{13}C-1,2,3,4,6,7,8-HpCDD	84.7
^{37}Cl-2,3,7,8-TCDD	87.2	^{13}C-OCDD	95.7

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 04/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 004**	Lab Sample ID:	**08 VNPC 004**
Matrix:	Soil	Sample Data Filename:	V-1620
Sample Size (dry):	10 g	Instrument ID:	HRGC-LRMS
% Moisture:	9.2	GC Column ID:	BPX-DXN
% Matrix Sample:	62.9	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	19-May-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		3431	3431	3431
1,2,3,7,8-PeCDD	1		134.8	134.8	134.8
1,2,3,4,7,8-HxCDD	0.1		4.7	0.47	0.47
1,2,3,6,7,8-HxCDD	0.1		24.6	2.46	2.46
1,2,3,7,8,9-HxCDD	0.1		11.2	1.12	1.12
1,2,3,4,6,7,8-HpCDD	0.01		145.5	1.455	1.455
OCDD	0.0001		411.5	0.041	0.041
2,3,7,8-TCDF	0.1		168.4	16.84	16.84
1,2,3,7,8-PeCDF	0.05		9.1	0.455	0.455
2,3,4,7,8-PeCDF	0.5		6.7	3.35	3.35
1,2,3,4,7,8-HxCDF	0.1		4.0	0.4	0.4
1,2,3,6,7,8-HxCDF	0.1		1.9	0.19	0.19
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.6	0	0.16
2,3,4,6,7,8-HxCDF	0.1		8.9	0.89	0.89
1,2,3,4,6,7,8-HpCDF	0.01		40.4	0.404	0.404
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.9	0	0.039
OCDF	0.0001		24.7	0.003	0.003
TOTAL TEQ				**3590**	**3590**
% 2,3,7,8-TCDD vs. WHO-TEQ				95.5	95.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	79.4	^{13}C-1,2,3,6,7,8-HxCDD	80.0
^{13}C-2,3,7, 8-TCDD	79.4	^{13}C-1,2,3,4,6,7,8-HpCDD	70.8
^{37}Cl-2,3,7,8-TCDD	86.2	^{13}C-OCDD	77.3

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Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 05/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 006**	Lab Sample ID:	**08 VNPC 006**
Matrix:	Soil	Sample Data Filename:	V-1606
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	9.5	GC Column ID:	BPX-DXN
% Matrix Sample:	56.2	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	23-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		16.3	16.3	16.3
1,2,3,7,8-PeCDD	1	ND	< 1.1	0	1.1
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.0	0	0.2
1,2,3,6,7,8-HxCDD	0.1	ND	< 2.2	0	0.22
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDD	0.01		39.1	0.391	0.391
OCDD	0.0001		343.3	0.034	0.034
2,3,7,8-TCDF	0.1		4.0	0.4	0.4
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 0.6	0	0.3
1,2,3,4,7,8-HxCDF	0.1	NDR	# 1.8	0	0.18
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.9	0	0.09
1,2,3,7,8,9-HxCDF	0.1	NDR	# 1.9	0	0.19
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.4	0	0.14
1,2,3,4,6,7,8-HpCDF	0.01		9.1	0.091	0.091
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.6	0	0.016
OCDF	0.0001		19.2	0.002	0.002
TOTAL TEQ				**17.2**	**20.0**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.7	81.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	93.5	^{13}C-1,2,3,6,7,8-HxCDD	92.7
^{13}C-2,3,7, 8-TCDD	89.5	^{13}C-1,2,3,4,6,7,8-HpCDD	93.4
^{37}Cl-2,3,7,8-TCDD	83.6	^{13}C-OCDD	97.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 06/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 007**	Lab Sample ID:	**08 VNPC 007**
Matrix:	Soil	Sample Data Filename:	V-1607
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	8.7	GC Column ID:	BPX-DXN
% Matrix Sample:	54.4	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	23-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		47.1	47.1	47.1
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.9	0	0.19
1,2,3,6,7,8-HxCDD	0.1		5.9	0.59	0.59
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDD	0.01		33.4	0.334	0.334
OCDD	0.0001		258	0.026	0.026
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 1.2	0	0.06
2,3,4,7,8-PeCDF	0.5	NDR	# 2.5	0	1.25
1,2,3,4,7,8-HxCDF	0.1		2.3	0.23	0.23
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.8	0	0.18
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,4,6,7,8-HpCDF	0.01		7.4	0.074	0.074
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 4.2	0	0.042
OCDF	0.0001		9.9	0.001	0.001
TOTAL TEQ				**49.0**	**53.3**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.2	88.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	89.4	^{13}C-1,2,3,6,7,8-HxCDD	87.5
^{13}C-2,3,7, 8-TCDD	86.0	^{13}C-1,2,3,4,6,7,8-HpCDD	90.2
^{37}Cl-2,3,7,8-TCDD	83.0	^{13}C-OCDD	99.9

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PCDDs/PCDFs ANALYSIS REPORT

No.: 07/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 008**	Lab Sample ID:	**08 VNPC 008**
Matrix:	Soil	Sample Data Filename:	V-1594
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	7.1	GC Column ID:	BPX-DXN
% Matrix Sample:	61.1	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	18-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		3.8	3.8	3.8
1,2,3,7,8-PeCDD	1	ND	< 1.0	0	1.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.2	0	0.22
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.6	0	0.16
1,2,3,7,8,9-HxCDD	0.1		3.1	0.31	0.31
1,2,3,4,6,7,8-HpCDD	0.01		4.3	0.043	0.043
OCDD	0.0001		62.5	0.006	0.006
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.7	0	0.035
2,3,4,7,8-PeCDF	0.5	ND	< 0.4	0	0.2
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.2	0	0.22
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.4	0	0.14
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.5	0	0.15
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,4,6,7,8-HpCDF	0.01	NDR	# 1.9	0	0.019
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.7	0	0.017
OCDF	0.0001	ND	< 3.4	0	0.0003
TOTAL TEQ				**4.16**	**6.57**
% 2,3,7,8-TCDD vs. WHO-TEQ				91.4	57.8

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	98.6	^{13}C-1,2,3,6,7,8-HxCDD	107.8
^{13}C-2,3,7, 8-TCDD	97.6	^{13}C-1,2,3,4,6,7,8-HpCDD	103.0
^{37}Cl-2,3,7,8-TCDD	93.4	^{13}C-OCDD	109.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 08/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 010**	Lab Sample ID:	**08 VNPC 010**
Matrix:	Soil	Sample Data Filename:	V-1608
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.2	GC Column ID:	BPX-DXN
% Matrix Sample:	78.2	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	23-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		7300	7300	7300
1,2,3,7,8-PeCDD	1		155.6	155.6	155.6
1,2,3,4,7,8-HxCDD	0.1		12.8	1.28	1.28
1,2,3,6,7,8-HxCDD	0.1		116.8	11.68	11.68
1,2,3,7,8,9-HxCDD	0.1		48	4.8	4.8
1,2,3,4,6,7,8-HpCDD	0.01		530.2	5.302	5.302
OCDD	0.0001		1041	0.104	0.104
2,3,7,8-TCDF	0.1		245.2	24.52	24.52
1,2,3,7,8-PeCDF	0.05		8.9	0.445	0.445
2,3,4,7,8-PeCDF	0.5		16	8.0	8.0
1,2,3,4,7,8-HxCDF	0.1		16.1	1.61	1.61
1,2,3,6,7,8-HxCDF	0.1		5.0	0.5	0.5
1,2,3,7,8,9-HxCDF	0.1		2.7	0.27	0.27
2,3,4,6,7,8-HxCDF	0.1		5.0	0.5	0.5
1,2,3,4,6,7,8-HpCDF	0.01		101.4	1.014	1.014
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.8	0	0.038
OCDF	0.0001		67.7	0.007	0.007
TOTAL TEQ				**7520**	**7520**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.1	97.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	89.4	^{13}C-1,2,3,6,7,8-HxCDD	92.8
^{13}C-2,3,7, 8-TCDD	88.9	^{13}C-1,2,3,4,6,7,8-HpCDD	87.5
^{37}Cl-2,3,7,8-TCDD	96.7	^{13}C-OCDD	93.3

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PCDDs/PCDFs ANALYSIS REPORT

No.: 09/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 011**	Lab Sample ID:	**08 VNPC 011**
Matrix:	Soil	Sample Data Filename:	V-1609
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	5.9	GC Column ID:	BPX-DXN
% Matrix Sample:	75.8	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	23-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		345.2	345.2	345.2
1,2,3,7,8-PeCDD	1		4.8	4.8	4.8
1,2,3,4,7,8-HxCDD	0.1		1.1	0.11	0.11
1,2,3,6,7,8-HxCDD	0.1		3.7	0.37	0.37
1,2,3,7,8,9-HxCDD	0.1		2.4	0.24	0.24
1,2,3,4,6,7,8-HpCDD	0.01		9.9	0.099	0.099
OCDD	0.0001		57.1	0.006	0.006
2,3,7,8-TCDF	0.1		9.0	0.9	0.9
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 0.4	0	0.2
1,2,3,4,7,8-HxCDF	0.1	NDR	# 1.6	0	0.16
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.7	0	0.07
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.7	0	0.07
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.5	0	0.05
1,2,3,4,6,7,8-HpCDF	0.01		3.1	0.031	0.031
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.5	0	0.015
OCDF	0.0001		3.0	0.001	0.001
TOTAL TEQ				**352**	**352**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.1	98.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	103.5	^{13}C-1,2,3,6,7,8-HxCDD	102.6
^{13}C-2,3,7, 8-TCDD	104.3	^{13}C-1,2,3,4,6,7,8-HpCDD	98.1
^{37}Cl-2,3,7,8-TCDD	91.6	^{13}C-OCDD	101.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 10/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 012**	Lab Sample ID:	**08 VNPC 012**
Matrix:	Soil	Sample Data Filename:	V-1676
Sample Size (dry):	1.02 g	Instrument ID:	HRGC-LRMS
% Moisture:	10.2	GC Column ID:	BPX-DXN
% Matrix Sample:	50.4	Injection Volume:	2 ul
Extraction Date:	02-Jun-08	Dilution Factor:	N/A
Analysis Date:	11-Jun-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		29979	29979	29979
1,2,3,7,8-PeCDD	1		261	261	261
1,2,3,4,7,8-HxCDD	0.1	ND	< 30	0	3.0
1,2,3,6,7,8-HxCDD	0.1		285	28.5	28.5
1,2,3,7,8,9-HxCDD	0.1	NDR	# 115	0	11.5
1,2,3,4,6,7,8-HpCDD	0.01		520	5.2	5.2
OCDD	0.0001		1211	0.121	0.121
2,3,7,8-TCDF	0.1		1447	144.7	144.7
1,2,3,7,8-PeCDF	0.05	NDR	# 37	0	1.85
2,3,4,7,8-PeCDF	0.5	ND	< 30	0	15
1,2,3,4,7,8-HxCDF	0.1	ND	< 30	0	3.0
1,2,3,6,7,8-HxCDF	0.1	NDR	# 27.5	0	2.75
1,2,3,7,8,9-HxCDF	0.1	ND	< 10	0	1.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 20	0	2.0
1,2,3,4,6,7,8-HpCDF	0.01		133	1.33	1.33
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 20	0	0.2
OCDF	0.0001	NDR	# 83	0	0.001
TOTAL TEQ				**30400**	**30500**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.6	98.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	83.8	^{13}C-1,2,3,6,7,8-HxCDD	86.4
^{13}C-2,3,7, 8-TCDD	83.9	^{13}C-1,2,3,4,6,7,8-HpCDD	93.4
^{37}Cl-2,3,7,8-TCDD	86.4	^{13}C-OCDD	110.8

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 11/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 012-2**	Lab Sample ID:	**08 VNPC 012-2**
Matrix:	Soil	Sample Data Filename:	V-1621
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	11.9	GC Column ID:	BPX-DXN
% Matrix Sample:	67.5	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	19-May-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		548.6	548.6	548.6
1,2,3,7,8-PeCDD	1		10.8	10.8	10.8
1,2,3,4,7,8-HxCDD	0.1	NDR	# 0.8	0	0.08
1,2,3,6,7,8-HxCDD	0.1		4.8	0.48	0.48
1,2,3,7,8,9-HxCDD	0.1		2.1	0.21	0.21
1,2,3,4,6,7,8-HpCDD	0.01		18.6	0.186	0.186
OCDD	0.0001		123.5	0.012	0.012
2,3,7,8-TCDF	0.1		31	3.1	3.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.0	0	0.05
2,3,4,7,8-PeCDF	0.5	NDR	# 1.5	0	0.75
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.7	0	0.07
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.2	0	0.02
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.6	0	0.06
2,3,4,6,7,8-HxCDF	0.1		1.1	0.11	0.11
1,2,3,4,6,7,8-HpCDF	0.01		4.1	0.041	0.041
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.4	0	0.014
OCDF	0.0001		2.0	0.0002	0.0002
TOTAL TEQ				**564**	**565**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.4	97.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	77.5	^{13}C-1,2,3,6,7,8-HxCDD	80.5
^{13}C-2,3,7, 8-TCDD	76.9	^{13}C-1,2,3,4,6,7,8-HpCDD	70.0
^{37}Cl-2,3,7,8-TCDD	79.8	^{13}C-OCDD	70.1

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Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 12/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 014-2**	Lab Sample ID:	**08 VNPC 014-2**
Matrix:	Soil	Sample Data Filename:	V-1610
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	11.0	GC Column ID:	BPX-DXN
% Matrix Sample:	43.2	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	23-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		16500	16500	16500
1,2,3,7,8-PeCDD	1		211.6	211.6	211.6
1,2,3,4,7,8-HxCDD	0.1		8.7	0.87	0.87
1,2,3,6,7,8-HxCDD	0.1		125.6	12.56	12.56
1,2,3,7,8,9-HxCDD	0.1		48.8	4.88	4.88
1,2,3,4,6,7,8-HpCDD	0.01		511.2	5.112	5.112
OCDD	0.0001		794	0.079	0.079
2,3,7,8-TCDF	0.1		263	26.3	26.3
1,2,3,7,8-PeCDF	0.05		10	0.5	0.5
2,3,4,7,8-PeCDF	0.5		21	10.5	10.5
1,2,3,4,7,8-HxCDF	0.1		15.3	1.53	1.53
1,2,3,6,7,8-HxCDF	0.1		4.8	0.48	0.48
1,2,3,7,8,9-HxCDF	0.1		4.7	0.47	0.47
2,3,4,6,7,8-HxCDF	0.1		5.1	0.51	0.51
1,2,3,4,6,7,8-HpCDF	0.01		78.8	0.788	0.788
1,2,3,4,7,8,9-HpCDF	0.01		2.9	0.029	0.029
OCDF	0.0001		57.1	0.006	0.006
TOTAL TEQ				**16800**	**16800**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.4	98.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	103.4	^{13}C-1,2,3,6,7,8-HxCDD	102.3
^{13}C-2,3,7, 8-TCDD	106.0	^{13}C-1,2,3,4,6,7,8-HpCDD	99.6
^{37}Cl-2,3,7,8-TCDD	129.2	^{13}C-OCDD	97.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 13/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 016**	Lab Sample ID:	**08 VNPC 016**
Matrix:	Soil	Sample Data Filename:	V-1595
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	8.7	GC Column ID:	BPX-DXN
% Matrix Sample:	64.6	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	18-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2888	2888	2888
1,2,3,7,8-PeCDD	1		48.3	48.3	48.3
1,2,3,4,7,8-HxCDD	0.1		6.2	0.62	0.62
1,2,3,6,7,8-HxCDD	0.1		29.4	2.94	2.94
1,2,3,7,8,9-HxCDD	0.1		16.2	1.62	1.62
1,2,3,4,6,7,8-HpCDD	0.01		128.7	1.287	1.287
OCDD	0.0001		389.3	0.039	0.039
2,3,7,8-TCDF	0.1		64.9	6.49	6.49
1,2,3,7,8-PeCDF	0.05	ND	< 2.3	0	0.115
2,3,4,7,8-PeCDF	0.5	NDR	# 3.0	0	1.5
1,2,3,4,7,8-HxCDF	0.1		4.1	0.41	0.41
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.2	0	0.12
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.6	0	0.06
1,2,3,4,6,7,8-HpCDF	0.01		21.7	0.217	0.217
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.2	0.032	0.032
OCDF	0.0001		18.7	0.002	0.002
TOTAL TEQ				**2950**	**2950**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.9	97.8

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.0	^{13}C-1,2,3,6,7,8-HxCDD	91.6
^{13}C-2,3,7, 8-TCDD	84.3	^{13}C-1,2,3,4,6,7,8-HpCDD	92.4
^{37}Cl-2,3,7,8-TCDD	87.5	^{13}C-OCDD	95.3

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PCDDs/PCDFs ANALYSIS REPORT

No.: 14/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 018**	Lab Sample ID:	**08 VNPC 018**
Matrix:	Soil	Sample Data Filename:	V-1596, V-1596A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.1	GC Column ID:	BPX-DXN
% Matrix Sample:	61.7	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	18-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		840	840	840
1,2,3,7,8-PeCDD	1		11.2	11.2	11.2
1,2,3,4,7,8-HxCDD	0.1		1.5	0.15	0.15
1,2,3,6,7,8-HxCDD	0.1		8.4	0.84	0.84
1,2,3,7,8,9-HxCDD	0.1		6.4	0.64	0.64
1,2,3,4,6,7,8-HpCDD	0.01		36.1	0.361	0.361
OCDD	0.0001		133.3	0.013	0.013
2,3,7,8-TCDF	0.1		110	11.0	11.0
1,2,3,7,8-PeCDF	0.05		5.1	0.255	0.255
2,3,4,7,8-PeCDF	0.5		1.3	0.65	0.65
1,2,3,4,7,8-HxCDF	0.1		2.2	0.22	0.22
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.9	0	0.09
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.1	0	0.11
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.4	0	0.04
1,2,3,4,6,7,8-HpCDF	0.01		10.2	0.102	0.102
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.3	0	0.013
OCDF	0.0001		7.2	0.001	0.001
TOTAL TEQ				**865**	**866**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.1	97.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.6	^{13}C-1,2,3,6,7,8-HxCDD	92.4
^{13}C-2,3,7, 8-TCDD	86.8	^{13}C-1,2,3,4,6,7,8-HpCDD	93.7
^{37}Cl-2,3,7,8-TCDD	86.7	^{13}C-OCDD	96.5

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PCDDs/PCDFs ANALYSIS REPORT

No.: 15/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 018-2**	Lab Sample ID:	**08 VNPC 018-2**
Matrix:	Soil	Sample Data Filename:	V-1597
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	8.4	GC Column ID:	BPX-DXN
% Matrix Sample:	54.5	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	18-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		850	850	850
1,2,3,7,8-PeCDD	1		11.3	11.3	11.3
1,2,3,4,7,8-HxCDD	0.1		2.9	0.29	0.29
1,2,3,6,7,8-HxCDD	0.1		9.3	0.93	0.93
1,2,3,7,8,9-HxCDD	0.1		6.2	0.62	0.62
1,2,3,4,6,7,8-HpCDD	0.01		38.9	0.389	0.389
OCDD	0.0001		176.4	0.018	0.018
2,3,7,8-TCDF	0.1		106.7	10.67	10.67
1,2,3,7,8-PeCDF	0.05		7.0	0.35	0.35
2,3,4,7,8-PeCDF	0.5	NDR	# 2.3	0	1.15
1,2,3,4,7,8-HxCDF	0.1		2.4	0.24	0.24
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.7	0	0.17
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,4,6,7,8-HpCDF	0.01		9.5	0.095	0.095
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.6	0	0.016
OCDF	0.0001		13.2	0.001	0.001
TOTAL TEQ				**875**	**877**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.2	97.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	85.3	^{13}C-1,2,3,6,7,8-HxCDD	87.6
^{13}C-2,3,7, 8-TCDD	83.0	^{13}C-1,2,3,4,6,7,8-HpCDD	89.3
^{37}Cl-2,3,7,8-TCDD	82.6	^{13}C-OCDD	93.9

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PCDDs/PCDFs ANALYSIS REPORT

No.: 16/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 021**	Lab Sample ID:	**08 VNPC 021**
Matrix:	Soil	Sample Data Filename:	V-1598, V-1598A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	9.9	GC Column ID:	BPX-DXN
% Matrix Sample:	42.8	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	18-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		894.4	894.4	894.4
1,2,3,7,8-PeCDD	1		7.2	7.2	7.2
1,2,3,4,7,8-HxCDD	0.1	NDR	# 2.5	0	0.25
1,2,3,6,7,8-HxCDD	0.1		16.3	1.63	1.63
1,2,3,7,8,9-HxCDD	0.1		4.7	0.47	0.47
1,2,3,4,6,7,8-HpCDD	0.01		51.5	0.515	0.515
OCDD	0.0001		136.3	0.014	0.014
2,3,7,8-TCDF	0.1		38.7	3.87	3.87
1,2,3,7,8-PeCDF	0.05		2.0	0.1	0.1
2,3,4,7,8-PeCDF	0.5	NDR	# 1.8	0	0.9
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.2	0	0.22
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.4	0	0.14
1,2,3,4,6,7,8-HpCDF	0.01		8.4	0.084	0.084
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.1	0	0.021
OCDF	0.0001	NDR	# 5.7	0	0.001
TOTAL TEQ				**908**	**910**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.5	98.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.4	^{13}C-1,2,3,6,7,8-HxCDD	100.8
^{13}C-2,3,7, 8-TCDD	91.1	^{13}C-1,2,3,4,6,7,8-HpCDD	99.8
^{37}Cl-2,3,7,8-TCDD	88.9	^{13}C-OCDD	104.3

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PCDDs/PCDFs ANALYSIS REPORT

No.: 17/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 023**	Lab Sample ID:	**08 VNPC 023**
Matrix:	Soil	Sample Data Filename:	V-1559
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.3	GC Column ID:	BPX-DXN
% Matrix Sample:	50.4	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	1-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1.0	1.0	1.0
1,2,3,7,8-PeCDD	1	ND	< 1.0	0	1.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.0	0	0.1
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.2	0	0.12
1,2,3,7,8,9-HxCDD	0.1		3.0	0.3	0.3
1,2,3,4,6,7,8-HpCDD	0.01		15	0.15	0.15
OCDD	0.0001		135.5	0.014	0.014
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.0	0	0.05
2,3,4,7,8-PeCDF	0.5	ND	< 1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.4	0	0.14
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.9	0	0.19
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,4,6,7,8-HpCDF	0.01		4.9	0.049	0.049
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.4	0	0.024
OCDF	0.0001	ND	< 2.1	0	0.0002
TOTAL TEQ				**1.51**	**3.97**
% 2,3,7,8-TCDD vs. WHO-TEQ				66.1	25.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	97.4	^{13}C-1,2,3,6,7,8-HxCDD	89.4
^{13}C-2,3,7, 8-TCDD	94.4	^{13}C-1,2,3,4,6,7,8-HpCDD	87.5
^{37}Cl-2,3,7,8-TCDD	88.3	^{13}C-OCDD	84.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 18/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 024-2**	Lab Sample ID:	**08 VNPC 024-2**
Matrix:	Soil	Sample Data Filename:	V-1560
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	19.6	GC Column ID:	BPX-DXN
% Matrix Sample:	54.2	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	1-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		0.9	0.9	0.9
1,2,3,7,8-PeCDD	1	ND	< 0.7	0	0.7
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.1	0	0.11
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.5	0	0.15
1,2,3,7,8,9-HxCDD	0.1	ND	< 2.4	0	0.24
1,2,3,4,6,7,8-HpCDD	0.01	NDR	# 6.1	0	0.061
OCDD	0.0001		20.4	0.002	0.002
2,3,7,8-TCDF	0.1	ND	< 0.5	0	0.05
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 0.6	0	0.3
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.7	0	0.17
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.9	0	0.09
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.7	0	0.17
1,2,3,4,6,7,8-HpCDF	0.01	ND	< 1.8	0	0.018
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.1	0	0.021
OCDF	0.0001	ND	< 3.2	0	0.0003
TOTAL TEQ				**0.90**	**3.14**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.8	28.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	100.5	^{13}C-1,2,3,6,7,8-HxCDD	92.4
^{13}C-2,3,7, 8-TCDD	98.7	^{13}C-1,2,3,4,6,7,8-HpCDD	91.3
^{37}Cl-2,3,7,8-TCDD	96.4	^{13}C-OCDD	89.5

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

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PCDDs/PCDFs ANALYSIS REPORT

No.: 19/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 025**	Lab Sample ID:	**08 VNPC 025**
Matrix:	Soil	Sample Data Filename:	V-1561
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	15.0	GC Column ID:	BPX-DXN
% Matrix Sample:	35.3	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	1-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		0.7	0.7	0.7
1,2,3,7,8-PeCDD	1	ND	< 1.0	0	1.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.6	0	0.16
1,2,3,6,7,8-HxCDD	0.1	NDR	# 4.5	0	0.45
1,2,3,7,8,9-HxCDD	0.1	ND	< 2.5	0	0.25
1,2,3,4,6,7,8-HpCDD	0.01		14	0.14	0.14
OCDD	0.0001		104.4	0.01	0.01
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.9	0	0.045
2,3,4,7,8-PeCDF	0.5	ND	< 0.9	0	0.45
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.0	0	0.2
1,2,3,6,7,8-HxCDF	0.1	NDR	# 3.0	0	0.3
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.8	0	0.18
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,4,6,7,8-HpCDF	0.01		6.2	0.062	0.062
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.0	0	0.05
OCDF	0.0001		10.4	0.001	0.001
TOTAL TEQ				**0.91**	**4.20**
% 2,3,7,8-TCDD vs. WHO-TEQ				76.7	16.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	89.4	^{13}C-1,2,3,6,7,8-HxCDD	82.1
^{13}C-2,3,7, 8-TCDD	88.0	^{13}C-1,2,3,4,6,7,8-HpCDD	83.1
^{37}Cl-2,3,7,8-TCDD	88.6	^{13}C-OCDD	83.0

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 20/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 026**	Lab Sample ID:	**08 VNPC 026**
Matrix:	Soil	Sample Data Filename:	V-1562, V-1562A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	15.0	GC Column ID:	BPX-DXN
% Matrix Sample:	29.8	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	1-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1.2	1.2	1.2
1,2,3,7,8-PeCDD	1	ND	< 0.8	0	0.8
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.7	0	0.17
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.3	0	0.13
1,2,3,7,8,9-HxCDD	0.1	ND	< 1.1	0	0.11
1,2,3,4,6,7,8-HpCDD	0.01		3.8	0.038	0.038
OCDD	0.0001		24.9	0.003	0.003
2,3,7,8-TCDF	0.1	ND	< 0.5	0	0.05
1,2,3,7,8-PeCDF	0.05	ND	< 0.5	0	0.025
2,3,4,7,8-PeCDF	0.5	ND	< 0.4	0	0.2
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.2	0	0.22
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.2	0	0.12
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.4	0	0.14
1,2,3,4,6,7,8-HpCDF	0.01	NDR	# 3.7	0	0.037
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.3	0	0.053
OCDF	0.0001	ND	< 3.3	0	0.0003
TOTAL TEQ				**1.24**	**3.51**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.7	34.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	95.8	^{13}C-1,2,3,6,7,8-HxCDD	85.6
^{13}C-2,3,7, 8-TCDD	91.9	^{13}C-1,2,3,4,6,7,8-HpCDD	86.3
^{37}Cl-2,3,7,8-TCDD	93.8	^{13}C-OCDD	89.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 21/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 027**	Lab Sample ID:	**08 VNPC 027**
Matrix:	Soil	Sample Data Filename:	V-1563
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	15.3	GC Column ID:	BPX-DXN
% Matrix Sample:	44.6	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	1-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.1	2.1	2.1
1,2,3,7,8-PeCDD	1	ND	< 1.7	0	1.7
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.0	0	0.2
1,2,3,6,7,8-HxCDD	0.1		9.2	0.92	0.92
1,2,3,7,8,9-HxCDD	0.1		4.9	0.49	0.49
1,2,3,4,6,7,8-HpCDD	0.01		61.6	0.616	0.616
OCDD	0.0001		286	0.029	0.029
2,3,7,8-TCDF	0.1	ND	< 1.5	0	0.15
1,2,3,7,8-PeCDF	0.05	ND	< 1.5	0	0.075
2,3,4,7,8-PeCDF	0.5	ND	< 0.4	0	0.2
1,2,3,4,7,8-HxCDF	0.1		3.4	0.34	0.34
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.2	0	0.22
1,2,3,7,8,9-HxCDF	0.1	NDR	# 3.1	0	0.31
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.0	0	0.2
1,2,3,4,6,7,8-HpCDF	0.01		19.3	0.193	0.193
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.0	0	0.03
OCDF	0.0001		13.8	0.001	0.001
TOTAL TEQ				**4.69**	**7.77**
% 2,3,7,8-TCDD vs. WHO-TEQ				44.8	27.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.5	^{13}C-1,2,3,6,7,8-HxCDD	86.1
^{13}C-2,3,7, 8-TCDD	93.0	^{13}C-1,2,3,4,6,7,8-HpCDD	87.5
^{37}Cl-2,3,7,8-TCDD	86.0	^{13}C-OCDD	87.8

Lab flags have been used on this report:

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PCDDs/PCDFs ANALYSIS REPORT

No.: 22/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 029**	Lab Sample ID:	**08 VNPC 029**
Matrix:	Soil	Sample Data Filename:	V-1549
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	7.0	GC Column ID:	BPX-DXN
% Matrix Sample:	49.2	Injection Volume:	2 ul
Extraction Date:	17-Mar-08	Dilution Factor:	N/A
Analysis Date:	26-Mar-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.2	2.2	2.2
1,2,3,7,8-PeCDD	1		3.2	3.2	3.2
1,2,3,4,7,8-HxCDD	0.1		7.3	0.73	0.73
1,2,3,6,7,8-HxCDD	0.1		39.8	3.98	3.98
1,2,3,7,8,9-HxCDD	0.1		19.8	1.98	1.98
1,2,3,4,6,7,8-HpCDD	0.01		936.3	9.363	9.363
OCDD	0.0001		5.407	0.541	0.541
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 0.6	0	0.3
1,2,3,4,7,8-HxCDF	0.1		12.4	1.24	1.24
1,2,3,6,7,8-HxCDF	0.1		7.5	0.75	0.75
1,2,3,7,8,9-HxCDF	0.1		3.2	0.32	0.32
2,3,4,6,7,8-HxCDF	0.1		10.7	1.07	1.07
1,2,3,4,6,7,8-HpCDF	0.01		192.4	1.924	1.924
1,2,3,4,7,8,9-HpCDF	0.01		6.4	0.064	0.064
OCDF	0.0001		280.4	0.028	0.028
TOTAL TEQ				**27.4**	**27.8**
% 2,3,7,8-TCDD vs. WHO-TEQ				8.0	7.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	86.3	^{13}C-1,2,3,6,7,8-HxCDD	77.4
^{13}C-2,3,7, 8-TCDD	83.5	^{13}C-1,2,3,4,6,7,8-HpCDD	83.8
^{37}Cl-2,3,7,8-TCDD	78.6	^{13}C-OCDD	91.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 23/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 030**	Lab Sample ID:	**08 VNPC 030**
Matrix:	Soil	Sample Data Filename:	V-1550
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	8.8	GC Column ID:	BPX-DXN
% Matrix Sample:	48.5	Injection Volume:	2 ul
Extraction Date:	17-Mar-08	Dilution Factor:	N/A
Analysis Date:	26-Mar-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		12.2	12.2	12.2
1,2,3,7,8-PeCDD	1		3.7	3.7	3.7
1,2,3,4,7,8-HxCDD	0.1		1.7	0.17	0.17
1,2,3,6,7,8-HxCDD	0.1		2.9	0.29	0.29
1,2,3,7,8,9-HxCDD	0.1		3.1	0.31	0.31
1,2,3,4,6,7,8-HpCDD	0.01		39.6	0.396	0.396
OCDD	0.0001		155.8	0.016	0.016
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.6	0	0.03
2,3,4,7,8-PeCDF	0.5	ND	< 0.8	0	0.4
1,2,3,4,7,8-HxCDF	0.1		2.2	0.22	0.22
1,2,3,6,7,8-HxCDF	0.1		2.4	0.24	0.24
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.9	0	0.09
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.9	0	0.19
1,2,3,4,6,7,8-HpCDF	0.01		5.7	0.057	0.057
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.9	0	0.029
OCDF	0.0001	NDR	# 6.3	0	0.0006
TOTAL TEQ				**17.6**	**18.4**
% 2,3,7,8-TCDD vs. WHO-TEQ				69.3	66.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.0	^{13}C-1,2,3,6,7,8-HxCDD	79.2
^{13}C-2,3,7, 8-TCDD	84.7	^{13}C-1,2,3,4,6,7,8-HpCDD	83.2
^{37}Cl-2,3,7,8-TCDD	80.8	^{13}C-OCDD	91.8

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PCDDs/PCDFs ANALYSIS REPORT

No.: 24/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 031**	Lab Sample ID:	**08 VNPC 031**
Matrix:	Soil	Sample Data Filename:	V-1551, V-1551A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.4	GC Column ID:	BPX-DXN
% Matrix Sample:	44.9	Injection Volume:	2 ul
Extraction Date:	17-Mar-08	Dilution Factor:	N/A
Analysis Date:	26-Mar-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		7.5	7.5	7.5
1,2,3,7,8-PeCDD	1		36.9	36.9	36.9
1,2,3,4,7,8-HxCDD	0.1		67.9	6.79	6.79
1,2,3,6,7,8-HxCDD	0.1		239	23.9	23.9
1,2,3,7,8,9-HxCDD	0.1		221.4	22.14	22.14
1,2,3,4,6,7,8-HpCDD	0.01		12387	123.87	123.87
OCDD	0.0001		39003	3.9	3.9
2,3,7,8-TCDF	0.1		5.0	0.5	0.5
1,2,3,7,8-PeCDF	0.05		4.4	0.22	0.22
2,3,4,7,8-PeCDF	0.5		6.5	3.25	3.25
1,2,3,4,7,8-HxCDF	0.1		20.7	2.07	2.07
1,2,3,6,7,8-HxCDF	0.1		13.5	1.35	1.35
1,2,3,7,8,9-HxCDF	0.1		5.5	0.55	0.55
2,3,4,6,7,8-HxCDF	0.1		13.3	1.33	1.33
1,2,3,4,6,7,8-HpCDF	0.01		205	2.05	2.05
1,2,3,4,7,8,9-HpCDF	0.01		10.5	0.105	0.105
OCDF	0.0001		205.3	0.021	0.021
TOTAL TEQ				**236**	**236**
% 2,3,7,8-TCDD vs. WHO-TEQ				3.2	3.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	56.4	^{13}C-1,2,3,6,7,8-HxCDD	51.2
^{13}C-2,3,7, 8-TCDD	55.7	^{13}C-1,2,3,4,6,7,8-HpCDD	54.8
^{37}Cl-2,3,7,8-TCDD	53.5	^{13}C-OCDD	65.9

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Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 25/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 032**	Lab Sample ID:	**08 VNPC 032**
Matrix:	Soil	Sample Data Filename:	V-1552
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	10.9	GC Column ID:	BPX-DXN
% Matrix Sample:	52.7	Injection Volume:	2 ul
Extraction Date:	17-Mar-08	Dilution Factor:	N/A
Analysis Date:	26-Mar-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.4	2.4	2.4
1,2,3,7,8-PeCDD	1		3.5	3.5	3.5
1,2,3,4,7,8-HxCDD	0.1		7.4	0.74	0.74
1,2,3,6,7,8-HxCDD	0.1		10.1	1.01	1.01
1,2,3,7,8,9-HxCDD	0.1		10.4	1.04	1.04
1,2,3,4,6,7,8-HpCDD	0.01		132.4	1.324	1.324
OCDD	0.0001		833.5	0.083	0.083
2,3,7,8-TCDF	0.1		1.5	0.15	0.15
1,2,3,7,8-PeCDF	0.05	NDR	# 2.2	0	0.11
2,3,4,7,8-PeCDF	0.5		2.6	1.3	1.3
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.6	0	0.26
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.7	0	0.27
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.0	0	0.3
2,3,4,6,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDF	0.01		20.8	0.208	0.208
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.2	0	0.032
OCDF	0.0001		29.1	0.003	0.003
TOTAL TEQ				**11.8**	**13.0**
% 2,3,7,8-TCDD vs. WHO-TEQ				20.4	18.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	79.2	^{13}C-1,2,3,6,7,8-HxCDD	76.0
^{13}C-2,3,7, 8-TCDD	75.8	^{13}C-1,2,3,4,6,7,8-HpCDD	78.4
^{37}Cl-2,3,7,8-TCDD	73.7	^{13}C-OCDD	79.8

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PCDDs/PCDFs ANALYSIS REPORT

No.: 26/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 033**	Lab Sample ID:	**08 VNPC 033**
Matrix:	Soil	Sample Data Filename:	V-1553
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	7.6	GC Column ID:	BPX-DXN
% Matrix Sample:	64.9	Injection Volume:	2 ul
Extraction Date:	17-Mar-08	Dilution Factor:	N/A
Analysis Date:	26-Mar-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		5.1	5.1	5.1
1,2,3,7,8-PeCDD	1		3.7	3.7	3.7
1,2,3,4,7,8-HxCDD	0.1		4.9	0.49	0.49
1,2,3,6,7,8-HxCDD	0.1		5.4	0.54	0.54
1,2,3,7,8,9-HxCDD	0.1		6.5	0.65	0.65
1,2,3,4,6,7,8-HpCDD	0.01		69.9	0.699	0.699
OCDD	0.0001		427	0.043	0.043
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05		1.4	0.07	0.07
2,3,4,7,8-PeCDF	0.5	NDR	# 1.2	0	0.6
1,2,3,4,7,8-HxCDF	0.1	NDR	# 2.1	0	0.21
1,2,3,6,7,8-HxCDF	0.1		2.1	0.21	0.21
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.1	0	0.21
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.6	0	0.16
1,2,3,4,6,7,8-HpCDF	0.01		12.7	0.127	0.127
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.0	0	0.03
OCDF	0.0001		7.8	0.001	0.001
TOTAL TEQ				**11.6**	**12.9**
% 2,3,7,8-TCDD vs. WHO-TEQ				43.9	39.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	91.2	^{13}C-1,2,3,6,7,8-HxCDD	86.8
^{13}C-2,3,7, 8-TCDD	89.1	^{13}C-1,2,3,4,6,7,8-HpCDD	87.2
^{37}Cl-2,3,7,8-TCDD	86.0	^{13}C-OCDD	97.5

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PCDDs/PCDFs ANALYSIS REPORT

No.: 27/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 034**	Lab Sample ID:	**08 VNPC 034**
Matrix:	Soil	Sample Data Filename:	V-1568, V-1568A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	14.2	GC Column ID:	BPX-DXN
% Matrix Sample:	47.0	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	2-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1.3	1.3	1.3
1,2,3,7,8-PeCDD	1	ND	< 1.5	0	1.5
1,2,3,4,7,8-HxCDD	0.1		4.6	0.46	0.46
1,2,3,6,7,8-HxCDD	0.1		14.3	1.43	1.43
1,2,3,7,8,9-HxCDD	0.1		12.3	1.23	1.23
1,2,3,4,6,7,8-HpCDD	0.01		257.4	2.574	2.574
OCDD	0.0001		1716	0.176	0.176
2,3,7,8-TCDF	0.1		1.0	0.1	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.0	0	0.05
2,3,4,7,8-PeCDF	0.5	ND	< 0.6	0	0.3
1,2,3,4,7,8-HxCDF	0.1	NDR	# 4.7	0	0.47
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.8	0	0.18
2,3,4,6,7,8-HxCDF	0.1		4.2	0.42	0.42
1,2,3,4,6,7,8-HpCDF	0.01		41.4	0.414	0.414
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.2	0	0.032
OCDF	0.0001		55.8	0.006	0.006
TOTAL TEQ				**8.11**	**10.8**
% 2,3,7,8-TCDD vs. WHO-TEQ				16.0	12.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	97.0	^{13}C-1,2,3,6,7,8-HxCDD	85.3
^{13}C-2,3,7, 8-TCDD	92.4	^{13}C-1,2,3,4,6,7,8-HpCDD	89.6
^{37}Cl-2,3,7,8-TCDD	88.2	^{13}C-OCDD	101.9

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PCDDs/PCDFs ANALYSIS REPORT

No.: 28/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 036**	Lab Sample ID:	**08 VNPC 036**
Matrix:	Soil	Sample Data Filename:	V-1564
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	9.2	GC Column ID:	BPX-DXN
% Matrix Sample:	66.3	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	2-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1.4	1.4	1.4
1,2,3,7,8-PeCDD	1		4.4	4.4	4.4
1,2,3,4,7,8-HxCDD	0.1		6.3	0.63	0.63
1,2,3,6,7,8-HxCDD	0.1		12.6	1.26	1.26
1,2,3,7,8,9-HxCDD	0.1		8.2	0.82	0.82
1,2,3,4,6,7,8-HpCDD	0.01		247	2.47	2.47
OCDD	0.0001		1462	0.146	0.146
2,3,7,8-TCDF	0.1		36.1	3.61	3.61
1,2,3,7,8-PeCDF	0.05		5.6	0.28	0.28
2,3,4,7,8-PeCDF	0.5		7.4	3.7	3.7
1,2,3,4,7,8-HxCDF	0.1		8.4	0.84	0.84
1,2,3,6,7,8-HxCDF	0.1		12.8	1.28	1.28
1,2,3,7,8,9-HxCDF	0.1		3.1	0.31	0.31
2,3,4,6,7,8-HxCDF	0.1		9.0	0.9	0.9
1,2,3,4,6,7,8-HpCDF	0.01		60.5	0.605	0.605
1,2,3,4,7,8,9-HpCDF	0.01		9.0	0.09	0.09
OCDF	0.0001		75.6	0.008	0.008
TOTAL TEQ				**22.7**	**22.8**
% 2,3,7,8-TCDD vs. WHO-TEQ				6.2	6.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	101.7	^{13}C-1,2,3,6,7,8-HxCDD	88.7
^{13}C-2,3,7, 8-TCDD	99.8	^{13}C-1,2,3,4,6,7,8-HpCDD	90.5
^{37}Cl-2,3,7,8-TCDD	90.2	^{13}C-OCDD	97.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 29/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 037**	Lab Sample ID:	**08 VNPC 037**
Matrix:	Soil	Sample Data Filename:	V-1565
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	8.9	GC Column ID:	BPX-DXN
% Matrix Sample:	50.0	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	2-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1.7	1.7	1.7
1,2,3,7,8-PeCDD	1	ND	< 1.4	0	1.4
1,2,3,4,7,8-HxCDD	0.1		3.5	0.35	0.35
1,2,3,6,7,8-HxCDD	0.1		10.6	1.06	1.06
1,2,3,7,8,9-HxCDD	0.1		3.2	0.32	0.32
1,2,3,4,6,7,8-HpCDD	0.01		86.2	0.862	0.862
OCDD	0.0001		460.9	0.046	0.046
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.9	0	0.045
2,3,4,7,8-PeCDF	0.5	NDR	# 2.3	0	1.15
1,2,3,4,7,8-HxCDF	0.1		5.0	0.5	0.5
1,2,3,6,7,8-HxCDF	0.1		4.4	0.44	0.44
1,2,3,7,8,9-HxCDF	0.1		3.4	0.34	0.34
2,3,4,6,7,8-HxCDF	0.1		6.2	0.62	0.62
1,2,3,4,6,7,8-HpCDF	0.01		23.2	0.232	0.232
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.4	0	0.024
OCDF	0.0001		17.3	0.002	0.002
TOTAL TEQ				**6.47**	**9.19**
% 2,3,7,8-TCDD vs. WHO-TEQ				26.3	18.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	100.7	^{13}C-1,2,3,6,7,8-HxCDD	90.4
^{13}C-2,3,7, 8-TCDD	97.5	^{13}C-1,2,3,4,6,7,8-HpCDD	89.8
^{37}Cl-2,3,7,8-TCDD	89.1	^{13}C-OCDD	100.2

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PCDDs/PCDFs ANALYSIS REPORT

No.: 30/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 039**	Lab Sample ID:	**08 VNPC 039**
Matrix:	Soil	Sample Data Filename:	V-1566
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	5.7	GC Column ID:	BPX-DXN
% Matrix Sample:	51.5	Injection Volume:	2 ul
Extraction Date:	24-Mar-08	Dilution Factor:	N/A
Analysis Date:	2-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.0	2.0	2.0
1,2,3,7,8-PeCDD	1		10.7	10.7	10.7
1,2,3,4,7,8-HxCDD	0.1		37.1	3.71	3.71
1,2,3,6,7,8-HxCDD	0.1		124.8	12.48	12.48
1,2,3,7,8,9-HxCDD	0.1		62.9	6.29	6.29
1,2,3,4,6,7,8-HpCDD	0.01		4369	43.69	43.69
OCDD	0.0001		31116	3.112	3.112
2,3,7,8-TCDF	0.1		9.0	0.9	0.9
1,2,3,7,8-PeCDF	0.05	NDR	# 2.8	0	0.14
2,3,4,7,8-PeCDF	0.5	NDR	# 2.0	0	1.0
1,2,3,4,7,8-HxCDF	0.1		15.3	1.53	1.53
1,2,3,6,7,8-HxCDF	0.1		10.9	1.09	1.09
1,2,3,7,8,9-HxCDF	0.1		6.8	0.68	0.68
2,3,4,6,7,8-HxCDF	0.1		24.8	2.48	2.48
1,2,3,4,6,7,8-HpCDF	0.01		959	9.59	9.59
1,2,3,4,7,8,9-HpCDF	0.01		50.6	0.506	0.506
OCDF	0.0001		2526	0.253	0.253
TOTAL TEQ				**99.0**	**100**
% 2,3,7,8-TCDD vs. WHO-TEQ				2.0	2.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.7	^{13}C-1,2,3,6,7,8-HxCDD	82.1
^{13}C-2,3,7, 8-TCDD	86.8	^{13}C-1,2,3,4,6,7,8-HpCDD	83.3
^{37}Cl-2,3,7,8-TCDD	82.5	^{13}C-OCDD	99.1

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 31/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 040**	Lab Sample ID:	**08 VNPC 040**
Matrix:	Soil	Sample Data Filename:	V-1567
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	13.1	GC Column ID:	BPX-DXN
% Matrix Sample:	48.5	Injection Volume:	2 ul
Extraction Date:	26-Mar-08	Dilution Factor:	N/A
Analysis Date:	2-Apr-08	Blank Data Filename:	V-BL1517
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.9	2.9	2.9
1,2,3,7,8-PeCDD	1	ND	< 1.1	0	1.1
1,2,3,4,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,6,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,7,8,9-HxCDD	0.1	ND	< 2.1	0	0.21
1,2,3,4,6,7,8-HpCDD	0.01		21.8	0.218	0.218
OCDD	0.0001		196.6	0.02	0.02
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.7	0	0.035
2,3,4,7,8-PeCDF	0.5	ND	< 0.7	0	0.35
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.6	0	0.16
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.0	0	0.3
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.3	0	0.23
1,2,3,4,6,7,8-HpCDF	0.01		9.3	0.093	0.093
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 4.5	0	0.045
OCDF	0.0001		9.5	0.001	0.001
TOTAL TEQ				**3.23**	**6.46**
% 2,3,7,8-TCDD vs. WHO-TEQ				89.7	44.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.5	^{13}C-1,2,3,6,7,8-HxCDD	88.3
^{13}C-2,3,7, 8-TCDD	94.3	^{13}C-1,2,3,4,6,7,8-HpCDD	92.5
^{37}Cl-2,3,7,8-TCDD	90.1	^{13}C-OCDD	105.9

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 32/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 041**	Lab Sample ID:	**08 VNPC 041**
Matrix:	Soil	Sample Data Filename:	V-1570
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	10.4	GC Column ID:	BPX-DXN
% Matrix Sample:	48.7	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	8-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		4.1	4.1	4.1
1,2,3,7,8-PeCDD	1	ND	< 0.8	0	0.8
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.6	0	0.16
1,2,3,6,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDD	0.01	ND	< 2.4	0	0.024
OCDD	0.0001		56.1	0.006	0.006
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.6	0	0.16
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.7	0	0.17
1,2,3,4,6,7,8-HpCDF	0.01	ND	< 2.9	0	0.029
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.9	0	0.029
OCDF	0.0001	ND	< 2.8	0	0.0003
TOTAL TEQ				**4.11**	**6.95**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.9	59.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	99.0	^{13}C-1,2,3,6,7,8-HxCDD	97.4
^{13}C-2,3,7, 8-TCDD	97.9	^{13}C-1,2,3,4,6,7,8-HpCDD	95.8
^{37}Cl-2,3,7,8-TCDD	94.1	^{13}C-OCDD	100.5

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PCDDs/PCDFs ANALYSIS REPORT

No.: 33/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 046**	Lab Sample ID:	**08 VNPC 046**
Matrix:	Soil	Sample Data Filename:	V-1599
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	12.3	GC Column ID:	BPX-DXN
% Matrix Sample:	42.8	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	18-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		102.8	102.8	102.8
1,2,3,7,8-PeCDD	1		3.1	3.1	3.1
1,2,3,4,7,8-HxCDD	0.1	NDR	# 4.5	0	0.45
1,2,3,6,7,8-HxCDD	0.1	ND	< 2.1	0	0.21
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.9	0	0.39
1,2,3,4,6,7,8-HpCDD	0.01	NDR	# 5.7	0	0.057
OCDD	0.0001		127.1	0.013	0.013
2,3,7,8-TCDF	0.1		13	1.3	1.3
1,2,3,7,8-PeCDF	0.05	ND	< 1.1	0	0.055
2,3,4,7,8-PeCDF	0.5	ND	< 1.5	0	0.75
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.2	0	0.12
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.9	0	0.19
1,2,3,4,6,7,8-HpCDF	0.01		4.7	0.047	0.047
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.9	0	0.019
OCDF	0.0001	ND	< 6.3	0	0.001
TOTAL TEQ				**107**	**110**
% 2,3,7,8-TCDD vs. WHO-TEQ				95.8	93.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	97.3	^{13}C-1,2,3,6,7,8-HxCDD	100.4
^{13}C-2,3,7, 8-TCDD	95.1	^{13}C-1,2,3,4,6,7,8-HpCDD	98.5
^{37}Cl-2,3,7,8-TCDD	90.9	^{13}C-OCDD	106.1

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PCDDs/PCDFs ANALYSIS REPORT

No.: 34/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 050**	Lab Sample ID:	**08 VNPC 050**
Matrix:	Soil	Sample Data Filename:	V-1571
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	11.7	GC Column ID:	BPX-DXN
% Matrix Sample:	44.1	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	8-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.4	2.4	2.4
1,2,3,7,8-PeCDD	1	ND	< 1.9	0	1.9
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.3	0	0.13
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.7	0	0.17
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDD	0.01	ND	< 4.9	0	0.049
OCDD	0.0001		45	0.005	0.005
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.1	0	0.055
2,3,4,7,8-PeCDF	0.5	ND	< 0.8	0	0.4
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.0	0	0.2
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.6	0	0.16
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.0	0	0.2
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,4,6,7,8-HpCDF	0.01	ND	< 4.0	0	0.04
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.9	0	0.029
OCDF	0.0001	ND	< 3.4	0	0.0003
TOTAL TEQ				**2.41**	**6.26**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.8	38.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.8	^{13}C-1,2,3,6,7,8-HxCDD	96.7
^{13}C-2,3,7, 8-TCDD	96.7	^{13}C-1,2,3,4,6,7,8-HpCDD	91.6
^{37}Cl-2,3,7,8-TCDD	87.9	^{13}C-OCDD	101.3

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PCDDs/PCDFs ANALYSIS REPORT

No.: 35/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 051**	Lab Sample ID:	**08 VNPC 051**
Matrix:	Soil	Sample Data Filename:	V-1572
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	13.3	GC Column ID:	BPX-DXN
% Matrix Sample:	51.2	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	8-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.3	2.3	2.3
1,2,3,7,8-PeCDD	1	ND	< 1.2	0	1.2
1,2,3,4,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,6,7,8-HxCDD	0.1		6.3	0.63	0.63
1,2,3,7,8,9-HxCDD	0.1		9.2	0.92	0.92
1,2,3,4,6,7,8-HpCDD	0.01		38.7	0.387	0.387
OCDD	0.0001		226	0.023	0.023
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.3	0	0.065
2,3,4,7,8-PeCDF	0.5	ND	< 1.3	0	0.65
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.9	0	0.19
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.2	0	0.22
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.7	0	0.17
1,2,3,4,6,7,8-HpCDF	0.01		8.3	0.083	0.083
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.8	0	0.018
OCDF	0.0001		9.3	0.001	0.001
TOTAL TEQ				**4.34**	**7.38**
% 2,3,7,8-TCDD vs. WHO-TEQ				53.0	31.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	104.6	^{13}C-1,2,3,6,7,8-HxCDD	95.9
^{13}C-2,3,7, 8-TCDD	102.6	^{13}C-1,2,3,4,6,7,8-HpCDD	97.7
^{37}Cl-2,3,7,8-TCDD	92.3	^{13}C-OCDD	100.9

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 36/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 052**	Lab Sample ID:	**08 VNPC 052**
Matrix:	Soil	Sample Data Filename:	V-1600
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	8.3	GC Column ID:	BPX-DXN
% Matrix Sample:	49.6	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		0.5	0.5	0.5
1,2,3,7,8-PeCDD	1	ND	< 0.5	0	0.05
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.7	0	0.17
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.6	0	0.16
1,2,3,7,8,9-HxCDD	0.1	ND	< 1.4	0	0.14
1,2,3,4,6,7,8-HpCDD	0.01		6.4	0.064	0.064
OCDD	0.0001		65.5	0.007	0.007
2,3,7,8-TCDF	0.1		2.0	0.2	0.2
1,2,3,7,8-PeCDF	0.05	ND	< 0.6	0	0.03
2,3,4,7,8-PeCDF	0.5	ND	< 0.7	0	0.35
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.8	0	0.08
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.3	0	0.13
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,4,6,7,8-HpCDF	0.01	NDR	# 2.8	0	0.028
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.9	0	0.039
OCDF	0.0001	ND	< 2.5	0	0.001
TOTAL TEQ				**0.77**	**2.17**
% 2,3,7,8-TCDD vs. WHO-TEQ				64.9	23.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	95.5	^{13}C-1,2,3,6,7,8-HxCDD	101.4
^{13}C-2,3,7, 8-TCDD	93.0	^{13}C-1,2,3,4,6,7,8-HpCDD	98.6
^{37}Cl-2,3,7,8-TCDD	93.1	^{13}C-OCDD	106.0

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 37/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 053**	Lab Sample ID:	**08 VNPC 053**
Matrix:	Soil	Sample Data Filename:	V-1601
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	16.9	GC Column ID:	BPX-DXN
% Matrix Sample:	54.0	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		28.6	28.6	28.6
1,2,3,7,8-PeCDD	1	NDR	# 1.5	0	1.5
1,2,3,4,7,8-HxCDD	0.1		2.1	0.21	0.21
1,2,3,6,7,8-HxCDD	0.1		7.3	0.73	0.73
1,2,3,7,8,9-HxCDD	0.1		7.0	0.7	0.7
1,2,3,4,6,7,8-HpCDD	0.01		104.3	1.043	1.043
OCDD	0.0001		882	0.088	0.088
2,3,7,8-TCDF	0.1		4.0	0.4	0.4
1,2,3,7,8-PeCDF	0.05	ND	< 0.5	0	0.025
2,3,4,7,8-PeCDF	0.5	ND	< 0.8	0	0.4
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.9	0	0.09
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.3	0	0.13
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,4,6,7,8-HpCDF	0.01		29.4	0.294	0.294
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.5	0	0.025
OCDF	0.0001		53.6	0.005	0.005
TOTAL TEQ				**32.1**	**34.6**
% 2,3,7,8-TCDD vs. WHO-TEQ				89.2	82.8

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	73.3	^{13}C-1,2,3,6,7,8-HxCDD	79.8
^{13}C-2,3,7, 8-TCDD	70.9	^{13}C-1,2,3,4,6,7,8-HpCDD	78.6
^{37}Cl-2,3,7,8-TCDD	70.6	^{13}C-OCDD	78.9

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 38/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 055**	Lab Sample ID:	**08 VNPC 055**
Matrix:	Sediment	Sample Data Filename:	V-1602
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	38.0	GC Column ID:	BPX-DXN
% Matrix Sample:	76.3	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		123.5	123.5	123.5
1,2,3,7,8-PeCDD	1	ND	< 1.8	0	1.8
1,2,3,4,7,8-HxCDD	0.1	NDR	# 2.3	0	0.23
1,2,3,6,7,8-HxCDD	0.1	NDR	# 3.8	0	0.38
1,2,3,7,8,9-HxCDD	0.1		3.0	0.3	0.3
1,2,3,4,6,7,8-HpCDD	0.01		28.1	0.281	0.281
OCDD	0.0001		197.5	0.02	0.02
2,3,7,8-TCDF	0.1		13.0	1.3	1.3
1,2,3,7,8-PeCDF	0.05	ND	< 1.4	0	0.07
2,3,4,7,8-PeCDF	0.5	ND	< 0.9	0	0.45
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.8	0	0.18
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.0	0	0.2
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,4,6,7,8-HpCDF	0.01		9.5	0.095	0.095
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.0	0	0.02
OCDF	0.0001		12.0	0.001	0.001
TOTAL TEQ				**126**	**129**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.4	95.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	84.6	^{13}C-1,2,3,6,7,8-HxCDD	91.0
^{13}C-2,3,7, 8-TCDD	81.5	^{13}C-1,2,3,4,6,7,8-HpCDD	87.2
^{37}Cl-2,3,7,8-TCDD	81.9	^{13}C-OCDD	90.4

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 39/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 056**	Lab Sample ID:	**08 VNPC 056**
Matrix:	Sediment	Sample Data Filename:	V-1603, V-1603A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	23.1	GC Column ID:	BPX-DXN
% Matrix Sample:	71.8	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		77.4	77.4	77.4
1,2,3,7,8-PeCDD	1		2.0	2.0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.0	0	0.1
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.5	0	0.15
1,2,3,7,8,9-HxCDD	0.1	ND	< 2.2	0	0.22
1,2,3,4,6,7,8-HpCDD	0.01		11.8	0.118	0.118
OCDD	0.0001		90.9	0.009	0.009
2,3,7,8-TCDF	0.1		10	1.0	1.0
1,2,3,7,8-PeCDF	0.05	ND	< 0.7	0	0.035
2,3,4,7,8-PeCDF	0.5	NDR	# 1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.7	0	0.07
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.9	0	0.09
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.0	0	0.1
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.9	0	0.09
1,2,3,4,6,7,8-HpCDF	0.01		4.9	0.049	0.049
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.1	0	0.021
OCDF	0.0001	ND	< 3.9	0	0.001
TOTAL TEQ				**80.6**	**82.0**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.1	94.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF		^{13}C-1,2,3,6,7,8-HxCDD	
^{13}C-2,3,7, 8-TCDD		^{13}C-1,2,3,4,6,7,8-HpCDD	
^{37}Cl-2,3,7,8-TCDD		^{13}C-OCDD	

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 40/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 057**	Lab Sample ID:	**08 VNPC 057**
Matrix:	Sediment	Sample Data Filename:	V-1604
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.5	GC Column ID:	BPX-DXN
% Matrix Sample:	32.6	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2.1	2.1	2.1
1,2,3,7,8-PeCDD	1	ND	< 1.0	0	1.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.1	0	0.11
1,2,3,6,7,8-HxCDD	0.1	NDR	# 2.5	0	0.25
1,2,3,7,8,9-HxCDD	0.1	ND	< 2.3	0	0.23
1,2,3,4,6,7,8-HpCDD	0.01		6.0	0.06	0.06
OCDD	0.0001		189.6	0.019	0.019
2,3,7,8-TCDF	0.1		2.0	0.2	0.2
1,2,3,7,8-PeCDF	0.05	ND	< 0.7	0	0.035
2,3,4,7,8-PeCDF	0.5	ND	< 0.8	0	0.4
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.9	0	0.09
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.8	0	0.08
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.9	0	0.09
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,4,6,7,8-HpCDF	0.01	ND	< 2.6	0	0.026
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.7	0	0.017
OCDF	0.0001	ND	< 1.7	0	0.001
TOTAL TEQ				**2.38**	**4.81**
% 2,3,7,8-TCDD vs. WHO-TEQ				88.3	43.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	93.0	^{13}C-1,2,3,6,7,8-HxCDD	99.8
^{13}C-2,3,7, 8-TCDD	87.8	^{13}C-1,2,3,4,6,7,8-HpCDD	95.3
^{37}Cl-2,3,7,8-TCDD	91.1	^{13}C-OCDD	93.5

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 41/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 058**	Lab Sample ID:	**08 VNPC 058**
Matrix:	Sediment	Sample Data Filename:	V-1605
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	29.2	GC Column ID:	BPX-DXN
% Matrix Sample:	79.9	Injection Volume:	2 ul
Extraction Date:	10-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		109.4	109.4	109.4
1,2,3,7,8-PeCDD	1		3.3	3.3	3.3
1,2,3,4,7,8-HxCDD	0.1	NDR	# 2.0	0	0.2
1,2,3,6,7,8-HxCDD	0.1		6.0	0.6	0.6
1,2,3,7,8,9-HxCDD	0.1	NDR	# 3.8	0	0.38
1,2,3,4,6,7,8-HpCDD	0.01		38.8	0.388	0.388
OCDD	0.0001		286.3	0.029	0.029
2,3,7,8-TCDF	0.1		20	2	2
1,2,3,7,8-PeCDF	0.05		4.2	0.21	0.21
2,3,4,7,8-PeCDF	0.5		8.5	4.25	4.25
1,2,3,4,7,8-HxCDF	0.1		4.7	0.47	0.47
1,2,3,6,7,8-HxCDF	0.1		1.9	0.19	0.19
1,2,3,7,8,9-HxCDF	0.1		2.6	0.26	0.26
2,3,4,6,7,8-HxCDF	0.1		3.3	0.33	0.33
1,2,3,4,6,7,8-HpCDF	0.01		13	0.13	0.13
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.2	0	0.012
OCDF	0.0001		15.1	0.002	0.002
TOTAL TEQ				**122**	**122**
% 2,3,7,8-TCDD vs. WHO-TEQ				90.0	89.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	80.9	^{13}C-1,2,3,6,7,8-HxCDD	83.4
^{13}C-2,3,7, 8-TCDD	77.2	^{13}C-1,2,3,4,6,7,8-HpCDD	82.9
^{37}Cl-2,3,7,8-TCDD	76.3	^{13}C-OCDD	83.7

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 42/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 061**	Lab Sample ID:	**08 VNPC 061**
Matrix:	Sediment	Sample Data Filename:	V-1573
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	10.5	GC Column ID:	BPX-DXN
% Matrix Sample:	92.7	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	8-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		10.9	10.9	10.9
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1		2.5	0.25	0.25
1,2,3,6,7,8-HxCDD	0.1		5.9	0.59	0.59
1,2,3,7,8,9-HxCDD	0.1		6.1	0.61	0.61
1,2,3,4,6,7,8-HpCDD	0.01		56.2	0.562	0.562
OCDD	0.0001		224.9	0.022	0.022
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 1.0	0	0.05
2,3,4,7,8-PeCDF	0.5	ND	< 1.7	0	0.85
1,2,3,4,7,8-HxCDF	0.1		3.5	0.35	0.35
1,2,3,6,7,8-HxCDF	0.1		4.9	0.49	0.49
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.8	0	0.18
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,4,6,7,8-HpCDF	0.01		5.7	0.057	0.057
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.8	0	0.018
OCDF	0.0001		6.9	0.001	0.001
TOTAL TEQ				**14.4**	**17.7**
% 2,3,7,8-TCDD vs. WHO-TEQ				75.5	61.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	93.5	^{13}C-1,2,3,6,7,8-HxCDD	88.0
^{13}C-2,3,7, 8-TCDD	93.4	^{13}C-1,2,3,4,6,7,8-HpCDD	88.0
^{37}Cl-2,3,7,8-TCDD	90.5	^{13}C-OCDD	91.5

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 43/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 062**	Lab Sample ID:	**08 VNPC 062**
Matrix:	Sediment	Sample Data Filename:	V-1574, V-1574A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	16.0	GC Column ID:	BPX-DXN
% Matrix Sample:	95.4	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	8-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		22.9	22.9	22.9
1,2,3,7,8-PeCDD	1	ND	< 1.1	0	1.1
1,2,3,4,7,8-HxCDD	0.1		2.9	0.29	0.29
1,2,3,6,7,8-HxCDD	0.1		4.7	0.47	0.47
1,2,3,7,8,9-HxCDD	0.1		3.9	0.39	0.39
1,2,3,4,6,7,8-HpCDD	0.01		55.5	0.555	0.555
OCDD	0.0001		371	0.037	0.037
2,3,7,8-TCDF	0.1		14	1.4	1.4
1,2,3,7,8-PeCDF	0.05		4.5	0.225	0.225
2,3,4,7,8-PeCDF	0.5		9.2	4.6	4.6
1,2,3,4,7,8-HxCDF	0.1		6.3	0.63	0.63
1,2,3,6,7,8-HxCDF	0.1		4.9	0.49	0.49
1,2,3,7,8,9-HxCDF	0.1		3.2	0.32	0.32
2,3,4,6,7,8-HxCDF	0.1		6.7	0.67	0.67
1,2,3,4,6,7,8-HpCDF	0.01		12.6	0.126	0.126
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.5	0	0.025
OCDF	0.0001		9.0	0.001	0.001
TOTAL TEQ				**33.1**	**34.2**
% 2,3,7,8-TCDD vs. WHO-TEQ				69.2	66.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	79.6	^{13}C-1,2,3,6,7,8-HxCDD	76.6
^{13}C-2,3,7, 8-TCDD	78.8	^{13}C-1,2,3,4,6,7,8-HpCDD	72.8
^{37}Cl-2,3,7,8-TCDD	78.8	^{13}C-OCDD	74.8

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 44/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 064**	Lab Sample ID:	**08 VNPC 064**
Matrix:	Sediment	Sample Data Filename:	V-1575
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	17.6	GC Column ID:	BPX-DXN
% Matrix Sample:	99.2	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	8-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		7.1	7.1	7.1
1,2,3,7,8-PeCDD	1	ND	< 1.1	0	1.1
1,2,3,4,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,6,7,8-HxCDD	0.1	ND	< 2.3	0	0.23
1,2,3,7,8,9-HxCDD	0.1		4.9	0.49	0.49
1,2,3,4,6,7,8-HpCDD	0.01		83.8	0.838	0.838
OCDD	0.0001		534.2	0.053	0.053
2,3,7,8-TCDF	0.1		7.0	0.7	0.7
1,2,3,7,8-PeCDF	0.05	NDR	# 5.4	0	0.27
2,3,4,7,8-PeCDF	0.5	ND	< 2.0	0	1.0
1,2,3,4,7,8-HxCDF	0.1	NDR	# 4.5	0	0.45
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.0	0	0.3
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,4,6,7,8-HpCDF	0.01		16.8	0.168	0.168
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.9	0	0.019
OCDF	0.0001		11.9	0.001	0.001
TOTAL TEQ				**9.35**	**13.2**
% 2,3,7,8-TCDD vs. WHO-TEQ				75.9	53.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	76.3	^{13}C-1,2,3,6,7,8-HxCDD	75.8
^{13}C-2,3,7, 8-TCDD	75.3	^{13}C-1,2,3,4,6,7,8-HpCDD	70.0
^{37}Cl-2,3,7,8-TCDD	75.4	^{13}C-OCDD	73.0

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Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 45/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 065**	Lab Sample ID:	**08 VNPC 065**
Matrix:	Sediment	Sample Data Filename:	V-1576
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	13.3	GC Column ID:	BPX-DXN
% Matrix Sample:	93.3	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	9-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	NDR	# 3.0	0	3.0
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	NDR	# 4.9	0	0.49
1,2,3,6,7,8-HxCDD	0.1	ND	< 2.7	0	0.27
1,2,3,7,8,9-HxCDD	0.1		4.2	0.42	0.42
1,2,3,4,6,7,8-HpCDD	0.01		12.5	0.125	0.125
OCDD	0.0001		115.3	0.012	0.012
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 2.5	0	0.125
2,3,4,7,8-PeCDF	0.5	ND	< 2.2	0	1.1
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.4	0	0.24
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.9	0	0.19
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,4,6,7,8-HpCDF	0.01		6.6	0.066	0.066
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 6.4	0	0.064
OCDF	0.0001	ND	< 0.9	0	0.0001
TOTAL TEQ				**0.62**	**8.42**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	35.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	94.1	^{13}C-1,2,3,6,7,8-HxCDD	92.1
^{13}C-2,3,7, 8-TCDD	92.4	^{13}C-1,2,3,4,6,7,8-HpCDD	93.5
^{37}Cl-2,3,7,8-TCDD	95.3	^{13}C-OCDD	96.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 46/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 068**	Lab Sample ID:	**08 VNBH 068**
Matrix:	Soil	Sample Data Filename:	V-1615
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.7	GC Column ID:	BPX-DXN
% Matrix Sample:	87.4	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1376	1376	1376
1,2,3,7,8-PeCDD	1		18.7	18.7	18.7
1,2,3,4,7,8-HxCDD	0.1		2.7	0.27	0.27
1,2,3,6,7,8-HxCDD	0.1		6.3	0.63	0.63
1,2,3,7,8,9-HxCDD	0.1		4.5	0.45	0.45
1,2,3,4,6,7,8-HpCDD	0.01		165.3	1.653	1.653
OCDD	0.0001		1221	0.122	0.122
2,3,7,8-TCDF	0.1		54.4	5.44	5.44
1,2,3,7,8-PeCDF	0.05	NDR	# 1.4	0	0.07
2,3,4,7,8-PeCDF	0.5	ND	< 1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1		3.1	0.31	0.31
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.6	0	0.16
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,4,6,7,8-HpCDF	0.01		25.1	0.251	0.251
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.9	0	0.029
OCDF	0.0001		41.5	0.004	0.004
TOTAL TEQ				**1400**	**1400**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.0	98.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	94.3	^{13}C-1,2,3,6,7,8-HxCDD	90.4
^{13}C-2,3,7, 8-TCDD	89.6	^{13}C-1,2,3,4,6,7,8-HpCDD	86.4
^{37}Cl-2,3,7,8-TCDD	93.3	^{13}C-OCDD	93.3

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PCDDs/PCDFs ANALYSIS REPORT

No.: 47/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 074**	Lab Sample ID:	**08 VNBH 074**
Matrix:	Soil	Sample Data Filename:	V-1582
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	11.6	GC Column ID:	BPX-DXN
% Matrix Sample:	77.9	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	11-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		439.1	439.1	439.1
1,2,3,7,8-PeCDD	1		3.9	3.9	3.9
1,2,3,4,7,8-HxCDD	0.1		3.2	0.32	0.32
1,2,3,6,7,8-HxCDD	0.1		10.5	1.05	1.05
1,2,3,7,8,9-HxCDD	0.1		8.3	0.83	0.83
1,2,3,4,6,7,8-HpCDD	0.01		152.1	1.521	1.521
OCDD	0.0001		1080	0.108	0.108
2,3,7,8-TCDF	0.1		8.0	0.8	0.8
1,2,3,7,8-PeCDF	0.05	ND	< 1.4	0	0.07
2,3,4,7,8-PeCDF	0.5	ND	< 1.6	0	0.8
1,2,3,4,7,8-HxCDF	0.1		2.6	0.26	0.26
1,2,3,6,7,8-HxCDF	0.1		2.0	0.2	0.2
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.7	0	0.17
2,3,4,6,7,8-HxCDF	0.1		2.3	0.23	0.23
1,2,3,4,6,7,8-HpCDF	0.01		22.2	0.222	0.222
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.4	0	0.054
OCDF	0.0001		41.3	0.004	0.004
TOTAL TEQ				**449**	**450**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.9	97.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	99.0	^{13}C-1,2,3,6,7,8-HxCDD	94.3
^{13}C-2,3,7, 8-TCDD	94.9	^{13}C-1,2,3,4,6,7,8-HpCDD	89.8
^{37}Cl-2,3,7,8-TCDD	94.8	^{13}C-OCDD	90.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 48/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 076**	Lab Sample ID:	**08 VNBH 076**
Matrix:	Soil	Sample Data Filename:	V-1583
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	5.5	GC Column ID:	BPX-DXN
% Matrix Sample:	74.5	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	11-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1529	1529	1529
1,2,3,7,8-PeCDD	1	ND	< 1.2	0	1.2
1,2,3,4,7,8-HxCDD	0.1		6.5	0.65	0.65
1,2,3,6,7,8-HxCDD	0.1		7.8	0.78	0.78
1,2,3,7,8,9-HxCDD	0.1		4.8	0.48	0.48
1,2,3,4,6,7,8-HpCDD	0.01		193.7	1.937	1.937
OCDD	0.0001		1054	0.105	0.105
2,3,7,8-TCDF	0.1		16	1.6	1.6
1,2,3,7,8-PeCDF	0.05	ND	< 1.5	0	0.075
2,3,4,7,8-PeCDF	0.5		3.0	1.5	1.5
1,2,3,4,7,8-HxCDF	0.1		4.6	0.46	0.46
1,2,3,6,7,8-HxCDF	0.1		2.5	0.25	0.25
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.5	0	0.25
2,3,4,6,7,8-HxCDF	0.1		6.4	0.64	0.64
1,2,3,4,6,7,8-HpCDF	0.01		21.2	0.212	0.212
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.3	0	0.033
OCDF	0.0001		27.9	0.003	0.003
TOTAL TEQ				**1540**	**1540**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.4	99.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.6	^{13}C-1,2,3,6,7,8-HxCDD	87.0
^{13}C-2,3,7, 8-TCDD	87.3	^{13}C-1,2,3,4,6,7,8-HpCDD	76.0
^{37}Cl-2,3,7,8-TCDD	88.0	^{13}C-OCDD	81.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 49/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 077**	Lab Sample ID:	**08 VNBH 077**
Matrix:	Soil	Sample Data Filename:	V-1584
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.7	GC Column ID:	BPX-DXN
% Matrix Sample:	84.0	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	11-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		70.5	70.5	70.5
1,2,3,7,8-PeCDD	1	ND	< 1.6	0	1.6
1,2,3,4,7,8-HxCDD	0.1		2.5	0.25	0.25
1,2,3,6,7,8-HxCDD	0.1		4.2	0.42	0.42
1,2,3,7,8,9-HxCDD	0.1	NDR	# 2.3	0	0.23
1,2,3,4,6,7,8-HpCDD	0.01		58.8	0.588	0.588
OCDD	0.0001		322.4	0.032	0.032
2,3,7,8-TCDF	0.1		2.0	0.2	0.2
1,2,3,7,8-PeCDF	0.05	ND	< 1.0	0	0.05
2,3,4,7,8-PeCDF	0.5	ND	< 0.9	0	0.45
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1		2.5	0.25	0.25
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.5	0	0.15
2,3,4,6,7,8-HxCDF	0.1		2.6	0.26	0.26
1,2,3,4,6,7,8-HpCDF	0.01		19.9	0.199	0.199
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.2	0	0.032
OCDF	0.0001		15.4	0.002	0.002
TOTAL TEQ				**72.7**	**75.3**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.0	93.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	93.2	^{13}C-1,2,3,6,7,8-HxCDD	93.4
^{13}C-2,3,7, 8-TCDD	92.2	^{13}C-1,2,3,4,6,7,8-HpCDD	79.2
^{37}Cl-2,3,7,8-TCDD	86.5	^{13}C-OCDD	83.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 50/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 080**	Lab Sample ID:	**08 VNBH 080**
Matrix:	Soil	Sample Data Filename:	V-1673
Sample Size (dry):	0.68 g	Instrument ID:	HRGC-LRMS
% Moisture:	11.4	GC Column ID:	BPX-DXN
% Matrix Sample:	53.1	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	10-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-37

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		36770	36770	36770
1,2,3,7,8-PeCDD	1		562	562	562
1,2,3,4,7,8-HxCDD	0.1	ND	< 100	0	10
1,2,3,6,7,8-HxCDD	0.1		364	36.4	36.4
1,2,3,7,8,9-HxCDD	0.1		335	33.5	33.5
1,2,3,4,6,7,8-HpCDD	0.01		588	5.88	5.88
OCDD	0.0001		1143	0.114	0.114
2,3,7,8-TCDF	0.1		715	71.5	71.5
1,2,3,7,8-PeCDF	0.05	NDR	# 52	0	2.6
2,3,4,7,8-PeCDF	0.5	NDR	# 69	0	34.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,7,8,9-HxCDF	0.1	ND	< 50	0	5.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,4,6,7,8-HpCDF	0.01		557	5.57	5.57
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 50	0	0.5
OCDF	0.0001	ND	< 100	0	0.01
TOTAL TEQ				**37500**	**37600**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.1	97.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	84.9	^{13}C-1,2,3,6,7,8-HxCDD	92.9
^{13}C-2,3,7, 8-TCDD	85.7	^{13}C-1,2,3,4,6,7,8-HpCDD	86.2
^{37}Cl-2,3,7,8-TCDD	88.8	^{13}C-OCDD	78.3

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 51/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 080-2**	Lab Sample ID:	**08 VNBH 080-2**
Matrix:	Soil	Sample Data Filename:	V-1672
Sample Size (dry):	0.66 g	Instrument ID:	HRGC-LRMS
% Moisture:	16.1	GC Column ID:	BPX-DXN
% Matrix Sample:	54.4	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	10-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-37

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		144110	144110	144110
1,2,3,7,8-PeCDD	1		1069	1069	1069
1,2,3,4,7,8-HxCDD	0.1		260	26	26
1,2,3,6,7,8-HxCDD	0.1		576	57.6	57.6
1,2,3,7,8,9-HxCDD	0.1		543	54.3	54.3
1,2,3,4,6,7,8-HpCDD	0.01		2678	26.78	26.78
OCDD	0.0001		6019	0.602	0.602
2,3,7,8-TCDF	0.1		6116	611.6	611.6
1,2,3,7,8-PeCDF	0.05		125	6.25	6.25
2,3,4,7,8-PeCDF	0.5		219	109.5	109.5
1,2,3,4,7,8-HxCDF	0.1	NDR	# 210	0	21
1,2,3,6,7,8-HxCDF	0.1	ND	< 42	0	4.2
1,2,3,7,8,9-HxCDF	0.1	ND	< 50	0	5.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,4,6,7,8-HpCDF	0.01		437	4.37	4.37
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 50	0	0.5
OCDF	0.0001		467	0.047	0.047
TOTAL TEQ				**146000**	**146000**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.7	98.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	83.2	^{13}C-1,2,3,6,7,8-HxCDD	88.4
^{13}C-2,3,7, 8-TCDD	84.0	^{13}C-1,2,3,4,6,7,8-HpCDD	84.6
^{37}Cl-2,3,7,8-TCDD	89.8	^{13}C-OCDD	82.3

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Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 52/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 080-3**	Lab Sample ID:	**08 VNBH 080-3**
Matrix:	Soil	Sample Data Filename:	V-1671, V-1671A
Sample Size (dry):	0.68 g	Instrument ID:	HRGC-LRMS
% Moisture:	15.1	GC Column ID:	BPX-DXN
% Matrix Sample:	51.8	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	10-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-37

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		259140	259140	259140
1,2,3,7,8-PeCDD	1		1522	1522	1522
1,2,3,4,7,8-HxCDD	0.1		143	14.3	14.3
1,2,3,6,7,8-HxCDD	0.1		1253	125.3	125.3
1,2,3,7,8,9-HxCDD	0.1		561	56.1	56.1
1,2,3,4,6,7,8-HpCDD	0.01		5419	54.19	54.19
OCDD	0.0001		11830	1.183	1.183
2,3,7,8-TCDF	0.1		6530	653	653
1,2,3,7,8-PeCDF	0.05		45	2.25	2.25
2,3,4,7,8-PeCDF	0.5		189	94.5	94.5
1,2,3,4,7,8-HxCDF	0.1		222	22.2	22.2
1,2,3,6,7,8-HxCDF	0.1		53	5.3	5.3
1,2,3,7,8,9-HxCDF	0.1	ND	< 20	0	2.0
2,3,4,6,7,8-HxCDF	0.1		71	7.1	7.1
1,2,3,4,6,7,8-HpCDF	0.01		783	7.83	7.83
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 40	0	0.4
OCDF	0.0001		842	0.084	0.084
TOTAL TEQ				**262000**	**262000**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.0	99.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	87.0	^{13}C-1,2,3,6,7,8-HxCDD	94.0
^{13}C-2,3,7, 8-TCDD	88.9	^{13}C-1,2,3,4,6,7,8-HpCDD	90.6
^{37}Cl-2,3,7,8-TCDD	90.0	^{13}C-OCDD	80.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 53/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 080-4**	Lab Sample ID:	**08 VNBH 080-4**
Matrix:	Soil	Sample Data Filename:	V-1670
Sample Size (dry):	0.51 g	Instrument ID:	HRGC-LRMS
% Moisture:	14.1	GC Column ID:	BPX-DXN
% Matrix Sample:	61.3	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	10-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-37

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		215300	215300	215300
1,2,3,7,8-PeCDD	1		1275	1275	1275
1,2,3,4,7,8-HxCDD	0.1		117	11.7	11.7
1,2,3,6,7,8-HxCDD	0.1		755	75.5	75.5
1,2,3,7,8,9-HxCDD	0.1		538	53.8	53.8
1,2,3,4,6,7,8-HpCDD	0.01		3854	38.54	38.54
OCDD	0.0001		6693	0.669	0.669
2,3,7,8-TCDF	0.1		5490	549	549
1,2,3,7,8-PeCDF	0.05	NDR	# 58	0	2.9
2,3,4,7,8-PeCDF	0.5		127	63.5	63.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 40	0	4.0
1,2,3,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,7,8,9-HxCDF	0.1	ND	< 50	0	5.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,4,6,7,8-HpCDF	0.01		645	6.45	6.45
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 50	0	0.5
OCDF	0.0001		747	0.075	0.075
TOTAL TEQ				**217000**	**217000**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.0	99.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	89.3	^{13}C-1,2,3,6,7,8-HxCDD	97.3
^{13}C-2,3,7, 8-TCDD	89.5	^{13}C-1,2,3,4,6,7,8-HpCDD	93.4
^{37}Cl-2,3,7,8-TCDD	92.4	^{13}C-OCDD	92.8

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 54/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 080-5**	Lab Sample ID:	**08 VNBH 080-5**
Matrix:	Soil	Sample Data Filename:	V-1662
Sample Size (dry):	5 g	Instrument ID:	HRGC-LRMS
% Moisture:	19.0	GC Column ID:	BPX-DXN
% Matrix Sample:	76.3	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		26233	26233	26233
1,2,3,7,8-PeCDD	1		132	132	132
1,2,3,4,7,8-HxCDD	0.1	NDR	# 11	0	1.1
1,2,3,6,7,8-HxCDD	0.1		87.3	8.73	8.73
1,2,3,7,8,9-HxCDD	0.1		32.9	3.29	3.29
1,2,3,4,6,7,8-HpCDD	0.01		396.9	3.969	3.969
OCDD	0.0001		668.4	0.067	0.067
2,3,7,8-TCDF	0.1		205	20.5	20.5
1,2,3,7,8-PeCDF	0.05		9	0.45	0.45
2,3,4,7,8-PeCDF	0.5		25	12.5	12.5
1,2,3,4,7,8-HxCDF	0.1		21	2.1	2.1
1,2,3,6,7,8-HxCDF	0.1		6.5	0.65	0.65
1,2,3,7,8,9-HxCDF	0.1		27	2.7	2.7
2,3,4,6,7,8-HxCDF	0.1	ND	< 6.6	0	0.66
1,2,3,4,6,7,8-HpCDF	0.01		65.5	0.655	0.655
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 10	0	0.1
OCDF	0.0001		50.2	0.005	0.005
TOTAL TEQ				**26400**	**26400**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.3	99.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	82.6	^{13}C-1,2,3,6,7,8-HxCDD	81.9
^{13}C-2,3,7, 8-TCDD	84.7	^{13}C-1,2,3,4,6,7,8-HpCDD	91.3
^{37}Cl-2,3,7,8-TCDD	99.4	^{13}C-OCDD	119.3

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PCDDs/PCDFs ANALYSIS REPORT

No.: 55/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 082**	Lab Sample ID:	**08 VNBH 082**
Matrix:	Soil	Sample Data Filename:	V-1661, V-1661A
Sample Size (dry):	10 g	Instrument ID:	HRGC-LRMS
% Moisture:	1.7	GC Column ID:	BPX-DXN
% Matrix Sample:	79.1	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		48597	48597	48597
1,2,3,7,8-PeCDD	1		329	329	329
1,2,3,4,7,8-HxCDD	0.1		34.8	3.48	3.48
1,2,3,6,7,8-HxCDD	0.1		226	22.6	22.6
1,2,3,7,8,9-HxCDD	0.1		107	10.7	10.7
1,2,3,4,6,7,8-HpCDD	0.01		947	9.47	9.47
OCDD	0.0001		1845	0.185	0.185
2,3,7,8-TCDF	0.1		802	80.2	80.2
1,2,3,7,8-PeCDF	0.05	NDR	# 12.8	0	0.64
2,3,4,7,8-PeCDF	0.5		41.2	20.6	20.6
1,2,3,4,7,8-HxCDF	0.1		25.3	2.53	2.53
1,2,3,6,7,8-HxCDF	0.1	NDR	# 6.6	0	0.66
1,2,3,7,8,9-HxCDF	0.1	ND	< 5	0	0.5
2,3,4,6,7,8-HxCDF	0.1	NDR	# 15	0	1.5
1,2,3,4,6,7,8-HpCDF	0.01		124.4	1.244	1.244
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 7	0	0.07
OCDF	0.0001		101	0.01	0.01
TOTAL TEQ				**49100**	**49100**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.0	99.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	71.8	^{13}C-1,2,3,6,7,8-HxCDD	71.1
^{13}C-2,3,7, 8-TCDD	74.4	^{13}C-1,2,3,4,6,7,8-HpCDD	81.1
^{37}Cl-2,3,7,8-TCDD	116.2	^{13}C-OCDD	95.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 56/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 083**	Lab Sample ID:	**08 VNBH 083**
Matrix:	Soil	Sample Data Filename:	V-1660, V-1660A
Sample Size (dry):	10 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.5	GC Column ID:	BPX-DXN
% Matrix Sample:	83.2	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		99.7	99.7	99.7
1,2,3,7,8-PeCDD	1		6.0	6.0	6.0
1,2,3,4,7,8-HxCDD	0.1		0.9	0.09	0.09
1,2,3,6,7,8-HxCDD	0.1		4.1	0.41	0.41
1,2,3,7,8,9-HxCDD	0.1		4.4	0.44	0.44
1,2,3,4,6,7,8-HpCDD	0.01		17.9	0.179	0.179
OCDD	0.0001		68.6	0.007	0.007
2,3,7,8-TCDF	0.1		8.0	0.8	0.8
1,2,3,7,8-PeCDF	0.05	ND	< 1.2	0	0.06
2,3,4,7,8-PeCDF	0.5	NDR	# 2.6	0	1.3
1,2,3,4,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,6,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.0	0	0.3
2,3,4,6,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDF	0.01		6.0	0.06	0.06
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.4	0	0.034
OCDF	0.0001	ND	< 5.5	0	0.001
TOTAL TEQ				**108**	**110**
% 2,3,7,8-TCDD vs. WHO-TEQ				92.6	90.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	79.8	^{13}C-1,2,3,6,7,8-HxCDD	75.6
^{13}C-2,3,7, 8-TCDD	78.3	^{13}C-1,2,3,4,6,7,8-HpCDD	85.0
^{37}Cl-2,3,7,8-TCDD	76.2	^{13}C-OCDD	108.2

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 57/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 085**	Lab Sample ID:	**08 VNBH 085**
Matrix:	Soil	Sample Data Filename:	V-1586
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.2	GC Column ID:	BPX-DXN
% Matrix Sample:	76.8	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	11-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1975	1975	1975
1,2,3,7,8-PeCDD	1		20	20	20
1,2,3,4,7,8-HxCDD	0.1		2.9	0.29	0.29
1,2,3,6,7,8-HxCDD	0.1		7.1	0.71	0.71
1,2,3,7,8,9-HxCDD	0.1		5.8	0.58	0.58
1,2,3,4,6,7,8-HpCDD	0.01		153.6	1.536	1.536
OCDD	0.0001		1211	0.121	0.121
2,3,7,8-TCDF	0.1		30.5	3.05	3.05
1,2,3,7,8-PeCDF	0.05	NDR	# 4.4	0	0.22
2,3,4,7,8-PeCDF	0.5	ND	< 0.7	0	0.35
1,2,3,4,7,8-HxCDF	0.1		7.8	0.78	0.78
1,2,3,6,7,8-HxCDF	0.1		5.3	0.53	0.53
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.5	0	0.15
2,3,4,6,7,8-HxCDF	0.1		4.3	0.43	0.43
1,2,3,4,6,7,8-HpCDF	0.01		34	0.34	0.34
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.6	0	0.036
OCDF	0.0001		49.3	0.005	0.005
TOTAL TEQ				**2000**	**2000**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.6	98.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	91.9	^{13}C-1,2,3,6,7,8-HxCDD	95.1
^{13}C-2,3,7, 8-TCDD	93.7	^{13}C-1,2,3,4,6,7,8-HpCDD	83.4
^{37}Cl-2,3,7,8-TCDD	94.1	^{13}C-OCDD	88.5

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 58/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 087**	Lab Sample ID:	**08 VNBH 087**
Matrix:	Soil	Sample Data Filename:	V-1611, V-1611A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.3	GC Column ID:	BPX-DXN
% Matrix Sample:	98.5	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	23-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		427.5	427.5	427.5
1,2,3,7,8-PeCDD	1		8.6	8.6	8.6
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.5	0	0.25
1,2,3,6,7,8-HxCDD	0.1	NDR	# 4.3	0	0.43
1,2,3,7,8,9-HxCDD	0.1		3.4	0.34	0.34
1,2,3,4,6,7,8-HpCDD	0.01		16.9	0.169	0.169
OCDD	0.0001		80.9	0.008	0.008
2,3,7,8-TCDF	0.1		27	2.7	2.7
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	NDR	# 1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.8	0	0.08
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.1	0	0.11
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,4,6,7,8-HpCDF	0.01		7.4	0.074	0.074
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.2	0	0.012
OCDF	0.0001		14.3	0.001	0.001
TOTAL TEQ				**440**	**441**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.3	96.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	97.9	^{13}C-1,2,3,6,7,8-HxCDD	97.6
^{13}C-2,3,7, 8-TCDD	96.0	^{13}C-1,2,3,4,6,7,8-HpCDD	94.3
^{37}Cl-2,3,7,8-TCDD	88.2	^{13}C-OCDD	92.1

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PCDDs/PCDFs ANALYSIS REPORT

No.: 59/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 088**	Lab Sample ID:	**08 VNBH 088**
Matrix:	Soil	Sample Data Filename:	V-1587, V-1587A
Sample Size (dry):	10 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.5	GC Column ID:	BPX-DXN
% Matrix Sample:	97.8	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	11-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		71.5	71.5	71.5
1,2,3,7,8-PeCDD	1	NDR	# 2.8	0	2.8
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.3	0	0.23
1,2,3,6,7,8-HxCDD	0.1		7.3	0.73	0.73
1,2,3,7,8,9-HxCDD	0.1		5.7	0.57	0.57
1,2,3,4,6,7,8-HpCDD	0.01		121.2	1.212	1.212
OCDD	0.0001		867.2	0.087	0.087
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 2.0	0	0.1
2,3,4,7,8-PeCDF	0.5	ND	< 3.0	0	1.5
1,2,3,4,7,8-HxCDF	0.1	ND	< 3.9	0	0.39
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.5	0	0.25
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.8	0	0.28
2,3,4,6,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDF	0.01		56.5	0.565	0.565
1,2,3,4,7,8,9-HpCDF	0.01		7.5	0.075	0.075
OCDF	0.0001		158.7	0.016	0.016
TOTAL TEQ				**75.4**	**81.2**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.9	88.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	91.6	^{13}C-1,2,3,6,7,8-HxCDD	96.3
^{13}C-2,3,7, 8-TCDD	93.6	^{13}C-1,2,3,4,6,7,8-HpCDD	76.5
^{37}Cl-2,3,7,8-TCDD	94.7	^{13}C-OCDD	86.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 60/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 088-2**	Lab Sample ID:	**08 VNBH 088-2**
Matrix:	Soil	Sample Data Filename:	V-1617
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	6.8	GC Column ID:	BPX-DXN
% Matrix Sample:	96.2	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		15.9	15.9	15.9
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.3	0	0.13
1,2,3,6,7,8-HxCDD	0.1		4.2	0.42	0.42
1,2,3,7,8,9-HxCDD	0.1		4.1	0.41	0.41
1,2,3,4,6,7,8-HpCDD	0.01		22.8	0.228	0.228
OCDD	0.0001		170	0.017	0.017
2,3,7,8-TCDF	0.1	NDR	# 3.0	0	0.3
1,2,3,7,8-PeCDF	0.05	ND	< 1.3	0	0.065
2,3,4,7,8-PeCDF	0.5	ND	< 1.5	0	0.75
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.8	0	0.18
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,4,6,7,8-HpCDF	0.01		12.1	0.121	0.121
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.5	0	0.015
OCDF	0.0001		30.1	0.003	0.003
TOTAL TEQ				**17.1**	**20.9**
% 2,3,7,8-TCDD vs. WHO-TEQ				93.0	76.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.6	^{13}C-1,2,3,6,7,8-HxCDD	86.9
^{13}C-2,3,7, 8-TCDD	86.6	^{13}C-1,2,3,4,6,7,8-HpCDD	87.6
^{37}Cl-2,3,7,8-TCDD	88.7	^{13}C-OCDD	96.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 61/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 088-4**	Lab Sample ID:	**08 VNBH 088-4**
Matrix:	Soil	Sample Data Filename:	V-1616
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	11.3	GC Column ID:	BPX-DXN
% Matrix Sample:	98.4	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		3.4	3.4	3.4
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 0.9	0	0.09
1,2,3,6,7,8-HxCDD	0.1	ND	< 1.3	0	0.13
1,2,3,7,8,9-HxCDD	0.1		1.8	0.18	0.18
1,2,3,4,6,7,8-HpCDD	0.01		5.9	0.059	0.059
OCDD	0.0001		47.3	0.005	0.005
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 0.4	0	0.02
2,3,4,7,8-PeCDF	0.5	ND	< 0.4	0	0.2
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.6	0	0.36
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.6	0	0.06
1,2,3,4,6,7,8-HpCDF	0.01		6.3	0.063	0.063
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.4	0	0.024
OCDF	0.0001		8.3	0.001	0.001
TOTAL TEQ				**3.71**	**7.11**
% 2,3,7,8-TCDD vs. WHO-TEQ				91.7	47.8

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.5	^{13}C-1,2,3,6,7,8-HxCDD	90.8
^{13}C-2,3,7, 8-TCDD	90.8	^{13}C-1,2,3,4,6,7,8-HpCDD	77.2
^{37}Cl-2,3,7,8-TCDD	89.7	^{13}C-OCDD	92.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 62/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 091**	Lab Sample ID:	**08 VNBH 091**
Matrix:	Soil	Sample Data Filename:	V-1585
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.5	GC Column ID:	BPX-DXN
% Matrix Sample:	54.1	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	11-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		213.5	213.5	213.5
1,2,3,7,8-PeCDD	1		11.1	11.1	11.1
1,2,3,4,7,8-HxCDD	0.1		11.3	1.13	1.13
1,2,3,6,7,8-HxCDD	0.1		24	2.4	2.4
1,2,3,7,8,9-HxCDD	0.1		19.9	1.99	1.99
1,2,3,4,6,7,8-HpCDD	0.01		532.5	5.325	5.325
OCDD	0.0001		3776	0.378	0.378
2,3,7,8-TCDF	0.1		9.0	0.9	0.9
1,2,3,7,8-PeCDF	0.05		5.2	0.26	0.26
2,3,4,7,8-PeCDF	0.5		3.5	1.75	1.75
1,2,3,4,7,8-HxCDF	0.1		18.8	1.88	1.88
1,2,3,6,7,8-HxCDF	0.1		7.3	0.73	0.73
1,2,3,7,8,9-HxCDF	0.1		4.2	0.42	0.42
2,3,4,6,7,8-HxCDF	0.1		9.2	0.92	0.92
1,2,3,4,6,7,8-HpCDF	0.01		173.8	1.738	1.738
1,2,3,4,7,8,9-HpCDF	0.01		14.3	0.143	0.143
OCDF	0.0001		191.6	0.019	0.019
TOTAL TEQ				**245**	**245**
% 2,3,7,8-TCDD vs. WHO-TEQ				87.3	87.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	84.4	^{13}C-1,2,3,6,7,8-HxCDD	87.4
^{13}C-2,3,7, 8-TCDD	82.5	^{13}C-1,2,3,4,6,7,8-HpCDD	72.6
^{37}Cl-2,3,7,8-TCDD	81.1	^{13}C-OCDD	82.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 63/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 097**	Lab Sample ID:	**08 VNBH 097**
Matrix:	Soil	Sample Data Filename:	V-1588, V-1588A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	7.0	GC Column ID:	BPX-DXN
% Matrix Sample:	97.2	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	16-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		9.5	9.5	9.5
1,2,3,7,8-PeCDD	1	ND	< 1.2	0	1.2
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.4	0	0.14
1,2,3,6,7,8-HxCDD	0.1		4.0	0.4	0.4
1,2,3,7,8,9-HxCDD	0.1		3.7	0.37	0.37
1,2,3,4,6,7,8-HpCDD	0.01		60	0.6	0.6
OCDD	0.0001		846	0.085	0.085
2,3,7,8-TCDF	0.1		2.0	0.2	0.2
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 1.5	0	0.75
1,2,3,4,7,8-HxCDF	0.1		2.2	0.22	0.22
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.7	0	0.17
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,4,6,7,8-HpCDF	0.01		13.8	0.138	0.138
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.1	0	0.031
OCDF	0.0001		68.7	0.007	0.007
TOTAL TEQ				**11.5**	**14.1**
% 2,3,7,8-TCDD vs. WHO-TEQ				82.5	67.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	94.6	^{13}C-1,2,3,6,7,8-HxCDD	94.4
^{13}C-2,3,7, 8-TCDD	89.0	^{13}C-1,2,3,4,6,7,8-HpCDD	91.1
^{37}Cl-2,3,7,8-TCDD	87.0	^{13}C-OCDD	93.2

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PCDDs/PCDFs ANALYSIS REPORT

No.: 64/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 099**	Lab Sample ID:	**08 VNBH 099**
Matrix:	Soil	Sample Data Filename:	V-1589
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.8	GC Column ID:	BPX-DXN
% Matrix Sample:	89.9	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	16-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		131.5	131.5	131.5
1,2,3,7,8-PeCDD	1		3.1	3.1	3.1
1,2,3,4,7,8-HxCDD	0.1		4.4	0.44	0.44
1,2,3,6,7,8-HxCDD	0.1		8.4	0.84	0.84
1,2,3,7,8,9-HxCDD	0.1		6.8	0.68	0.68
1,2,3,4,6,7,8-HpCDD	0.01		176.2	1.762	1.762
OCDD	0.0001		1139	0.114	0.114
2,3,7,8-TCDF	0.1		5.0	0.5	0.5
1,2,3,7,8-PeCDF	0.05	ND	< 0.5	0	0.025
2,3,4,7,8-PeCDF	0.5	ND	< 1.6	0	0.8
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.3	0	0.13
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.5	0	0.35
2,3,4,6,7,8-HxCDF	0.1		4.3	0.43	0.43
1,2,3,4,6,7,8-HpCDF	0.01		30	0.3	0.3
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 4.0	0	0.04
OCDF	0.0001		35.4	0.004	0.004
TOTAL TEQ				**140**	**141**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.2	93.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.0	^{13}C-1,2,3,6,7,8-HxCDD	94.3
^{13}C-2,3,7, 8-TCDD	90.0	^{13}C-1,2,3,4,6,7,8-HpCDD	92.4
^{37}Cl-2,3,7,8-TCDD	86.1	^{13}C-OCDD	94.4

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 65/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 102**	Lab Sample ID:	**08 VNBH 102**
Matrix:	Soil	Sample Data Filename:	V-1577
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	6.8	GC Column ID:	BPX-DXN
% Matrix Sample:	57.6	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	9-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		29.2	29.2	29.2
1,2,3,7,8-PeCDD	1		4.9	4.9	4.9
1,2,3,4,7,8-HxCDD	0.1		10.2	1.02	1.02
1,2,3,6,7,8-HxCDD	0.1		28.4	2.84	2.84
1,2,3,7,8,9-HxCDD	0.1		16.2	1.62	1.62
1,2,3,4,6,7,8-HpCDD	0.01		3237	32.37	32.37
OCDD	0.0001		22264	2.226	2.226
2,3,7,8-TCDF	0.1		10	1.0	1.0
1,2,3,7,8-PeCDF	0.05		4.0	0.2	0.2
2,3,4,7,8-PeCDF	0.5	NDR	# 3.6	0	1.8
1,2,3,4,7,8-HxCDF	0.1		12.3	1.23	1.23
1,2,3,6,7,8-HxCDF	0.1		7.4	0.74	0.74
1,2,3,7,8,9-HxCDF	0.1		7.4	0.74	0.74
2,3,4,6,7,8-HxCDF	0.1		6.8	0.68	0.68
1,2,3,4,6,7,8-HpCDF	0.01		63.3	0.633	0.633
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.5	0	0.025
OCDF	0.0001		73.7	0.007	0.007
TOTAL TEQ				**79.4**	**81.2**
% 2,3,7,8-TCDD vs. WHO-TEQ				36.8	36.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	69.7	^{13}C-1,2,3,6,7,8-HxCDD	68.5
^{13}C-2,3,7, 8-TCDD	68.3	^{13}C-1,2,3,4,6,7,8-HpCDD	63.9
^{37}Cl-2,3,7,8-TCDD	71.8	^{13}C-OCDD	69.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 66/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 104**	Lab Sample ID:	**08 VNBH 104**
Matrix:	Soil	Sample Data Filename:	V-1578
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.1	GC Column ID:	BPX-DXN
% Matrix Sample:	70.4	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	9-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2000	2000	2000
1,2,3,7,8-PeCDD	1		11.9	11.9	11.9
1,2,3,4,7,8-HxCDD	0.1		15.3	1.53	1.53
1,2,3,6,7,8-HxCDD	0.1		36.3	3.63	3.63
1,2,3,7,8,9-HxCDD	0.1		30.1	3.01	3.01
1,2,3,4,6,7,8-HpCDD	0.01		574.2	5.742	5.742
OCDD	0.0001		3021	0.302	0.302
2,3,7,8-TCDF	0.1		64	6.4	6.4
1,2,3,7,8-PeCDF	0.05		5.2	0.26	0.26
2,3,4,7,8-PeCDF	0.5		5.2	2.6	2.6
1,2,3,4,7,8-HxCDF	0.1		10.5	1.05	1.05
1,2,3,6,7,8-HxCDF	0.1		10.2	1.02	1.02
1,2,3,7,8,9-HxCDF	0.1		6.1	0.61	0.61
2,3,4,6,7,8-HxCDF	0.1		7.2	0.72	0.72
1,2,3,4,6,7,8-HpCDF	0.01		107.9	1.079	1.079
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.2	0	0.052
OCDF	0.0001		92.3	0.009	0.009
TOTAL TEQ				**2040**	**2040**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.1	98.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	81.0	^{13}C-1,2,3,6,7,8-HxCDD	74.2
^{13}C-2,3,7, 8-TCDD	80.4	^{13}C-1,2,3,4,6,7,8-HpCDD	75.8
^{37}Cl-2,3,7,8-TCDD	84.1	^{13}C-OCDD	77.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 67/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 105**	Lab Sample ID:	**08 VNBH 105**
Matrix:	Soil	Sample Data Filename:	V-1579
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.6	GC Column ID:	BPX-DXN
% Matrix Sample:	79.7	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	9-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		22256	22256	22256
1,2,3,7,8-PeCDD	1		215.7	215.7	215.7
1,2,3,4,7,8-HxCDD	0.1		53.3	5.33	5.33
1,2,3,6,7,8-HxCDD	0.1		249.7	24.97	24.97
1,2,3,7,8,9-HxCDD	0.1		137.8	13.78	13.78
1,2,3,4,6,7,8-HpCDD	0.01		1240	12.4	12.4
OCDD	0.0001		3348	0.335	0.335
2,3,7,8-TCDF	0.1		2430	243	243
1,2,3,7,8-PeCDF	0.05		46.5	2.325	2.325
2,3,4,7,8-PeCDF	0.5		26.5	13.25	13.25
1,2,3,4,7,8-HxCDF	0.1		19.5	1.95	1.95
1,2,3,6,7,8-HxCDF	0.1		9.1	0.91	0.91
1,2,3,7,8,9-HxCDF	0.1		4.1	0.41	0.41
2,3,4,6,7,8-HxCDF	0.1		40.1	4.01	4.01
1,2,3,4,6,7,8-HpCDF	0.01		105.8	1.058	1.058
1,2,3,4,7,8,9-HpCDF	0.01		7.4	0.074	0.074
OCDF	0.0001		52.6	0.005	0.005
TOTAL TEQ				**22800**	**22800**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.6	97.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	91.6	^{13}C-1,2,3,6,7,8-HxCDD	87.0
^{13}C-2,3,7, 8-TCDD	90.0	^{13}C-1,2,3,4,6,7,8-HpCDD	81.8
^{37}Cl-2,3,7,8-TCDD	129.6	^{13}C-OCDD	77.8

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PCDDs/PCDFs ANALYSIS REPORT

No.: 68/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 106**	Lab Sample ID:	**08 VNBH 106**
Matrix:	Soil	Sample Data Filename:	V-1580, V-1580A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	12.9	GC Column ID:	BPX-DXN
% Matrix Sample:	43.0	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	9-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		140	140	140
1,2,3,7,8-PeCDD	1	ND	< 2.3	0	2.3
1,2,3,4,7,8-HxCDD	0.1		5.8	0.58	0.58
1,2,3,6,7,8-HxCDD	0.1		8.0	0.8	0.8
1,2,3,7,8,9-HxCDD	0.1		10	1.0	1.0
1,2,3,4,6,7,8-HpCDD	0.01		132.6	1.326	1.326
OCDD	0.0001		974.4	0.097	0.097
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 2.2	0	0.11
2,3,4,7,8-PeCDF	0.5	ND	< 1.7	0	0.85
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.5	0	0.25
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.2	0	0.22
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.1	0	0.21
2,3,4,6,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDF	0.01		27.8	0.278	0.278
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.0	0	0.05
OCDF	0.0001		35.1	0.004	0.004
TOTAL TEQ				**145**	**149**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.8	94.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	76.5	^{13}C-1,2,3,6,7,8-HxCDD	77.6
^{13}C-2,3,7, 8-TCDD	73.7	^{13}C-1,2,3,4,6,7,8-HpCDD	74.4
^{37}Cl-2,3,7,8-TCDD	74.2	^{13}C-OCDD	70.9

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PCDDs/PCDFs ANALYSIS REPORT

No.: 69/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 107**	Lab Sample ID:	**08 VNBH 107**
Matrix:	Soil	Sample Data Filename:	V-1612
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	37.1	GC Column ID:	BPX-DXN
% Matrix Sample:	66.4	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		489.4	489.4	489.4
1,2,3,7,8-PeCDD	1		21	21	21
1,2,3,4,7,8-HxCDD	0.1		19.9	1.99	1.99
1,2,3,6,7,8-HxCDD	0.1		54.3	5.43	5.43
1,2,3,7,8,9-HxCDD	0.1		40.3	4.03	4.03
1,2,3,4,6,7,8-HpCDD	0.01		1389	13.89	13.89
OCDD	0.0001		11720	1.172	1.172
2,3,7,8-TCDF	0.1		42.1	4.21	4.21
1,2,3,7,8-PeCDF	0.05		8.1	0.405	0.405
2,3,4,7,8-PeCDF	0.5		11.9	5.95	5.95
1,2,3,4,7,8-HxCDF	0.1		20.2	2.02	2.02
1,2,3,6,7,8-HxCDF	0.1		13.1	1.31	1.31
1,2,3,7,8,9-HxCDF	0.1		5.1	0.51	0.51
2,3,4,6,7,8-HxCDF	0.1		18.7	1.87	1.87
1,2,3,4,6,7,8-HpCDF	0.01		233.6	2.336	2.336
1,2,3,4,7,8,9-HpCDF	0.01		9.6	0.096	0.096
OCDF	0.0001		337.5	0.034	0.034
TOTAL TEQ				**556**	**556**
% 2,3,7,8-TCDD vs. WHO-TEQ				88.1	88.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	81.9	^{13}C-1,2,3,6,7,8-HxCDD	75.6
^{13}C-2,3,7, 8-TCDD	78.2	^{13}C-1,2,3,4,6,7,8-HpCDD	75.4
^{37}Cl-2,3,7,8-TCDD	78.7	^{13}C-OCDD	82.8

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PCDDs/PCDFs ANALYSIS REPORT

No.: 70/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 108**	Lab Sample ID:	**08 VNBH 108**
Matrix:	Sediment	Sample Data Filename:	V-1613, V-1613A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	50.6	GC Column ID:	BPX-DXN
% Matrix Sample:	89.9	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1030	1030	1030
1,2,3,7,8-PeCDD	1		22.8	22.8	22.8
1,2,3,4,7,8-HxCDD	0.1		13.8	1.38	1.38
1,2,3,6,7,8-HxCDD	0.1		41	4.1	4.1
1,2,3,7,8,9-HxCDD	0.1		31.7	3.17	3.17
1,2,3,4,6,7,8-HpCDD	0.01		705	7.05	7.05
OCDD	0.0001		4950	0.495	0.495
2,3,7,8-TCDF	0.1		71.5	7.15	7.15
1,2,3,7,8-PeCDF	0.05		7.5	0.375	0.375
2,3,4,7,8-PeCDF	0.5		12.8	6.4	6.4
1,2,3,4,7,8-HxCDF	0.1		10.7	1.07	1.07
1,2,3,6,7,8-HxCDF	0.1		9.5	0.95	0.95
1,2,3,7,8,9-HxCDF	0.1	NDR	# 2.4	0	0.24
2,3,4,6,7,8-HxCDF	0.1		10.1	1.01	1.01
1,2,3,4,6,7,8-HpCDF	0.01		121.5	1.215	1.215
1,2,3,4,7,8,9-HpCDF	0.01	NDR	# 11	0	0.11
OCDF	0.0001		153.2	0.015	0.015
TOTAL TEQ				**1090**	**1090**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.7	94.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	83.2	^{13}C-1,2,3,6,7,8-HxCDD	75.8
^{13}C-2,3,7, 8-TCDD	78.5	^{13}C-1,2,3,4,6,7,8-HpCDD	73.7
^{37}Cl-2,3,7,8-TCDD	78.7	^{13}C-OCDD	81.6

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 71/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 110**	Lab Sample ID:	**08 VNBH 110**
Matrix:	Sediment	Sample Data Filename:	V-1614
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	64.7	GC Column ID:	BPX-DXN
% Matrix Sample:	81.1	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1400	1400	1400
1,2,3,7,8-PeCDD	1		52.5	52.5	52.5
1,2,3,4,7,8-HxCDD	0.1		22.4	2.24	2.24
1,2,3,6,7,8-HxCDD	0.1		68.2	6.82	6.82
1,2,3,7,8,9-HxCDD	0.1		45.1	4.51	4.51
1,2,3,4,6,7,8-HpCDD	0.01		1237	12.37	12.37
OCDD	0.0001		9253	0.925	0.925
2,3,7,8-TCDF	0.1		83.4	8.34	8.34
1,2,3,7,8-PeCDF	0.05		7.1	0.355	0.355
2,3,4,7,8-PeCDF	0.5		12.9	6.45	6.45
1,2,3,4,7,8-HxCDF	0.1		18.3	1.83	1.83
1,2,3,6,7,8-HxCDF	0.1		17.5	1.75	1.75
1,2,3,7,8,9-HxCDF	0.1		6.0	0.6	0.6
2,3,4,6,7,8-HxCDF	0.1		10.1	1.01	1.01
1,2,3,4,6,7,8-HpCDF	0.01		213.5	2.135	2.135
1,2,3,4,7,8,9-HpCDF	0.01		7.0	0.07	0.07
OCDF	0.0001		326.7	0.033	0.033
TOTAL TEQ				**1500**	**1500**
% 2,3,7,8-TCDD vs. WHO-TEQ				93.2	93.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	62.4	^{13}C-1,2,3,6,7,8-HxCDD	65.2
^{13}C-2,3,7, 8-TCDD	60.0	^{13}C-1,2,3,4,6,7,8-HpCDD	62.7
^{37}Cl-2,3,7,8-TCDD	64.4	^{13}C-OCDD	71.5

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Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 72/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 112**	Lab Sample ID:	**08 VNBH 112**
Matrix:	Soil	Sample Data Filename:	V-1590
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.8	GC Column ID:	BPX-DXN
% Matrix Sample:	55.8	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	16-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		30.4	30.4	30.4
1,2,3,7,8-PeCDD	1	NDR	# 3.5	0	3.5
1,2,3,4,7,8-HxCDD	0.1		6.2	0.62	0.62
1,2,3,6,7,8-HxCDD	0.1		15.6	1.56	1.56
1,2,3,7,8,9-HxCDD	0.1		8.6	0.86	0.86
1,2,3,4,6,7,8-HpCDD	0.01		326.6	3.266	3.266
OCDD	0.0001		2.488	0.249	0.249
2,3,7,8-TCDF	0.1		4.0	0.4	0.4
1,2,3,7,8-PeCDF	0.05	ND	< 2.9	0	0.145
2,3,4,7,8-PeCDF	0.5	NDR	# 2.6	0	1.3
1,2,3,4,7,8-HxCDF	0.1		8.6	0.86	0.86
1,2,3,6,7,8-HxCDF	0.1		6.4	0.64	0.64
1,2,3,7,8,9-HxCDF	0.1		4.6	0.46	0.46
2,3,4,6,7,8-HxCDF	0.1		4.3	0.43	0.43
1,2,3,4,6,7,8-HpCDF	0.01		59.6	0.596	0.596
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.4	0	0.024
OCDF	0.0001		86.9	0.009	0.009
TOTAL TEQ				**40.4**	**45.3**
% 2,3,7,8-TCDD vs. WHO-TEQ				75.3	67.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	92.0	^{13}C-1,2,3,6,7,8-HxCDD	92.0
^{13}C-2,3,7, 8-TCDD	84.6	^{13}C-1,2,3,4,6,7,8-HpCDD	89.5
^{37}Cl-2,3,7,8-TCDD	82.4	^{13}C-OCDD	91.5

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PCDDs/PCDFs ANALYSIS REPORT

No.: 73/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 113**	Lab Sample ID:	**08 VNBH 113**
Matrix:	Soil	Sample Data Filename:	V-1581
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	6.4	GC Column ID:	BPX-DXN
% Matrix Sample:	58.8	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	9-Apr-08	Blank Data Filename:	V-BLK35d
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-27A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		68.7	68.7	68.7
1,2,3,7,8-PeCDD	1		6.6	6.6	6.6
1,2,3,4,7,8-HxCDD	0.1		18.6	1.86	1.86
1,2,3,6,7,8-HxCDD	0.1		23.1	2.31	2.31
1,2,3,7,8,9-HxCDD	0.1		24.8	2.48	2.48
1,2,3,4,6,7,8-HpCDD	0.01		379.3	3.793	3.793
OCDD	0.0001		2650	0.265	0.265
2,3,7,8-TCDF	0.1		39.8	3.98	3.98
1,2,3,7,8-PeCDF	0.05	ND	< 2.7	0	0.135
2,3,4,7,8-PeCDF	0.5	ND	< 1.8	0	0.9
1,2,3,4,7,8-HxCDF	0.1		3.6	0.36	0.36
1,2,3,6,7,8-HxCDF	0.1		5.7	0.57	0.57
1,2,3,7,8,9-HxCDF	0.1	ND	< 4.6	0	0.46
2,3,4,6,7,8-HxCDF	0.1		7.5	0.75	0.75
1,2,3,4,6,7,8-HpCDF	0.01		45.2	0.452	0.452
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.0	0	0.05
OCDF	0.0001		80.7	0.008	0.008
TOTAL TEQ				**92.1**	**93.7**
% 2,3,7,8-TCDD vs. WHO-TEQ				74.6	73.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	86.0	^{13}C-1,2,3,6,7,8-HxCDD	77.3
^{13}C-2,3,7, 8-TCDD	83.2	^{13}C-1,2,3,4,6,7,8-HpCDD	81.3
^{37}Cl-2,3,7,8-TCDD	82.7	^{13}C-OCDD	81.5

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PCDDs/PCDFs ANALYSIS REPORT

No.: 74/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 114**	Lab Sample ID:	**08 VNBH 114**
Matrix:	Soil	Sample Data Filename:	V-1591
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.1	GC Column ID:	BPX-DXN
% Matrix Sample:	89.3	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	16-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		467.3	467.3	467.3
1,2,3,7,8-PeCDD	1		17.8	17.8	17.8
1,2,3,4,7,8-HxCDD	0.1		9.0	0.9	0.9
1,2,3,6,7,8-HxCDD	0.1		33	3.3	3.3
1,2,3,7,8,9-HxCDD	0.1		21.8	2.18	2.18
1,2,3,4,6,7,8-HpCDD	0.01		725	7.25	7.25
OCDD	0.0001		6794	0.679	0.679
2,3,7,8-TCDF	0.1		79.4	7.94	7.94
1,2,3,7,8-PeCDF	0.05		6.1	0.305	0.305
2,3,4,7,8-PeCDF	0.5		6.8	3.4	3.4
1,2,3,4,7,8-HxCDF	0.1		8.5	0.85	0.85
1,2,3,6,7,8-HxCDF	0.1		7.4	0.74	0.74
1,2,3,7,8,9-HxCDF	0.1		4.7	0.47	0.47
2,3,4,6,7,8-HxCDF	0.1		13.5	1.35	1.35
1,2,3,4,6,7,8-HpCDF	0.01		100.8	1.008	1.008
1,2,3,4,7,8,9-HpCDF	0.01		4.7	0.047	0.047
OCDF	0.0001		167.4	0.017	0.017
TOTAL TEQ				**516**	**516**
% 2,3,7,8-TCDD vs. WHO-TEQ				90.6	90.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.2	^{13}C-1,2,3,6,7,8-HxCDD	90.6
^{13}C-2,3,7, 8-TCDD	83.7	^{13}C-1,2,3,4,6,7,8-HpCDD	87.6
^{37}Cl-2,3,7,8-TCDD	82.9	^{13}C-OCDD	92.5

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PCDDs/PCDFs ANALYSIS REPORT

No.: 75/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 115**	Lab Sample ID:	**08 VNBH 115**
Matrix:	Soil	Sample Data Filename:	V-1592
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.2	GC Column ID:	BPX-DXN
% Matrix Sample:	65.2	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	16-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1.0	1.0	1.0
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.8	0	0.28
1,2,3,6,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDD	0.01		20.2	0.202	0.202
OCDD	0.0001		215	0.022	0.022
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.0	0	0.05
2,3,4,7,8-PeCDF	0.5	ND	< 0.8	0	0.4
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.6	0	0.06
1,2,3,6,7,8-HxCDF	0.1		2.6	0.26	0.26
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.9	0	0.09
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,4,6,7,8-HpCDF	0.01		6.9	0.069	0.069
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.5	0	0.015
OCDF	0.0001		6.7	0.001	0.001
TOTAL TEQ				**1.55**	**5.30**
% 2,3,7,8-TCDD vs. WHO-TEQ				64.4	18.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	97.4	^{13}C-1,2,3,6,7,8-HxCDD	94.5
^{13}C-2,3,7, 8-TCDD	92.6	^{13}C-1,2,3,4,6,7,8-HpCDD	90.0
^{37}Cl-2,3,7,8-TCDD	88.4	^{13}C-OCDD	89.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 76/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 119**	Lab Sample ID:	**08 VNBH 119**
Matrix:	Soil	Sample Data Filename:	V-1593
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.6	GC Column ID:	BPX-DXN
% Matrix Sample:	78.0	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	16-Apr-08	Blank Data Filename:	V-BLK35k
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-28A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		70.1	70.1	70.1
1,2,3,7,8-PeCDD	1		135.4	135.4	135.4
1,2,3,4,7,8-HxCDD	0.1		12.9	1.29	1.29
1,2,3,6,7,8-HxCDD	0.1		21.3	2.13	2.13
1,2,3,7,8,9-HxCDD	0.1		20.6	2.06	2.06
1,2,3,4,6,7,8-HpCDD	0.01		286.3	2.863	2.863
OCDD	0.0001		1208	0.121	0.121
2,3,7,8-TCDF	0.1		5.0	0.5	0.5
1,2,3,7,8-PeCDF	0.05	NDR	# 2.3	0	0.115
2,3,4,7,8-PeCDF	0.5	NDR	# 3.1	0	1.55
1,2,3,4,7,8-HxCDF	0.1		3.5	0.35	0.35
1,2,3,6,7,8-HxCDF	0.1		3.1	0.31	0.31
1,2,3,7,8,9-HxCDF	0.1		1.4	0.14	0.14
2,3,4,6,7,8-HxCDF	0.1		3.7	0.37	0.37
1,2,3,4,6,7,8-HpCDF	0.01		18.4	0.184	0.184
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.5	0	0.015
OCDF	0.0001		17.8	0.002	0.002
TOTAL TEQ				**216**	**218**
% 2,3,7,8-TCDD vs. WHO-TEQ				32.5	32.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.6	^{13}C-1,2,3,6,7,8-HxCDD	93.8
^{13}C-2,3,7, 8-TCDD	90.7	^{13}C-1,2,3,4,6,7,8-HpCDD	91.0
^{37}Cl-2,3,7,8-TCDD	87.7	^{13}C-OCDD	94.1

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 77/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 122**	Lab Sample ID:	**08 VNBH 122**
Matrix:	Soil	Sample Data Filename:	V-1657
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	15.0	GC Column ID:	BPX-DXN
% Matrix Sample:	84.7	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		194.2	194.2	194.2
1,2,3,7,8-PeCDD	1		22.5	22.5	22.5
1,2,3,4,7,8-HxCDD	0.1		3.9	0.39	0.39
1,2,3,6,7,8-HxCDD	0.1		9.8	0.98	0.98
1,2,3,7,8,9-HxCDD	0.1		7.7	0.77	0.77
1,2,3,4,6,7,8-HpCDD	0.01		169.5	1.695	1.695
OCDD	0.0001		1101	0.11	0.11
2,3,7,8-TCDF	0.1		7.0	0.7	0.7
1,2,3,7,8-PeCDF	0.05	NDR	# 1.4	0	0.07
2,3,4,7,8-PeCDF	0.5	ND	< 1.1	0	0.55
1,2,3,4,7,8-HxCDF	0.1		4.5	0.45	0.45
1,2,3,6,7,8-HxCDF	0.1	NDR	# 3.1	0	0.31
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.2	0	0.32
2,3,4,6,7,8-HxCDF	0.1		6.6	0.66	0.66
1,2,3,4,6,7,8-HpCDF	0.01		28.2	0.282	0.282
1,2,3,4,7,8,9-HpCDF	0.01	NDR	# 5.6	0	0.056
OCDF	0.0001		47.8	0.005	0.005
TOTAL TEQ				**223**	**224**
% 2,3,7,8-TCDD vs. WHO-TEQ				87.2	86.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	81.6	^{13}C-1,2,3,6,7,8-HxCDD	81.5
^{13}C-2,3,7, 8-TCDD	82.6	^{13}C-1,2,3,4,6,7,8-HpCDD	90.6
^{37}Cl-2,3,7,8-TCDD	84.2	^{13}C-OCDD	107.7

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 78/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 125**	Lab Sample ID:	**08 VNBH 125**
Matrix:	Soil	Sample Data Filename:	V-1659
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	1.1	GC Column ID:	BPX-DXN
% Matrix Sample:	99.0	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		2013	2013	2013
1,2,3,7,8-PeCDD	1		53.7	53.7	53.7
1,2,3,4,7,8-HxCDD	0.1		8.2	0.82	0.82
1,2,3,6,7,8-HxCDD	0.1		29.1	2.91	2.91
1,2,3,7,8,9-HxCDD	0.1		16.4	1.64	1.64
1,2,3,4,6,7,8-HpCDD	0.01		305.3	3.053	3.053
OCDD	0.0001		1996	0.2	0.2
2,3,7,8-TCDF	0.1		83.2	8.32	8.32
1,2,3,7,8-PeCDF	0.05		3.6	0.18	0.18
2,3,4,7,8-PeCDF	0.5		3.9	1.95	1.95
1,2,3,4,7,8-HxCDF	0.1		11.2	1.12	1.12
1,2,3,6,7,8-HxCDF	0.1		5.3	0.53	0.53
1,2,3,7,8,9-HxCDF	0.1		4.5	0.45	0.45
2,3,4,6,7,8-HxCDF	0.1		4.6	0.46	0.46
1,2,3,4,6,7,8-HpCDF	0.01		55.8	0.558	0.558
1,2,3,4,7,8,9-HpCDF	0.01	NDR	# 4.6	0	0.046
OCDF	0.0001		82.4	0.008	0.008
TOTAL TEQ				**2100**	**2100**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.4	96.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.6	^{13}C-1,2,3,6,7,8-HxCDD	86.3
^{13}C-2,3,7, 8-TCDD	88.8	^{13}C-1,2,3,4,6,7,8-HpCDD	91.5
^{37}Cl-2,3,7,8-TCDD	92.8	^{13}C-OCDD	103.4

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 79/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 127**	Lab Sample ID:	**08 VNBH 127**
Matrix:	Soil	Sample Data Filename:	V-1658
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	1.9	GC Column ID:	BPX-DXN
% Matrix Sample:	86.0	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		65.8	65.8	65.8
1,2,3,7,8-PeCDD	1		1.8	1.8	1.8
1,2,3,4,7,8-HxCDD	0.1	NDR	# 3.3	0	0.33
1,2,3,6,7,8-HxCDD	0.1		4.8	0.48	0.48
1,2,3,7,8,9-HxCDD	0.1		2.5	0.25	0.25
1,2,3,4,6,7,8-HpCDD	0.01		50	0.5	0.5
OCDD	0.0001		545	0.054	0.054
2,3,7,8-TCDF	0.1		3.0	0.3	0.3
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1		2.7	0.27	0.27
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.8	0	0.18
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.4	0	0.24
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.0	0	0.2
1,2,3,4,6,7,8-HpCDF	0.01		13.9	0.139	0.139
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.0	0	0.02
OCDF	0.0001		27	0.003	0.003
TOTAL TEQ				**69.6**	**71.1**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.6	92.5

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	80.9	^{13}C-1,2,3,6,7,8-HxCDD	81.8
^{13}C-2,3,7, 8-TCDD	80.3	^{13}C-1,2,3,4,6,7,8-HpCDD	79.8
^{37}Cl-2,3,7,8-TCDD	83.3	^{13}C-OCDD	89.1

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PCDDs/PCDFs ANALYSIS REPORT

No.: 80/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 130**	Lab Sample ID:	**08 VNBH 130**
Matrix:	Soil	Sample Data Filename:	V-1663
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	17.8	GC Column ID:	BPX-DXN
% Matrix Sample:	88.2	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	4-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-36

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		566.3	566.3	566.3
1,2,3,7,8-PeCDD	1		13.7	13.7	13.7
1,2,3,4,7,8-HxCDD	0.1		3.1	0.31	0.31
1,2,3,6,7,8-HxCDD	0.1		11.6	1.16	1.16
1,2,3,7,8,9-HxCDD	0.1		7.8	0.78	0.78
1,2,3,4,6,7,8-HpCDD	0.01		175.5	1.755	1.755
OCDD	0.0001		1182	0.118	0.118
2,3,7,8-TCDF	0.1		21.8	2.18	2.18
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5		3.1	1.55	1.55
1,2,3,4,7,8-HxCDF	0.1		2.8	0.28	0.28
1,2,3,6,7,8-HxCDF	0.1		2.6	0.26	0.26
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.7	0	0.27
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.7	0	0.27
1,2,3,4,6,7,8-HpCDF	0.01		33.7	0.337	0.337
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.0	0	0.05
OCDF	0.0001		64.5	0.006	0.006
TOTAL TEQ				**589**	**589**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.2	96.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.5	^{13}C-1,2,3,6,7,8-HxCDD	88.1
^{13}C-2,3,7, 8-TCDD	84.2	^{13}C-1,2,3,4,6,7,8-HpCDD	88.5
^{37}Cl-2,3,7,8-TCDD	81.4	^{13}C-OCDD	97.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 81/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 134**	Lab Sample ID:	**08 VNBH 134**
Matrix:	Soil	Sample Data Filename:	V-1664
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	1.4	GC Column ID:	BPX-DXN
% Matrix Sample:	59.2	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	4-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-36

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		41.1	41.1	41.1
1,2,3,7,8-PeCDD	1		4.4	4.4	4.4
1,2,3,4,7,8-HxCDD	0.1	ND	< 3	0	0.3
1,2,3,6,7,8-HxCDD	0.1		8.2	0.82	0.82
1,2,3,7,8,9-HxCDD	0.1	ND	< 3	0	0.3
1,2,3,4,6,7,8-HpCDD	0.01		21.8	0.218	0.218
OCDD	0.0001		180.2	0.018	0.018
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 2	0	0.1
2,3,4,7,8-PeCDF	0.5	ND	< 1.2	0	0.6
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.4	0	0.14
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.3	0	0.23
1,2,3,4,6,7,8-HpCDF	0.01		10	0.1	0.1
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.6	0	0.056
OCDF	0.0001	NDR	# 10	0	0.001
TOTAL TEQ				**47.3**	**49.4**
% 2,3,7,8-TCDD vs. WHO-TEQ				87.0	83.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	85.6	^{13}C-1,2,3,6,7,8-HxCDD	91.2
^{13}C-2,3,7, 8-TCDD	83.1	^{13}C-1,2,3,4,6,7,8-HpCDD	89.7
^{37}Cl-2,3,7,8-TCDD	81.4	^{13}C-OCDD	101.1

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PCDDs/PCDFs ANALYSIS REPORT

No.: 82/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 136**	Lab Sample ID:	**08 VNBH 136**
Matrix:	Soil	Sample Data Filename:	V-1665
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.6	GC Column ID:	BPX-DXN
% Matrix Sample:	89.8	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	4-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-36

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		67.4	67.4	67.4
1,2,3,7,8-PeCDD	1		2.2	2.2	2.2
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.2	0	0.22
1,2,3,6,7,8-HxCDD	0.1		4.9	0.49	0.49
1,2,3,7,8,9-HxCDD	0.1	NDR	# 5.2	0	0.52
1,2,3,4,6,7,8-HpCDD	0.01		65.3	0.653	0.653
OCDD	0.0001		315	0.032	0.032
2,3,7,8-TCDF	0.1		5.0	0.5	0.5
1,2,3,7,8-PeCDF	0.05	ND	< 1.1	0	0.055
2,3,4,7,8-PeCDF	0.5	NDR	# 2.9	0	1.45
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.2	0	0.22
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.9	0	0.19
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.8	0	0.18
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,4,6,7,8-HpCDF	0.01		8.0	0.08	0.08
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.9	0	0.059
OCDF	0.0001		16.7	0.002	0.002
TOTAL TEQ				**71.4**	**74.4**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.5	90.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	87.0	^{13}C-1,2,3,6,7,8-HxCDD	85.7
^{13}C-2,3,7, 8-TCDD	83.0	^{13}C-1,2,3,4,6,7,8-HpCDD	88.6
^{37}Cl-2,3,7,8-TCDD	80.2	^{13}C-OCDD	97.1

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 83/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 137**	Lab Sample ID:	**08 VNBH 137**
Matrix:	Soil	Sample Data Filename:	V-1666
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	1.2	GC Column ID:	BPX-DXN
% Matrix Sample:	86.5	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	4-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-36

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		395.9	395.9	395.9
1,2,3,7,8-PeCDD	1	NDR	# 15	0	15
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.9	0	0.29
1,2,3,6,7,8-HxCDD	0.1		6.0	0.6	0.6
1,2,3,7,8,9-HxCDD	0.1		4.7	0.47	0.47
1,2,3,4,6,7,8-HpCDD	0.01		19.1	0.191	0.191
OCDD	0.0001		63.5	0.006	0.006
2,3,7,8-TCDF	0.1		43	4.3	4.3
1,2,3,7,8-PeCDF	0.05	NDR	# 2.3	0	0.115
2,3,4,7,8-PeCDF	0.5	NDR	# 5.1	0	2.55
1,2,3,4,7,8-HxCDF	0.1	NDR	# 3.4	0	0.34
1,2,3,6,7,8-HxCDF	0.1	NDR	# 4.2	0	0.42
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.5	0	0.25
2,3,4,6,7,8-HxCDF	0.1	ND	< 3.0	0	0.3
1,2,3,4,6,7,8-HpCDF	0.01	NDR	# 2.9	0	0.029
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.7	0	0.027
OCDF	0.0001	ND	< 5.7	0	0.001
TOTAL TEQ				**401**	**421**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.6	94.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	87.8	^{13}C-1,2,3,6,7,8-HxCDD	87.4
^{13}C-2,3,7, 8-TCDD	84.4	^{13}C-1,2,3,4,6,7,8-HpCDD	87.9
^{37}Cl-2,3,7,8-TCDD	79.7	^{13}C-OCDD	103.2

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PCDDs/PCDFs ANALYSIS REPORT

No.: 84/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 139**	Lab Sample ID:	**08 VNBH 139**
Matrix:	Soil	Sample Data Filename:	V-1667, V-1667A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	10.0	GC Column ID:	BPX-DXN
% Matrix Sample:	89.2	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	4-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-36

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		20	20	20
1,2,3,7,8-PeCDD	1	NDR	# 6.2	0	6.2
1,2,3,4,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,6,7,8-HxCDD	0.1		7.0	0.7	0.7
1,2,3,7,8,9-HxCDD	0.1		4.8	0.48	0.48
1,2,3,4,6,7,8-HpCDD	0.01		10.8	0.108	0.108
OCDD	0.0001		80.7	0.008	0.008
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 0.6	0	0.03
2,3,4,7,8-PeCDF	0.5	NDR	# 3.2	0	1.6
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.8	0	0.28
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,4,6,7,8-HpCDF	0.01		2.4	0.024	0.024
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.0	0	0.02
OCDF	0.0001	ND	< 10	0	0.001
TOTAL TEQ				**21.9**	**30.7**
% 2,3,7,8-TCDD vs. WHO-TEQ				91.2	65.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	89.2	^{13}C-1,2,3,6,7,8-HxCDD	91.8
^{13}C-2,3,7, 8-TCDD	87.5	^{13}C-1,2,3,4,6,7,8-HpCDD	91.4
^{37}Cl-2,3,7,8-TCDD	84.4	^{13}C-OCDD	103.3

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 85/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 141**	Lab Sample ID:	**08 VNBH 141**
Matrix:	Soil	Sample Data Filename:	V-1668
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.1	GC Column ID:	BPX-DXN
% Matrix Sample:	78.8	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	4-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-36

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		742.2	742.2	742.2
1,2,3,7,8-PeCDD	1		4.8	4.8	4.8
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.8	0	0.18
1,2,3,6,7,8-HxCDD	0.1	NDR	# 5.5	0	0.55
1,2,3,7,8,9-HxCDD	0.1		6.0	0.6	0.6
1,2,3,4,6,7,8-HpCDD	0.01		55.2	0.552	0.552
OCDD	0.0001		1070	0.107	0.107
2,3,7,8-TCDF	0.1		16.0	1.6	1.6
1,2,3,7,8-PeCDF	0.05	ND	< 2.5	0	0.125
2,3,4,7,8-PeCDF	0.5	NDR	# 8.0	0	4.0
1,2,3,4,7,8-HxCDF	0.1	ND	< 5	0	0.5
1,2,3,6,7,8-HxCDF	0.1	ND	< 5	0	0.5
1,2,3,7,8,9-HxCDF	0.1	ND	< 5	0	0.5
2,3,4,6,7,8-HxCDF	0.1	ND	< 5	0	0.5
1,2,3,4,6,7,8-HpCDF	0.01	ND	< 5	0	0.05
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 10	0	0.1
OCDF	0.0001		33.1	0.003	0.003
TOTAL TEQ				**750**	**757**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.0	98.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	60.4	^{13}C-1,2,3,6,7,8-HxCDD	4.0
^{13}C-2,3,7, 8-TCDD	85.9	^{13}C-1,2,3,4,6,7,8-HpCDD	3.4
^{37}Cl-2,3,7,8-TCDD	84.4	^{13}C-OCDD	119.6

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PCDDs/PCDFs ANALYSIS REPORT

No.: 86/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 141-3**	Lab Sample ID:	**08 VNBH 141-3**
Matrix:	Soil	Sample Data Filename:	V-1650, V-1650A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.2	GC Column ID:	BPX-DXN
% Matrix Sample:	82.4	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	27-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-33

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		8236	8236	8236
1,2,3,7,8-PeCDD	1		54.4	54.4	54.4
1,2,3,4,7,8-HxCDD	0.1		5.4	0.54	0.54
1,2,3,6,7,8-HxCDD	0.1		25.8	2.58	2.58
1,2,3,7,8,9-HxCDD	0.1		8.9	0.89	0.89
1,2,3,4,6,7,8-HpCDD	0.01		97.7	0.977	0.977
OCDD	0.0001		403.6	0.04	0.04
2,3,7,8-TCDF	0.1		105.9	10.59	10.59
1,2,3,7,8-PeCDF	0.05	NDR	# 1.9	0	0.095
2,3,4,7,8-PeCDF	0.5		3.0	1.5	1.5
1,2,3,4,7,8-HxCDF	0.1		9.6	0.96	0.96
1,2,3,6,7,8-HxCDF	0.1	NDR	# 3.9	0	0.39
1,2,3,7,8,9-HxCDF	0.1	NDR	# 7.3	0	0.73
2,3,4,6,7,8-HxCDF	0.1	NDR	# 6.1	0	0.61
1,2,3,4,6,7,8-HpCDF	0.01		43.1	0.431	0.431
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.2	0	0.032
OCDF	0.0001		33	0.003	0.003
TOTAL TEQ				**8310**	**8310**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.1	99.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.9	^{13}C-1,2,3,6,7,8-HxCDD	89.2
^{13}C-2,3,7, 8-TCDD	86.8	^{13}C-1,2,3,4,6,7,8-HpCDD	91.0
^{37}Cl-2,3,7,8-TCDD	108.7	^{13}C-OCDD	100.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 87/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 141-6**	Lab Sample ID:	**08 VNBH 141-6**
Matrix:	Soil	Sample Data Filename:	V-1651
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	14.2	GC Column ID:	BPX-DXN
% Matrix Sample:	86.5	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	28-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-34

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		11.8	11.8	11.8
1,2,3,7,8-PeCDD	1		9.2	9.2	9.2
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.3	0	0.13
1,2,3,6,7,8-HxCDD	0.1		2.9	0.29	0.29
1,2,3,7,8,9-HxCDD	0.1	ND	< 1.9	0	0.19
1,2,3,4,6,7,8-HpCDD	0.01		4.3	0.043	0.043
OCDD	0.0001		27.9	0.003	0.003
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.3	0	0.065
2,3,4,7,8-PeCDF	0.5	ND	< 1.5	0	0.75
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.8	0	0.08
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.7	0	0.17
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.8	0	0.08
1,2,3,4,6,7,8-HpCDF	0.01		2.2	0.022	0.022
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 4.8	0	0.048
OCDF	0.0001	ND	< 5.1	0	0.001
TOTAL TEQ				**21.4**	**23.1**
% 2,3,7,8-TCDD vs. WHO-TEQ				55.2	51.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	90.9	^{13}C-1,2,3,6,7,8-HxCDD	83.1
^{13}C-2,3,7, 8-TCDD	88.6	^{13}C-1,2,3,4,6,7,8-HpCDD	88.9
^{37}Cl-2,3,7,8-TCDD	93.5	^{13}C-OCDD	98.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 88/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 142**	Lab Sample ID:	**08 VNBH 142**
Matrix:	Soil	Sample Data Filename:	V-1652
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.8	GC Column ID:	BPX-DXN
% Matrix Sample:	88.9	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	28-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-34

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		31.3	31.3	31.3
1,2,3,7,8-PeCDD	1		6.4	6.4	6.4
1,2,3,4,7,8-HxCDD	0.1	NDR	# 2.8	0	0.28
1,2,3,6,7,8-HxCDD	0.1		4.8	0.48	0.48
1,2,3,7,8,9-HxCDD	0.1		4.4	0.44	0.44
1,2,3,4,6,7,8-HpCDD	0.01		53.8	0.538	0.538
OCDD	0.0001		499	0.05	0.05
2,3,7,8-TCDF	0.1		2.0	0.2	0.2
1,2,3,7,8-PeCDF	0.05	ND	< 1.2	0	0.06
2,3,4,7,8-PeCDF	0.5	ND	< 1.8	0	0.9
1,2,3,4,7,8-HxCDF	0.1		2.7	0.27	0.27
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.2	0	0.22
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.4	0	0.14
1,2,3,4,6,7,8-HpCDF	0.01		16.9	0.169	0.169
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 3.1	0	0.031
OCDF	0.0001		24.5	0.002	0.002
TOTAL TEQ				**39.9**	**41.6**
% 2,3,7,8-TCDD vs. WHO-TEQ				78.5	75.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	93.3	^{13}C-1,2,3,6,7,8-HxCDD	84.1
^{13}C-2,3,7, 8-TCDD	90.7	^{13}C-1,2,3,4,6,7,8-HpCDD	87.9
^{37}Cl-2,3,7,8-TCDD	95.6	^{13}C-OCDD	90.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 89/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 143-3**	Lab Sample ID:	**08 VNBH 143-3**
Matrix:	Soil	Sample Data Filename:	V-1653
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	9.1	GC Column ID:	BPX-DXN
% Matrix Sample:	96.6	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	28-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-34

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		3.8	3.8	3.8
1,2,3,7,8-PeCDD	1	ND	< 2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 1.7	0	0.17
1,2,3,6,7,8-HxCDD	0.1	ND	< 3.2	0	0.32
1,2,3,7,8,9-HxCDD	0.1	ND	< 4.2	0	0.42
1,2,3,4,6,7,8-HpCDD	0.01	ND	< 7.4	0	0.074
OCDD	0.0001		29.6	0.003	0.003
2,3,7,8-TCDF	0.1	ND	< 1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	< 1.1	0	0.055
2,3,4,7,8-PeCDF	0.5	ND	< 1.2	0	0.6
1,2,3,4,7,8-HxCDF	0.1	ND	< 2.3	0	0.23
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.9	0	0.19
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.4	0	0.24
1,2,3,4,6,7,8-HpCDF	0.01	ND	< 3.1	0	0.031
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 5.6	0	0.056
OCDF	0.0001	ND	< 5.4	0	0.001
TOTAL TEQ				**3.80**	**8.50**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.9	44.7

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	92.3	^{13}C-1,2,3,6,7,8-HxCDD	87.5
^{13}C-2,3,7, 8-TCDD	86.7	^{13}C-1,2,3,4,6,7,8-HpCDD	91.1
^{37}Cl-2,3,7,8-TCDD	90.6	^{13}C-OCDD	99.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 90/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 145**	Lab Sample ID:	**08 VNBH 145**
Matrix:	Soil	Sample Data Filename:	V-1654, V-1654A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.9	GC Column ID:	BPX-DXN
% Matrix Sample:	93.3	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	28-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-34

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		81.8	81.8	81.8
1,2,3,7,8-PeCDD	1		9.2	9.2	9.2
1,2,3,4,7,8-HxCDD	0.1		1.6	0.16	0.16
1,2,3,6,7,8-HxCDD	0.1		6.6	0.66	0.66
1,2,3,7,8,9-HxCDD	0.1		4.7	0.47	0.47
1,2,3,4,6,7,8-HpCDD	0.01		45.5	0.455	0.455
OCDD	0.0001		277	0.028	0.028
2,3,7,8-TCDF	0.1		9.1	0.91	0.91
1,2,3,7,8-PeCDF	0.05	ND	< 0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	< 1.2	0	0.6
1,2,3,4,7,8-HxCDF	0.1	NDR	# 1.9	0	0.19
1,2,3,6,7,8-HxCDF	0.1	NDR	# 1.2	0	0.12
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.2	0	0.12
2,3,4,6,7,8-HxCDF	0.1	NDR	# 1.9	0	0.19
1,2,3,4,6,7,8-HpCDF	0.01		10.5	0.105	0.105
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.3	0	0.023
OCDF	0.0001		14.1	0.001	0.001
TOTAL TEQ				**93.8**	**95.1**
% 2,3,7,8-TCDD vs. WHO-TEQ				87.2	86.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	89.0	^{13}C-1,2,3,6,7,8-HxCDD	83.6
^{13}C-2,3,7, 8-TCDD	87.8	^{13}C-1,2,3,4,6,7,8-HpCDD	88.5
^{37}Cl-2,3,7,8-TCDD	90.4	^{13}C-OCDD	89.8

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PCDDs/PCDFs ANALYSIS REPORT

No.: 91/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 147**	Lab Sample ID:	**08 VNBH 147**
Matrix:	Soil	Sample Data Filename:	V-1655
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	2.6	GC Column ID:	BPX-DXN
% Matrix Sample:	94.8	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	28-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-34

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		236.4	236.4	236.4
1,2,3,7,8-PeCDD	1		18.8	18.8	18.8
1,2,3,4,7,8-HxCDD	0.1	ND	< 2.5	0	0.25
1,2,3,6,7,8-HxCDD	0.1		8.3	0.83	0.83
1,2,3,7,8,9-HxCDD	0.1		7.8	0.78	0.78
1,2,3,4,6,7,8-HpCDD	0.01		30.9	0.309	0.309
OCDD	0.0001		284.6	0.028	0.028
2,3,7,8-TCDF	0.1		5.0	0.5	0.5
1,2,3,7,8-PeCDF	0.05	ND	< 1.1	0	0.055
2,3,4,7,8-PeCDF	0.5	ND	< 1.1	0	0.55
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.6	0	0.16
1,2,3,6,7,8-HxCDF	0.1	ND	< 2.1	0	0.21
1,2,3,7,8,9-HxCDF	0.1	ND	< 2.0	0	0.2
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.3	0	0.23
1,2,3,4,6,7,8-HpCDF	0.01		9.1	0.091	0.091
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 4.3	0	0.043
OCDF	0.0001		12.5	0.001	0.001
TOTAL TEQ				**258**	**259**
% 2,3,7,8-TCDD vs. WHO-TEQ				91.7	91.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	85.7	^{13}C-1,2,3,6,7,8-HxCDD	84.3
^{13}C-2,3,7, 8-TCDD	83.8	^{13}C-1,2,3,4,6,7,8-HpCDD	81.8
^{37}Cl-2,3,7,8-TCDD	89.5	^{13}C-OCDD	90.7

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

LABORATORY ANALYTICAL CHEMISTRY, VIETNAM - RUSSIAN TROPICAL CENTRE (VRTC)
Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 92/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 149**	Lab Sample ID:	**08 VNBH 149**
Matrix:	Soil	Sample Data Filename:	V-1656
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.0	GC Column ID:	BPX-DXN
% Matrix Sample:	82.0	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	28-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-34

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		94.3	94.3	94.3
1,2,3,7,8-PeCDD	1		8.8	8.8	8.8
1,2,3,4,7,8-HxCDD	0.1	ND	< 3.0	0	0.3
1,2,3,6,7,8-HxCDD	0.1		4.0	0.4	0.4
1,2,3,7,8,9-HxCDD	0.1	NDR	# 5.7	0	0.57
1,2,3,4,6,7,8-HpCDD	0.01		27.6	0.276	0.276
OCDD	0.0001		257.1	0.026	0.026
2,3,7,8-TCDF	0.1		4.0	0.4	0.4
1,2,3,7,8-PeCDF	0.05	ND	< 1.3	0	0.065
2,3,4,7,8-PeCDF	0.5	NDR	# 1.6	0	0.8
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.9	0	0.19
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.9	0	0.19
2,3,4,6,7,8-HxCDF	0.1	ND	< 3.3	0	0.33
1,2,3,4,6,7,8-HpCDF	0.01		6.8	0.068	0.068
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.9	0	0.019
OCDF	0.0001	ND	< 4.0	0	0.001
TOTAL TEQ				**104**	**107**
% 2,3,7,8-TCDD vs. WHO-TEQ				90.4	88.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	87.6	^{13}C-1,2,3,6,7,8-HxCDD	81.1
^{13}C-2,3,7, 8-TCDD	85.5	^{13}C-1,2,3,4,6,7,8-HpCDD	85.0
^{37}Cl-2,3,7,8-TCDD	92.2	^{13}C-OCDD	100.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 93/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 153**	Lab Sample ID:	**08 VNBH 153**
Matrix:	Soil	Sample Data Filename:	V-1618
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	1.4	GC Column ID:	BPX-DXN
% Matrix Sample:	70.9	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	19-May-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		737.8	737.8	737.8
1,2,3,7,8-PeCDD	1		13	13	13
1,2,3,4,7,8-HxCDD	0.1		2.1	0.21	0.21
1,2,3,6,7,8-HxCDD	0.1		11.7	1.17	1.17
1,2,3,7,8,9-HxCDD	0.1		7.0	0.7	0.7
1,2,3,4,6,7,8-HpCDD	0.01		95	0.95	0.95
OCDD	0.0001		381	0.038	0.038
2,3,7,8-TCDF	0.1		20.3	2.03	2.03
1,2,3,7,8-PeCDF	0.05		1.2	0.06	0.06
2,3,4,7,8-PeCDF	0.5	NDR	# 1.8	0	0.9
1,2,3,4,7,8-HxCDF	0.1		1.7	0.17	0.17
1,2,3,6,7,8-HxCDF	0.1		1.2	0.12	0.12
1,2,3,7,8,9-HxCDF	0.1		1.5	0.15	0.15
2,3,4,6,7,8-HxCDF	0.1		1.5	0.15	0.15
1,2,3,4,6,7,8-HpCDF	0.01		13.3	0.133	0.133
1,2,3,4,7,8,9-HpCDF	0.01		1.3	0.013	0.013
OCDF	0.0001		14.4	0.001	0.001
TOTAL TEQ				**757**	**758**
% 2,3,7,8-TCDD vs. WHO-TEQ				97.5	97.4

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	80.0	^{13}C-1,2,3,6,7,8-HxCDD	77.8
^{13}C-2,3,7, 8-TCDD	78.5	^{13}C-1,2,3,4,6,7,8-HpCDD	73.9
^{37}Cl-2,3,7,8-TCDD	83.5	^{13}C-OCDD	63.9

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PCDDs/PCDFs ANALYSIS REPORT

No.: 94/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 156**	Lab Sample ID:	**08 VNBH 156**
Matrix:	Sediment	Sample Data Filename:	V-1628
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	50.5	GC Column ID:	BPX-DXN
% Matrix Sample:	92.8	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	20-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-31

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		15.2	15.2	15.2
1,2,3,7,8-PeCDD	1	NDR	# 7.0	0	7.0
1,2,3,4,7,8-HxCDD	0.1	ND	< 4.9	0	0.49
1,2,3,6,7,8-HxCDD	0.1		4.6	0.46	0.46
1,2,3,7,8,9-HxCDD	0.1	ND	< 3.9	0	0.39
1,2,3,4,6,7,8-HpCDD	0.01		17.5	0.175	0.175
OCDD	0.0001		167.8	0.017	0.017
2,3,7,8-TCDF	0.1		3.0	0.3	0.3
1,2,3,7,8-PeCDF	0.05	ND	< 1.3	0	0.065
2,3,4,7,8-PeCDF	0.5	ND	< 1.2	0	0.6
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	< 1.9	0	0.19
1,2,3,7,8,9-HxCDF	0.1	ND	< 3.1	0	0.31
2,3,4,6,7,8-HxCDF	0.1	ND	< 2.5	0	0.25
1,2,3,4,6,7,8-HpCDF	0.01		6.6	0.066	0.066
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.6	0	0.026
OCDF	0.0001	NDR	# 17.4	0	0.002
TOTAL TEQ				**16.2**	**25.7**
% 2,3,7,8-TCDD vs. WHO-TEQ				93.7	59.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	84.6	^{13}C-1,2,3,6,7,8-HxCDD	85.8
^{13}C-2,3,7, 8-TCDD	80.4	^{13}C-1,2,3,4,6,7,8-HpCDD	74.6
^{37}Cl-2,3,7,8-TCDD	85.7	^{13}C-OCDD	72.7

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PCDDs/PCDFs ANALYSIS REPORT

No.: 95/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 158**	Lab Sample ID:	**08 VNBH 158**
Matrix:	Sediment	Sample Data Filename:	V-1629
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	21.6	GC Column ID:	BPX-DXN
% Matrix Sample:	68.7	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	20-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-31

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		18	18	18
1,2,3,7,8-PeCDD	1	NDR	# 6.5	0	6.5
1,2,3,4,7,8-HxCDD	0.1	ND	< 0.4	0	0.04
1,2,3,6,7,8-HxCDD	0.1	NDR	# 2.1	0	0.21
1,2,3,7,8,9-HxCDD	0.1	NDR	# 1.8	0	0.18
1,2,3,4,6,7,8-HpCDD	0.01		5.2	0.052	0.052
OCDD	0.0001		17.8	0.002	0.002
2,3,7,8-TCDF	0.1		2.0	0.2	0.2
1,2,3,7,8-PeCDF	0.05	ND	< 0.5	0	0.025
2,3,4,7,8-PeCDF	0.5	ND	< 0.4	0	0.2
1,2,3,4,7,8-HxCDF	0.1	ND	< 0.8	0	0.08
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.7	0	0.07
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.7	0	0.07
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.5	0	0.05
1,2,3,4,6,7,8-HpCDF	0.01		2.1	0.021	0.021
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.7	0	0.017
OCDF	0.0001	NDR	# 6.5	0	0.001
TOTAL TEQ				**18.3**	**25.7**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.5	70.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	82.1	^{13}C-1,2,3,6,7,8-HxCDD	80.5
^{13}C-2,3,7, 8-TCDD	76.9	^{13}C-1,2,3,4,6,7,8-HpCDD	66.7
^{37}Cl-2,3,7,8-TCDD	80.3	^{13}C-OCDD	73.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 96/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 159**	Lab Sample ID:	**08 VNBH 159**
Matrix:	Sediment	Sample Data Filename:	V-1619, V-1619A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	64.9	GC Column ID:	BPX-DXN
% Matrix Sample:	62.4	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	19-May-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		727	727	727
1,2,3,7,8-PeCDD	1		20.3	20.3	20.3
1,2,3,4,7,8-HxCDD	0.1		2.7	0.27	0.27
1,2,3,6,7,8-HxCDD	0.1		12.1	1.21	1.21
1,2,3,7,8,9-HxCDD	0.1		8.0	0.8	0.8
1,2,3,4,6,7,8-HpCDD	0.01		158	1.58	1.58
OCDD	0.0001		962	0.096	0.096
2,3,7,8-TCDF	0.1		37.6	3.76	3.76
1,2,3,7,8-PeCDF	0.05	NDR	# 1.5	0	0.075
2,3,4,7,8-PeCDF	0.5	NDR	# 1.9	0	0.95
1,2,3,4,7,8-HxCDF	0.1		2.2	0.22	0.22
1,2,3,6,7,8-HxCDF	0.1		2.1	0.21	0.21
1,2,3,7,8,9-HxCDF	0.1		1.2	0.12	0.12
2,3,4,6,7,8-HxCDF	0.1		1.6	0.16	0.16
1,2,3,4,6,7,8-HpCDF	0.01		23	0.23	0.23
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.4	0	0.014
OCDF	0.0001		39	0.004	0.004
TOTAL TEQ				**756**	**757**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.2	96.0

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	63.4	^{13}C-1,2,3,6,7,8-HxCDD	62.4
^{13}C-2,3,7, 8-TCDD	61.8	^{13}C-1,2,3,4,6,7,8-HpCDD	58.3
^{37}Cl-2,3,7,8-TCDD	64.0	^{13}C-OCDD	65.2

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PCDDs/PCDFs ANALYSIS REPORT

No.: 97/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 161**	Lab Sample ID:	**08 VNBH 161**
Matrix:	Soil	Sample Data Filename:	V-1624
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	5.3	GC Column ID:	BPX-DXN
% Matrix Sample:	84.3	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	20-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-31

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		311.1	311.1	311.1
1,2,3,7,8-PeCDD	1		8.4	8.4	8.4
1,2,3,4,7,8-HxCDD	0.1		2.4	0.24	0.24
1,2,3,6,7,8-HxCDD	0.1		5.4	0.54	0.54
1,2,3,7,8,9-HxCDD	0.1		3.9	0.39	0.39
1,2,3,4,6,7,8-HpCDD	0.01		84.6	0.846	0.846
OCDD	0.0001		450	0.045	0.045
2,3,7,8-TCDF	0.1		6.0	0.6	0.6
1,2,3,7,8-PeCDF	0.05	ND	< 0.9	0	0.045
2,3,4,7,8-PeCDF	0.5	ND	< 2.1	0	1.05
1,2,3,4,7,8-HxCDF	0.1	NDR	# 0.6	0	0.06
1,2,3,6,7,8-HxCDF	0.1	ND	< 0.6	0	0.06
1,2,3,7,8,9-HxCDF	0.1	ND	< 0.6	0	0.06
2,3,4,6,7,8-HxCDF	0.1		1.7	0.17	0.17
1,2,3,4,6,7,8-HpCDF	0.01		8.5	0.085	0.085
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.1	0	0.021
OCDF	0.0001		7.6	0.001	0.001
TOTAL TEQ				**322**	**324**
% 2,3,7,8-TCDD vs. WHO-TEQ				96.5	96.1

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	85.5	^{13}C-1,2,3,6,7,8-HxCDD	81.3
^{13}C-2,3,7, 8-TCDD	81.7	^{13}C-1,2,3,4,6,7,8-HpCDD	82.1
^{37}Cl-2,3,7,8-TCDD	85.2	^{13}C-OCDD	91.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 98/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 163**	Lab Sample ID:	**08 VNBH 163**
Matrix:	Soil	Sample Data Filename:	V-1625
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.3	GC Column ID:	BPX-DXN
% Matrix Sample:	77.3	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	20-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-31

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		17.4	17.4	17.4
1,2,3,7,8-PeCDD	1	NDR	# 7.1	0	7.1
1,2,3,4,7,8-HxCDD	0.1		2.7	0.27	0.27
1,2,3,6,7,8-HxCDD	0.1		7.1	0.71	0.71
1,2,3,7,8,9-HxCDD	0.1		4.8	0.48	0.48
1,2,3,4,6,7,8-HpCDD	0.01		165.2	1.652	1.652
OCDD	0.0001		773	0.077	0.077
2,3,7,8-TCDF	0.1		3.0	0.3	0.3
1,2,3,7,8-PeCDF	0.05	ND	< 1.1	0	0.055
2,3,4,7,8-PeCDF	0.5	ND	< 0.5	0	0.25
1,2,3,4,7,8-HxCDF	0.1		2.2	0.22	0.22
1,2,3,6,7,8-HxCDF	0.1		1.4	0.14	0.14
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.7	0	0.17
2,3,4,6,7,8-HxCDF	0.1	ND	< 0.7	0	0.07
1,2,3,4,6,7,8-HpCDF	0.01		17.9	0.179	0.179
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.5	0	0.015
OCDF	0.0001		18.9	0.002	0.002
TOTAL TEQ				**21.4**	**29.1**
% 2,3,7,8-TCDD vs. WHO-TEQ				81.2	59.8

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	80.8	^{13}C-1,2,3,6,7,8-HxCDD	79.1
^{13}C-2,3,7, 8-TCDD	77.5	^{13}C-1,2,3,4,6,7,8-HpCDD	75.8
^{37}Cl-2,3,7,8-TCDD	81.9	^{13}C-OCDD	81.8

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Nguyen Van Huyen Street, Cau Giay District, Hanoi, Vietnam

PCDDs/PCDFs ANALYSIS REPORT

No.: 99/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 166**	Lab Sample ID:	**08 VNBH 166**
Matrix:	Soil	Sample Data Filename:	V-1626
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.2	GC Column ID:	BPX-DXN
% Matrix Sample:	76.3	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	20-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-31

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		80.9	80.9	80.9
1,2,3,7,8-PeCDD	1		9.2	9.2	9.2
1,2,3,4,7,8-HxCDD	0.1		3.2	0.32	0.32
1,2,3,6,7,8-HxCDD	0.1		8.7	0.87	0.87
1,2,3,7,8,9-HxCDD	0.1		7.4	0.74	0.74
1,2,3,4,6,7,8-HpCDD	0.01		367.8	3.678	3.678
OCDD	0.0001		1645	0.165	0.165
2,3,7,8-TCDF	0.1		12	1.2	1.2
1,2,3,7,8-PeCDF	0.05	ND	< 1.3	0	0.065
2,3,4,7,8-PeCDF	0.5	ND	< 1.2	0	0.6
1,2,3,4,7,8-HxCDF	0.1		1.3	0.13	0.13
1,2,3,6,7,8-HxCDF	0.1		0.9	0.09	0.09
1,2,3,7,8,9-HxCDF	0.1		1.1	0.11	0.11
2,3,4,6,7,8-HxCDF	0.1	NDR	# 0.9	0	0.09
1,2,3,4,6,7,8-HpCDF	0.01		18.4	0.184	0.184
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 1.6	0	0.016
OCDF	0.0001		21.5	0.002	0.002
TOTAL TEQ				**97.6**	**98.4**
% 2,3,7,8-TCDD vs. WHO-TEQ				82.9	82.3

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	82.1	^{13}C-1,2,3,6,7,8-HxCDD	79.3
^{13}C-2,3,7, 8-TCDD	78.0	^{13}C-1,2,3,4,6,7,8-HpCDD	75.4
^{37}Cl-2,3,7,8-TCDD	82.6	^{13}C-OCDD	77.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 100/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 170**	Lab Sample ID:	**08 VNBH 170**
Matrix:	Soil	Sample Data Filename:	V-1627, V-1627A
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	3.0	GC Column ID:	BPX-DXN
% Matrix Sample:	55.4	Injection Volume:	2 ul
Extraction Date:	21-Apr-08	Dilution Factor:	N/A
Analysis Date:	20-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-31

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		12395	12395	12395
1,2,3,7,8-PeCDD	1		733.2	733.2	733.2
1,2,3,4,7,8-HxCDD	0.1		25.1	2.51	2.51
1,2,3,6,7,8-HxCDD	0.1		273.2	27.32	27.32
1,2,3,7,8,9-HxCDD	0.1		106.4	10.64	10.64
1,2,3,4,6,7,8-HpCDD	0.01		1272	12.72	12.72
OCDD	0.0001		4069	0.407	0.407
2,3,7,8-TCDF	0.1		520.5	52.05	52.05
1,2,3,7,8-PeCDF	0.05		7.6	0.38	0.38
2,3,4,7,8-PeCDF	0.5		105	52.5	52.5
1,2,3,4,7,8-HxCDF	0.1		63.6	6.36	6.36
1,2,3,6,7,8-HxCDF	0.1		14.6	1.46	1.46
1,2,3,7,8,9-HxCDF	0.1		16.8	1.68	1.68
2,3,4,6,7,8-HxCDF	0.1		19.8	1.98	1.98
1,2,3,4,6,7,8-HpCDF	0.01		242.9	2.429	2.429
1,2,3,4,7,8,9-HpCDF	0.01		13.3	0.133	0.133
OCDF	0.0001		160	0.016	0.016
TOTAL TEQ				**13300**	**13300**
% 2,3,7,8-TCDD vs. WHO-TEQ				93.2	93.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	77.1	^{13}C-1,2,3,6,7,8-HxCDD	72.1
^{13}C-2,3,7, 8-TCDD	75.2	^{13}C-1,2,3,4,6,7,8-HpCDD	65.1
^{37}Cl-2,3,7,8-TCDD	97.5	^{13}C-OCDD	68.2

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PCDDs/PCDFs ANALYSIS REPORT

No.: 101/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 002-2**	Lab Sample ID:	**Duplicate**
Matrix:	Soil	Sample Data Filename:	V-1678
Sample Size (dry):	0.63 g	Instrument ID:	HRGC-LRMS
% Moisture:	6.1	GC Column ID:	BPX-DXN
% Matrix Sample:	66.2	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	11-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-38

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		243719	243719	243719
1,2,3,7,8-PeCDD	1		1859	1859	1859
1,2,3,4,7,8-HxCDD	0.1	NDR	# 153	0	15.3
1,2,3,6,7,8-HxCDD	0.1		1431	143.1	143.1
1,2,3,7,8,9-HxCDD	0.1		1030	103	103
1,2,3,4,6,7,8-HpCDD	0.01		5558	55.58	55.58
OCDD	0.0001		9855	0.986	0.986
2,3,7,8-TCDF	0.1		2407	240.7	240.7
1,2,3,7,8-PeCDF	0.05	ND	< 64.9	0	3.245
2,3,4,7,8-PeCDF	0.5		305	152.5	152.5
1,2,3,4,7,8-HxCDF	0.1		191	19.1	19.1
1,2,3,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,7,8,9-HxCDF	0.1	ND	< 50	0	5.0
2,3,4,6,7,8-HxCDF	0.1	ND	< 50	0	5.0
1,2,3,4,6,7,8-HpCDF	0.01		985	9.85	9.85
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 50	0	0.5
OCDF	0.0001		776	0.078	0.078
TOTAL TEQ				**246000**	**246000**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.0	98.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.8	^{13}C-1,2,3,6,7,8-HxCDD	88.0
^{13}C-2,3,7, 8-TCDD	88.2	^{13}C-1,2,3,4,6,7,8-HpCDD	93.2
^{37}Cl-2,3,7,8-TCDD	93.6	^{13}C-OCDD	106.9

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 102/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNPC 012**	Lab Sample ID:	**Duplicate**
Matrix:	Soil	Sample Data Filename:	V-1622, V-1622A
Sample Size (dry):	1.02 g	Instrument ID:	HRGC-LRMS
% Moisture:	10.2	GC Column ID:	BPX-DXN
% Matrix Sample:	50.4	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	11-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-38

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		39478	39478	39478
1,2,3,7,8-PeCDD	1		344.5	344.5	344.5
1,2,3,4,7,8-HxCDD	0.1		25.2	2.52	2.52
1,2,3,6,7,8-HxCDD	0.1		211.6	21.16	21.16
1,2,3,7,8,9-HxCDD	0.1		66.6	6.66	6.66
1,2,3,4,6,7,8-HpCDD	0.01		676.3	6.76	6.76
OCDD	0.0001		1360	0.136	0.136
2,3,7,8-TCDF	0.1		1700	170	170
1,2,3,7,8-PeCDF	0.05		42.9	2.145	2.145
2,3,4,7,8-PeCDF	0.5		42.2	21.1	21.1
1,2,3,4,7,8-HxCDF	0.1		23.2	2.32	2.32
1,2,3,6,7,8-HxCDF	0.1		8.3	0.83	0.83
1,2,3,7,8,9-HxCDF	0.1		4.4	0.44	0.44
2,3,4,6,7,8-HxCDF	0.1		18.6	1.86	1.86
1,2,3,4,6,7,8-HpCDF	0.01		131.3	1.313	1.313
1,2,3,4,7,8,9-HpCDF	0.01		2.5	0.025	0.025
OCDF	0.0001		46.2	0.005	0.005
TOTAL TEQ				**40100**	**40100**
% 2,3,7,8-TCDD vs. WHO-TEQ				98.6	98.6

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	82.8	^{13}C-1,2,3,6,7,8-HxCDD	78.9
^{13}C-2,3,7, 8-TCDD	87.7	^{13}C-1,2,3,4,6,7,8-HpCDD	68.6
^{37}Cl-2,3,7,8-TCDD	162.1	^{13}C-OCDD	68.9

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PCDDs/PCDFs ANALYSIS REPORT

No.: 103/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 088**	Lab Sample ID:	**Duplicate**
Matrix:	Soil	Sample Data Filename:	V-1674
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.5	GC Column ID:	BPX-DXN
% Matrix Sample:	97.8	Injection Volume:	2 ul
Extraction Date:	2-Jun-08	Dilution Factor:	N/A
Analysis Date:	11-Jun-08	Blank Data Filename:	V-BLK38b
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-38

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		71.3	71.3	71.3
1,2,3,7,8-PeCDD	1	NDR	# 2.3	0	2.3
1,2,3,4,7,8-HxCDD	0.1	ND	< 3	0	0.3
1,2,3,6,7,8-HxCDD	0.1		5.9	0.59	0.59
1,2,3,7,8,9-HxCDD	0.1		5.5	0.55	0.55
1,2,3,4,6,7,8-HpCDD	0.01		115.6	1.156	1.156
OCDD	0.0001		1008	0.101	0.101
2,3,7,8-TCDF	0.1		5.6	0.56	0.56
1,2,3,7,8-PeCDF	0.05	ND	< 1.2	0	0.06
2,3,4,7,8-PeCDF	0.5	ND	< 0.8	0	0.4
1,2,3,4,7,8-HxCDF	0.1	ND	< 1.6	0	0.16
1,2,3,6,7,8-HxCDF	0.1	NDR	# 2.4	0	0.24
1,2,3,7,8,9-HxCDF	0.1	ND	< 1.5	0	0.15
2,3,4,6,7,8-HxCDF	0.1	ND	< 1.5	0	0.15
1,2,3,4,6,7,8-HpCDF	0.01		42.4	0.424	0.424
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 2.5	0	0.025
OCDF	0.0001		159.2	0.016	0.016
TOTAL TEQ				**74.7**	**78.5**
% 2,3,7,8-TCDD vs. WHO-TEQ				95.5	90.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	85.0	^{13}C-1,2,3,6,7,8-HxCDD	86.6
^{13}C-2,3,7, 8-TCDD	87.7	^{13}C-1,2,3,4,6,7,8-HpCDD	90.4
^{37}Cl-2,3,7,8-TCDD	88.9	^{13}C-OCDD	96.4

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PCDDs/PCDFs ANALYSIS REPORT

No.: 104/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 108**	Lab Sample ID:	**Duplicate**
Matrix:	Sediment	Sample Data Filename:	V-1630
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	50.6	GC Column ID:	BPX-DXN
% Matrix Sample:	89.9	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	24-Apr-08	Blank Data Filename:	V-BLK37a
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30A

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g (dry weight)	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		1121.7	1121.7	1121.7
1,2,3,7,8-PeCDD	1		32.3	32.3	32.3
1,2,3,4,7,8-HxCDD	0.1		14.6	1.46	1.46
1,2,3,6,7,8-HxCDD	0.1		44.8	4.48	4.48
1,2,3,7,8,9-HxCDD	0.1		41.2	4.12	4.12
1,2,3,4,6,7,8-HpCDD	0.01		721.3	7.213	7.213
OCDD	0.0001		6049.1	0.605	0.605
2,3,7,8-TCDF	0.1		74.5	7.45	7.45
1,2,3,7,8-PeCDF	0.05		7.3	0.365	0.365
2,3,4,7,8-PeCDF	0.5		12.8	6.4	6.4
1,2,3,4,7,8-HxCDF	0.1		15.4	1.54	1.54
1,2,3,6,7,8-HxCDF	0.1		11.3	1.13	1.13
1,2,3,7,8,9-HxCDF	0.1	NDR	# 2.4	0	0.24
2,3,4,6,7,8-HxCDF	0.1		9.6	0.96	0.96
1,2,3,4,6,7,8-HpCDF	0.01		120.2	1.202	1.202
1,2,3,4,7,8,9-HpCDF	0.01		6.6	0.066	0.066
OCDF	0.0001		187.5	0.019	0.019
TOTAL TEQ				**1190**	**1190**
% 2,3,7,8-TCDD vs. WHO-TEQ				94.2	94.2

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	80.1	^{13}C-1,2,3,6,7,8-HxCDD	74.3
^{13}C-2,3,7, 8-TCDD	75.4	^{13}C-1,2,3,4,6,7,8-HpCDD	72.7
^{37}Cl-2,3,7,8-TCDD	75.3	^{13}C-OCDD	87.0

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PCDDs/PCDFs ANALYSIS REPORT

No.: 105/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**08 VNBH 141-3**	Lab Sample ID:	**Duplicate**
Matrix:	Soil	Sample Data Filename:	V-1649
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	4.2	GC Column ID:	BPX-DXN
% Matrix Sample:	82.4	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	27-May-08	Blank Data Filename:	V-BLK37g
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-33

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	CONCENTRATION pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1		8271.9	8271.9	8271.9
1,2,3,7,8-PeCDD	1		59.1	59.1	59.1
1,2,3,4,7,8-HxCDD	0.1		4.7	0.47	0.47
1,2,3,6,7,8-HxCDD	0.1		27.5	2.75	2.75
1,2,3,7,8,9-HxCDD	0.1		10.1	1.01	1.01
1,2,3,4,6,7,8-HpCDD	0.01		90.4	0.904	0.904
OCDD	0.0001		450	0.045	0.045
2,3,7,8-TCDF	0.1		212.2	21.22	21.22
1,2,3,7,8-PeCDF	0.05	ND	< 1.6	0	0.08
2,3,4,7,8-PeCDF	0.5	ND	< 2.1	0	1.05
1,2,3,4,7,8-HxCDF	0.1		6.1	0.61	0.61
1,2,3,6,7,8-HxCDF	0.1	NDR	# 4.1	0	0.41
1,2,3,7,8,9-HxCDF	0.1	NDR	# 4.5	0	0.45
2,3,4,6,7,8-HxCDF	0.1	NDR	# 4.7	0	0.47
1,2,3,4,6,7,8-HpCDF	0.01		38.0	0.38	0.38
1,2,3,4,7,8,9-HpCDF	0.01	ND	< 4.4	0	0.044
OCDF	0.0001		39.1	0.004	0.004
TOTAL TEQ				**8360**	**8360**
% 2,3,7,8-TCDD vs. WHO-TEQ				99.0	98.9

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	88.4	^{13}C-1,2,3,6,7,8-HxCDD	88.7
^{13}C-2,3,7, 8-TCDD	86.7	^{13}C-1,2,3,4,6,7,8-HpCDD	87.7
^{37}Cl-2,3,7,8-TCDD	104.5	^{13}C-OCDD	110.8

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

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PCDDs/PCDFs ANALYSIS REPORT

No.: 106/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**Lab Blank**	Lab Sample ID:	**BL 1517**
Matrix:	Silicagel	Sample Data Filename:	V-BL1517
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	-	GC Column ID:	BPX-DXN
% Matrix Sample:	-	Injection Volume:	2 ul
Extraction Date:	11-Mar-08	Dilution Factor:	N/A
Analysis Date:	18-Mar-08	Blank Data Filename:	-
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-24

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	DETECTION LIMIT pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	ND	1.9	0	1.9
1,2,3,7,8-PeCDD	1	ND	2.0	0	2.0
1,2,3,4,7,8-HxCDD	0.1	ND	2.3	0	0.23
1,2,3,6,7,8-HxCDD	0.1	ND	2.5	0	0.25
1,2,3,7,8,9-HxCDD	0.1	ND	2.7	0	0.27
1,2,3,4,6,7,8-HpCDD	0.01	ND	5.0	0	0.05
OCDD	0.0001	ND	6.9	0	0.001
2,3,7,8-TCDF	0.1	ND	1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	1.0	0	0.5
1,2,3,4,7,8-HxCDF	0.1	ND	2.6	0	0.26
1,2,3,6,7,8-HxCDF	0.1	ND	2.6	0	0.26
1,2,3,7,8,9-HxCDF	0.1	ND	2.8	0	0.28
2,3,4,6,7,8-HxCDF	0.1	ND	1.9	0	0.19
1,2,3,4,6,7,8-HpCDF	0.01	ND	4.6	0	0.046
1,2,3,4,7,8,9-HpCDF	0.01	ND	4.5	0	0.045
OCDF	0.0001	ND	5.1	0	0.001
TOTAL TEQ				**ND**	**6.42**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	-

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	94.0	^{13}C-1,2,3,6,7,8-HxCDD	92.1
^{13}C-2,3,7, 8-TCDD	93.5	^{13}C-1,2,3,4,6,7,8-HpCDD	81.7
^{37}Cl-2,3,7,8-TCDD	89.6	^{13}C-OCDD	96.3

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 107/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**Lab Blank**	Lab Sample ID:	**BLK 35d**
Matrix:	Silicagel	Sample Data Filename:	V-BLK35d
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	-	GC Column ID:	BPX-DXN
% Matrix Sample:	-	Injection Volume:	2 ul
Extraction Date:	31-Mar-08	Dilution Factor:	N/A
Analysis Date:	2-Apr-08	Blank Data Filename:	-
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-26B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	DETECTION LIMIT pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	ND	1.5	0	1.5
1,2,3,7,8-PeCDD	1	ND	2.8	0	2.8
1,2,3,4,7,8-HxCDD	0.1	ND	1.3	0	0.13
1,2,3,6,7,8-HxCDD	0.1	ND	2.2	0	0.22
1,2,3,7,8,9-HxCDD	0.1	ND	1.0	0	0.1
1,2,3,4,6,7,8-HpCDD	0.01	ND	4.7	0	0.047
OCDD	0.0001	ND	6.8	0	0.001
2,3,7,8-TCDF	0.1	ND	0.5	0	0.05
1,2,3,7,8-PeCDF	0.05	ND	0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	0.9	0	0.45
1,2,3,4,7,8-HxCDF	0.1	ND	1.5	0	0.15
1,2,3,6,7,8-HxCDF	0.1	ND	2.5	0	0.25
1,2,3,7,8,9-HxCDF	0.1	ND	2.4	0	0.24
2,3,4,6,7,8-HxCDF	0.1	ND	0.8	0	0.08
1,2,3,4,6,7,8-HpCDF	0.01	ND	2.7	0	0.027
1,2,3,4,7,8,9-HpCDF	0.01	ND	3.0	0	0.03
OCDF	0.0001	ND	3.5	0	0.0004
TOTAL TEQ				**ND**	**6.12**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	-

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.1	^{13}C-1,2,3,6,7,8-HxCDD	99.1
^{13}C-2,3,7, 8-TCDD	95.3	^{13}C-1,2,3,4,6,7,8-HpCDD	97.2
^{37}Cl-2,3,7,8-TCDD	95.7	^{13}C-OCDD	87.6

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 108/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**Lab Blank**	Lab Sample ID:	**BLK 35k**
Matrix:	Silicagel	Sample Data Filename:	V-BLK35k
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	-	GC Column ID:	BPX-DXN
% Matrix Sample:	-	Injection Volume:	2 ul
Extraction Date:	7-Apr-08	Dilution Factor:	N/A
Analysis Date:	22-Apr-08	Blank Data Filename:	-
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-29

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	DETECTION LIMIT pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	ND	0.5	0	0.5
1,2,3,7,8-PeCDD	1	ND	1.9	0	1.9
1,2,3,4,7,8-HxCDD	0.1	ND	1.7	0	0.17
1,2,3,6,7,8-HxCDD	0.1	ND	2.8	0	0.28
1,2,3,7,8,9-HxCDD	0.1	ND	2.5	0	0.25
1,2,3,4,6,7,8-HpCDD	0.01	ND	3.9	0	0.39
OCDD	0.0001	ND	15.8	0	0.002
2,3,7,8-TCDF	0.1	ND	1.3	0	0.13
1,2,3,7,8-PeCDF	0.05	ND	1.9	0	0.095
2,3,4,7,8-PeCDF	0.5	ND	0.7	0	0.35
1,2,3,4,7,8-HxCDF	0.1	ND	1.3	0	0.13
1,2,3,6,7,8-HxCDF	0.1	ND	1.1	0	0.11
1,2,3,7,8,9-HxCDF	0.1	ND	2.7	0	0.27
2,3,4,6,7,8-HxCDF	0.1	ND	1.6	0	0.16
1,2,3,4,6,7,8-HpCDF	0.01	ND	3.8	0	0.038
1,2,3,4,7,8,9-HpCDF	0.01	ND	5.2	0	0.052
OCDF	0.0001	ND	5.2	0	0.001
TOTAL TEQ				**ND**	**4.83**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	-

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	98.5	^{13}C-1,2,3,6,7,8-HxCDD	97.5
^{13}C-2,3,7, 8-TCDD	97.2	^{13}C-1,2,3,4,6,7,8-HpCDD	96.8
^{37}Cl-2,3,7,8-TCDD	98.7	^{13}C-OCDD	90.3

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 109/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**Lab Blank**	Lab Sample ID:	**BLK 37a**
Matrix:	Silicagel	Sample Data Filename:	V-BLK37a
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	-	GC Column ID:	BPX-DXN
% Matrix Sample:	-	Injection Volume:	2 ul
Extraction Date:	16-Apr-08	Dilution Factor:	N/A
Analysis Date:	19-May-08	Blank Data Filename:	-
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-30B

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	DETECTION LIMIT pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	ND	0.6	0	0.6
1,2,3,7,8-PeCDD	1	ND	0.8	0	0.8
1,2,3,4,7,8-HxCDD	0.1	ND	1.0	0	0.1
1,2,3,6,7,8-HxCDD	0.1	ND	1.0	0	0.1
1,2,3,7,8,9-HxCDD	0.1	ND	1.2	0	0.12
1,2,3,4,6,7,8-HpCDD	0.01	ND	1.2	0	0.012
OCDD	0.0001	ND	1.4	0	0.0001
2,3,7,8-TCDF	0.1	ND	1.3	0	0.13
1,2,3,7,8-PeCDF	0.05	ND	0.8	0	0.04
2,3,4,7,8-PeCDF	0.5	ND	0.7	0	0.35
1,2,3,4,7,8-HxCDF	0.1	ND	0.4	0	0.04
1,2,3,6,7,8-HxCDF	0.1	ND	0.4	0	0.04
1,2,3,7,8,9-HxCDF	0.1	ND	1.3	0	0.13
2,3,4,6,7,8-HxCDF	0.1	ND	0.6	0	0.06
1,2,3,4,6,7,8-HpCDF	0.01	ND	1.2	0	0.012
1,2,3,4,7,8,9-HpCDF	0.01	ND	1.1	0	0.011
OCDF	0.0001	ND	1.2	0	0.0001
TOTAL TEQ				**ND**	**2.54**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	-

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	98.5	^{13}C-1,2,3,6,7,8-HxCDD	86.3
^{13}C-2,3,7, 8-TCDD	98.5	^{13}C-1,2,3,4,6,7,8-HpCDD	86.1
^{37}Cl-2,3,7,8-TCDD	98.8	^{13}C-OCDD	87.3

Lab flags have been used on this report:

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- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 110/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**Lab Blank**	Lab Sample ID:	**BLK 37g**
Matrix:	Silicagel	Sample Data Filename:	V-BLK37g
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	-	GC Column ID:	BPX-DXN
% Matrix Sample:	-	Injection Volume:	2 ul
Extraction Date:	19-May-08	Dilution Factor:	N/A
Analysis Date:	3-Jun-08	Blank Data Filename:	-
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-35

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	DETECTION LIMIT pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	ND	0.8	0	0.8
1,2,3,7,8-PeCDD	1	ND	1.2	0	1.2
1,2,3,4,7,8-HxCDD	0.1	ND	2.2	0	0.22
1,2,3,6,7,8-HxCDD	0.1	ND	2.1	0	0.21
1,2,3,7,8,9-HxCDD	0.1	ND	2.4	0	0.24
1,2,3,4,6,7,8-HpCDD	0.01	ND	4.0	0	0.04
OCDD	0.0001	ND	8.6	0	0.001
2,3,7,8-TCDF	0.1	ND	1.1	0	0.11
1,2,3,7,8-PeCDF	0.05	ND	0.7	0	0.035
2,3,4,7,8-PeCDF	0.5	ND	0.9	0	0.45
1,2,3,4,7,8-HxCDF	0.1	ND	1.2	0	0.12
1,2,3,6,7,8-HxCDF	0.1	ND	1.2	0	0.12
1,2,3,7,8,9-HxCDF	0.1	ND	1.6	0	0.16
2,3,4,6,7,8-HxCDF	0.1	ND	1.2	0	0.12
1,2,3,4,6,7,8-HpCDF	0.01	ND	1.9	0	0.019
1,2,3,4,7,8,9-HpCDF	0.01	ND	3.6	0	0.036
OCDF	0.0001	ND	4.3	0	0.0004
TOTAL TEQ				**ND**	**3.88**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	-

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	105.0	^{13}C-1,2,3,6,7,8-HxCDD	103.3
^{13}C-2,3,7, 8-TCDD	99.8	^{13}C-1,2,3,4,6,7,8-HpCDD	95.7
^{37}Cl-2,3,7,8-TCDD	101.3	^{13}C-OCDD	93.3

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

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PCDDs/PCDFs ANALYSIS REPORT

No.: 111/2008/PT-VPBCĐ33-UNDP

CLIENT SAMPLE NO.:	**Lab Blank**	Lab Sample ID:	**BLK 38b**
Matrix:	Silicagel	Sample Data Filename:	V-BLK38b
Sample Size (dry):	20 g	Instrument ID:	HRGC-LRMS
% Moisture:	-	GC Column ID:	BPX-DXN
% Matrix Sample:	-	Injection Volume:	2 ul
Extraction Date:	26-May-08	Dilution Factor:	N/A
Analysis Date:	11-Jun-08	Blank Data Filename:	-
Extract Volume:	20 ul	Cal. Ver. Data Filename:	CC3-38

CONCENTRATION OF ANALYTES:

COMPOUND	WHO-TEF (1998)	LAB FLAG	DETECTION LIMIT pg/g	WHO-TEQ (1998)	
				Lowerbound (ND=0)	Upperbound (ND=DL)
2,3,7,8-TCDD	1	ND	1.5	0	1.5
1,2,3,7,8-PeCDD	1	ND	1.9	0	1.9
1,2,3,4,7,8-HxCDD	0.1	ND	2.8	0	0.28
1,2,3,6,7,8-HxCDD	0.1	ND	3.3	0	0.33
1,2,3,7,8,9-HxCDD	0.1	ND	2.5	0	0.25
1,2,3,4,6,7,8-HpCDD	0.01	ND	7.8	0	0.078
OCDD	0.0001	ND	12.5	0	0.001
2,3,7,8-TCDF	0.1	ND	1.0	0	0.1
1,2,3,7,8-PeCDF	0.05	ND	1.4	0	0.07
2,3,4,7,8-PeCDF	0.5	ND	1.3	0	0.13
1,2,3,4,7,8-HxCDF	0.1	ND	1.7	0	0.17
1,2,3,6,7,8-HxCDF	0.1	ND	2.2	0	0.22
1,2,3,7,8,9-HxCDF	0.1	ND	3.4	0	0.34
2,3,4,6,7,8-HxCDF	0.1	ND	2.9	0	0.29
1,2,3,4,6,7,8-HpCDF	0.01	ND	5.0	0	0.05
1,2,3,4,7,8,9-HpCDF	0.01	ND	3.2	0	0.032
OCDF	0.0001	ND	8.1	0	0.001
TOTAL TEQ				**ND**	**5.74**
% 2,3,7,8-TCDD vs. WHO-TEQ				-	-

RECOVERY OF INTERNAL AND CLEAN-UP STANDARDS:

LABELED COMPOUND	Recovery (%)	LABELED COMPOUND	Recovery (%)
^{13}C-2,3,7,8-TCDF	96.1	^{13}C-1,2,3,6,7,8-HxCDD	96.2
^{13}C-2,3,7, 8-TCDD	91.9	^{13}C-1,2,3,4,6,7,8-HpCDD	91.4
^{37}Cl-2,3,7,8-TCDD	100.5	^{13}C-OCDD	97.9

Lab flags have been used on this report:

- ND (flag < in concentration column) = not detected this compound, the number following this flag represents the detection limit (DL).
- NDR (flag # in concentration column) = peak detected but did not meet quantification criteria, the number following this flag represents the estimated maximum possible concentration.

Approved by: MSc. Trinh Khac Sau, Head of Lab. Analytical Chemistry, VRTC
Dr. Nguyen Hong Du, Vice Director-General, VRTC

Table 2.3.13 TEF of dioxin and furan.

TT	Congener	I-TEF	WHO-TEF (1998)
1	**2,3,7,8-TCDD**	1	1
2	**1,2,3,7,8-PeCDD**	0,5	1
3	**1,2,3,4,7,8-HxCDD**	0,1	0,1
4	**1,2,3,6,7,8-HxCDD**	0,1	0,1
5	**1,2,3,7,8,9-HxCDD**	0,1	0,1
6	**1,2,3,4,6,7,8-HpCDD**	0,01	0,01
7	**OCDD**	0,001	0,0001
8	**2,3,7,8-TCDF**	0,1	0,1
9	**1,2,3,7,8-PeCDF**	0,05	0,05
10	**2,3,4,7,8-PeCDF**	0,5	0,5
11	**1,2,3,4,7,8-HxCDF**	0,1	0,1
12	**1,2,3,6,7,8-HxCDF**	0,1	0,1
13	**1,2,3,7,8,9-HxCDF**	0,1	0,1
14	**2,3,4,6,7,8-HxCDF**	0,1	0,1
15	**1,2,3,4,6,7,8-HpCDF**	0,01	0,01
16	**1,2,3,4,7,8,9-HpCDF**	0,01	0,01
17	**OCDF**	0,001	0,0001

I-TEF: International toxicity equivalency factors

WHO-TEF (1998): Toxicity equivalency factors according to the World Health Ognization for humans (1998)

Table 2.3.14 Recovery of internal standards in samples from Phu Cat.

No.	Sample	Sample Data File name	^{13}C -2,3,7,8-TCDF	^{13}C-2,3,7, 8-TCDD	^{13}C - 1,2,3,6,7,8-HxCDD	^{13}C - 1,2,3,4,6,7,8-HpCDD	^{13}C –OCDD
1	**08VNPC 029**	V-1549	86,3	83,5	77,4	83,8	91,6
2	**08VNPC 030**	V-1550	88,0	84,7	79,2	83,2	91,8
3	**08VNPC 031**	V-1551A	56,4	55,7	51,2	54,8	65,9
4	**08VNPC 032**	V-1552	79,2	75,8	76,0	78,4	79,8
5	**08VNPC 033**	V-1553	91,2	89,1	86,8	87,2	97,5
6	**08VNPC 023**	V-1559	97,4	94,4	89,4	87,5	84,6
7	**08VNPC 024-2**	V-1560	100,5	98,7	92,4	91,3	89,5
8	**08VNPC 025**	V-1561	89,4	88,0	82,1	83,1	83,0
9	**08VNPC 026**	V-1562A	95,8	91,9	85,6	86,3	89,4
10	**08VNPC 027**	V-1563	96,5	93,0	86,1	87,5	87,8
11	**08VNPC 036**	V-1564	101,7	99,8	88,7	90,5	97,7
12	**08VNPC 037**	V-1565	100,7	97,5	90,4	89,8	100,2
13	**08VNPC 039**	V-1566	90,7	86,8	82,1	83,3	99,1
14	**08VNPC 040**	V-1567	96,5	94,3	88,3	92,5	105,9
15	**08VNPC 034**	V-1568A	97,0	92,4	85,3	89,6	101,9
16	**08VNPC 041**	V-1570	99,0	97,9	97,4	95,8	100,5
17	**08VNPC 050**	V-1571	96,8	96,7	96,7	91,6	101,3
18	**08VNPC 051**	V-1572	104,6	102,6	95,9	97,7	100,9
19	**08VNPC 061**	V-1573	93,5	93,4	88,0	88,0	91,5
20	**08VNPC 062**	V-1574A	79,6	78,8	76,6	72,8	74,8
21	**08VNPC 064**	V-1575	76,3	75,3	75,8	70,0	73,0
22	**08VNPC 065**	V-1576	94,1	92,4	92,1	93,5	96,0
23	**08VNPC 008**	V-1594	98,6	97,6	107,8	103,0	109,4
24	**08VNPC 016**	V-1595	88,0	84,3	91,6	92,4	95,3
25	**08VNPC 018**	V-1596A	90,6	86,8	92,4	93,7	96,5
26	**08VNPC 018-2**	V-1597	85,3	83,0	87,6	89,3	93,9
27	**08VNPC 021**	V-1598A	90,4	91,1	100,8	99,8	104,3
28	**08VNPC 046**	V-1599	97,3	95,1	100,4	98,5	106,1
29	**08VNPC 052**	V-1600	95,5	93,0	101,4	98,6	106,0
30	**08VNPC 053**	V-1601	73,3	70,9	79,8	78,6	78,9
31	**08VNPC 055**	V-1602	84,6	81,5	91,0	87,2	90,4
32	**08VNPC 056**	V-1603A	70,5	68,5	76,5	72,6	69,2
33	**08VNPC 057**	V-1604	93,0	87,8	99,8	95,3	93,5
34	**08VNPC 058**	V-1605	80,9	77,2	83,4	82,9	83,7
35	**08VNPC 006**	V-1606	93,5	89,5	92,7	93,4	97,6

Table 2.3.14 (Cont'd.)

No.	Sample	Sample Data File name	^{13}C -2,3,7,8-TCDF	^{13}C-2,3,7, 8-TCDD	^{13}C - 1,2,3,6,7,8-HxCDD	^{13}C - 1,2,3,4,6,7,8-HpCDD	^{13}C –OCDD
36	**08VNPC 007**	V-1607	89,4	86,0	87,5	90,2	99,9
37	**08VNPC 010**	V-1608	89,4	88,9	92,8	87,5	93,3
38	**08VNPC 011**	V-1609	103,5	104,3	102,6	98,1	101,6
39	**08VNPC 014-2**	V-1610	103,4	106,0	102,3	99,6	97,6
40	**08VNPC 004**	V-1620	79,4	79,4	80,0	70,8	77,3
41	**08VNPC 012-2**	V-1621	77,5	76,9	80,5	70,0	70,1
42	**08VNPC 012**	V-1622	82,8	87,7	78,9	68,6	68,9
43	**08VNPC 002-2**	V-1623	88,3	100,2	87,3	74,0	72,0
44	**08VNPC 001**	V-1669A	85,6	85,5	88,9	88,4	83,9
45	**08VNPC 003**	V-1675	83,8	84,2	81,3	84,7	95,7
46	**08VNPC012 DUPLICATE**	V-1676	83,8	83,9	86,4	93,4	110,8
47	**08VNPC002-2 DUPLICATE**	V-1678	88,8	88,2	88,0	93,2	106,9
		AVERAGE	**89,5**	**88,1**	**87,8**	**86,9**	**91,6**
		MIN	**56,4**	**55,7**	**51,2**	**54,8**	**65,9**
		MAX	**104,6**	**106,0**	**107,8**	**103,0**	**110,8**

Table 2.3.15 Recovery of internal standards in samples from Bien Hoa.

No.	Sample	Sample Data File name	^{13}C -2,3,7,8-TCDF	^{13}C-2,3,7, 8-TCDD	^{13}C - 1,2,3,6,7,8-HxCDD	^{13}C - 1,2,3,4,6,7,8 -HpCDD	^{13}C –OCDD
1	**08VNBH 102**	V-1577	69,7	68,3	68,5	63,9	69,6
2	**08VNBH 104**	V-1578	81,0	80,4	74,2	75,8	77,4
3	**08VNBH 105**	V-1579	91,6	90,0	87,0	81,8	77,8
4	**08VNBH 106**	V-1580A	76,5	73,7	77,6	74,4	70,9
5	**08VNBH 113**	V-1581	86,0	83,2	77,3	81,3	81,5
6	**08VNBH 074**	V-1582	99,0	94,9	94,3	89,8	90,7
7	**08VNBH 076**	V-1583	88,6	87,3	87,0	76,0	81,7
8	**08VNBH 077**	V-1584	93,2	92,2	93,4	79,2	83,4
9	**08VNBH 091**	V-1585	84,4	82,5	87,4	72,6	82,7
10	**08VNBH 085**	V-1586	91,9	93,7	95,1	83,4	88,5
11	**08VNBH 088**	V-1587A	91,6	93,6	96,3	76,5	86,4
12	**08VNBH 097**	V-1588A	94,6	89,0	94,4	91,1	93,2
13	**08VNBH 099**	V-1589	96,0	90,0	94,3	92,4	94,4
14	**08VNBH 112**	V-1590	92,0	84,6	92,0	89,5	91,5
15	**08VNBH 114**	V-1591	90,2	83,7	90,6	87,6	92,5
16	**08VNBH 115**	V-1592	97,4	92,6	94,5	90,0	89,7
17	**08VNBH 119**	V-1593	96,6	90,7	93,8	91,0	94,1
18	**08VNBH 087**	V-1611A	97,9	96,0	97,6	94,3	92,1
19	**08VNBH 107**	V-1612	81,9	78,2	75,6	75,4	82,8
20	**08VNBH 108**	V-1613A	83,2	78,5	75,8	73,7	81,6
21	**08VNBH 110**	V-1614	62,4	60,0	65,2	62,7	71,5
22	**08VNBH 068**	V-1615	94,3	89,6	90,4	86,4	93,3
23	**08VNBH 088-4**	V-1616	90,5	90,8	90,8	77,2	92,0
24	**08VNBH 088-2**	V-1617	90,6	86,6	86,9	87,6	96,7
25	**08VNBH 153**	V-1618	80,0	78,5	77,8	73,9	63,9
26	**08VNBH 159**	V-1619A	63,4	61,8	62,4	58,3	65,2
27	**08VNBH 161**	V-1624	85,5	81,7	81,3	82,1	91,4
28	**08VNBH 163**	V-1625	80,8	77,5	79,1	75,8	81,8
29	**08VNBH 166**	V-1626	82,1	78,0	79,3	75,4	77,0
30	**08VNBH 170**	V-1627	77,1	75,2	72,1	65,1	68,2
31	**08VNBH 156**	V-1628	84,6	80,4	85,8	74,6	72,7
32	**08VNBH 158**	V-1629	82,1	76,9	80,5	66,7	73,0
33	**08VNBH 141-3**	V-1650	88,9	86,8	89,2	91,0	100,7
34	**08VNBH 141-6**	V-1651	90,9	88,6	83,1	88,9	98,4
35	**08VNBH 142**	V-1652	93,3	90,7	84,1	87,9	90,0

Table 2.3.15 (Cont'd.)

No.	Sample	Sample Data File name	^{13}C -2,3,7,8-TCDF	^{13}C-2,3,7, 8-TCDD	^{13}C - 1,2,3,6,7,8-HxCDD	^{13}C - 1,2,3,4,6,7,8 -HpCDD	^{13}C –OCDD
36	**08VNBH 143-3**	V-1653	92,3	86,7	87,5	91,1	99,4
37	**08VNBH 145**	V-1654A	89,0	87,8	83,6	88,5	89,8
38	**08VNBH 147**	V-1655	85,7	83,8	84,3	81,8	90,7
39	**08VNBH 149**	V-1656	87,6	85,5	81,1	85,0	100,7
40	**08VNBH 122**	V-1657	81,6	82,6	81,5	90,6	107,7
41	**08VNBH 127**	V-1658	80,9	80,3	81,8	79,8	89,1
42	**08VNBH 125**	V-1659	88,6	88,8	86,3	91,5	103,4
43	**08VNBH 083**	V-1660A	79,8	78,3	75,6	85,0	108,2
44	**08VNBH 082**	V-1661A	71,8	74,4	71,1	81,1	95,0
45	**08VNBH 080-5**	V-1662	82,6	84,7	81,9	91,3	119,3
46	**08VNBH 130**	V-1663	88,5	84,2	88,1	88,5	97,0
47	**08VNBH 134**	V-1664	85,6	83,1	91,2	89,7	101,1
48	**08VNBH 136**	V-1665	87,0	83,0	85,7	88,6	97,1
49	**08VNBH 137**	V-1666	87,8	84,4	87,4	87,9	103,2
50	**08VNBH 139**	V-1667A	89,2	87,5	91,8	91,4	103,3
51	**08VNBH 141**	V-1668	60,4	85,9	64,0	63,4	119,6
52	**08VNBH 080-4**	V-1670	89,3	89,5	97,3	93,4	92,8
53	**08VNBH 080-3**	V-1671A	87,0	88,9	94,0	90,6	80,0
54	**08VNBH 080-2**	V-1672	83,2	84,0	88,4	84,6	82,3
55	**08VNBH 080**	V-1673	84,9	85,7	92,9	86,2	78,3
56	**08VNBH 088 DUPLICATE**	V-1674	85,0	87,7	86,6	90,4	96,4
		AVERAGE	**85,7**	**84,0**	**84,6**	**82,4**	**89,2**
		MIN	**60,4**	**60,0**	**62,4**	**58,3**	**63,9**
		MAX	**99,0**	**96,0**	**97,6**	**94,3**	**119,6**

Table A2.3 Blank Samples.

Lab Sample I.D.	BL 1517	BLK 35d	BLK 35k	BLK 37a	BLK 37g	BLK 38b
Matrix	Silicagel	Silicagel	Silicagel	Silicagel	Silicagel	Silicagel
Sample Size	20 g	20 g	20 g	20 g	20 g	20 g
Extraction Date	11-Mar-08	31-Mar-08	7-Apr-08	16-Apr-08	19-May-08	26-May-08
Analysis Date	18-Mar-08	2-Apr-08	22-Apr-08	19-May-08	3-Jun-08	11-Jun-08
Sample Data Filename	V-BL1517	V-BLK35d	V-BLK35k	V-BLK37a	V-BLK37g	V-BLK38b
Extract Volume	20 µl	20 µl	20 µl	20 µl	20 µl	20 µl
Injection Volume	2 µl	2 µl	2 µl	2 µl	2 µl	2 µl
Dilution Factor	N/A	N/A	N/A	N/A	N/A	N/A
Cal. Ver. Data Filename	CC3-24	CC3-26B	CC3-29	CC3-30B	CC3-35	CC3-38
GC Column ID	BPX-DXN	BPX-DXN	BPX-DXN	BPX-DXN	BPX-DXN	BPX-DXN

Analyte	WHO 1998 TEF	Conc. Found	Detection Limit	Conc. Found	Detection Limit	Conc. Found	Detection Limit	Conc. Found	Detection Limit	Conc. Found	Detection Limit	Conc. Found	Detection Limit
2,3,7,8-TCDD	1	ND	1.9	ND	1.5	ND	0.5	ND	0.6	ND	0.8	ND	1.5
1,2,3,7,8-PeCDD	1	ND	2.0	ND	2.8	ND	1.9	ND	0.8	ND	1.2	ND	1.9
1,2,3,4,7,8-HxCDD	0.1	ND	2.3	ND	1.3	ND	1.7	ND	1.0	ND	2.2	ND	2.8
1,2,3,6,7,8-HxCDD	0.1	ND	2.5	ND	2.2	ND	2.8	ND	1.0	ND	2.1	ND	3.3
1,2,3,7,8,9-HxCDD	0.1	ND	2.7	ND	1.0	ND	2.5	ND	1.2	ND	2.4	ND	2.5
1,2,3,4,6,7,8-HpCDD	0.01	ND	5.0	ND	4.7	ND	3.9	ND	1.2	ND	4.0	ND	7.8
OCDD	0.0001	ND	6.9	ND	6.8	ND	15.8	ND	1.4	ND	8.6	ND	12.5
2,3,7,8-TCDF	0.1	ND	1.0	ND	0.5	ND	1.3	ND	1.3	ND	1.1	ND	1.0
1,2,3,7,8-PeCDF	0.05	ND	0.8	ND	0.8	ND	1.9	ND	0.8	ND	0.7	ND	1.4
2,3,4,7,8-PeCDF	0.5	ND	1.0	ND	0.9	ND	0.7	ND	0.7	ND	0.9	ND	1.3
1,2,3,4,7,8-HxCDF	0.1	ND	2.6	ND	1.5	ND	1.3	ND	0.4	ND	1.2	ND	1.7
1,2,3,6,7,8-HxCDF	0.1	ND	2.6	ND	2.5	ND	1.1	ND	0.4	ND	1.2	ND	2.2
1,2,3,7,8,9-HxCDF	0.1	ND	2.8	ND	2.4	ND	2.7	ND	1.3	ND	1.6	ND	3.4
2,3,4,6,7,8-HxCDF	0.1	ND	1.9	ND	0.8	ND	1.6	ND	0.6	ND	1.2	ND	2.9
1,2,3,4,6,7,8-HpCDF	0.01	ND	4.6	ND	2.7	ND	3.8	ND	1.2	ND	1.9	ND	5.0
1,2,3,4,7,8,9-HpCDF	0.01	ND	4.5	ND	3.0	ND	5.2	ND	1.1	ND	3.6	ND	3.2
OCDF	0.0001	ND	5.1	ND	3.5	ND	5.2	ND	1.2	ND	4.3	ND	8.1
TOTAL TEQ													
	ND = 0	**ND**		**ND**		**ND**		**ND**		**ND**		**ND**	
	ND = 1/2 DL	**3.21**		**3.06**		**2.24**		**1.27**		**1.94**		**3.13**	
	ND = DL	**6.42**		**6.12**		**4.48**		**2.55**		**3.88**		**6.26**	

ND = not detected

Table A2.4 Samples analyzed by VRTC and AXYS labs for Phu Cat and Bien Hoa, 2008.

A Phù Cát Airbase

TT		PCDD (pg/g)							PCDF (pg/g)										TEQ lowerbound	TEQ upperound	TEQ ND (<)=1/2DL	% 2378-TCDD/TEQ
		2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF				
I	**Former Storage Area**																					
1	**08VNPC 001**	**36356**	442	< 30	< 30	< 30	240	460	1440	< 20	42.4	< 30	< 30	< 30	< 30	129.1	< 30	< 50	36967	36989	36978	98.3
2	**08VNPC 002-2**	**235924**	1555	140	1372	522	6088	10270	1987	63.1	235	141	41.2	41.1	61.4	986	21.5	458	238102	238102	238102	99.1
3	**08VNPC 003**	**4096**	140	< 10	# 25	# 50,7	104	578	306	< 10	# 16	< 10	< 10	< 10	< 10	99.5	< 10	# 87	4269	4290	4280	95.7
4	**08VNPC 004**	**3431**	135	4.7	24.6	11.2	146	412	168	9.1	6.7	4.0	1.9	< 1,6	8.9	40.4	< 3,9	24.7	3594	3594	3594	95.5
5	**08VNPC 010**	**7300**	156	12.8	117	48.0	530	1041	245	8.9	16.0	16.1	5.0	2.7	5.0	101	< 3,8	67.7	7516	7516	7516	97.1
6	**08VNPC 011**	**345**	4.8	1.1	3.7	2.4	9.9	57.1	9.0	< 0,8	< 0,4	# 1,6	< 0,7	< 0,7	< 0,5	3.1	< 1,5	3.0	352	352	352.06	98.1
7	**08VNPC 012**	**29979**	261	< 30	285	# 115	520	1211	1447	# 37	< 30	< 30	# 27,5	< 10	< 20	133	< 20	# 83	30420	30460	30440	98.5
8	**08VNPC 012-2**	**549**	10.8	# 0,8	4.8	2.1	18.6	124	31.0	< 1,0	# 1,5	< 0,7	< 0,2	< 0,6	1.1	4.1	< 1,4	2.0	564	565	564	97.3
9	**08VNPC 014-2**	**16500**	212	8.7	126	48.8	511	794	263	10.0	21.0	15.3	4.8	4.7	5.1	78.8	2.9	57.1	16776	16776	16776	98.4
II	**Former Loading Area**																					
1	**08VNPC 006**	16.3	< 1,1	< 2,0	< 2,2	< 3,0	39.1	343	4.00	< 0,8	< 0,6	# 1,8	< 0,9	# 1,9	< 1,4	9.10	< 1,6	19.2	17.2	20.0	18.6	87.6
2	**08VNPC 007**	47.1	< 2,0	< 1,9	5.90	< 3,0	33.4	258	6.00	< 1,2	# 2,5	2.30	< 1,5	< 1,8	< 1,3	7.40	< 4,2	9.90	49.0	58.3	53.6	87.9
3	**08VNPC 008**	3.80	< 1,0	< 2,2	< 1,6	3.10	4.30	62.5	< 1,0	< 0,7	< 0,4	< 2,2	< 1,4	< 1,5	< 1,5	# 1,9	< 1,7	< 3,4	4.16	6.57	5.36	70.8
4	**08VNPC 018**	840	11.2	1.50	8.40	6.40	36.1	133	110	5.10	1.30	2.20	< 0,9	< 1,1	< 0,4	10.2	< 1,3	7.20	865	866	866	97.0
5	**08VNPC 018-2**	850	11.3	2.90	9.30	6.20	38.9	176	107	7.00	# 2,3	2.40	< 1,5	< 1,7	< 1,5	9.50	< 1,6	13.2	875	877	876	97.1
III	**Former Washing Area**																					
1	**08VNPC 023**	1.00	< 1,0	< 1,0	< 1,2	3.00	15.0	136	< 1,0	< 1,0	< 1,0	< 1,4	< 1,1	< 1,9	< 1,2	4.90	< 2,4	< 2,1	1.51	3.97	2.74	36.5
2	**08VNPC 024-2**	0.900	< 0,7	< 1,1	< 1,5	< 2,4	# 6,1	20.4	< 0,5	< 0,8	< 0,6	< 1,2	< 1,7	< 0,9	< 1,7	< 1,8	< 2,1	< 3,2	0.902	3.14	2.02	44.5
3	**08VNPC 025**	0.700	< 1,0	< 1,6	# 4,5	< 2,5	14.0	104	< 1,0	< 0,9	< 0,9	< 2,0	# 3,0	< 1,8	< 1,0	6.20	< 5,0	10.4	0.913	4.20	2.56	27.4
4	**08VNPC 026**	1.20	< 0,8	< 1,7	< 1,3	< 1,1	3.80	24.9	< 0,5	< 0,5	< 0,4	< 2,1	< 2,2	< 1,2	< 1,4	# 3,7	< 5,3	< 3,3	1.24	3.51	2.38	50.5
5	**08VNPC 027**	2.10	< 1,7	< 2,0	9.20	4.90	61.6	286	< 1,5	< 1,5	< 0,4	3.40	< 2,2	# 3,1	< 2,0	19.3	< 3,0	13.8	4.69	7.77	6.23	33.7
6	**08VNPC 040**	2.90	< 1,1	< 3,0	< 3,0	< 2,1	21.8	197	< 1,0	< 0,7	< 0,7	< 1,0	< 1,6	< 3,0	< 2,3	9.30	< 4,5	9.50	3.23	6.46	4.85	59.8
7	**08VNPC 041**	4.10	< 0,8	< 1,6	< 3,0	< 3,0	< 2,4	56.1	< 1,0	< 0,8	< 1,0	< 1,2	< 1,1	< 1,6	< 1,7	< 2,9	< 2,9	< 2,8	4.11	6.95	5.53	74.2
8	**08VNPC 050**	2.40	< 1,9	< 1,3	< 1,7	< 3,0	< 4,9	45.0	< 1,0	< 1,1	< 0,8	< 2,0	< 1,6	< 2,0	< 1,2	< 4,0	< 2,9	< 3,4	2.41	6.26	4.33	55.4
9	**08VNPC 051**	2.30	< 1,2	< 3,0	6.30	9.20	38.7	226	< 1,0	< 1,3	< 1,3	< 1,9	< 1,2	< 2,2	< 1,7	8.30	< 1,8	9.30	4.34	7.38	5.86	39.2
IV	**South East Corner**																					
1	**08VNPC 029**	2.20	3.20	7.30	39.8	19.8	936	5407	< 1,0	< 0,8	< 0,6	12.4	7.50	3.20	10.7	192	6.40	280	27.4	27.8	27.6	7.97
2	**08VNPC 030**	12.2	3.70	1.70	2.90	3.10	39.6	156	< 1,0	< 0,6	< 0,8	2.20	2.40	< 0,9	< 1,9	5.70	< 2,9	# 6,3	17.6	18.4	18.0	67.7
3	**08VNPC 031**	7.50	36.9	67.9	239	221	12387	39003	5.00	4.40	6.50	20.7	13.5	5.50	13.3	205	10.5	205	236	236	236	3.17
4	**08VNPC 032**	2.40	3.50	7.40	10.1	10.4	132	834	1.50	# 2,2	2.60	< 2,6	< 2,7	< 3,0	< 3,0	20.8	< 3,2	29.1	11.8	13.0	12.4	19.4
5	**08VNPC 033**	5.10	3.70	4.90	5.40	6.50	69.9	427	< 1,0	1.40	# 1,2	# 2,1	2.10	< 2,1	< 1,6	12.7	< 3,0	7.80	11.6	12.9	12.3	41.5
6	**08VNPC 034**	1.30	< 1,5	4.60	14.3	12.3	257	1716	1.00	< 1,0	< 0,6	# 4,7	< 1,3	< 1,8	4.20	41.4	< 3,2	55.8	8.11	10.8	9.4	13.8
7	**08VNPC 036**	1.40	4.40	6.30	12.6	8.20	247	1462	36.1	5.60	7.40	8.40	12.8	3.10	9.00	60.5	9.0	75.6	22.7	22.8	22.7	6.15
8	**08VNPC 037**	1.70	< 1,4	3.50	10.6	3.20	86.2	460.9	< 1,0	< 0,9	# 2,3	5.00	4.40	3.40	6.20	23.2	< 2,4	17.3	6.47	9.19	7.83	21.7
9	**08VNPC 039**	2.00	10.7	37.1	125	62.9	4369	31116	9.00	# 2,8	# 2,0	15.3	10.9	6.80	24.8	959	50.6	2526	99.0	100	99.6	2.01
V	**Buffer Zone (Perimeter)**																					
1	**08VNPC 016**	2888	48.3	6.20	29.4	16.2	129	389	64.9	< 2,3	# 3,0	4.10	< 1,3	< 1,2	< 0,6	21.7	< 3,2	18.7	2950	2952	2951	97.9
2	**08VNPC 021**	894	7.20	# 2,5	16.3	4.70	51.5	136	38.7	2.0	# 1,8	< 1,5	< 1,5	< 2,2	< 1,4	8.40	< 2,1	# 5,7	908	910	909	98.4
3	**08VNPC 046**	103	3.10	# 4,5	< 2,1	< 3,9	# 5,7	127	13.0	< 1,1	< 1,5	< 1,0	< 1,5	< 1,2	< 1,9	4.70	< 1,9	< 6,3	107	110	109	94.7
4	**08VNPC 052**	0.500	< 0,5	< 1,7	< 1,6	< 1,4	6.40	65.5	2.00	< 0,6	< 0,7	< 1,2	< 0,8	< 1,3	< 1,0	# 2,8	< 3,9	< 2,5	0.771	2.17	1.47	34.0
5	**08VNPC 053**	28.6	# 1,5	2.10	7.30	7.00	104	882	4.00	< 0,5	< 0,8	< 0,9	< 1,1	< 1,3	< 2,1	29.4	< 2,5	53.6	32.07	34.6	33.3	85.8
VI	**Sedimentation Tank**																					
1	**08VNPC 055**	124	< 1,8	# 2,3	# 3,8	3.0	28.1	198	13.0	< 1,4	< 0,9	< 1,8	< 1,3	< 2,0	< 1,5	9.50	< 2,0	12.0	126	129	127	97.0
2	**08VNPC 056**	77.4	2.00	< 1,0	< 1,5	< 2,2	11.8	90.9	10.0	< 0,7	# 1,0	< 0,7	< 0,9	< 1,0	< 0,9	4.90	< 2,1	< 3,9	80.6	82.0	81.3	95.2
3	**08VNPC 057**	2.10	< 1,0	< 1,1	# 2,5	< 2,3	6.0	190	2.0	< 0,7	< 0,8	< 0,9	< 0,8	< 0,9	< 1,0	< 2,6	< 1,7	< 1,7	2.38	4.81	3.59	58.4
4	**08VNPC 058**	109	3.30	# 2,0	6.0	# 3,8	38.8	286	20.0	4.20	8.50	4.70	1.90	2.60	3.30	13.0	< 1,2	15.1	122	122	121.9	89.8
	Lake A																					
1	**08VNPC 061**	10.9	< 2,0	2.50	5.90	6.10	56.2	225	6.0	< 1,0	< 1,7	3.50	4.90	< 1,8	< 1,3	5.70	< 1,8	6.90	14.4	17.7	16.0	68.0
2	**08VNPC 062**	22.9	< 1,1	2.90	4.70	3.90	55.5	371	14.0	4.50	9.2	6.30	4.90	3.20	6.70	12.6	< 2,5	9.00	33.1	34.2	33.7	68.0
	Lake B																					
1	**08VNPC 064**	7.1	< 1,1	< 3,0	< 2,3	4.9	83.8	534	7.0	# 5,4	< 2,0	# 4,5	< 1,1	< 3,0	< 1,2	16.8	< 1,9	12.0	9.35	13.2	11.3	63.0
	Lake C																					
1	**08VNPC 065**	# 3,0	< 2,0	# 4,9	< 2,7	4.2	12.5	115	< 1,0	< 2,5	< 2,2	< 2,4	< 1,1	< 1,9	< 1,1	6.6	< 6,4	< 0,9	0.620	8.42	4.5	-

Table A2.4 (Cont'd.)

B Biên Hoà Airbase

TT		PCDD (pg/g)							PCDF (pg/g)												
		2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	TEQ lowerbound	TEQ upperound	TEQ ND (<)=1/2DL	% 2378-TCDD/TEQ
I	**Site A**																				
1	**08VNBH 068**	1376	18.7	2.70	6.30	4.50	165	1221	54.4	# 1,4	< 1,0	3.10	< 1,2	< 1,6	< 1,1	25.1	< 2,9	41.5	1404	1405	1404	98.0
2	**08VNBH 074**	439	3.90	3.20	10.5	8.30	152	1080	8.00	< 1,4	< 1,6	2.60	2.00	< 1,7	2.30	22,2	< 5,4	41.3	449	450	449	97.8
3	**08VNBH 076**	1529	< 1,2	6.50	7.80	4.80	194	1054	16.0	< 1,5	3.00	4.60	2.50	< 2,5	6.40	21.2	< 3,3	28.0	1538	1539	1538	99.4
4	**08VNBH 077**	70.5	< 1,6	2.50	4.20	# 2,3	58.8	322	2.00	< 1,0	< 0,9	< 1,2	2.50	< 1,5	2.60	19.9	< 3,2	15.4	72.7	75.3	74.0	95.3
5	**08VNBH 085**	1975	20.0	2.90	7.10	5.80	154	1211	30.5	# 4,4	< 0,7	7.80	5.30	< 1,5	4.30	34.0	< 3,6	49.3	2003	2004	2004	98.6
6	**08VNBH 087**	428	8.60	< 2,5	# 4,3	3.40	16.9	80.9	27.0	< 0,8	# 1,0	< 0,8	< 1,0	< 1,1	< 1,2	7.40	< 1,2	14.3	439	441	440	97.1
7	**08VNBH 088**	71.5	# 2,8	< 2,3	7.30	5.70	121	867	6.00	< 2,0	< 3,0	< 3,9	< 2,5	< 2,8	< 3,0	56.5	7.50	159	75.4	81.2	78.3	91.3
9	**08VNBH 088-2**	15.9	< 2,0	< 1,3	4.20	4.10	22.8	170	# 3,0	< 1,3	< 1,5	< 1,1	< 1,3	< 1,8	< 1,3	12.1	< 1,5	30.1	17.1	20.9	19.0	83.7
10	**08VNBH 088-4**	3.40	< 2,0	< 0,9	< 1,3	1.80	5.90	47.3	< 1,0	< 0,4	< 0,4	< 2,1	< 2,1	< 3,6	< 0,6	6.30	< 2,4	8.30	3.71	7.11	5.41	62.8
11	**08VNBH 091**	214	11.1	11.3	24	19.9	533	3776	9.00	5.20	3.50	18.8	7.30	4.20	9.20	174	14.3	192	245	245	245	87.3
12	**08VNBH 097**	9.50	< 1,2	< 1,4	4.00	3.70	60.0	846	2.00	< 0,8	< 1,5	2.20	< 1,0	< 1,7	< 1,3	13.8	< 3,1	68.7	11.5	14.1	12.8	74.2
13	**08VNBH 099**	132	3.10	4.40	8.40	6.80	176	1139	5.00	< 0,5	< 1,6	< 1,3	< 1,1	< 3,5	4.30	30.0	< 4,0	35.4	140	141	140	93.7
14	**08VNBH 112**	30.4	# 3,5	6.20	16.0	8.60	327	2488	4.00	< 2,9	# 2,6	8.60	6.40	4.6	4.30	59.6	< 2,4	86.9	40.4	45.3	42.8	71.0
II	**Pacer Ivy (Site B)**																					
1	**08VNBH 102**	29.2	4.9	10.2	28.4	16.2	3237	22264	10.0	4.0	# 3,6	12.3	7.4	7.4	6.80	63.3	< 2,5	73.7	79.4	81.2	80.3	36.4
2	**08VNBH 104**	2000	11.9	15.3	36.3	30.1	574	3021	64.0	5.2	5.2	10.5	10.2	6.1	7.20	108	< 5,2	92.3	2040	2040	2040	98.0
3	**08VNBH 105**	22256	216	53.3	250	138	1240	3348	2430	46.5	26.5	19.5	9.1	4.1	40.1	106	7.4	52.6	22796	22796	22796	97.6
4	**08VNBH 106**	140	< 2,3	5.8	8.0	10.0	133	974	6.0	< 2,2	< 1,7	< 2,5	< 2,2	< 2,1	< 3,0	27.8	< 5,0	35.1	145	149	147	95.4
5	**08VNBH 107**	489	21.0	19.9	54.0	40.3	1389	11720	42.1	8.1	11.9	20.2	13.1	5.1	18.7	234	9.6	338	556	556	556	88.1
6	**08VNBH 108**	1030	22.8	13.8	41.0	31.7	705	4950	71.5	7.5	12.8	10.7	9.5	# 2,4	10.1	122	# 11	153	1087	1088	1087	94.7
7	**08VNBH 110**	1400	52.5	22.4	68.2	45.1	1237	9253	83.4	7.1	12.9	18.3	17.5	6.0	10.1	214	7.0	327	1502	1502	1502	93.2
8	**08VNBH 113**	68.7	6.6	18.6	23.0	24.8	379	2650	39.8	< 2,7	< 1,8	3.6	5.7	< 4,6	7.50	45.2	< 5,0	80.7	92.1	93.7	92.9	74.0
9	**08VNBH 114**	467	17.8	9.0	33.0	21.8	725	6794	79.4	6.1	6.8	8.5	7.4	4.7	13.5	101	4.7	167	516	516	516	90.6
10	**08VNBH 115**	1.0	< 2,0	< 2,8	< 3,0	< 3,0	20.2	215	< 1,0	< 1,0	< 0,8	< 0,6	2.6	< 0,9	< 1,5	6.90	< 1,5	6.70	1554	5.30	780	0.128
11	**08VNBH 119**	70.1	135	12.9	21.3	20.6	286	1208	5.0	# 2,3	# 3,1	3.5	3.1	1.4	3.70	18.4	< 1,5	17.8	216	218	217	32.4
III	**Z1 Area**																					
1	**08VNBH 080**	36770	562	< 100	364	335	588	1143	715	# 52	# 69	< 50	< 50	< 50	< 50	557	< 50	< 100	37485	37553	37519	98.0
2	**08VNBH 080-2**	144110	1069	260	576	543	2678	6019	6116	125	219	# 210	< 42	< 50	< 50	437	< 50	467	146076	146112	146094	98.6
3	**08VNBH 080-3**	259140	1522	143	1253	561	5419	11830	6530	45.0	189	222	53.0	< 20	71.0	783	< 40	842	261705	261708	261707	99.0
4	**08VNBH 080-4**	215300	1275	117	755	538	3854	6693	5490	# 58	127	< 40	< 50	< 50	< 50	645	< 50	747	217374	217397	217386	99.0
5	**08VNBH 080-5**	26233	132	# 11	87.3	32.9	397	668.4	205	9.00	25.0	21.0	6.50	27.0	< 6,6	65.5	< 10	50.2	26421	26423	26422	99.3
6	**08VNBH 082**	48597	329	34.8	226	107	947	1845	802	# 12,8	41.2	25.3	# 6,6	< 5	# 15	124	< 7	101	49077	49080	49079	99.0
7	**08VNBH 083**	99.7	6.00	0.900	4.10	4.40	17.9	68.6	8.00	< 1,2	# 2,6	< 3,0	< 3,0	< 3,0	< 3,0	6.0	< 3,4	< 5,5	108	110	109	91.5
8	**08VNBH 122**	194	22.5	3.90	9.80	7.70	170	1101	7.00	# 1,4	< 1,1	4.50	# 3,1	< 3,2	6.60	28.2	# 5,6	47.8	223	224	223	86.9
9	**08VNBH 125**	2013	53.7	8.20	29.1	16.4	305	1996	83.2	3.60	3.90	11.2	5.30	4.50	4.60	55.8	# 4,6	82.4	2089	2089	2089	96.4
10	**08VNBH 127**	65.8	1.80	# 3,3	4.80	2.50	50.0	545	3.00	< 0,8	< 1,0	2.70	< 1,8	< 2,4	< 2,0	13.9	< 2,0	27.0	69.6	71.1	70.4	93.5
11	**08VNBH 130**	566	13.7	3.10	11.6	7.80	176	1182	21.8	< 0,8	3.10	2.80	2.60	< 2,7	< 2,7	33.7	< 5,0	64.5	589	589	589	96.1
12	**08VNBH 134**	41.1	4.40	< 3	8.20	< 3	21.8	180	6.00	< 2	< 1,2	< 2,1	< 2,1	< 1,4	< 2,3	10.0	< 5,6	# 10	47.3	49.4	48.3	85.0
13	**08VNBH 136**	67.4	2.20	< 2,2	4.90	# 5,2	65.3	315	5.00	< 1,1	# 2,9	< 2,2	< 1,9	< 1,8	< 1,2	8.00	< 5,9	16.7	71.4	74.4	72.9	92.5
14	**08VNBH 137**	396	# 15	< 2,9	6.00	4.70	19.1	63.5	43.0	# 2,3	# 5,1	# 3,4	# 4,2	< 2,5	< 3,0	# 2,9	< 2,7	< 5,7	401	421	411	96.3
15	**08VNBH 139**	20.0	# 6,2	< 3,0	7.00	4.80	10.8	80.7	6.00	< 0,6	# 3,2	< 1,2	< 1,0	< 2,8	< 1,0	2.40	< 2,0	< 10	21.9	30.7	26.3	76.0
16	**08VNBH 141**	742	4.80	< 1,8	# 5,5	6.00	55.2	1070	16.0	< 2,5	# 8,0	< 5	< 5	< 5	< 5	< 5	< 10	33.1	750	757	753	98.5
17	**08VNBH 141-3**	8236	54.4	5.40	25.8	8.90	97.7	404	106	# 1,9	3.00	9.60	# 3,9	# 7,3	# 6,1	43.1	< 3,2	33.0	8309	8311	8310	99.1
18	**08VNBH 141-6**	11.8	9.20	< 1,3	2.90	< 1,9	4.30	27.9	< 1,0	< 1,3	< 1,5	< 1,5	< 0,8	< 1,7	< 0,8	2.20	< 4,8	< 5,1	21.4	23.1	22.2	53.1
19	**08VNBH 142**	31.3	6.40	# 2,8	4.80	4.40	53.8	499	2.00	< 1,2	< 1,8	2.70	< 1,0	< 2,2	< 1,4	16.9	< 3,1	24.5	39.9	41.6	40.7	76.9
20	**08VNBH 143-3**	3.80	< 2,0	< 1,7	< 3,2	< 4,2	< 7,4	29.6	< 1,0	< 1,1	< 1,2	< 2,3	< 2,1	< 1,9	< 2,4	< 3,1	< 5,6	< 5,4	3.80	8.50	6.15	61.8
21	**08VNBH 145**	81.8	9.20	1.60	6.60	4.70	45.5	277	9.10	< 0,8	< 1,2	# 1,9	# 1,2	< 1,2	# 1,9	10.5	< 2,3	14.1	93.8	95.1	94.4	86.6
22	**08VNBH 147**	236	18.8	< 2,5	8.30	7.80	30.9	285	5.00	< 1,1	< 1,1	< 1,6	< 2,1	< 2,0	< 2,3	9.10	< 4,3	12.5	258	259	259	91.4
23	**08VNBH 149**	94.3	8.80	< 3,0	4.00	# 5,7	27.6	257	4.00	< 1,3	# 1,6	< 1,2	< 1,9	< 1,9	< 3,3	6.80	< 1,9	< 4,0	104	107	106	89.3
24	**08VNBH 153**	738	13.0	2.10	11.7	7.00	95.0	381	20.3	1.20	# 1,8	1.70	1.20	1.50	1.50	13.3	1.30	14.4	757	758	757	97.4
25	**08VNBH 156**	15.2	# 7,0	< 4,9	4.60	< 3,9	17.5	168	3.00	< 1,3	< 1,2	< 1,2	< 1,9	< 3,1	< 2,5	6.60	< 2,6	# 17,4	16.2	25.7	20.9	72.6
26	**08VNBH 158**	18.0	# 6,5	< 0,4	# 2,1	# 1,8	5.20	17.8	2.00	< 0,5	< 0,4	< 0,8	< 0,7	< 0,7	< 0,5	2.10	< 1,7	# 6,5	18.3	25.7	22.0	81.8
27	**08VNBH 159**	727	20.3	2.70	12.1	8.00	158	962	37.6	# 1,5	# 1,9	2.20	2.10	1.20	1.60	23.0	< 1,4	39.0	756	757	756	96.1
28	**08VNBH 161**	311	8.40	2.40	5.40	3.90	84.6	450	6.00	< 0,9	< 2,1	# 0,6	< 0,6	< 0,6	1.70	8.50	< 2,1	7.60	322	324	323	96.3
29	**08VNBH 163**	17.4	# 7,1	2.70	7.10	4.80	165	773	3.00	< 1,1	< 0,5	2.20	1.40	< 1,7	< 0,7	17.9	< 1,5	18.9	21.4	29.1	25.3	68.9
30	**08VNBH 166**	80.9	9.20	3.20	8.70	7.40	368	1645	12.0	< 1,3	< 1,2	1.30	0.900	1.10	# 0,9	18.4	< 1,6	21.5	97.6	98.4	98.0	82.6
31	**08VNBH 170**	12395	733	25.1	273	106	1272	4069	521	7.60	105	63.6	14.6	16.8	19.8	243	13.3	160	13301	13301	13301	93.2

Appendix A3

AXYS Methods and Laboratory Results

ANALYSIS OF POLYCHLORINATED DIOXINS AND FURANS BY EPA METHOD 1613B

Samples are spiked with a suite of isotopically labelled surrogate standards prior to analysis, solvent extracted, and cleaned up through a series of chromatographic columns that may include gel permeation, silica, Florisil, carbon/Celite, and alumina columns. The extract is concentrated and spiked with an isotopically labelled recovery (internal) standard. Analysis is performed using a high-resolution mass spectrometer coupled to a high-resolution gas chromatograph equipped with a DB-5 capillary chromatography column (60 m, 0.25 mm i.d., 0.1 µm film thickness). A second column, DB-225 (30 m, 0.25 mm i.d., 0.15 µm film thickness), is used for confirmation of 2,3,7,8-TCDF identification. All procedures are carried out according to protocols as described in EPA Method 1613B, with the significant modifications summarized below. The data are evaluated against QC criteria presented in Tables 1 and 2.

Method Modifications:

Section 2.1.2

Non-aqueous liquid from multiphase sample is combined with the solid phase and extracted by Dean Stark soxhlet.

Section 7.2.1

Anhydrous sodium sulphate (Na_2SO_4) is purchased in powder form (not granular) and is baked overnight prior to use. There is no solvent rinse with dichloromethane.

Section 7.10

The concentration of the labelled compound spiking solution is 100 ng/mL (except for OCDD which is 200 ng/mL) and the sample spiking volume is 20 µL. The resulting concentrations in the final extracts are as specified in the method.

Section 7.11

The concentration of the clean-up standard spiking solution is 10 ng/mL and the sample spiking volume is 20 µL. The resulting concentration in the final extracts are as specified in the method.

Sections 7.13, 14.0, 15.0

An additional lower level calibration solution, 0.2 times the concentration of CS1, is prepared and included in the initial calibration series. Initial calibration is based on a six-point series.

Section 7.14

The concentration of the PAR spiking solutions is 0.2/1.0/2.0 ng/mL for tetra/penta, hexa, hepta, hexa/octas respectively and the spiking volume is 1 mL. The resulting final concentration in the extracts are as specified in the method.

Section 9.3.3, Table 7

Acceptance criteria for the percent recovery of surrogate standards in samples have been revised. Criteria that are higher than 130% have been lowered to 130%, as presented in Table 1.

Section 11.5

Aqueous samples containing >1% visible solids are prepared and extracted using the same procedure as samples containing ≤1% visible solids. This involves extracting the solids by soxhlet and the filtrate by separatory funnel extraction and combining the extract from the two phases.

Section 12.0

Samples with sufficiently low moisture content may be mixed with Na_2SO_4 and extracted using regular soxhlet apparatus in 80:20 toluene:acetone.

Section 12.4

The equilibration time for the sodium sulphate drying step is that required to produce a dry, free flowing powder (minimum thirty minutes). This may be less than the 12-hour minimum specified in EPA 1613B.

Section 12.5.1

Samples are spiked with cleanup standard right after extraction and before reduction; not spiked into the separatory funnels containing the extracts prior to the acid/base wash.

Section 12.6.1.1

Rotary evaporator baths are maintained at 35ºC. Mimic proofs are collected instead of collecting proofs each day and archiving.

Section 13.0

Extracts may be cleaned up on silica, alumina and carbon chromatographic columns using a Fluid Management System (FMS) automated cleanup system.

Section 13.7

Gravimetric lipid analysis is carried out on two subsamples of the extract.

Sections 14.0, 15.0, 16.0, Table 8, Table 9

M/Z channels 354/356 and 366/368 are used to confirm and quantify the native and surrogate penta-substituted dioxins, respectively; this change from the method's specification is made in the instrument method in order to avoid a persistent interference in the 356/358 and 368/370 M/Z channels. The theoretical ratio for the P5CDD M/M+2 ions is 0.61; therefore, the acceptance range is 0.52 - 0.70.

Section 15.3.5, Table 6

Acceptance criteria for calibration verification concentrations have been modified, as presented in Table 1, so that ranges do not exceed 70-130% of the test concentration.

Section 15.5.3 Table 6

Acceptance specifications for OPR concentrations have been modified, as presented in Table 1, so that ranges do not exceed 70-130%.

Section 17.0

$Conc_i$ - the concentrations of target analytes, and the labelled compound concentrations and recoveries, are calculated using the equations below. These procedures are equivalent to those described in the method but are more direct.

$$Conc_i = \frac{A_i}{A_{si}} \times \frac{M_{si}}{RRF_{i,si}} \times \frac{1}{M_x}$$

where A_i = summed areas of the primary and secondary m/z's for the analyte peak of interest (compound *i*)

A_{si} = summed areas of the primary and secondary m/z's for the labelled surrogate peak used to quantify *i*)

M_x = mass of sample taken for analysis

M_{si} = mass of labelled surrogate (compound *si*) added to sample as calculated by the concentration of standard spiked (pg/mL) multiplied by the volume spiked (mL)

$RRF_{i,si}$ = mean relative response factor of *i* to *si* from the five-point calibration range and defined individually as:

$$\frac{A_i}{A_{si}} \times \frac{M_{si}}{M_i}$$

Calculation of Surrogate Standard Concentrations and Percent Recoveries:

Concentrations of surrogate standards are calculated using the following equation:

$$Conc_{si} = \frac{A_{si}}{A_{rs}} \times \frac{M_{rs}}{RRF_{si,rs}}$$

and, the percent recoveries of the surrogate standards are calculated using the following equation:

$$\%\text{Recovery} = \frac{A_{si}}{A_{rs}} \times \frac{M_{rs}}{RRF_{si,rs}} \times \frac{1}{M_{si}} \times 100$$

where A_{rs} and A_{si} are the summed peak areas (from the primary and secondary m/z channels) of recovery standard and labelled surrogate added to the sample;
M_{rs} and M_{si} are the masses of recovery standard and labelled surrogate added to the sample, and;
$RRF_{si,rs}$ is the mean relative response factor of the labelled surrogate to the recovery standard as determined by the five-point calibration range and defined individually as:

.

$$\frac{A_{si}}{A_{rs}} \times \frac{M_{rs}}{M_{si}}$$

Section 17.5

Extracts may be diluted with solvent and re-analyzed by GC/MS isotope-dilution to bring the instrumental response to within the linear range of the instrument. For very high-level samples where a smaller sample aliquot may not be representative, extracts may be diluted and re-spiked with labelled quantification standards and re-analyzed by GC/MS to bring the instrumental response analytes within range. Final results may be recovery corrected using the mean recovery of labelled quantification standards.

Table 1 QC Acceptance Criteria for PCDD/F in CAL/VER, IPR, OPR and Test Samples[1]

	Test Conc ng/mL	IPR[2]		OPR[3] (%)	I-CAL %	CAL/VER[4] (%)	Labelled Cmpd %Rec. in Sample	
		RSD (%)	X(%)				Warning Limit	Control Limit
Native Compound								
2,3,7,8-TCDD	10	28	83-129	70-130	20	78-129	-	-
2,3,7,8-TCDF	10	20	87-137	75-130	20	84-120	-	-
1,2,3,7,8-PeCDD	50	15	76-132	70-130	20	78-130	-	-
1,2,3,7,8-PeCDF	50	15	86-124	80-130	20	82-120	-	-
2,3,4,7,8-PeCDF	50	17	72-150	70-130	20	82-122	-	-
1,2,3,4,7,8-HxCDD	50	19	78-152	70-130	20	78-128	-	-
1,2,3,6,7,8-HxCDD	50	15	84-124	76-130	20	78-128	-	-
1,2,3,7,8,9-HXCDD	50	22	74-142	70-130	35	82-122	-	-
1,2,3,4,7,8-HxCDF	50	17	82-108	72-130	20	90-112	-	-
1,2,3,6,7,8-HxCDF	50	13	92-120	84-130	20	88-114	-	-
1,2,3,7,8,9-HxCDF	50	13	84-122	78-130	20	90-112	-	-
2,3,4,6,7,8-HxCDF	50	15	74-158	70-130	20	88-114	-	-
1,2,3,4,6,7,8-HpCDD	50	15	76-130	70-130	20	86-116	-	-
1,2,3,4,6,7,8-HpCDF	50	13	90-112	82-122	20	90-110	-	-
1,2,3,4,7,8,9-HpCDF	50	16	86-126	78-130	20	86-116	-	-
OCDD	100	19	86-126	78-130	20	79-126	-	-
OCDF	100	27	74-146	70-130	35	70-130	-	-
Surrogate Standards								
$^{13}C_{12}$-2,3,7,8-TCDD	100	37	28-134	25-130	35	82-121	40-120	25-130
$^{13}C_{12}$-2,3,7,8-TCDF	100	35	31-113	25-130	35	71-130	40-120	24-130
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	39	27-184	25-150	35	70-130	40-120	25-130
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	34	27-156	25-130	35	76-130	40-120	24-130
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	38	16-279	25-130	35	77-130	40-120	21-130
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	41	29-147	25-130	35	85-117	40-120	32-130
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	38	34-122	25-130	35	85-118	40-120	28-130
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	43	27-152	25-130	35	76-130	40-120	26-130
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	35	30-122	25-130	35	70-130	40-120	26-123
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	40	24-157	25-130	35	74-130	40-120	29-130
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	37	29-136	25-130	35	73-130	40-120	28-130
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	35	34-129	25-130	35	72-130	40-120	23-130
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	41	32-110	25-130	35	78-129	40-120	28-130
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	40	28-141	25-130	35	77-129	40-120	26-130
$^{13}C_{12}$-OCDD	200	48	20-138	25-130	35	70-130	25-120	17-130
Cleanup Standard								
$^{37}Cl_4$-2,3,7,8-TCDD	10	36	39-154	31-130	35	79-127	40-120	35-130

[1] QC acceptance criteria for IPR, OPR, and samples based on a 20 µL extract final volume

[2] IPR: Initial Precision and Recovery demonstration

[3] OPR: Ongoing Precision and Recovery test run with every batch of samples.

[4] CAL VER: Calibration Verification test run at least every 12 hours

Table 2 QC Specifications for QC Samples, Instrumental Analysis, and Analyte Quantification

QC Parameter	Specification
Analysis Duplicate	Must agree to within ±20% of the mean (applicable to concentrations >10 times the DL)[1]
Procedural Blank	**Blood:** TCDD/F <0.2 pg/sample, PeCDD/F <0.5 pg/sample, HxCDD/F and HpCDD/F <1.0 pg/ sample, OCDD/F<5 pg/sample **Other Matrices:** TCDD/F <0.5 pg/sample, PeCDD/F, HxCDD/F, HpCDD/F <1.0 pg/sample, OCDD/F <5 pg/sample Higher levels acceptable where all sample concentrations a >10X the blank
Detection Limit	SDL Requirements **Blood:** Tetra-penta-CDD/F 0.2 pg/sample Hexa-octa-CDD/F 0.5 pg/sample **Other Matrices**: 1 pg/sample
Instrument Carryover: **Toluene Blank** **Samples**	A. 1st toluene blank following CAL-VER must have <0.6 pg TCDD and <19 pg OCDD B. 2nd toluene blank following CAL-VER must have <0.2 pg TCDD and <3 pg OCDD <10% contribution from preceding sample (based on observed instrument carryover rate)
Analyte/Surrogate Ratios	Response must be within the calibrated range of the instrument. Coders may use data from more than one chromatogram to get the responses in the calibrated range.
Ion Ratios	Must be within ±15% of theoretical
Sensitivity	S:N≥10:1 for all compounds for 0.1 pg/µL (CS-0.2), plus For bloods: S:N≥3:1 for 0.025 pg/µL 2,3,7,8-T4CDD

[1] Duplicate criterion is a guideline; final assessment depends upon sample characteristics, overall batch QC and on-going lab performance.

ANALYSIS OF POLYCHLORINATED DIOXINS AND FURANS BY EPA METHOD 1613B

Samples are spiked with a suite of isotopically labelled surrogate standards prior to analysis, solvent extracted, and cleaned up through a series of chromatographic columns that may include gel permeation, silica, Florisil, carbon/Celite, and alumina columns. The extract is concentrated and spiked with an isotopically labelled recovery (internal) standard. Analysis is performed using a high-resolution mass spectrometer coupled to a high-resolution gas chromatograph equipped with a DB-5 capillary chromatography column (60 m, 0.25 mm i.d., 0.1 µm film thickness). A second column, DB-225 (30 m, 0.25 mm i.d., 0.15 µm film thickness), is used for confirmation of 2,3,7,8-TCDF identification. All procedures are carried out according to protocols as described in EPA Method 1613B, with the significant modifications summarized below. The data are evaluated against QC criteria presented in Tables 1 and 2.

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where A_i = summed areas of the primary and secondary m/z's for the analyte peak of interest (compound *i*)

A_{si} = summed areas of the primary and secondary m/z's for the labelled surrogate peak used to quantify *i*)

M_x = mass of sample taken for analysis

M_{si} = mass of labelled surrogate (compound *si*) added to sample as calculated by the concentration of standard spiked (pg/mL) multiplied by the volume spiked (mL)

$RRF_{i,si}$ = mean relative response factor of *i* to *si* from the five-point calibration range and defined individually as:

$$\frac{A_i}{A_{si}} \times \frac{M_{si}}{M_i}$$

Calculation of Surrogate Standard Concentrations and Percent Recoveries:

Concentrations of surrogate standards are calculated using the following equation:

$$Conc_{si} = \frac{A_{si}}{A_{rs}} \times \frac{M_{rs}}{RRF_{si,rs}}$$

and, the percent recoveries of the surrogate standards are calculated using the following equation:

$$\%\text{Recovery} = \frac{A_{si}}{A_{rs}} \times \frac{M_{rs}}{RRF_{si,rs}} \times \frac{1}{M_{si}} \times 100$$

where A_{rs} and A_{si} are the summed peak areas (from the primary and secondary m/z channels) of recovery standard and labelled surrogate added to the sample;
M_{rs} and M_{si} are the masses of recovery standard and labelled surrogate added to the sample, and;
$RRF_{si,rs}$ is the mean relative response factor of the labelled surrogate to the recovery standard as determined by the five-point calibration range and defined individually as:

.

$$\frac{A_{si}}{A_{rs}} \times \frac{M_{rs}}{M_{si}}$$

Section 17.5

Extracts may be diluted with solvent and re-analyzed by GC/MS isotope-dilution to bring the instrumental response to within the linear range of the instrument. For very high-level samples where a smaller sample aliquot may not be representative, extracts may be diluted and re-spiked with labelled quantification standards and re-analyzed by GC/MS to bring the instrumental response analytes within range. Final results may be recovery corrected using the mean recovery of labelled quantification standards.

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		RSD (%)	X(%)				Warning Limit	Control Limit
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2,3,7,8-TCDF	10	20	87-137	75-130	20	84-120	-	-
1,2,3,7,8-PeCDD	50	15	76-132	70-130	20	78-130	-	-
1,2,3,7,8-PeCDF	50	15	86-124	80-130	20	82-120	-	-
2,3,4,7,8-PeCDF	50	17	72-150	70-130	20	82-122	-	-
1,2,3,4,7,8-HxCDD	50	19	78-152	70-130	20	78-128	-	-
1,2,3,6,7,8-HxCDD	50	15	84-124	76-130	20	78-128	-	-
1,2,3,7,8,9-HXCDD	50	22	74-142	70-130	35	82-122	-	-
1,2,3,4,7,8-HxCDF	50	17	82-108	72-130	20	90-112	-	-
1,2,3,6,7,8-HxCDF	50	13	92-120	84-130	20	88-114	-	-
1,2,3,7,8,9-HxCDF	50	13	84-122	78-130	20	90-112	-	-
2,3,4,6,7,8-HxCDF	50	15	74-158	70-130	20	88-114	-	-
1,2,3,4,6,7,8-HpCDD	50	15	76-130	70-130	20	86-116	-	-
1,2,3,4,6,7,8-HpCDF	50	13	90-112	82-122	20	90-110	-	-
1,2,3,4,7,8,9-HpCDF	50	16	86-126	78-130	20	86-116	-	-
OCDD	100	19	86-126	78-130	20	79-126	-	-
OCDF	100	27	74-146	70-130	35	70-130	-	-
Surrogate Standards								
$^{13}C_{12}$-2,3,7,8-TCDD	100	37	28-134	25-130	35	82-121	40-120	25-130
$^{13}C_{12}$-2,3,7,8-TCDF	100	35	31-113	25-130	35	71-130	40-120	24-130
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	39	27-184	25-150	35	70-130	40-120	25-130
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	34	27-156	25-130	35	76-130	40-120	24-130
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	38	16-279	25-130	35	77-130	40-120	21-130
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	41	29-147	25-130	35	85-117	40-120	32-130
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	38	34-122	25-130	35	85-118	40-120	28-130
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	43	27-152	25-130	35	76-130	40-120	26-130
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	35	30-122	25-130	35	70-130	40-120	26-123
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	40	24-157	25-130	35	74-130	40-120	29-130
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	37	29-136	25-130	35	73-130	40-120	28-130
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	35	34-129	25-130	35	72-130	40-120	23-130
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	41	32-110	25-130	35	78-129	40-120	28-130
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	40	28-141	25-130	35	77-129	40-120	26-130
$^{13}C_{12}$-OCDD	200	48	20-138	25-130	35	70-130	25-120	17-130
Cleanup Standard								
$^{37}Cl_4$-2,3,7,8-TCDD	10	36	39-154	31-130	35	79-127	40-120	35-130

[1] QC acceptance criteria for IPR, OPR, and samples based on a 20 µL extract final volume
[2] IPR: Initial Precision and Recovery demonstration
[3] OPR: Ongoing Precision and Recovery test run with every batch of samples.
[4] CAL VER: Calibration Verification test run at least every 12 hours

Table 2 QC Specifications for QC Samples, Instrumental Analysis, and Analyte Quantification

QC Parameter	Specification
Analysis Duplicate	Must agree to within ±20% of the mean (applicable to concentrations >10 times the DL)[1]
Procedural Blank	**Blood:** TCDD/F <0.2 pg/sample, PeCDD/F <0.5 pg/sample, HxCDD/F and HpCDD/F <1.0 pg/ sample, OCDD/F<5 pg/sample **Other Matrices:** TCDD/F <0.5 pg/sample, PeCDD/F, HxCDD/F, HpCDD/F <1.0 pg/sample, OCDD/F <5 pg/sample Higher levels acceptable where all sample concentrations a >10X the blank
Detection Limit	SDL Requirements **Blood:** Tetra-penta-CDD/F 0.2 pg/sample Hexa-octa-CDD/F 0.5 pg/sample **Other Matrices**: 1 pg/sample
Instrument Carryover: **Toluene Blank** **Samples**	A. 1st toluene blank following CAL-VER must have <0.6 pg TCDD and <19 pg OCDD B. 2nd toluene blank following CAL-VER must have <0.2 pg TCDD and <3 pg OCDD <10% contribution from preceding sample (based on observed instrument carryover rate)
Analyte/Surrogate Ratios	Response must be within the calibrated range of the instrument. Coders may use data from more than one chromatogram to get the responses in the calibrated range.
Ion Ratios	Must be within ±15% of theoretical
Sensitivity	S:N≥10:1 for all compounds for 0.1 pg/µL (CS-0.2), plus For bloods: S:N≥3:1 for 0.025 pg/µL 2,3,7,8-T4CDD

[1] Duplicate criterion is a guideline; final assessment depends upon sample characteristics, overall batch QC and on-going lab performance.

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 067
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-1
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.06 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 02:48:26	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_193 S: 7**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
		% Moisture:	1.03

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1890	0.853	0.77	1.001
1,2,3,7,8-PECDD [3]		22.7	1.45	0.70	1.001
1,2,3,4,7,8-HXCDD		3.96	1.55	1.38	1.000
1,2,3,6,7,8-HXCDD		7.50	1.55	1.23	1.000
1,2,3,7,8,9-HXCDD		6.43	1.55	1.23	1.010
1,2,3,4,6,7,8-HPCDD		126	1.62	1.06	1.000
OCDD		1550	2.14	0.88	1.000
2,3,7,8-TCDF		52.5	0.859	0.76	1.002
1,2,3,7,8-PECDF		2.96	0.864	1.49	1.001
2,3,4,7,8-PECDF		5.50	0.864	1.32	1.000
1,2,3,4,7,8-HXCDF		4.15	0.675	1.37	1.000
1,2,3,6,7,8-HXCDF		2.16	0.675	1.14	1.001
1,2,3,7,8,9-HXCDF	NDR	1.78	0.675	1.88	1.000
2,3,4,6,7,8-HXCDF	NDR	3.57	0.675	0.85	1.000
1,2,3,4,6,7,8-HPCDF		21.3	2.03	1.06	1.000
1,2,3,4,7,8,9-HPCDF	ND		2.03		
OCDF		70.8	1.16	0.82	1.002
TOTAL TETRA-DIOXINS		1970	0.853		
TOTAL PENTA-DIOXINS		61.7	1.45		
TOTAL HEXA-DIOXINS		50.0	1.55		
TOTAL HEPTA-DIOXINS		231	1.62		
TOTAL TETRA-FURANS		325	0.859		
TOTAL PENTA-FURANS		188	0.864		
TOTAL HEXA-FURANS		33.4	0.675		
TOTAL HEPTA-FURANS		58.5	2.03		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-1_Form1A_DX8C_193S7_SJ857276.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 067
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-1
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 02:48:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.03

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	31100	77.7	0.78	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28900	72.3	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	33600	84.1	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	34100	85.2	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	35100	87.8	1.04	1.094
13C-OCDD		80000	64900	81.2	0.88	1.178
13C-2,3,7,8-TCDF		40000	28200	70.5	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	28700	71.7	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	28300	70.6	1.57	1.352
13C-1,2,3,4,7,8-HXCDF		40000	34100	85.2	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34500	86.3	0.51	0.959
13C-1,2,3,7,8,9-HXCDF		40000	34000	85.0	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	33800	84.6	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	33200	83.0	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	34600	86.4	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	219	110		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-1_Form2_DX8C_193S7_SJ857276.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 067
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-1
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 02:44:17	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.03

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	43.8	3.52	0.52	1.002

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-1_Form1A_DB83_119S13_SJ858628.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 067

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.06 g (dry)	**Lab Sample I.D.:**	L11075-1
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 13** **DX8C_193 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1890	0.853	1	1.89e+03	1.89e+03	
1,2,3,7,8-PECDD		22.7	1.45	1	2.27e+01	2.27e+01	
1,2,3,4,7,8-HXCDD		3.96	1.55	0.1	3.96e-01	3.96e-01	
1,2,3,6,7,8-HXCDD		7.50	1.55	0.1	7.50e-01	7.50e-01	
1,2,3,7,8,9-HXCDD		6.43	1.55	0.1	6.43e-01	6.43e-01	
1,2,3,4,6,7,8-HPCDD		126	1.62	0.01	1.26e+00	1.26e+00	
OCDD		1550	2.14	0.0001	1.55e-01	1.55e-01	
2,3,7,8-TCDF	ND		3.52	0.1	0.00e+00	1.76e-01	
1,2,3,7,8-PECDF		2.96	0.864	0.05	1.48e-01	1.48e-01	
2,3,4,7,8-PECDF		5.50	0.864	0.5	2.75e+00	2.75e+00	
1,2,3,4,7,8-HXCDF		4.15	0.675	0.1	4.15e-01	4.15e-01	
1,2,3,6,7,8-HXCDF		2.16	0.675	0.1	2.16e-01	2.16e-01	
1,2,3,7,8,9-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
2,3,4,6,7,8-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
1,2,3,4,6,7,8-HPCDF		21.3	2.03	0.01	2.13e-01	2.13e-01	
1,2,3,4,7,8,9-HPCDF	ND		2.03	0.01	0.00e+00	1.02e-02	
OCDF		70.8	1.16	0.0001	7.08e-03	7.08e-03	
			TOTAL TEQ		1920	1920	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1890	0.853	1	1.89e+03	1.89e+03	
1,2,3,7,8-PECDD		22.7	1.45	1	2.27e+01	2.27e+01	
1,2,3,4,7,8-HXCDD		3.96	1.55	0.1	3.96e-01	3.96e-01	
1,2,3,6,7,8-HXCDD		7.50	1.55	0.1	7.50e-01	7.50e-01	
1,2,3,7,8,9-HXCDD		6.43	1.55	0.1	6.43e-01	6.43e-01	
1,2,3,4,6,7,8-HPCDD		126	1.62	0.01	1.26e+00	1.26e+00	
OCDD		1550	2.14	0.0003	4.65e-01	4.65e-01	
2,3,7,8-TCDF	ND		3.52	0.1	0.00e+00	1.76e-01	
1,2,3,7,8-PECDF		2.96	0.864	0.03	8.88e-02	8.88e-02	
2,3,4,7,8-PECDF		5.50	0.864	0.3	1.65e+00	1.65e+00	
1,2,3,4,7,8-HXCDF		4.15	0.675	0.1	4.15e-01	4.15e-01	
1,2,3,6,7,8-HXCDF		2.16	0.675	0.1	2.16e-01	2.16e-01	
1,2,3,7,8,9-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
2,3,4,6,7,8-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
1,2,3,4,6,7,8-HPCDF		21.3	2.03	0.01	2.13e-01	2.13e-01	
1,2,3,4,7,8,9-HPCDF	ND		2.03	0.01	0.00e+00	1.02e-02	
OCDF		70.8	1.16	0.0003	2.12e-02	2.12e-02	
			TOTAL TEQ		1920	1920	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-2
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.74 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 03:43:25	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_193 S: 8**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
		% Moisture:	14.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		1770	2.26	0.62	1.000
1,2,3,4,7,8-HXCDD		137	9.88	1.18	1.000
1,2,3,6,7,8-HXCDD		1370	9.88	1.22	1.000
1,2,3,7,8,9-HXCDD		559	9.88	1.22	1.010
1,2,3,4,6,7,8-HPCDD		5930	4.84	1.02	1.000
OCDD		14000	1.89	0.87	1.000
2,3,7,8-TCDF		9150	14.7	0.76	1.004
1,2,3,7,8-PECDF		36.7	1.88	1.44	1.001
2,3,4,7,8-PECDF		260	1.88	1.44	1.000
1,2,3,4,7,8-HXCDF		203	3.04	1.25	1.000
1,2,3,6,7,8-HXCDF		42.4	3.04	1.27	1.000
1,2,3,7,8,9-HXCDF		4.59	3.04	1.20	1.000
2,3,4,6,7,8-HXCDF		67.4	3.04	1.23	1.001
1,2,3,4,6,7,8-HPCDF		853	4.95	1.01	1.000
1,2,3,4,7,8,9-HPCDF		36.2	4.95	1.16	1.000
OCDF		846	1.40	0.90	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		15600	2.26		
TOTAL HEXA-DIOXINS		17000	9.88		
TOTAL HEPTA-DIOXINS		12500	4.84		
TOTAL TETRA-FURANS		41200	14.7		
TOTAL PENTA-FURANS		27500	1.88		
TOTAL HEXA-FURANS		3960	3.04		
TOTAL HEPTA-FURANS		1670	4.95		

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form1A_DX8C_193S8_SJ857277.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 03:43:25	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	14.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	17300	43.2	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	14800	37.1	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	16800	42.0	1.24	0.987
13C-1,2,3,6,7,8-HXCDD		40000	17400	43.4	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	17100	42.9	1.03	1.094
13C-OCDD		80000	29900	37.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	15200	38.0	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	14600	36.5	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	14800	36.9	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	17100	42.8	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	17600	43.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	17100	42.8	0.51	1.004
13C-2,3,4,6,7,8-HXCDF		40000	17600	44.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	16400	41.0	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	16500	41.2	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form2_DX8C_193S8_SJ857277.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-2 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.74 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 05:36:44	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	200	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 12**
Dilution Factor:	10	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	14.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	298000	65.5	0.79	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	313000	65.5		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form1A_DX82_171S12_SJ859416.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-2 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.74 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 05:36:44	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	200	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 12**
Dilution Factor:	10	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	14.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	19300	48.2	0.73	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	4000	4000	100		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form2_DX82_171S12_SJ859416.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 21:30:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 4**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	14.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		1450	24.5	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-2_Form1A_DB83_121S4_SJ859671.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.74 g (dry)	**Lab Sample I.D.:**	L11075-2
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 4** **DX82_171 S: 12** **DX8C_193 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		298000	65.5	1	2.98e+05	2.98e+05	
1,2,3,7,8-PECDD		1770	2.26	1	1.77e+03	1.77e+03	
1,2,3,4,7,8-HXCDD		137	9.88	0.1	1.37e+01	1.37e+01	
1,2,3,6,7,8-HXCDD		1370	9.88	0.1	1.37e+02	1.37e+02	
1,2,3,7,8,9-HXCDD		559	9.88	0.1	5.59e+01	5.59e+01	
1,2,3,4,6,7,8-HPCDD		5930	4.84	0.01	5.93e+01	5.93e+01	
OCDD		14000	1.89	0.0001	1.40e+00	1.40e+00	
2,3,7,8-TCDF		1450	24.5	0.1	1.45e+02	1.45e+02	
1,2,3,7,8-PECDF		36.7	1.88	0.05	1.84e+00	1.84e+00	
2,3,4,7,8-PECDF		260	1.88	0.5	1.30e+02	1.30e+02	
1,2,3,4,7,8-HXCDF		203	3.04	0.1	2.03e+01	2.03e+01	
1,2,3,6,7,8-HXCDF		42.4	3.04	0.1	4.24e+00	4.24e+00	
1,2,3,7,8,9-HXCDF		4.59	3.04	0.1	4.59e-01	4.59e-01	
2,3,4,6,7,8-HXCDF		67.4	3.04	0.1	6.74e+00	6.74e+00	
1,2,3,4,6,7,8-HPCDF		853	4.95	0.01	8.53e+00	8.53e+00	
1,2,3,4,7,8,9-HPCDF		36.2	4.95	0.01	3.62e-01	3.62e-01	
OCDF		846	1.40	0.0001	8.46e-02	8.46e-02	
			TOTAL TEQ		300000	300000	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		298000	65.5	1	2.98e+05	2.98e+05	
1,2,3,7,8-PECDD		1770	2.26	1	1.77e+03	1.77e+03	
1,2,3,4,7,8-HXCDD		137	9.88	0.1	1.37e+01	1.37e+01	
1,2,3,6,7,8-HXCDD		1370	9.88	0.1	1.37e+02	1.37e+02	
1,2,3,7,8,9-HXCDD		559	9.88	0.1	5.59e+01	5.59e+01	
1,2,3,4,6,7,8-HPCDD		5930	4.84	0.01	5.93e+01	5.93e+01	
OCDD		14000	1.89	0.0003	4.20e+00	4.20e+00	
2,3,7,8-TCDF		1450	24.5	0.1	1.45e+02	1.45e+02	
1,2,3,7,8-PECDF		36.7	1.88	0.03	1.10e+00	1.10e+00	
2,3,4,7,8-PECDF		260	1.88	0.3	7.80e+01	7.80e+01	
1,2,3,4,7,8-HXCDF		203	3.04	0.1	2.03e+01	2.03e+01	
1,2,3,6,7,8-HXCDF		42.4	3.04	0.1	4.24e+00	4.24e+00	
1,2,3,7,8,9-HXCDF		4.59	3.04	0.1	4.59e-01	4.59e-01	
2,3,4,6,7,8-HXCDF		67.4	3.04	0.1	6.74e+00	6.74e+00	
1,2,3,4,6,7,8-HPCDF		853	4.95	0.01	8.53e+00	8.53e+00	
1,2,3,4,7,8,9-HPCDF		36.2	4.95	0.01	3.62e-01	3.62e-01	
OCDF		846	1.40	0.0003	2.54e-01	2.54e-01	
			TOTAL TEQ		300000	300000	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 04:38:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	17.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		1040	2.77	0.62	1.000
1,2,3,4,7,8-HXCDD		93.9	8.17	1.14	1.000
1,2,3,6,7,8-HXCDD		831	8.17	1.32	1.000
1,2,3,7,8,9-HXCDD		339	8.17	1.28	1.010
1,2,3,4,6,7,8-HPCDD		3410	7.59	1.02	1.000
OCDD		7340	2.91	0.88	1.000
2,3,7,8-TCDF		5650	11.0	0.77	1.003
1,2,3,7,8-PECDF		18.2	2.43	1.57	1.001
2,3,4,7,8-PECDF		150	2.43	1.65	1.000
1,2,3,4,7,8-HXCDF		115	2.98	1.34	1.000
1,2,3,6,7,8-HXCDF		23.5	2.98	1.06	1.000
1,2,3,7,8,9-HXCDF	ND		2.98		
2,3,4,6,7,8-HXCDF		38.7	2.98	1.21	1.000
1,2,3,4,6,7,8-HPCDF		490	6.94	1.00	1.000
1,2,3,4,7,8,9-HPCDF		19.9	6.94	0.92	1.000
OCDF		461	4.34	0.89	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		7020	2.77		
TOTAL HEXA-DIOXINS		8200	8.17		
TOTAL HEPTA-DIOXINS		6490	7.59		
TOTAL TETRA-FURANS		24900	11.0		
TOTAL PENTA-FURANS		16000	2.43		
TOTAL HEXA-FURANS		2320	2.98		
TOTAL HEPTA-FURANS		944	6.94		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form1A_DX8C_193S9_SJ857278.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 04:38:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	17.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	14700	36.7	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	12800	32.1	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		40000	14200	35.5	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	14800	37.1	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	16000	40.1	1.05	1.094
13C-OCDD		80000	30100	37.6	0.88	1.177
13C-2,3,7,8-TCDF		40000	13200	32.9	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	12900	32.2	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	12600	31.6	1.59	1.352
13C-1,2,3,4,7,8-HXCDF		40000	14600	36.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	14800	37.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	14600	36.6	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	15300	38.3	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	14600	36.5	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	15000	37.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form2_DX8C_193S9_SJ857278.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-3 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.94 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 02:53:34	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	100	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 9**
Dilution Factor:	5	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	17.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	184000	38.1	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	193000	38.1		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form1A_DX82_171S9_SJ859413.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3 W
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 02:53:34	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	17.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	16900	42.2	0.75	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	200	99.8		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form2_DX82_171S9_SJ859413.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 22:05:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	17.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		893	38.8	0.71	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.94 g (dry)	**Lab Sample I.D.:**	L11075-3
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 5** **DX82_171 S: 9** **DX8C_193 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		184000	38.1	1	1.84e+05	1.84e+05	
1,2,3,7,8-PECDD		1040	2.77	1	1.04e+03	1.04e+03	
1,2,3,4,7,8-HXCDD		93.9	8.17	0.1	9.39e+00	9.39e+00	
1,2,3,6,7,8-HXCDD		831	8.17	0.1	8.31e+01	8.31e+01	
1,2,3,7,8,9-HXCDD		339	8.17	0.1	3.39e+01	3.39e+01	
1,2,3,4,6,7,8-HPCDD		3410	7.59	0.01	3.41e+01	3.41e+01	
OCDD		7340	2.91	0.0001	7.34e-01	7.34e-01	
2,3,7,8-TCDF		893	38.8	0.1	8.93e+01	8.93e+01	
1,2,3,7,8-PECDF		18.2	2.43	0.05	9.10e-01	9.10e-01	
2,3,4,7,8-PECDF		150	2.43	0.5	7.50e+01	7.50e+01	
1,2,3,4,7,8-HXCDF		115	2.98	0.1	1.15e+01	1.15e+01	
1,2,3,6,7,8-HXCDF		23.5	2.98	0.1	2.35e+00	2.35e+00	
1,2,3,7,8,9-HXCDF	ND		2.98	0.1	0.00e+00	1.49e-01	
2,3,4,6,7,8-HXCDF		38.7	2.98	0.1	3.87e+00	3.87e+00	
1,2,3,4,6,7,8-HPCDF		490	6.94	0.01	4.90e+00	4.90e+00	
1,2,3,4,7,8,9-HPCDF		19.9	6.94	0.01	1.99e-01	1.99e-01	
OCDF		461	4.34	0.0001	4.61e-02	4.61e-02	
			TOTAL TEQ		185000	185000	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		184000	38.1	1	1.84e+05	1.84e+05	
1,2,3,7,8-PECDD		1040	2.77	1	1.04e+03	1.04e+03	
1,2,3,4,7,8-HXCDD		93.9	8.17	0.1	9.39e+00	9.39e+00	
1,2,3,6,7,8-HXCDD		831	8.17	0.1	8.31e+01	8.31e+01	
1,2,3,7,8,9-HXCDD		339	8.17	0.1	3.39e+01	3.39e+01	
1,2,3,4,6,7,8-HPCDD		3410	7.59	0.01	3.41e+01	3.41e+01	
OCDD		7340	2.91	0.0003	2.20e+00	2.20e+00	
2,3,7,8-TCDF		893	38.8	0.1	8.93e+01	8.93e+01	
1,2,3,7,8-PECDF		18.2	2.43	0.03	5.46e-01	5.46e-01	
2,3,4,7,8-PECDF		150	2.43	0.3	4.50e+01	4.50e+01	
1,2,3,4,7,8-HXCDF		115	2.98	0.1	1.15e+01	1.15e+01	
1,2,3,6,7,8-HXCDF		23.5	2.98	0.1	2.35e+00	2.35e+00	
1,2,3,7,8,9-HXCDF	ND		2.98	0.1	0.00e+00	1.49e-01	
2,3,4,6,7,8-HXCDF		38.7	2.98	0.1	3.87e+00	3.87e+00	
1,2,3,4,6,7,8-HPCDF		490	6.94	0.01	4.90e+00	4.90e+00	
1,2,3,4,7,8,9-HPCDF		19.9	6.94	0.01	1.99e-01	1.99e-01	
OCDF		461	4.34	0.0003	1.38e-01	1.38e-01	
			TOTAL TEQ		185000	185000	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 05:37:37	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.14

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		320	0.832	0.61	1.001
1,2,3,4,7,8-HXCDD		30.5	2.61	1.14	1.000
1,2,3,6,7,8-HXCDD		196	2.61	1.26	1.000
1,2,3,7,8,9-HXCDD		83.8	2.61	1.16	1.011
1,2,3,4,6,7,8-HPCDD		795	4.95	1.06	1.000
OCDD		1660	8.18	0.87	1.000
2,3,7,8-TCDF		1250	7.08	0.77	1.003
1,2,3,7,8-PECDF		10.1	1.22	1.34	1.001
2,3,4,7,8-PECDF		37.7	1.22	1.50	1.000
1,2,3,4,7,8-HXCDF		21.6	1.20	1.13	1.000
1,2,3,6,7,8-HXCDF		6.85	1.20	1.13	1.000
1,2,3,7,8,9-HXCDF	NDR	1.56	1.20	2.91	1.000
2,3,4,6,7,8-HXCDF		8.74	1.20	1.34	1.000
1,2,3,4,6,7,8-HPCDF		103	1.06	1.02	1.000
1,2,3,4,7,8,9-HPCDF		4.48	1.06	0.98	1.000
OCDF		96.5	2.35	0.89	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		1570	0.832		
TOTAL HEXA-DIOXINS		1910	2.61		
TOTAL HEPTA-DIOXINS		1570	4.95		
TOTAL TETRA-FURANS		6420	7.08		
TOTAL PENTA-FURANS		3950	1.22		
TOTAL HEXA-FURANS		658	1.20		
TOTAL HEPTA-FURANS		191	1.06		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form1A_DX8C_195AS9_SJ857308.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 05:37:37	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.14

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	38000	95.0	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	31900	79.8	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	38300	95.9	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	39100	97.7	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	34800	87.1	1.04	1.094
13C-OCDD		80000	60000	75.0	0.90	1.177
13C-2,3,7,8-TCDF		40000	36800	92.1	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	33300	83.2	1.55	1.286
13C-2,3,4,7,8-PECDF		40000	32600	81.6	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	41300	103	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40600	102	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	38300	95.8	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		40000	39600	99.0	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	35900	89.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	36200	90.6	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form2_DX8C_195AS9_SJ857308.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-4 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.06 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 04:42:17	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	100	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 11**
Dilution Factor:	5	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	3.14

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	46900	13.7	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	49100	13.7		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form1A_DX82_171S11_SJ859415.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4 W
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 04:42:17	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.14

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	37400	93.4	0.80	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	189	94.3		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form2_DX82_171S11_SJ859415.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 22:41:14	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.14

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		275	12.5	0.82	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-4_Form1A_DB83_121S6_SJ859673.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 082

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.06 g (dry)	**Lab Sample I.D.:**	L11075-4
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 6** **DX82_171 S: 11** **DX8C_195A S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		46900	13.7	1	4.69e+04	4.69e+04	
1,2,3,7,8-PECDD		320	0.832	1	3.20e+02	3.20e+02	
1,2,3,4,7,8-HXCDD		30.5	2.61	0.1	3.05e+00	3.05e+00	
1,2,3,6,7,8-HXCDD		196	2.61	0.1	1.96e+01	1.96e+01	
1,2,3,7,8,9-HXCDD		83.8	2.61	0.1	8.38e+00	8.38e+00	
1,2,3,4,6,7,8-HPCDD		795	4.95	0.01	7.95e+00	7.95e+00	
OCDD		1660	8.18	0.0001	1.66e-01	1.66e-01	
2,3,7,8-TCDF		275	12.5	0.1	2.75e+01	2.75e+01	
1,2,3,7,8-PECDF		10.1	1.22	0.05	5.05e-01	5.05e-01	
2,3,4,7,8-PECDF		37.7	1.22	0.5	1.89e+01	1.89e+01	
1,2,3,4,7,8-HXCDF		21.6	1.20	0.1	2.16e+00	2.16e+00	
1,2,3,6,7,8-HXCDF		6.85	1.20	0.1	6.85e-01	6.85e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF		8.74	1.20	0.1	8.74e-01	8.74e-01	
1,2,3,4,6,7,8-HPCDF		103	1.06	0.01	1.03e+00	1.03e+00	
1,2,3,4,7,8,9-HPCDF		4.48	1.06	0.01	4.48e-02	4.48e-02	
OCDF		96.5	2.35	0.0001	9.65e-03	9.65e-03	
			TOTAL TEQ		47300	47300	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		46900	13.7	1	4.69e+04	4.69e+04	
1,2,3,7,8-PECDD		320	0.832	1	3.20e+02	3.20e+02	
1,2,3,4,7,8-HXCDD		30.5	2.61	0.1	3.05e+00	3.05e+00	
1,2,3,6,7,8-HXCDD		196	2.61	0.1	1.96e+01	1.96e+01	
1,2,3,7,8,9-HXCDD		83.8	2.61	0.1	8.38e+00	8.38e+00	
1,2,3,4,6,7,8-HPCDD		795	4.95	0.01	7.95e+00	7.95e+00	
OCDD		1660	8.18	0.0003	4.98e-01	4.98e-01	
2,3,7,8-TCDF		275	12.5	0.1	2.75e+01	2.75e+01	
1,2,3,7,8-PECDF		10.1	1.22	0.03	3.03e-01	3.03e-01	
2,3,4,7,8-PECDF		37.7	1.22	0.3	1.13e+01	1.13e+01	
1,2,3,4,7,8-HXCDF		21.6	1.20	0.1	2.16e+00	2.16e+00	
1,2,3,6,7,8-HXCDF		6.85	1.20	0.1	6.85e-01	6.85e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF		8.74	1.20	0.1	8.74e-01	8.74e-01	
1,2,3,4,6,7,8-HPCDF		103	1.06	0.01	1.03e+00	1.03e+00	
1,2,3,4,7,8,9-HPCDF		4.48	1.06	0.01	4.48e-02	4.48e-02	
OCDF		96.5	2.35	0.0003	2.90e-02	2.90e-02	
			TOTAL TEQ		47300	47300	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-4_TEQ_SJ857308.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-5 (A)
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.49 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 06:32:29	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_195A S: 10**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
		% Moisture:	0.82

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		115	0.944	0.77	1.001
1,2,3,7,8-PECDD [3]		4.23	0.596	0.53	1.001
1,2,3,4,7,8-HXCDD		0.856	0.678	1.41	1.000
1,2,3,6,7,8-HXCDD	NDR	2.51	0.678	0.73	1.000
1,2,3,7,8,9-HXCDD		1.69	0.678	1.33	1.010
1,2,3,4,6,7,8-HPCDD	NDR	10.7	0.471	1.31	1.000
OCDD		63.4	0.528	0.95	1.000
2,3,7,8-TCDF		7.91	0.600	0.69	1.003
1,2,3,7,8-PECDF	ND		0.633		
2,3,4,7,8-PECDF	NDR	2.81	0.633	0.88	1.000
1,2,3,4,7,8-HXCDF	NDR	1.74	0.559	1.60	1.000
1,2,3,6,7,8-HXCDF	NDR	0.714	0.559	1.68	1.000
1,2,3,7,8,9-HXCDF	ND		0.559		
2,3,4,6,7,8-HXCDF	NDR	0.603	0.559	0.75	1.000
1,2,3,4,6,7,8-HPCDF		3.32	0.583	1.03	1.001
1,2,3,4,7,8,9-HPCDF	ND		0.583		
OCDF		5.69	0.737	0.91	1.002
TOTAL TETRA-DIOXINS		118	0.944		
TOTAL PENTA-DIOXINS		6.76	0.596		
TOTAL HEXA-DIOXINS		5.89	0.678		
TOTAL HEPTA-DIOXINS		9.23	0.471		
TOTAL TETRA-FURANS		78.4	0.600		
TOTAL PENTA-FURANS		39.9	0.633		
TOTAL HEXA-FURANS		5.01	0.559		
TOTAL HEPTA-FURANS		3.32	0.583		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-5_Form1A_DX8C_195AS10_SJ857309.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-5 (A)
Matrix:	SOLID	**Sample Size:**	3.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 06:32:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg absolute	**% Moisture:**	0.82

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	35500	88.8	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	33700	84.4	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	35500	88.8	1.33	0.987
13C-1,2,3,6,7,8-HXCDD		40000	36600	91.5	1.20	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	35600	88.9	1.06	1.093
13C-OCDD		80000	60100	75.2	0.90	1.177
13C-2,3,7,8-TCDF		40000	36100	90.2	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	34700	86.7	1.53	1.286
13C-2,3,4,7,8-PECDF		40000	34700	86.7	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	37000	92.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	38100	95.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	37200	93.1	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	36900	92.2	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	35200	87.9	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	36400	91.1	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	219	110		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-5_Form2_DX8C_195AS10_SJ857309.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-5 (A)
Matrix:	SOLID	**Sample Size:**	3.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 01:33:04	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	0.82

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.69		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-5_Form1A_DB83_119S11_SJ858626.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 083

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.49 g (dry)	**Lab Sample I.D.:**	L11075-5 (A)
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 11** **DX8C_195A S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.944	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD		4.23	0.596	1	4.23e+00	4.23e+00	
1,2,3,4,7,8-HXCDD		0.856	0.678	0.1	8.56e-02	8.56e-02	
1,2,3,6,7,8-HXCDD	ND		0.678	0.1	0.00e+00	3.39e-02	
1,2,3,7,8,9-HXCDD		1.69	0.678	0.1	1.69e-01	1.69e-01	
1,2,3,4,6,7,8-HPCDD	ND		0.471	0.01	0.00e+00	2.36e-03	
OCDD		63.4	0.528	0.0001	6.34e-03	6.34e-03	
2,3,7,8-TCDF	ND		2.69	0.1	0.00e+00	1.35e-01	
1,2,3,7,8-PECDF	ND		0.633	0.05	0.00e+00	1.58e-02	
2,3,4,7,8-PECDF	ND		0.633	0.5	0.00e+00	1.58e-01	
1,2,3,4,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,7,8,9-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
2,3,4,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,4,6,7,8-HPCDF		3.32	0.583	0.01	3.32e-02	3.32e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.583	0.01	0.00e+00	2.92e-03	
OCDF		5.69	0.737	0.0001	5.69e-04	5.69e-04	
			TOTAL TEQ		120	120	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.944	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD		4.23	0.596	1	4.23e+00	4.23e+00	
1,2,3,4,7,8-HXCDD		0.856	0.678	0.1	8.56e-02	8.56e-02	
1,2,3,6,7,8-HXCDD	ND		0.678	0.1	0.00e+00	3.39e-02	
1,2,3,7,8,9-HXCDD		1.69	0.678	0.1	1.69e-01	1.69e-01	
1,2,3,4,6,7,8-HPCDD	ND		0.471	0.01	0.00e+00	2.36e-03	
OCDD		63.4	0.528	0.0003	1.90e-02	1.90e-02	
2,3,7,8-TCDF	ND		2.69	0.1	0.00e+00	1.35e-01	
1,2,3,7,8-PECDF	ND		0.633	0.03	0.00e+00	9.50e-03	
2,3,4,7,8-PECDF	ND		0.633	0.3	0.00e+00	9.50e-02	
1,2,3,4,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,7,8,9-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
2,3,4,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,4,6,7,8-HPCDF		3.32	0.583	0.01	3.32e-02	3.32e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.583	0.01	0.00e+00	2.92e-03	
OCDF		5.69	0.737	0.0003	1.71e-03	1.71e-03	
			TOTAL TEQ		120	120	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-5_TEQ_SJ857309.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.12 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 07:27:20	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_195A S: 11**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
		% Moisture:	2.34

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		105	0.685	0.80	1.001
1,2,3,7,8-PECDD [3]	NDR	3.26	0.606	1.23	1.000
1,2,3,4,7,8-HXCDD	NDR	0.865	0.844	1.01	1.000
1,2,3,6,7,8-HXCDD	NDR	2.02	0.844	1.01	1.000
1,2,3,7,8,9-HXCDD		1.17	0.844	1.21	1.011
1,2,3,4,6,7,8-HPCDD		11.2	0.824	1.00	1.000
OCDD		61.1	0.743	0.89	1.000
2,3,7,8-TCDF		6.90	0.596	0.67	1.002
1,2,3,7,8-PECDF	ND		0.801		
2,3,4,7,8-PECDF		3.33	0.801	1.68	1.001
1,2,3,4,7,8-HXCDF		1.21	0.622	1.32	1.000
1,2,3,6,7,8-HXCDF	NDR	0.882	0.622	0.69	1.000
1,2,3,7,8,9-HXCDF	ND		0.622		
2,3,4,6,7,8-HXCDF	NDR	0.961	0.622	0.91	1.001
1,2,3,4,6,7,8-HPCDF		3.05	0.715	1.03	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.715		
OCDF		7.63	0.534	0.92	1.002
TOTAL TETRA-DIOXINS		111	0.685		
TOTAL PENTA-DIOXINS		4.93	0.606		
TOTAL HEXA-DIOXINS		10.4	0.844		
TOTAL HEPTA-DIOXINS		21.3	0.824		
TOTAL TETRA-FURANS		65.5	0.596		
TOTAL PENTA-FURANS		33.8	0.801		
TOTAL HEXA-FURANS		4.61	0.622		
TOTAL HEPTA-FURANS		3.05	0.715		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-103_Form1A_DX8C_195AS11_SJ857310.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 07:27:20	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg absolute	**% Moisture:**	2.34

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	37400	93.5	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	35500	88.9	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	37800	94.5	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	39300	98.3	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	38500	96.3	1.05	1.094
13C-OCDD		80000	68000	85.0	0.90	1.177
13C-2,3,7,8-TCDF		40000	37300	93.2	0.78	0.966
13C-1,2,3,7,8-PECDF		40000	35900	89.8	1.56	1.287
13C-2,3,4,7,8-PECDF		40000	36600	91.6	1.56	1.353
13C-1,2,3,4,7,8-HXCDF		40000	39000	97.5	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40000	100	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	39200	97.9	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	39600	99.1	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	37700	94.2	0.43	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	39800	99.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		4000	5450	136		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-103_Form2_DX8C_195AS11_SJ857310.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.12 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	13-May-2008
Analysis Date:	14-May-2008 **Time:** 02:08:42	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB225
Injection Volume (uL):	2.0	**Sample Data Filename:**	**DB83_119 S: 12**
Dilution Factor:	N/A	**Blank Data Filename:**	DB83_119 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DB83_119 S: 2
		% Moisture:	2.34

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	9.79	2.47	0.73	1.002

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_WG25088-103_Form1A_DB83_119S12_SJ858627.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Sample Size:	3.12 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 12** **DX8C_195A S: 11**
		Sample Collection:	N/A

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		105	0.685	1	1.05e+02	1.05e+02	
1,2,3,7,8-PECDD	ND		0.606	1	0.00e+00	3.03e-01	
1,2,3,4,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,6,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,7,8,9-HXCDD		1.17	0.844	0.1	1.17e-01	1.17e-01	
1,2,3,4,6,7,8-HPCDD		11.2	0.824	0.01	1.12e-01	1.12e-01	
OCDD		61.1	0.743	0.0001	6.11e-03	6.11e-03	
2,3,7,8-TCDF	ND		2.47	0.1	0.00e+00	1.24e-01	
1,2,3,7,8-PECDF	ND		0.801	0.05	0.00e+00	2.00e-02	
2,3,4,7,8-PECDF		3.33	0.801	0.5	1.67e+00	1.67e+00	
1,2,3,4,7,8-HXCDF		1.21	0.622	0.1	1.21e-01	1.21e-01	
1,2,3,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,7,8,9-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
2,3,4,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,4,6,7,8-HPCDF		3.05	0.715	0.01	3.05e-02	3.05e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.715	0.01	0.00e+00	3.58e-03	
OCDF		7.63	0.534	0.0001	7.63e-04	7.63e-04	
			TOTAL TEQ		107	108	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		105	0.685	1	1.05e+02	1.05e+02	
1,2,3,7,8-PECDD	ND		0.606	1	0.00e+00	3.03e-01	
1,2,3,4,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,6,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,7,8,9-HXCDD		1.17	0.844	0.1	1.17e-01	1.17e-01	
1,2,3,4,6,7,8-HPCDD		11.2	0.824	0.01	1.12e-01	1.12e-01	
OCDD		61.1	0.743	0.0003	1.83e-02	1.83e-02	
2,3,7,8-TCDF	ND		2.47	0.1	0.00e+00	1.24e-01	
1,2,3,7,8-PECDF	ND		0.801	0.03	0.00e+00	1.20e-02	
2,3,4,7,8-PECDF		3.33	0.801	0.3	9.99e-01	9.99e-01	
1,2,3,4,7,8-HXCDF		1.21	0.622	0.1	1.21e-01	1.21e-01	
1,2,3,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,7,8,9-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
2,3,4,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,4,6,7,8-HPCDF		3.05	0.715	0.01	3.05e-02	3.05e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.715	0.01	0.00e+00	3.58e-03	
OCDF		7.63	0.534	0.0003	2.29e-03	2.29e-03	
			TOTAL TEQ		106	107	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25088-103_TEQ_SJ857310.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. PROJECT 00057781

Contract No.: 4496

Client ID: 08 VNBH 083

Concentration Units: pg/g (dry weight basis)

COMPOUND	L11075-5 (A)		WG25088-103		MEAN	RELATIVE PERCENT DIFFERENCE
	LAB FLAG [1]	CONC. FOUND	LAB FLAG [1]	CONC. FOUND		
2,3,7,8-TCDD		115		105	110	8.88
1,2,3,7,8-PECDD		4.23	NDR	3.26		
1,2,3,4,7,8-HXCDD		0.856	NDR	0.865		
1,2,3,6,7,8-HXCDD	NDR	2.51	NDR	2.02		
1,2,3,7,8,9-HXCDD		1.69		1.17	1.43	36.0
1,2,3,4,6,7,8-HPCDD	NDR	10.7		11.2		
OCDD		63.4		61.1	62.3	3.64
2,3,7,8-TCDF	ND		NDR	9.79		
1,2,3,7,8-PECDF	ND		ND			
2,3,4,7,8-PECDF	NDR	2.81		3.33		
1,2,3,4,7,8-HXCDF	NDR	1.74		1.21		
1,2,3,6,7,8-HXCDF	NDR	0.714	NDR	0.882		
1,2,3,7,8,9-HXCDF	ND		ND			
2,3,4,6,7,8-HXCDF	NDR	0.603	NDR	0.961		
1,2,3,4,6,7,8-HPCDF		3.32		3.05	3.19	8.57
1,2,3,4,7,8,9-HPCDF	ND		ND			
OCDF		5.69		7.63	6.66	29.1

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: RPD.xsl; Created: 29-May-2008 11:35:00; Application: XMLTransformer-1.9.5;
Report Filename: RPD_DIOXINS_1613-RPD_WG25088-103_L11075-5_.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 05:33:08	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.37

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		91.3	1.08	0.65	1.001
1,2,3,4,7,8-HXCDD	NDR	7.43	1.22	0.82	1.000
1,2,3,6,7,8-HXCDD		17.7	1.22	1.32	1.000
1,2,3,7,8,9-HXCDD		10.6	1.22	1.41	1.010
1,2,3,4,6,7,8-HPCDD		160	1.41	1.09	1.000
OCDD		1670	0.972	0.86	1.001
2,3,7,8-TCDF		537	2.57	0.76	1.003
1,2,3,7,8-PECDF	NDR	5.43	1.33	1.05	1.001
2,3,4,7,8-PECDF		8.26	1.33	1.34	1.000
1,2,3,4,7,8-HXCDF		6.12	1.00	1.29	1.001
1,2,3,6,7,8-HXCDF		3.01	1.00	1.06	1.001
1,2,3,7,8,9-HXCDF	NDR	1.92	1.00	0.42	1.000
2,3,4,6,7,8-HXCDF		4.00	1.00	1.10	1.000
1,2,3,4,6,7,8-HPCDF		29.1	2.71	1.17	1.000
1,2,3,4,7,8,9-HPCDF		3.60	2.71	1.17	1.000
OCDF		48.8	1.37	0.85	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		322	1.08		
TOTAL HEXA-DIOXINS		160	1.22		
TOTAL HEPTA-DIOXINS		303	1.41		
TOTAL TETRA-FURANS		2250	2.57		
TOTAL PENTA-FURANS		1440	1.33		
TOTAL HEXA-FURANS		123	1.00		
TOTAL HEPTA-FURANS		66.2	2.71		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form1A_DX8C_193S10_SJ857279.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 05:33:08	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.37

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	24400	61.1	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	21900	54.7	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	24900	62.3	1.29	0.987
13C-1,2,3,6,7,8-HXCDD		40000	25700	64.2	1.21	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	27500	68.8	1.05	1.094
13C-OCDD		80000	52300	65.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	22300	55.7	0.77	0.965
13C-1,2,3,7,8-PECDF		40000	21900	54.7	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	22000	55.0	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	24700	61.8	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	25200	63.0	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	24500	61.2	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		40000	25000	62.5	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	25200	63.1	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	26200	65.5	0.44	1.103

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	X

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form2_DX8C_193S10_SJ857279.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-6 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.09 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 03:47:55	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	100	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 10**
Dilution Factor:	5	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	3.37

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	65400	11.4	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	66700	11.4		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form1A_DX82_171S10_SJ859414.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6 W
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 03:47:55	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.37

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	35300	88.3	0.80	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	163	81.5		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form2_DX82_171S10_SJ859414.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 15:27:56	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 15**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.37

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		96.9	6.17	0.85	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-6_Form1A_DB83_120S15_SJ859663.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 084

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.09 g (dry)	**Lab Sample I.D.:**	L11075-6
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_120 S: 15** **DX82_171 S: 10** **DX8C_193 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		65400	11.4	1	6.54e+04	6.54e+04	
1,2,3,7,8-PECDD		91.3	1.08	1	9.13e+01	9.13e+01	
1,2,3,4,7,8-HXCDD	ND		1.22	0.1	0.00e+00	6.10e-02	
1,2,3,6,7,8-HXCDD		17.7	1.22	0.1	1.77e+00	1.77e+00	
1,2,3,7,8,9-HXCDD		10.6	1.22	0.1	1.06e+00	1.06e+00	
1,2,3,4,6,7,8-HPCDD		160	1.41	0.01	1.60e+00	1.60e+00	
OCDD		1670	0.972	0.0001	1.67e-01	1.67e-01	
2,3,7,8-TCDF		96.9	6.17	0.1	9.69e+00	9.69e+00	
1,2,3,7,8-PECDF	ND		1.33	0.05	0.00e+00	3.33e-02	
2,3,4,7,8-PECDF		8.26	1.33	0.5	4.13e+00	4.13e+00	
1,2,3,4,7,8-HXCDF		6.12	1.00	0.1	6.12e-01	6.12e-01	
1,2,3,6,7,8-HXCDF		3.01	1.00	0.1	3.01e-01	3.01e-01	
1,2,3,7,8,9-HXCDF	ND		1.00	0.1	0.00e+00	5.00e-02	
2,3,4,6,7,8-HXCDF		4.00	1.00	0.1	4.00e-01	4.00e-01	
1,2,3,4,6,7,8-HPCDF		29.1	2.71	0.01	2.91e-01	2.91e-01	
1,2,3,4,7,8,9-HPCDF		3.60	2.71	0.01	3.60e-02	3.60e-02	
OCDF		48.8	1.37	0.0001	4.88e-03	4.88e-03	
			TOTAL TEQ		65500	65500	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		65400	11.4	1	6.54e+04	6.54e+04	
1,2,3,7,8-PECDD		91.3	1.08	1	9.13e+01	9.13e+01	
1,2,3,4,7,8-HXCDD	ND		1.22	0.1	0.00e+00	6.10e-02	
1,2,3,6,7,8-HXCDD		17.7	1.22	0.1	1.77e+00	1.77e+00	
1,2,3,7,8,9-HXCDD		10.6	1.22	0.1	1.06e+00	1.06e+00	
1,2,3,4,6,7,8-HPCDD		160	1.41	0.01	1.60e+00	1.60e+00	
OCDD		1670	0.972	0.0003	5.01e-01	5.01e-01	
2,3,7,8-TCDF		96.9	6.17	0.1	9.69e+00	9.69e+00	
1,2,3,7,8-PECDF	ND		1.33	0.03	0.00e+00	2.00e-02	
2,3,4,7,8-PECDF		8.26	1.33	0.3	2.48e+00	2.48e+00	
1,2,3,4,7,8-HXCDF		6.12	1.00	0.1	6.12e-01	6.12e-01	
1,2,3,6,7,8-HXCDF		3.01	1.00	0.1	3.01e-01	3.01e-01	
1,2,3,7,8,9-HXCDF	ND		1.00	0.1	0.00e+00	5.00e-02	
2,3,4,6,7,8-HXCDF		4.00	1.00	0.1	4.00e-01	4.00e-01	
1,2,3,4,6,7,8-HPCDF		29.1	2.71	0.01	2.91e-01	2.91e-01	
1,2,3,4,7,8,9-HPCDF		3.60	2.71	0.01	3.60e-02	3.60e-02	
OCDF		48.8	1.37	0.0003	1.46e-02	1.46e-02	
			TOTAL TEQ		65500	65500	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-6_TEQ_SJ857279.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 087
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-7 i
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 00:10:20	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_171 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		450	2.21	0.76	1.001
1,2,3,7,8-PECDD [3]		6.29	2.40	0.52	1.001
1,2,3,4,7,8-HXCDD	ND		3.18		
1,2,3,6,7,8-HXCDD	NDR	4.10	3.18	0.70	1.000
1,2,3,7,8,9-HXCDD		4.73	3.18	1.35	1.010
1,2,3,4,6,7,8-HPCDD		23.2	2.25	1.19	1.000
OCDD		147	1.57	0.95	1.001
2,3,7,8-TCDF		56.0	2.62	0.76	1.003
1,2,3,7,8-PECDF	NDR	1.47	1.23	1.00	1.001
2,3,4,7,8-PECDF	NDR	3.15	1.23	1.90	1.000
1,2,3,4,7,8-HXCDF	NDR	2.27	1.24	1.52	1.000
1,2,3,6,7,8-HXCDF	ND		1.24		
1,2,3,7,8,9-HXCDF		1.31	1.24	1.41	1.000
2,3,4,6,7,8-HXCDF	NDR	1.61	1.24	0.91	1.001
1,2,3,4,6,7,8-HPCDF		7.21	1.31	0.91	1.000
1,2,3,4,7,8,9-HPCDF	ND		1.31		
OCDF		16.7	1.62	0.98	1.002
TOTAL TETRA-DIOXINS		485	2.21		
TOTAL PENTA-DIOXINS		10.1	2.40		
TOTAL HEXA-DIOXINS		15.7	3.18		
TOTAL HEPTA-DIOXINS		40.0	2.25		
TOTAL TETRA-FURANS		603	2.62		
TOTAL PENTA-FURANS		129	1.23		
TOTAL HEXA-FURANS		7.57	1.24		
TOTAL HEPTA-FURANS		16.0	1.31		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-7_Form1A_DX82_171S6_SJ859412.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 087
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-7 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.99 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 00:10:20	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 6**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	1.69

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	34700	86.7	0.80	1.015
13C-1,2,3,7,8-PECDD [4]		40000	35000	87.4	0.65	1.387
13C-1,2,3,4,7,8-HXCDD		40000	34400	86.0	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35900	89.7	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32900	82.3	1.01	1.094
13C-OCDD		80000	66100	82.7	0.91	1.177
13C-2,3,7,8-TCDF		40000	37300	93.2	0.80	0.967
13C-1,2,3,7,8-PECDF		40000	39200	98.0	1.58	1.289
13C-2,3,4,7,8-PECDF		40000	37400	93.5	1.62	1.357
13C-1,2,3,4,7,8-HXCDF		40000	39900	99.7	0.54	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40600	101	0.54	0.958
13C-1,2,3,7,8,9-HXCDF		40000	40600	101	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		40000	40500	101	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	34100	85.2	0.48	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	36200	90.4	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	179	89.3		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-7_Form2_DX82_171S6_SJ859412.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 087
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-7
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 03:19:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		6.60	4.58	0.84	1.000

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-7_Form1A_DB83_119S14_SJ858629.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 087

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.99 g (dry)	**Lab Sample I.D.:**	L11075-7
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 14** **DX82_171 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		450	2.21	1	4.50e+02	4.50e+02	
1,2,3,7,8-PECDD		6.29	2.40	1	6.29e+00	6.29e+00	
1,2,3,4,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,6,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,7,8,9-HXCDD		4.73	3.18	0.1	4.73e-01	4.73e-01	
1,2,3,4,6,7,8-HPCDD		23.2	2.25	0.01	2.32e-01	2.32e-01	
OCDD		147	1.57	0.0001	1.47e-02	1.47e-02	
2,3,7,8-TCDF		6.60	4.58	0.1	6.60e-01	6.60e-01	
1,2,3,7,8-PECDF	ND		1.23	0.05	0.00e+00	3.08e-02	
2,3,4,7,8-PECDF	ND		1.23	0.5	0.00e+00	3.08e-01	
1,2,3,4,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,7,8,9-HXCDF		1.31	1.24	0.1	1.31e-01	1.31e-01	
2,3,4,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,4,6,7,8-HPCDF		7.21	1.31	0.01	7.21e-02	7.21e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.31	0.01	0.00e+00	6.55e-03	
OCDF		16.7	1.62	0.0001	1.67e-03	1.67e-03	
			TOTAL TEQ		458	459	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		450	2.21	1	4.50e+02	4.50e+02	
1,2,3,7,8-PECDD		6.29	2.40	1	6.29e+00	6.29e+00	
1,2,3,4,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,6,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,7,8,9-HXCDD		4.73	3.18	0.1	4.73e-01	4.73e-01	
1,2,3,4,6,7,8-HPCDD		23.2	2.25	0.01	2.32e-01	2.32e-01	
OCDD		147	1.57	0.0003	4.41e-02	4.41e-02	
2,3,7,8-TCDF		6.60	4.58	0.1	6.60e-01	6.60e-01	
1,2,3,7,8-PECDF	ND		1.23	0.03	0.00e+00	1.85e-02	
2,3,4,7,8-PECDF	ND		1.23	0.3	0.00e+00	1.85e-01	
1,2,3,4,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,7,8,9-HXCDF		1.31	1.24	0.1	1.31e-01	1.31e-01	
2,3,4,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,4,6,7,8-HPCDF		7.21	1.31	0.01	7.21e-02	7.21e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.31	0.01	0.00e+00	6.55e-03	
OCDF		16.7	1.62	0.0003	5.01e-03	5.01e-03	
			TOTAL TEQ		458	459	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-8
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.12 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 07:23:01	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_193 S: 12**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
		% Moisture:	2.84

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		115	0.802	0.74	1.001
1,2,3,7,8-PECDD [3]	NDR	1.74	1.19	1.25	1.001
1,2,3,4,7,8-HXCDD	NDR	1.28	1.21	2.17	1.000
1,2,3,6,7,8-HXCDD		6.54	1.21	1.31	1.000
1,2,3,7,8,9-HXCDD	NDR	4.33	1.21	1.00	1.010
1,2,3,4,6,7,8-HPCDD		127	1.41	1.10	1.000
OCDD		1160	0.912	0.87	1.000
2,3,7,8-TCDF	NDR	5.02	0.736	0.55	1.003
1,2,3,7,8-PECDF	NDR	2.52	1.06	0.80	1.001
2,3,4,7,8-PECDF	NDR	3.21	1.06	1.25	1.000
1,2,3,4,7,8-HXCDF	NDR	2.06	0.992	1.07	1.001
1,2,3,6,7,8-HXCDF	NDR	1.63	0.992	2.09	1.000
1,2,3,7,8,9-HXCDF	NDR	1.55	0.992	0.70	1.000
2,3,4,6,7,8-HXCDF		2.46	0.992	1.19	1.000
1,2,3,4,6,7,8-HPCDF		39.5	3.49	0.96	1.000
1,2,3,4,7,8,9-HPCDF	ND		3.49		
OCDF		200	1.65	0.85	1.002
TOTAL TETRA-DIOXINS		115	0.802		
TOTAL PENTA-DIOXINS	ND		1.19		
TOTAL HEXA-DIOXINS		6.54	1.21		
TOTAL HEPTA-DIOXINS		172	1.41		
TOTAL TETRA-FURANS		16.6	0.736		
TOTAL PENTA-FURANS		6.01	1.06		
TOTAL HEXA-FURANS		42.3	0.992		
TOTAL HEPTA-FURANS		136	3.49		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-8_Form1A_DX8C_193S12_SJ857281.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 088
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-8
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 07:23:01	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	2.84

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	24600	61.5	0.79	1.013
13C-1,2,3,7,8-PECDD [4]		40000	23600	59.0	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29000	72.6	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	29200	73.0	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30800	77.0	1.04	1.094
13C-OCDD		80000	61900	77.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	22100	55.1	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	23200	57.9	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	23700	59.3	1.56	1.353
13C-1,2,3,4,7,8-HXCDF		40000	29000	72.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	29500	73.9	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	28600	71.5	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	29200	73.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	29400	73.4	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30400	76.1	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	149	74.3		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-8_Form2_DX8C_193S12_SJ857281.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-8
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 23:46:11	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	2.84

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.73		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-8_Form1A_DB83_119S8_SJ858623.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 088

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.12 g (dry)	**Lab Sample I.D.:**	L11075-8
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 8** **DX8C_193 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.802	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD	ND		1.19	1	0.00e+00	5.95e-01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		6.54	1.21	0.1	6.54e-01	6.54e-01	
1,2,3,7,8,9-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,4,6,7,8-HPCDD		127	1.41	0.01	1.27e+00	1.27e+00	
OCDD		1160	0.912	0.0001	1.16e-01	1.16e-01	
2,3,7,8-TCDF	ND		2.73	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		1.06	0.05	0.00e+00	2.65e-02	
2,3,4,7,8-PECDF	ND		1.06	0.5	0.00e+00	2.65e-01	
1,2,3,4,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,6,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,7,8,9-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
2,3,4,6,7,8-HXCDF		2.46	0.992	0.1	2.46e-01	2.46e-01	
1,2,3,4,6,7,8-HPCDF		39.5	3.49	0.01	3.95e-01	3.95e-01	
1,2,3,4,7,8,9-HPCDF	ND		3.49	0.01	0.00e+00	1.75e-02	
OCDF		200	1.65	0.0001	2.00e-02	2.00e-02	
			TOTAL TEQ		118	119	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.802	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD	ND		1.19	1	0.00e+00	5.95e-01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		6.54	1.21	0.1	6.54e-01	6.54e-01	
1,2,3,7,8,9-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,4,6,7,8-HPCDD		127	1.41	0.01	1.27e+00	1.27e+00	
OCDD		1160	0.912	0.0003	3.48e-01	3.48e-01	
2,3,7,8-TCDF	ND		2.73	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		1.06	0.03	0.00e+00	1.59e-02	
2,3,4,7,8-PECDF	ND		1.06	0.3	0.00e+00	1.59e-01	
1,2,3,4,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,6,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,7,8,9-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
2,3,4,6,7,8-HXCDF		2.46	0.992	0.1	2.46e-01	2.46e-01	
1,2,3,4,6,7,8-HPCDF		39.5	3.49	0.01	3.95e-01	3.95e-01	
1,2,3,4,7,8,9-HPCDF	ND		3.49	0.01	0.00e+00	1.75e-02	
OCDF		200	1.65	0.0003	6.00e-02	6.00e-02	
			TOTAL TEQ		118	119	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-8_TEQ_SJ857281.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-9
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.90 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 11:31:58	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_194 S: 4**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
		% Moisture:	7.98

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	12.6	0.860	0.56	1.001
1,2,3,7,8-PECDD [3]	NDR	1.81	1.01	1.58	1.001
1,2,3,4,7,8-HXCDD		1.66	1.04	1.13	1.000
1,2,3,6,7,8-HXCDD		2.56	1.04	1.20	1.000
1,2,3,7,8,9-HXCDD		3.39	1.04	1.06	1.010
1,2,3,4,6,7,8-HPCDD	NDR	6.04	1.13	1.34	1.000
OCDD		20.5	0.923	0.84	1.000
2,3,7,8-TCDF		2.24	0.569	0.73	1.001
1,2,3,7,8-PECDF	NDR	1.96	0.860	2.06	1.001
2,3,4,7,8-PECDF		3.26	0.860	1.44	1.000
1,2,3,4,7,8-HXCDF		1.62	0.804	1.19	1.000
1,2,3,6,7,8-HXCDF		1.66	0.804	1.26	1.001
1,2,3,7,8,9-HXCDF	NDR	1.08	0.804	1.71	1.000
2,3,4,6,7,8-HXCDF		2.18	0.804	1.11	1.000
1,2,3,4,6,7,8-HPCDF		3.69	1.29	1.02	1.001
1,2,3,4,7,8,9-HPCDF	NDR	1.83	1.29	0.67	1.000
OCDF		4.95	1.17	0.89	1.002
TOTAL TETRA-DIOXINS	ND		0.860		
TOTAL PENTA-DIOXINS	ND		1.01		
TOTAL HEXA-DIOXINS		7.61	1.04		
TOTAL HEPTA-DIOXINS	ND		1.13		
TOTAL TETRA-FURANS		3.30	0.569		
TOTAL PENTA-FURANS		3.26	0.860		
TOTAL HEXA-FURANS		6.34	0.804		
TOTAL HEPTA-FURANS		3.69	1.29		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-9_Form1A_DX8C_194S4_SJ857826.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-9
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.90 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 11:31:58	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_194 S: 4**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
		% Moisture:	7.98

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	27400	68.5	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	26800	67.1	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	31100	77.7	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31900	79.7	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32300	80.8	1.05	1.094
13C-OCDD		80000	61300	76.6	0.89	1.177
13C-2,3,7,8-TCDF		40000	25200	63.0	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	26400	65.9	1.54	1.285
13C-2,3,4,7,8-PECDF		40000	26700	66.8	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	30500	76.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	32100	80.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	29500	73.8	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	31000	77.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	30500	76.3	0.45	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30800	77.1	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	170	85.0		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-9_Form2_DX8C_194S4_SJ857826.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-9
Matrix:	SOLID	**Sample Size:**	2.90 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 00:21:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	7.98

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.74		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-9_Form1A_DB83_119S9_SJ858624.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.90 g (dry)	**Lab Sample I.D.:**	L11075-9
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 9** **DX8C_194 S: 4**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.860	1	0.00e+00	4.30e-01	
1,2,3,7,8-PECDD	ND		1.01	1	0.00e+00	5.05e-01	
1,2,3,4,7,8-HXCDD		1.66	1.04	0.1	1.66e-01	1.66e-01	
1,2,3,6,7,8-HXCDD		2.56	1.04	0.1	2.56e-01	2.56e-01	
1,2,3,7,8,9-HXCDD		3.39	1.04	0.1	3.39e-01	3.39e-01	
1,2,3,4,6,7,8-HPCDD	ND		1.13	0.01	0.00e+00	5.65e-03	
OCDD		20.5	0.923	0.0001	2.05e-03	2.05e-03	
2,3,7,8-TCDF	ND		2.74	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		0.860	0.05	0.00e+00	2.15e-02	
2,3,4,7,8-PECDF		3.26	0.860	0.5	1.63e+00	1.63e+00	
1,2,3,4,7,8-HXCDF		1.62	0.804	0.1	1.62e-01	1.62e-01	
1,2,3,6,7,8-HXCDF		1.66	0.804	0.1	1.66e-01	1.66e-01	
1,2,3,7,8,9-HXCDF	ND		0.804	0.1	0.00e+00	4.02e-02	
2,3,4,6,7,8-HXCDF		2.18	0.804	0.1	2.18e-01	2.18e-01	
1,2,3,4,6,7,8-HPCDF		3.69	1.29	0.01	3.69e-02	3.69e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.29	0.01	0.00e+00	6.45e-03	
OCDF		4.95	1.17	0.0001	4.95e-04	4.95e-04	
			TOTAL TEQ		2.98	4.12	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.860	1	0.00e+00	4.30e-01	
1,2,3,7,8-PECDD	ND		1.01	1	0.00e+00	5.05e-01	
1,2,3,4,7,8-HXCDD		1.66	1.04	0.1	1.66e-01	1.66e-01	
1,2,3,6,7,8-HXCDD		2.56	1.04	0.1	2.56e-01	2.56e-01	
1,2,3,7,8,9-HXCDD		3.39	1.04	0.1	3.39e-01	3.39e-01	
1,2,3,4,6,7,8-HPCDD	ND		1.13	0.01	0.00e+00	5.65e-03	
OCDD		20.5	0.923	0.0003	6.15e-03	6.15e-03	
2,3,7,8-TCDF	ND		2.74	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		0.860	0.03	0.00e+00	1.29e-02	
2,3,4,7,8-PECDF		3.26	0.860	0.3	9.78e-01	9.78e-01	
1,2,3,4,7,8-HXCDF		1.62	0.804	0.1	1.62e-01	1.62e-01	
1,2,3,6,7,8-HXCDF		1.66	0.804	0.1	1.66e-01	1.66e-01	
1,2,3,7,8,9-HXCDF	ND		0.804	0.1	0.00e+00	4.02e-02	
2,3,4,6,7,8-HXCDF		2.18	0.804	0.1	2.18e-01	2.18e-01	
1,2,3,4,6,7,8-HPCDF		3.69	1.29	0.01	3.69e-02	3.69e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.29	0.01	0.00e+00	6.45e-03	
OCDF		4.95	1.17	0.0003	1.49e-03	1.49e-03	
			TOTAL TEQ		2.33	3.47	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-9_TEQ_SJ857826.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 097
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-10
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.07 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 12:26:51	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_194 S: 5**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
		% Moisture:	5.81

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	11.5	0.751	0.57	1.001
1,2,3,7,8-PECDD [3]		1.93	0.679	0.55	1.000
1,2,3,4,7,8-HXCDD		1.77	0.706	1.09	1.000
1,2,3,6,7,8-HXCDD		4.10	0.706	1.42	1.000
1,2,3,7,8,9-HXCDD		3.09	0.706	1.42	1.010
1,2,3,4,6,7,8-HPCDD		80.5	1.11	1.08	1.000
OCDD		810	0.795	0.87	1.000
2,3,7,8-TCDF		2.77	0.496	0.88	1.001
1,2,3,7,8-PECDF	NDR	1.42	0.482	1.19	1.001
2,3,4,7,8-PECDF		3.27	0.482	1.34	1.000
1,2,3,4,7,8-HXCDF	NDR	2.49	0.617	1.56	1.000
1,2,3,6,7,8-HXCDF	NDR	1.80	0.617	0.58	1.000
1,2,3,7,8,9-HXCDF	NDR	1.78	0.617	1.55	1.000
2,3,4,6,7,8-HXCDF		2.27	0.617	1.12	1.001
1,2,3,4,6,7,8-HPCDF		18.1	0.787	1.08	1.000
1,2,3,4,7,8,9-HPCDF		2.64	0.787	0.89	1.000
OCDF		81.4	1.35	0.86	1.002
TOTAL TETRA-DIOXINS		1.09	0.751		
TOTAL PENTA-DIOXINS		1.93	0.679		
TOTAL HEXA-DIOXINS		14.5	0.706		
TOTAL HEPTA-DIOXINS		146	1.11		
TOTAL TETRA-FURANS		7.33	0.496		
TOTAL PENTA-FURANS		8.19	0.482		
TOTAL HEXA-FURANS		14.7	0.617		
TOTAL HEPTA-FURANS		61.9	0.787		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-10_Form1A_DX8C_194S5_SJ857827.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 097
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-10
Matrix:	SOLID	**Sample Size:**	3.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 12:26:51	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	5.81

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30000	75.0	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28500	71.3	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	32600	81.4	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		40000	34000	85.0	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	31200	78.1	1.04	1.094
13C-OCDD		80000	54700	68.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	27900	69.8	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	28400	71.0	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	28200	70.4	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	32600	81.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34000	85.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	31800	79.6	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	32600	81.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	30900	77.2	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30600	76.6	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	192	96.1		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-10_Form2_DX8C_194S5_SJ857827.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 097
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-10
Matrix:	SOLID	**Sample Size:**	3.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 00:57:25	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	5.81

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		3.94		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-10_Form1A_DB83_119S10_SJ858625.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 097

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.07 g (dry)	**Lab Sample I.D.:**	L11075-10
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 10** **DX8C_194 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.751	1	0.00e+00	3.76e-01	
1,2,3,7,8-PECDD		1.93	0.679	1	1.93e+00	1.93e+00	
1,2,3,4,7,8-HXCDD		1.77	0.706	0.1	1.77e-01	1.77e-01	
1,2,3,6,7,8-HXCDD		4.10	0.706	0.1	4.10e-01	4.10e-01	
1,2,3,7,8,9-HXCDD		3.09	0.706	0.1	3.09e-01	3.09e-01	
1,2,3,4,6,7,8-HPCDD		80.5	1.11	0.01	8.05e-01	8.05e-01	
OCDD		810	0.795	0.0001	8.10e-02	8.10e-02	
2,3,7,8-TCDF	ND		3.94	0.1	0.00e+00	1.97e-01	
1,2,3,7,8-PECDF	ND		0.482	0.05	0.00e+00	1.21e-02	
2,3,4,7,8-PECDF		3.27	0.482	0.5	1.64e+00	1.64e+00	
1,2,3,4,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,6,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,7,8,9-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
2,3,4,6,7,8-HXCDF		2.27	0.617	0.1	2.27e-01	2.27e-01	
1,2,3,4,6,7,8-HPCDF		18.1	0.787	0.01	1.81e-01	1.81e-01	
1,2,3,4,7,8,9-HPCDF		2.64	0.787	0.01	2.64e-02	2.64e-02	
OCDF		81.4	1.35	0.0001	8.14e-03	8.14e-03	
			TOTAL TEQ		5.79	6.47	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.751	1	0.00e+00	3.76e-01	
1,2,3,7,8-PECDD		1.93	0.679	1	1.93e+00	1.93e+00	
1,2,3,4,7,8-HXCDD		1.77	0.706	0.1	1.77e-01	1.77e-01	
1,2,3,6,7,8-HXCDD		4.10	0.706	0.1	4.10e-01	4.10e-01	
1,2,3,7,8,9-HXCDD		3.09	0.706	0.1	3.09e-01	3.09e-01	
1,2,3,4,6,7,8-HPCDD		80.5	1.11	0.01	8.05e-01	8.05e-01	
OCDD		810	0.795	0.0003	2.43e-01	2.43e-01	
2,3,7,8-TCDF	ND		3.94	0.1	0.00e+00	1.97e-01	
1,2,3,7,8-PECDF	ND		0.482	0.03	0.00e+00	7.23e-03	
2,3,4,7,8-PECDF		3.27	0.482	0.3	9.81e-01	9.81e-01	
1,2,3,4,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,6,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,7,8,9-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
2,3,4,6,7,8-HXCDF		2.27	0.617	0.1	2.27e-01	2.27e-01	
1,2,3,4,6,7,8-HPCDF		18.1	0.787	0.01	1.81e-01	1.81e-01	
1,2,3,4,7,8,9-HPCDF		2.64	0.787	0.01	2.64e-02	2.64e-02	
OCDF		81.4	1.35	0.0003	2.44e-02	2.44e-02	
			TOTAL TEQ		5.31	5.99	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-10_TEQ_SJ857827.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 108
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-11
Matrix:	SOLID	**Sample Size:**	1.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 13:21:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	46.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1170	1.64	0.79	1.001
1,2,3,7,8-PECDD [3]		27.8	1.76	0.54	1.001
1,2,3,4,7,8-HXCDD		14.7	2.32	1.14	1.000
1,2,3,6,7,8-HXCDD		46.9	2.32	1.29	1.000
1,2,3,7,8,9-HXCDD		43.2	2.32	1.27	1.010
1,2,3,4,6,7,8-HPCDD		766	2.93	1.06	1.000
OCDD		6570	1.02	0.89	1.000
2,3,7,8-TCDF		81.3	1.42	0.76	1.001
1,2,3,7,8-PECDF		6.81	1.61	1.36	1.001
2,3,4,7,8-PECDF		15.7	1.61	1.74	1.000
1,2,3,4,7,8-HXCDF		17.6	2.53	1.35	1.001
1,2,3,6,7,8-HXCDF		12.5	2.53	1.39	1.000
1,2,3,7,8,9-HXCDF	ND		2.53		
2,3,4,6,7,8-HXCDF	NDR	10.5	2.53	1.57	1.000
1,2,3,4,6,7,8-HPCDF		123	2.18	0.91	1.000
1,2,3,4,7,8,9-HPCDF		7.74	2.18	0.91	1.000
OCDF		204	1.52	0.86	1.002
TOTAL TETRA-DIOXINS		1290	1.64		
TOTAL PENTA-DIOXINS		196	1.76		
TOTAL HEXA-DIOXINS		421	2.32		
TOTAL HEPTA-DIOXINS		1490	2.93		
TOTAL TETRA-FURANS		424	1.42		
TOTAL PENTA-FURANS		416	1.61		
TOTAL HEXA-FURANS		232	2.53		
TOTAL HEPTA-FURANS		304	2.18		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-11_Form1A_DX8C_194S6_SJ857828.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 108
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-11
Matrix:	SOLID	**Sample Size:**	1.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 13:21:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	46.9

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28200	70.5	0.79	1.013
13C-1,2,3,7,8-PECDD [4]		40000	27000	67.5	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29700	74.2	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30500	76.2	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30700	76.8	1.03	1.094
13C-OCDD		80000	59500	74.3	0.90	1.177
13C-2,3,7,8-TCDF		40000	27100	67.7	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	25800	64.4	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	26600	66.4	1.53	1.353
13C-1,2,3,4,7,8-HXCDF		40000	28100	70.1	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	28800	72.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	28100	70.3	0.51	1.004
13C-2,3,4,6,7,8-HXCDF		40000	29000	72.4	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	28000	70.0	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	29500	73.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	195	97.7		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-11_Form2_DX8C_194S6_SJ857828.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 108
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-11
Matrix:	SOLID	**Sample Size:**	1.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 03:55:34	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 15**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	46.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		63.0	5.14	0.66	1.000

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-11_Form1A_DB83_119S15_SJ858630.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 108

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	1.87 g (dry)	**Lab Sample I.D.:**	L11075-11
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 15** **DX8C_194 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1170	1.64	1	1.17e+03	1.17e+03	
1,2,3,7,8-PECDD		27.8	1.76	1	2.78e+01	2.78e+01	
1,2,3,4,7,8-HXCDD		14.7	2.32	0.1	1.47e+00	1.47e+00	
1,2,3,6,7,8-HXCDD		46.9	2.32	0.1	4.69e+00	4.69e+00	
1,2,3,7,8,9-HXCDD		43.2	2.32	0.1	4.32e+00	4.32e+00	
1,2,3,4,6,7,8-HPCDD		766	2.93	0.01	7.66e+00	7.66e+00	
OCDD		6570	1.02	0.0001	6.57e-01	6.57e-01	
2,3,7,8-TCDF		63.0	5.14	0.1	6.30e+00	6.30e+00	
1,2,3,7,8-PECDF		6.81	1.61	0.05	3.41e-01	3.41e-01	
2,3,4,7,8-PECDF		15.7	1.61	0.5	7.85e+00	7.85e+00	
1,2,3,4,7,8-HXCDF		17.6	2.53	0.1	1.76e+00	1.76e+00	
1,2,3,6,7,8-HXCDF		12.5	2.53	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
2,3,4,6,7,8-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
1,2,3,4,6,7,8-HPCDF		123	2.18	0.01	1.23e+00	1.23e+00	
1,2,3,4,7,8,9-HPCDF		7.74	2.18	0.01	7.74e-02	7.74e-02	
OCDF		204	1.52	0.0001	2.04e-02	2.04e-02	
			TOTAL TEQ		1240	1240	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1170	1.64	1	1.17e+03	1.17e+03	
1,2,3,7,8-PECDD		27.8	1.76	1	2.78e+01	2.78e+01	
1,2,3,4,7,8-HXCDD		14.7	2.32	0.1	1.47e+00	1.47e+00	
1,2,3,6,7,8-HXCDD		46.9	2.32	0.1	4.69e+00	4.69e+00	
1,2,3,7,8,9-HXCDD		43.2	2.32	0.1	4.32e+00	4.32e+00	
1,2,3,4,6,7,8-HPCDD		766	2.93	0.01	7.66e+00	7.66e+00	
OCDD		6570	1.02	0.0003	1.97e+00	1.97e+00	
2,3,7,8-TCDF		63.0	5.14	0.1	6.30e+00	6.30e+00	
1,2,3,7,8-PECDF		6.81	1.61	0.03	2.04e-01	2.04e-01	
2,3,4,7,8-PECDF		15.7	1.61	0.3	4.71e+00	4.71e+00	
1,2,3,4,7,8-HXCDF		17.6	2.53	0.1	1.76e+00	1.76e+00	
1,2,3,6,7,8-HXCDF		12.5	2.53	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
2,3,4,6,7,8-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
1,2,3,4,6,7,8-HPCDF		123	2.18	0.01	1.23e+00	1.23e+00	
1,2,3,4,7,8,9-HPCDF		7.74	2.18	0.01	7.74e-02	7.74e-02	
OCDF		204	1.52	0.0003	6.12e-02	6.12e-02	
			TOTAL TEQ		1230	1230	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-11_TEQ_SJ857828.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 109
Sample Collection:
N/A

Form 1A
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-12
Matrix:	SOLID	**Sample Size:**	1.85 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 14:16:34	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	41.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		2650	1.63	0.78	1.001
1,2,3,7,8-PECDD [3]		45.0	1.60	0.69	1.001
1,2,3,4,7,8-HXCDD		15.6	4.08	1.09	1.000
1,2,3,6,7,8-HXCDD		55.9	4.08	1.39	1.000
1,2,3,7,8,9-HXCDD		37.1	4.08	1.10	1.010
1,2,3,4,6,7,8-HPCDD		978	4.50	1.05	1.000
OCDD		9480	2.47	0.90	1.000
2,3,7,8-TCDF		495	1.12	0.79	1.001
1,2,3,7,8-PECDF		10.6	1.48	1.64	1.001
2,3,4,7,8-PECDF		14.4	1.48	1.52	1.000
1,2,3,4,7,8-HXCDF		23.0	2.32	1.41	1.000
1,2,3,6,7,8-HXCDF		13.7	2.32	1.18	1.000
1,2,3,7,8,9-HXCDF	ND		2.32		
2,3,4,6,7,8-HXCDF		11.9	2.32	1.16	1.000
1,2,3,4,6,7,8-HPCDF		131	1.86	0.93	1.000
1,2,3,4,7,8,9-HPCDF		9.30	1.86	1.10	1.000
OCDF		181	1.60	0.87	1.002
TOTAL TETRA-DIOXINS		3020	1.63		
TOTAL PENTA-DIOXINS		367	1.60		
TOTAL HEXA-DIOXINS		542	4.08		
TOTAL HEPTA-DIOXINS		1920	4.50		
TOTAL TETRA-FURANS		1320	1.12		
TOTAL PENTA-FURANS		901	1.48		
TOTAL HEXA-FURANS		327	2.32		
TOTAL HEPTA-FURANS		311	1.86		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-12_Form1A_DX8C_194S7_SJ857829.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 109
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-12
Matrix:	SOLID	**Sample Size:**	1.85 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 14:16:34	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	41.0

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	26100	65.3	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	23800	59.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	27900	69.8	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	28000	70.1	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30000	75.0	1.03	1.094
13C-OCDD		80000	57700	72.1	0.90	1.177
13C-2,3,7,8-TCDF		40000	25100	62.8	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	23400	58.4	1.54	1.285
13C-2,3,4,7,8-PECDF		40000	23400	58.5	1.57	1.353
13C-1,2,3,4,7,8-HXCDF		40000	27400	68.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	27900	69.7	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	26600	66.6	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	26900	67.3	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	25500	63.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	28300	70.7	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	205	102		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-12_Form2_DX8C_194S7_SJ857829.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 109
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-12
Matrix:	SOLID	**Sample Size:**	1.85 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 14:16:47	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	41.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		470	8.94	0.66	1.000

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 109

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	1.85 g (dry)	**Lab Sample I.D.:**	L11075-12
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 13** **DX8C_194 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2650	1.63	1	2.65e+03	2.65e+03	
1,2,3,7,8-PECDD		45.0	1.60	1	4.50e+01	4.50e+01	
1,2,3,4,7,8-HXCDD		15.6	4.08	0.1	1.56e+00	1.56e+00	
1,2,3,6,7,8-HXCDD		55.9	4.08	0.1	5.59e+00	5.59e+00	
1,2,3,7,8,9-HXCDD		37.1	4.08	0.1	3.71e+00	3.71e+00	
1,2,3,4,6,7,8-HPCDD		978	4.50	0.01	9.78e+00	9.78e+00	
OCDD		9480	2.47	0.0001	9.48e-01	9.48e-01	
2,3,7,8-TCDF		470	8.94	0.1	4.70e+01	4.70e+01	
1,2,3,7,8-PECDF		10.6	1.48	0.05	5.30e-01	5.30e-01	
2,3,4,7,8-PECDF		14.4	1.48	0.5	7.20e+00	7.20e+00	
1,2,3,4,7,8-HXCDF		23.0	2.32	0.1	2.30e+00	2.30e+00	
1,2,3,6,7,8-HXCDF		13.7	2.32	0.1	1.37e+00	1.37e+00	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		11.9	2.32	0.1	1.19e+00	1.19e+00	
1,2,3,4,6,7,8-HPCDF		131	1.86	0.01	1.31e+00	1.31e+00	
1,2,3,4,7,8,9-HPCDF		9.30	1.86	0.01	9.30e-02	9.30e-02	
OCDF		181	1.60	0.0001	1.81e-02	1.81e-02	
			TOTAL TEQ		2780	2780	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2650	1.63	1	2.65e+03	2.65e+03	
1,2,3,7,8-PECDD		45.0	1.60	1	4.50e+01	4.50e+01	
1,2,3,4,7,8-HXCDD		15.6	4.08	0.1	1.56e+00	1.56e+00	
1,2,3,6,7,8-HXCDD		55.9	4.08	0.1	5.59e+00	5.59e+00	
1,2,3,7,8,9-HXCDD		37.1	4.08	0.1	3.71e+00	3.71e+00	
1,2,3,4,6,7,8-HPCDD		978	4.50	0.01	9.78e+00	9.78e+00	
OCDD		9480	2.47	0.0003	2.84e+00	2.84e+00	
2,3,7,8-TCDF		470	8.94	0.1	4.70e+01	4.70e+01	
1,2,3,7,8-PECDF		10.6	1.48	0.03	3.18e-01	3.18e-01	
2,3,4,7,8-PECDF		14.4	1.48	0.3	4.32e+00	4.32e+00	
1,2,3,4,7,8-HXCDF		23.0	2.32	0.1	2.30e+00	2.30e+00	
1,2,3,6,7,8-HXCDF		13.7	2.32	0.1	1.37e+00	1.37e+00	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		11.9	2.32	0.1	1.19e+00	1.19e+00	
1,2,3,4,6,7,8-HPCDF		131	1.86	0.01	1.31e+00	1.31e+00	
1,2,3,4,7,8,9-HPCDF		9.30	1.86	0.01	9.30e-02	9.30e-02	
OCDF		181	1.60	0.0003	5.43e-02	5.43e-02	
			TOTAL TEQ		2780	2780	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-12_TEQ_SJ857829.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 111
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-13
Matrix:	SOLID	**Sample Size:**	2.01 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 15:11:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		5810	1.59	0.77	1.001
1,2,3,7,8-PECDD [3]		59.4	1.62	0.60	1.000
1,2,3,4,7,8-HXCDD		32.5	3.75	1.06	1.000
1,2,3,6,7,8-HXCDD		219	3.75	1.25	1.000
1,2,3,7,8,9-HXCDD		134	3.75	1.28	1.010
1,2,3,4,6,7,8-HPCDD		1070	3.02	1.01	1.000
OCDD		2890	1.02	0.88	1.000
2,3,7,8-TCDF		508	1.62	0.77	1.001
1,2,3,7,8-PECDF	NDR	7.11	0.954	2.08	1.001
2,3,4,7,8-PECDF		11.1	0.954	1.47	1.000
1,2,3,4,7,8-HXCDF	NDR	7.50	2.32	1.76	1.000
1,2,3,6,7,8-HXCDF		7.22	2.32	1.23	1.001
1,2,3,7,8,9-HXCDF	ND		2.32		
2,3,4,6,7,8-HXCDF		5.50	2.32	1.06	1.001
1,2,3,4,6,7,8-HPCDF		60.9	1.13	1.13	1.000
1,2,3,4,7,8,9-HPCDF		3.57	1.13	1.16	1.000
OCDF		76.8	1.79	0.86	1.002
TOTAL TETRA-DIOXINS		6210	1.59		
TOTAL PENTA-DIOXINS		746	1.62		
TOTAL HEXA-DIOXINS		1380	3.75		
TOTAL HEPTA-DIOXINS		1730	3.02		
TOTAL TETRA-FURANS		1280	1.62		
TOTAL PENTA-FURANS		1010	0.954		
TOTAL HEXA-FURANS		210	2.32		
TOTAL HEPTA-FURANS		120	1.13		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-13_Form1A_DX8C_194S8_SJ857830.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 111
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-13
Matrix:	SOLID	**Sample Size:**	2.01 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 15:11:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	49.1

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28400	71.0	0.80	1.012
13C-1,2,3,7,8-PECDD [4]		40000	26700	66.7	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		40000	30300	75.8	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30400	76.1	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	33500	83.8	1.05	1.094
13C-OCDD		80000	66800	83.5	0.89	1.177
13C-2,3,7,8-TCDF		40000	26900	67.2	0.78	0.964
13C-1,2,3,7,8-PECDF		40000	26000	65.1	1.55	1.284
13C-2,3,4,7,8-PECDF		40000	26300	65.7	1.55	1.352
13C-1,2,3,4,7,8-HXCDF		40000	28700	71.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	29200	72.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	28700	71.8	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	29600	74.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	29900	74.8	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	31900	79.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	190	95.1		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-13_Form2_DX8C_194S8_SJ857830.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 111
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-13
Matrix:	SOLID	**Sample Size:**	2.01 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 14:52:21	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		453	6.91	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-13_Form1A_DB83_120S14_SJ859662.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 111

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.01 g (dry)	**Lab Sample I.D.:**	L11075-13
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 14** **DX8C_194 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		5810	1.59	1	5.81e+03	5.81e+03	
1,2,3,7,8-PECDD		59.4	1.62	1	5.94e+01	5.94e+01	
1,2,3,4,7,8-HXCDD		32.5	3.75	0.1	3.25e+00	3.25e+00	
1,2,3,6,7,8-HXCDD		219	3.75	0.1	2.19e+01	2.19e+01	
1,2,3,7,8,9-HXCDD		134	3.75	0.1	1.34e+01	1.34e+01	
1,2,3,4,6,7,8-HPCDD		1070	3.02	0.01	1.07e+01	1.07e+01	
OCDD		2890	1.02	0.0001	2.89e-01	2.89e-01	
2,3,7,8-TCDF		453	6.91	0.1	4.53e+01	4.53e+01	
1,2,3,7,8-PECDF	ND		0.954	0.05	0.00e+00	2.39e-02	
2,3,4,7,8-PECDF		11.1	0.954	0.5	5.55e+00	5.55e+00	
1,2,3,4,7,8-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
1,2,3,6,7,8-HXCDF		7.22	2.32	0.1	7.22e-01	7.22e-01	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		5.50	2.32	0.1	5.50e-01	5.50e-01	
1,2,3,4,6,7,8-HPCDF		60.9	1.13	0.01	6.09e-01	6.09e-01	
1,2,3,4,7,8,9-HPCDF		3.57	1.13	0.01	3.57e-02	3.57e-02	
OCDF		76.8	1.79	0.0001	7.68e-03	7.68e-03	
			TOTAL TEQ		5970	5970	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		5810	1.59	1	5.81e+03	5.81e+03	
1,2,3,7,8-PECDD		59.4	1.62	1	5.94e+01	5.94e+01	
1,2,3,4,7,8-HXCDD		32.5	3.75	0.1	3.25e+00	3.25e+00	
1,2,3,6,7,8-HXCDD		219	3.75	0.1	2.19e+01	2.19e+01	
1,2,3,7,8,9-HXCDD		134	3.75	0.1	1.34e+01	1.34e+01	
1,2,3,4,6,7,8-HPCDD		1070	3.02	0.01	1.07e+01	1.07e+01	
OCDD		2890	1.02	0.0003	8.67e-01	8.67e-01	
2,3,7,8-TCDF		453	6.91	0.1	4.53e+01	4.53e+01	
1,2,3,7,8-PECDF	ND		0.954	0.03	0.00e+00	1.43e-02	
2,3,4,7,8-PECDF		11.1	0.954	0.3	3.33e+00	3.33e+00	
1,2,3,4,7,8-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
1,2,3,6,7,8-HXCDF		7.22	2.32	0.1	7.22e-01	7.22e-01	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		5.50	2.32	0.1	5.50e-01	5.50e-01	
1,2,3,4,6,7,8-HPCDF		60.9	1.13	0.01	6.09e-01	6.09e-01	
1,2,3,4,7,8,9-HPCDF		3.57	1.13	0.01	3.57e-02	3.57e-02	
OCDF		76.8	1.79	0.0003	2.30e-02	2.30e-02	
			TOTAL TEQ		5970	5970	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-13_TEQ_SJ857830.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 114
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-14
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 16:06:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.30

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		521	0.681	0.75	1.001
1,2,3,7,8-PECDD [3]		14.9	0.767	0.60	1.001
1,2,3,4,7,8-HXCDD		13.7	0.943	1.40	1.000
1,2,3,6,7,8-HXCDD		40.9	0.943	1.20	1.000
1,2,3,7,8,9-HXCDD		33.2	0.943	1.36	1.010
1,2,3,4,6,7,8-HPCDD		828	2.09	1.03	1.000
OCDD		8700	0.807	0.88	1.000
2,3,7,8-TCDF		90.7	0.646	0.72	1.001
1,2,3,7,8-PECDF		8.34	1.02	1.33	1.001
2,3,4,7,8-PECDF		9.48	1.02	1.76	1.000
1,2,3,4,7,8-HXCDF		13.2	1.20	1.31	1.000
1,2,3,6,7,8-HXCDF		8.46	1.20	1.18	1.000
1,2,3,7,8,9-HXCDF	ND		1.20		
2,3,4,6,7,8-HXCDF	NDR	8.74	1.20	1.01	1.000
1,2,3,4,6,7,8-HPCDF		109	0.843	0.98	1.000
1,2,3,4,7,8,9-HPCDF		8.27	0.843	1.12	1.000
OCDF		212	0.499	0.87	1.002
TOTAL TETRA-DIOXINS		566	0.681		
TOTAL PENTA-DIOXINS		107	0.767		
TOTAL HEXA-DIOXINS		331	0.943		
TOTAL HEPTA-DIOXINS		1530	2.09		
TOTAL TETRA-FURANS		288	0.646		
TOTAL PENTA-FURANS		317	1.02		
TOTAL HEXA-FURANS		170	1.20		
TOTAL HEPTA-FURANS		286	0.843		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-14_Form1A_DX8C_194S9_SJ857831.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 114
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-14
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 16:06:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.30

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33000	82.4	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	30100	75.3	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	36200	90.5	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35900	89.8	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	39600	98.9	1.04	1.094
13C-OCDD		80000	75400	94.2	0.89	1.178
13C-2,3,7,8-TCDF		40000	30700	76.8	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	29600	74.1	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	29700	74.3	1.54	1.353
13C-1,2,3,4,7,8-HXCDF		40000	35400	88.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	35900	89.8	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	34700	86.8	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	35400	88.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	34400	85.9	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	37400	93.6	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	203	101		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-14_Form2_DX8C_194S9_SJ857831.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 114
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-14
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 04:31:11	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 16**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.30

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		84.2	2.55	0.67	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-14_Form1A_DB83_119S16_SJ858631.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 114

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.99 g (dry)	**Lab Sample I.D.:**	L11075-14
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 16** **DX8C_194 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		521	0.681	1	5.21e+02	5.21e+02	
1,2,3,7,8-PECDD		14.9	0.767	1	1.49e+01	1.49e+01	
1,2,3,4,7,8-HXCDD		13.7	0.943	0.1	1.37e+00	1.37e+00	
1,2,3,6,7,8-HXCDD		40.9	0.943	0.1	4.09e+00	4.09e+00	
1,2,3,7,8,9-HXCDD		33.2	0.943	0.1	3.32e+00	3.32e+00	
1,2,3,4,6,7,8-HPCDD		828	2.09	0.01	8.28e+00	8.28e+00	
OCDD		8700	0.807	0.0001	8.70e-01	8.70e-01	
2,3,7,8-TCDF		84.2	2.55	0.1	8.42e+00	8.42e+00	
1,2,3,7,8-PECDF		8.34	1.02	0.05	4.17e-01	4.17e-01	
2,3,4,7,8-PECDF		9.48	1.02	0.5	4.74e+00	4.74e+00	
1,2,3,4,7,8-HXCDF		13.2	1.20	0.1	1.32e+00	1.32e+00	
1,2,3,6,7,8-HXCDF		8.46	1.20	0.1	8.46e-01	8.46e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
1,2,3,4,6,7,8-HPCDF		109	0.843	0.01	1.09e+00	1.09e+00	
1,2,3,4,7,8,9-HPCDF		8.27	0.843	0.01	8.27e-02	8.27e-02	
OCDF		212	0.499	0.0001	2.12e-02	2.12e-02	
			TOTAL TEQ		571	571	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		521	0.681	1	5.21e+02	5.21e+02	
1,2,3,7,8-PECDD		14.9	0.767	1	1.49e+01	1.49e+01	
1,2,3,4,7,8-HXCDD		13.7	0.943	0.1	1.37e+00	1.37e+00	
1,2,3,6,7,8-HXCDD		40.9	0.943	0.1	4.09e+00	4.09e+00	
1,2,3,7,8,9-HXCDD		33.2	0.943	0.1	3.32e+00	3.32e+00	
1,2,3,4,6,7,8-HPCDD		828	2.09	0.01	8.28e+00	8.28e+00	
OCDD		8700	0.807	0.0003	2.61e+00	2.61e+00	
2,3,7,8-TCDF		84.2	2.55	0.1	8.42e+00	8.42e+00	
1,2,3,7,8-PECDF		8.34	1.02	0.03	2.50e-01	2.50e-01	
2,3,4,7,8-PECDF		9.48	1.02	0.3	2.84e+00	2.84e+00	
1,2,3,4,7,8-HXCDF		13.2	1.20	0.1	1.32e+00	1.32e+00	
1,2,3,6,7,8-HXCDF		8.46	1.20	0.1	8.46e-01	8.46e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
1,2,3,4,6,7,8-HPCDF		109	0.843	0.01	1.09e+00	1.09e+00	
1,2,3,4,7,8,9-HPCDF		8.27	0.843	0.01	8.27e-02	8.27e-02	
OCDF		212	0.499	0.0003	6.36e-02	6.36e-02	
			TOTAL TEQ		570	571	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 116
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-15
Matrix:	SOLID	**Sample Size:**	2.98 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 17:01:09	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.96

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		844	0.813	0.78	1.001
1,2,3,7,8-PECDD [3]		12.8	0.886	0.68	1.000
1,2,3,4,7,8-HXCDD		16.3	1.77	1.06	1.000
1,2,3,6,7,8-HXCDD		47.7	1.77	1.26	1.000
1,2,3,7,8,9-HXCDD		37.6	1.77	1.26	1.010
1,2,3,4,6,7,8-HPCDD		1180	2.52	1.05	1.000
OCDD		10600	0.699	0.89	1.000
2,3,7,8-TCDF		36.9	1.05	0.76	1.002
1,2,3,7,8-PECDF		9.04	0.604	1.68	1.001
2,3,4,7,8-PECDF		14.4	0.604	1.45	1.000
1,2,3,4,7,8-HXCDF		24.5	0.864	1.26	1.000
1,2,3,6,7,8-HXCDF		12.5	0.864	1.12	1.000
1,2,3,7,8,9-HXCDF	ND		0.864		
2,3,4,6,7,8-HXCDF		13.6	0.864	1.38	1.000
1,2,3,4,6,7,8-HPCDF		142	0.987	1.06	1.000
1,2,3,4,7,8,9-HPCDF		11.9	0.987	1.06	1.000
OCDF		265	0.751	0.88	1.002
TOTAL TETRA-DIOXINS		891	0.813		
TOTAL PENTA-DIOXINS		94.7	0.886		
TOTAL HEXA-DIOXINS		332	1.77		
TOTAL HEPTA-DIOXINS		2030	2.52		
TOTAL TETRA-FURANS		126	1.05		
TOTAL PENTA-FURANS		197	0.604		
TOTAL HEXA-FURANS		276	0.864		
TOTAL HEPTA-FURANS		340	0.987		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-15_Form1A_DX8C_194S10_SJ857832.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 116
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-15
Matrix:	SOLID	**Sample Size:**	2.98 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 17:01:09	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.96

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	31600	79.0	0.79	1.012
13C-1,2,3,7,8-PECDD [4]		40000	30200	75.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	34600	86.4	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35300	88.3	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	36800	92.0	1.04	1.094
13C-OCDD		80000	70900	88.7	0.89	1.177
13C-2,3,7,8-TCDF		40000	28500	71.3	0.78	0.964
13C-1,2,3,7,8-PECDF		40000	29700	74.1	1.54	1.284
13C-2,3,4,7,8-PECDF		40000	29900	74.7	1.52	1.352
13C-1,2,3,4,7,8-HXCDF		40000	33800	84.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	35000	87.5	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	33600	83.9	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	34200	85.6	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	34100	85.4	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	35400	88.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	194	97.1		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-15_Form2_DX8C_194S10_SJ857832.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 116
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-15
Matrix:	SOLID	**Sample Size:**	2.98 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 05:06:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 17**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.96

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	26.0	2.55	0.73	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-15_Form1A_DB83_119S17_SJ858632.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 116

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.98 g (dry)	**Lab Sample I.D.:**	L11075-15
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_119 S: 17** **DX8C_194 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		844	0.813	1	8.44e+02	8.44e+02	
1,2,3,7,8-PECDD		12.8	0.886	1	1.28e+01	1.28e+01	
1,2,3,4,7,8-HXCDD		16.3	1.77	0.1	1.63e+00	1.63e+00	
1,2,3,6,7,8-HXCDD		47.7	1.77	0.1	4.77e+00	4.77e+00	
1,2,3,7,8,9-HXCDD		37.6	1.77	0.1	3.76e+00	3.76e+00	
1,2,3,4,6,7,8-HPCDD		1180	2.52	0.01	1.18e+01	1.18e+01	
OCDD		10600	0.699	0.0001	1.06e+00	1.06e+00	
2,3,7,8-TCDF	ND		2.55	0.1	0.00e+00	1.28e-01	
1,2,3,7,8-PECDF		9.04	0.604	0.05	4.52e-01	4.52e-01	
2,3,4,7,8-PECDF		14.4	0.604	0.5	7.20e+00	7.20e+00	
1,2,3,4,7,8-HXCDF		24.5	0.864	0.1	2.45e+00	2.45e+00	
1,2,3,6,7,8-HXCDF		12.5	0.864	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		0.864	0.1	0.00e+00	4.32e-02	
2,3,4,6,7,8-HXCDF		13.6	0.864	0.1	1.36e+00	1.36e+00	
1,2,3,4,6,7,8-HPCDF		142	0.987	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		11.9	0.987	0.01	1.19e-01	1.19e-01	
OCDF		265	0.751	0.0001	2.65e-02	2.65e-02	
			TOTAL TEQ		894	894	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		844	0.813	1	8.44e+02	8.44e+02	
1,2,3,7,8-PECDD		12.8	0.886	1	1.28e+01	1.28e+01	
1,2,3,4,7,8-HXCDD		16.3	1.77	0.1	1.63e+00	1.63e+00	
1,2,3,6,7,8-HXCDD		47.7	1.77	0.1	4.77e+00	4.77e+00	
1,2,3,7,8,9-HXCDD		37.6	1.77	0.1	3.76e+00	3.76e+00	
1,2,3,4,6,7,8-HPCDD		1180	2.52	0.01	1.18e+01	1.18e+01	
OCDD		10600	0.699	0.0003	3.18e+00	3.18e+00	
2,3,7,8-TCDF	ND		2.55	0.1	0.00e+00	1.28e-01	
1,2,3,7,8-PECDF		9.04	0.604	0.03	2.71e-01	2.71e-01	
2,3,4,7,8-PECDF		14.4	0.604	0.3	4.32e+00	4.32e+00	
1,2,3,4,7,8-HXCDF		24.5	0.864	0.1	2.45e+00	2.45e+00	
1,2,3,6,7,8-HXCDF		12.5	0.864	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		0.864	0.1	0.00e+00	4.32e-02	
2,3,4,6,7,8-HXCDF		13.6	0.864	0.1	1.36e+00	1.36e+00	
1,2,3,4,6,7,8-HPCDF		142	0.987	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		11.9	0.987	0.01	1.19e-01	1.19e-01	
OCDF		265	0.751	0.0003	7.95e-02	7.95e-02	
			TOTAL TEQ		893	893	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-15_TEQ_SJ857832.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 120
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-16
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.15 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 17:56:00	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_194 S: 11**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
		% Moisture:	1.48

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		221	0.621	0.75	1.001
1,2,3,7,8-PECDD [3]		16.5	0.664	0.53	1.001
1,2,3,4,7,8-HXCDD		18.4	1.24	1.37	1.000
1,2,3,6,7,8-HXCDD		70.3	1.24	1.20	1.000
1,2,3,7,8,9-HXCDD		53.5	1.24	1.23	1.010
1,2,3,4,6,7,8-HPCDD		1910	4.27	1.01	1.000
OCDD		12900	0.941	0.88	1.000
2,3,7,8-TCDF		30.5	0.608	0.81	1.002
1,2,3,7,8-PECDF		9.44	0.633	1.41	1.001
2,3,4,7,8-PECDF		16.5	0.633	1.38	1.000
1,2,3,4,7,8-HXCDF		28.0	0.676	1.21	1.000
1,2,3,6,7,8-HXCDF		17.0	0.676	1.31	1.000
1,2,3,7,8,9-HXCDF		2.31	0.676	1.13	1.001
2,3,4,6,7,8-HXCDF		15.7	0.676	1.30	1.000
1,2,3,4,6,7,8-HPCDF		142	1.18	1.05	1.000
1,2,3,4,7,8,9-HPCDF		9.54	1.18	1.13	1.000
OCDF		214	2.12	0.89	1.002
TOTAL TETRA-DIOXINS		263	0.621		
TOTAL PENTA-DIOXINS		131	0.664		
TOTAL HEXA-DIOXINS		551	1.24		
TOTAL HEPTA-DIOXINS		3230	4.27		
TOTAL TETRA-FURANS		156	0.608		
TOTAL PENTA-FURANS		219	0.633		
TOTAL HEXA-FURANS		315	0.676		
TOTAL HEPTA-FURANS		326	1.18		

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-16_Form1A_DX8C_194S11_SJ857833.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 120
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-16
Matrix:	SOLID	**Sample Size:**	3.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 17:56:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.48

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33600	84.1	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	29800	74.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	36700	91.8	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	36700	91.6	1.23	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	37400	93.6	1.05	1.094
13C-OCDD		80000	72100	90.1	0.89	1.178
13C-2,3,7,8-TCDF		40000	31400	78.6	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	29800	74.6	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	29700	74.3	1.54	1.353
13C-1,2,3,4,7,8-HXCDF		40000	35700	89.3	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	36700	91.8	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	35400	88.6	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	36000	90.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	35100	87.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	36500	91.2	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		400	415	104		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-16_Form2_DX8C_194S11_SJ857833.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 120
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-16
Matrix:	SOLID	**Sample Size:**	3.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 05:42:23	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 18**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.48

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	24.3	1.85	1.04	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-16_Form1A_DB83_119S18_SJ858633.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 120

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.15 g (dry)	**Lab Sample I.D.:**	L11075-16
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 18** **DX8C_194 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		221	0.621	1	2.21e+02	2.21e+02	
1,2,3,7,8-PECDD		16.5	0.664	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD		18.4	1.24	0.1	1.84e+00	1.84e+00	
1,2,3,6,7,8-HXCDD		70.3	1.24	0.1	7.03e+00	7.03e+00	
1,2,3,7,8,9-HXCDD		53.5	1.24	0.1	5.35e+00	5.35e+00	
1,2,3,4,6,7,8-HPCDD		1910	4.27	0.01	1.91e+01	1.91e+01	
OCDD		12900	0.941	0.0001	1.29e+00	1.29e+00	
2,3,7,8-TCDF	ND		1.85	0.1	0.00e+00	9.25e-02	
1,2,3,7,8-PECDF		9.44	0.633	0.05	4.72e-01	4.72e-01	
2,3,4,7,8-PECDF		16.5	0.633	0.5	8.25e+00	8.25e+00	
1,2,3,4,7,8-HXCDF		28.0	0.676	0.1	2.80e+00	2.80e+00	
1,2,3,6,7,8-HXCDF		17.0	0.676	0.1	1.70e+00	1.70e+00	
1,2,3,7,8,9-HXCDF		2.31	0.676	0.1	2.31e-01	2.31e-01	
2,3,4,6,7,8-HXCDF		15.7	0.676	0.1	1.57e+00	1.57e+00	
1,2,3,4,6,7,8-HPCDF		142	1.18	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		9.54	1.18	0.01	9.54e-02	9.54e-02	
OCDF		214	2.12	0.0001	2.14e-02	2.14e-02	
			TOTAL TEQ		289	289	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		221	0.621	1	2.21e+02	2.21e+02	
1,2,3,7,8-PECDD		16.5	0.664	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD		18.4	1.24	0.1	1.84e+00	1.84e+00	
1,2,3,6,7,8-HXCDD		70.3	1.24	0.1	7.03e+00	7.03e+00	
1,2,3,7,8,9-HXCDD		53.5	1.24	0.1	5.35e+00	5.35e+00	
1,2,3,4,6,7,8-HPCDD		1910	4.27	0.01	1.91e+01	1.91e+01	
OCDD		12900	0.941	0.0003	3.87e+00	3.87e+00	
2,3,7,8-TCDF	ND		1.85	0.1	0.00e+00	9.25e-02	
1,2,3,7,8-PECDF		9.44	0.633	0.03	2.83e-01	2.83e-01	
2,3,4,7,8-PECDF		16.5	0.633	0.3	4.95e+00	4.95e+00	
1,2,3,4,7,8-HXCDF		28.0	0.676	0.1	2.80e+00	2.80e+00	
1,2,3,6,7,8-HXCDF		17.0	0.676	0.1	1.70e+00	1.70e+00	
1,2,3,7,8,9-HXCDF		2.31	0.676	0.1	2.31e-01	2.31e-01	
2,3,4,6,7,8-HXCDF		15.7	0.676	0.1	1.57e+00	1.57e+00	
1,2,3,4,6,7,8-HPCDF		142	1.18	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		9.54	1.18	0.01	9.54e-02	9.54e-02	
OCDF		214	2.12	0.0003	6.42e-02	6.42e-02	
			TOTAL TEQ		288	288	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-16_TEQ_SJ857833.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 123
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-17
Matrix:	SOLID	**Sample Size:**	2.64 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 18:50:52	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	15.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1310	0.722	0.77	1.001
1,2,3,7,8-PECDD [3]		16.5	0.723	0.70	1.000
1,2,3,4,7,8-HXCDD	NDR	2.65	1.21	0.84	1.000
1,2,3,6,7,8-HXCDD		11.6	1.21	1.20	1.000
1,2,3,7,8,9-HXCDD		8.18	1.21	1.42	1.010
1,2,3,4,6,7,8-HPCDD		155	1.07	1.06	1.000
OCDD		1670	0.975	0.86	1.000
2,3,7,8-TCDF		40.0	0.538	0.72	1.003
1,2,3,7,8-PECDF	NDR	2.57	0.568	0.94	1.001
2,3,4,7,8-PECDF		3.62	0.568	1.67	1.000
1,2,3,4,7,8-HXCDF		3.92	0.613	1.17	1.000
1,2,3,6,7,8-HXCDF		2.59	0.613	1.08	1.000
1,2,3,7,8,9-HXCDF	NDR	1.11	0.613	2.18	1.000
2,3,4,6,7,8-HXCDF	NDR	2.80	0.613	0.73	1.001
1,2,3,4,6,7,8-HPCDF		23.1	0.693	1.16	1.000
1,2,3,4,7,8,9-HPCDF	NDR	1.85	0.693	2.21	1.000
OCDF		63.1	1.08	0.84	1.002
TOTAL TETRA-DIOXINS		1380	0.722		
TOTAL PENTA-DIOXINS		57.3	0.723		
TOTAL HEXA-DIOXINS		101	1.21		
TOTAL HEPTA-DIOXINS		302	1.07		
TOTAL TETRA-FURANS		178	0.538		
TOTAL PENTA-FURANS		154	0.568		
TOTAL HEXA-FURANS		54.9	0.613		
TOTAL HEPTA-FURANS		50.9	0.693		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-17_Form1A_DX8C_194S12_SJ857834.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 123
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-17
Matrix:	SOLID	**Sample Size:**	2.64 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 18:50:52	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	15.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	31900	79.7	0.81	1.012
13C-1,2,3,7,8-PECDD [4]		40000	29400	73.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	34000	84.9	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35100	87.7	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	36200	90.6	1.05	1.094
13C-OCDD		80000	67800	84.8	0.88	1.177
13C-2,3,7,8-TCDF		40000	29300	73.2	0.79	0.964
13C-1,2,3,7,8-PECDF		40000	29000	72.5	1.54	1.284
13C-2,3,4,7,8-PECDF		40000	28900	72.3	1.54	1.352
13C-1,2,3,4,7,8-HXCDF		40000	33700	84.1	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34600	86.4	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	33100	82.7	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	33500	83.8	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	32700	81.7	0.43	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	35000	87.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	197	98.4		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-17_Form2_DX8C_194S12_SJ857834.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 123
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-17
Matrix:	SOLID	**Sample Size:**	2.64 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 13:05:34	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	15.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	20.8	2.46	1.43	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-17_Form1A_DB83_120S11_SJ859660.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 123

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.64 g (dry)	**Lab Sample I.D.:**	L11075-17
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 11** **DX8C_194 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1310	0.722	1	1.31e+03	1.31e+03	
1,2,3,7,8-PECDD		16.5	0.723	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		11.6	1.21	0.1	1.16e+00	1.16e+00	
1,2,3,7,8,9-HXCDD		8.18	1.21	0.1	8.18e-01	8.18e-01	
1,2,3,4,6,7,8-HPCDD		155	1.07	0.01	1.55e+00	1.55e+00	
OCDD		1670	0.975	0.0001	1.67e-01	1.67e-01	
2,3,7,8-TCDF	ND		2.46	0.1	0.00e+00	1.23e-01	
1,2,3,7,8-PECDF	ND		0.568	0.05	0.00e+00	1.42e-02	
2,3,4,7,8-PECDF		3.62	0.568	0.5	1.81e+00	1.81e+00	
1,2,3,4,7,8-HXCDF		3.92	0.613	0.1	3.92e-01	3.92e-01	
1,2,3,6,7,8-HXCDF		2.59	0.613	0.1	2.59e-01	2.59e-01	
1,2,3,7,8,9-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
2,3,4,6,7,8-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
1,2,3,4,6,7,8-HPCDF		23.1	0.693	0.01	2.31e-01	2.31e-01	
1,2,3,4,7,8,9-HPCDF	ND		0.693	0.01	0.00e+00	3.47e-03	
OCDF		63.1	1.08	0.0001	6.31e-03	6.31e-03	
			TOTAL TEQ		1330	1330	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1310	0.722	1	1.31e+03	1.31e+03	
1,2,3,7,8-PECDD		16.5	0.723	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		11.6	1.21	0.1	1.16e+00	1.16e+00	
1,2,3,7,8,9-HXCDD		8.18	1.21	0.1	8.18e-01	8.18e-01	
1,2,3,4,6,7,8-HPCDD		155	1.07	0.01	1.55e+00	1.55e+00	
OCDD		1670	0.975	0.0003	5.01e-01	5.01e-01	
2,3,7,8-TCDF	ND		2.46	0.1	0.00e+00	1.23e-01	
1,2,3,7,8-PECDF	ND		0.568	0.03	0.00e+00	8.52e-03	
2,3,4,7,8-PECDF		3.62	0.568	0.3	1.09e+00	1.09e+00	
1,2,3,4,7,8-HXCDF		3.92	0.613	0.1	3.92e-01	3.92e-01	
1,2,3,6,7,8-HXCDF		2.59	0.613	0.1	2.59e-01	2.59e-01	
1,2,3,7,8,9-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
2,3,4,6,7,8-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
1,2,3,4,6,7,8-HPCDF		23.1	0.693	0.01	2.31e-01	2.31e-01	
1,2,3,4,7,8,9-HPCDF	ND		0.693	0.01	0.00e+00	3.47e-03	
OCDF		63.1	1.08	0.0003	1.89e-02	1.89e-02	
			TOTAL TEQ		1330	1330	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-17_TEQ_SJ857834.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-101 :4496
Sample Receipt Date:	N/A	**Sample Size:**	3.00 g
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 00:58:40	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_193 S: 5**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g	**Cal. Ver. Data Filename:**	DX8C_193 S: 1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	4.12	0.690	0.34	1.001
1,2,3,7,8-PECDD [3]	NDR	2.28	1.12	0.28	1.000
1,2,3,4,7,8-HXCDD		2.17	1.56	1.11	1.000
1,2,3,6,7,8-HXCDD	ND		1.56		
1,2,3,7,8,9-HXCDD		3.31	1.56	1.24	1.011
1,2,3,4,6,7,8-HPCDD		5.76	1.26	0.91	1.000
OCDD		6.03	1.59	0.96	1.000
2,3,7,8-TCDF	NDR	1.97	0.533	0.96	1.001
1,2,3,7,8-PECDF	NDR	1.83	0.971	0.98	1.000
2,3,4,7,8-PECDF		4.44	0.971	1.58	1.000
1,2,3,4,7,8-HXCDF	NDR	2.07	1.23	0.99	1.000
1,2,3,6,7,8-HXCDF		2.24	1.23	1.12	1.001
1,2,3,7,8,9-HXCDF	ND		1.23		
2,3,4,6,7,8-HXCDF	NDR	2.79	1.23	0.73	1.000
1,2,3,4,6,7,8-HPCDF	NDR	3.58	1.22	0.86	1.000
1,2,3,4,7,8,9-HPCDF		2.37	1.22	1.09	1.000
OCDF		4.29	1.28	0.81	1.002
TOTAL TETRA-DIOXINS	ND		0.690		
TOTAL PENTA-DIOXINS	ND		1.12		
TOTAL HEXA-DIOXINS		5.48	1.56		
TOTAL HEPTA-DIOXINS		5.76	1.26		
TOTAL TETRA-FURANS	ND		0.533		
TOTAL PENTA-FURANS		4.44	0.971		
TOTAL HEXA-FURANS		2.24	1.23		
TOTAL HEPTA-FURANS		2.37	1.22		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25088-101_Form1A_DX8C_193S5_SJ857274.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-101 :4496
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 00:58:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute		

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28500	71.3	0.80	1.012
13C-1,2,3,7,8-PECDD [4]		40000	25500	63.7	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29200	73.1	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30300	75.8	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	29700	74.3	1.04	1.094
13C-OCDD		80000	56300	70.4	0.90	1.177
13C-2,3,7,8-TCDF		40000	26900	67.2	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	25600	63.9	1.54	1.285
13C-2,3,4,7,8-PECDF		40000	25200	63.0	1.57	1.352
13C-1,2,3,4,7,8-HXCDF		40000	29300	73.2	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	30800	77.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	29000	72.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	30000	74.9	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	28700	71.8	0.45	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	28600	71.6	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	224	112		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-101_Form2_DX8C_193S5_SJ857274.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Lab Sample I.D.:	WG25088-101 :4496		
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 21:59:21	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g		

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		3.06		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_WG25088-101_Form1A_DB83_119S5_SJ859665.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
Lab Blank

PCDD/PCDF ANALYSIS TEQ DATA REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	N/A
Sample Size:	3.00 g	**Lab Sample I.D.:**	WG25088-101 :4496
Concentration Units:	pg/g	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_119 S: 5** **DX8C_193 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.690	1	0.00e+00	3.45e-01	
1,2,3,7,8-PECDD	ND		1.12	1	0.00e+00	5.60e-01	
1,2,3,4,7,8-HXCDD		2.17	1.56	0.1	2.17e-01	2.17e-01	
1,2,3,6,7,8-HXCDD	ND		1.56	0.1	0.00e+00	7.80e-02	
1,2,3,7,8,9-HXCDD		3.31	1.56	0.1	3.31e-01	3.31e-01	
1,2,3,4,6,7,8-HPCDD		5.76	1.26	0.01	5.76e-02	5.76e-02	
OCDD		6.03	1.59	0.0001	6.03e-04	6.03e-04	
2,3,7,8-TCDF	ND		3.06	0.1	0.00e+00	1.53e-01	
1,2,3,7,8-PECDF	ND		0.971	0.05	0.00e+00	2.43e-02	
2,3,4,7,8-PECDF		4.44	0.971	0.5	2.22e+00	2.22e+00	
1,2,3,4,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,6,7,8-HXCDF		2.24	1.23	0.1	2.24e-01	2.24e-01	
1,2,3,7,8,9-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
2,3,4,6,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.22	0.01	0.00e+00	6.10e-03	
1,2,3,4,7,8,9-HPCDF		2.37	1.22	0.01	2.37e-02	2.37e-02	
OCDF		4.29	1.28	0.0001	4.29e-04	4.29e-04	
			TOTAL TEQ		3.07	4.43	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.690	1	0.00e+00	3.45e-01	
1,2,3,7,8-PECDD	ND		1.12	1	0.00e+00	5.60e-01	
1,2,3,4,7,8-HXCDD		2.17	1.56	0.1	2.17e-01	2.17e-01	
1,2,3,6,7,8-HXCDD	ND		1.56	0.1	0.00e+00	7.80e-02	
1,2,3,7,8,9-HXCDD		3.31	1.56	0.1	3.31e-01	3.31e-01	
1,2,3,4,6,7,8-HPCDD		5.76	1.26	0.01	5.76e-02	5.76e-02	
OCDD		6.03	1.59	0.0003	1.81e-03	1.81e-03	
2,3,7,8-TCDF	ND		3.06	0.1	0.00e+00	1.53e-01	
1,2,3,7,8-PECDF	ND		0.971	0.03	0.00e+00	1.46e-02	
2,3,4,7,8-PECDF		4.44	0.971	0.3	1.33e+00	1.33e+00	
1,2,3,4,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,6,7,8-HXCDF		2.24	1.23	0.1	2.24e-01	2.24e-01	
1,2,3,7,8,9-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
2,3,4,6,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.22	0.01	0.00e+00	6.10e-03	
1,2,3,4,7,8,9-HPCDF		2.37	1.22	0.01	2.37e-02	2.37e-02	
OCDF		4.29	1.28	0.0003	1.29e-03	1.29e-03	
			TOTAL TEQ		2.19	3.53	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25088-101_TEQ_SJ857274.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8A
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_193 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-102 :4496
Extraction Date:	23-Apr-2008	**Analysis Date:**	06-May-2008 **Time:** 22:13:53

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.77	10.6	10.0	7.10 - 16.7	94.4
1,2,3,7,8-PECDD [4]		0.61	56.6	56.1	39.6 - 80.4	99.1
1,2,3,4,7,8-HXCDD		1.24	59.2	57.4	41.4 - 97.1	97.0
1,2,3,6,7,8-HXCDD		1.24	51.8	52.3	39.4 - 69.4	101
1,2,3,7,8,9-HXCDD		1.23	56.7	58.2	36.3 - 91.9	103
1,2,3,4,6,7,8-HPCDD		1.03	50.0	46.2	35.0 - 70.0	92.4
OCDD		0.88	108	94.5	84.2 - 155	87.6
2,3,7,8-TCDF		0.76	10.9	11.1	8.18 - 17.2	102
1,2,3,7,8-PECDF		1.52	50.0	50.2	40.0 - 67.0	100
2,3,4,7,8-PECDF		1.52	50.0	49.8	34.0 - 80.0	99.7
1,2,3,4,7,8-HXCDF		1.22	54.4	53.1	39.2 - 72.9	97.5
1,2,3,6,7,8-HXCDF		1.21	50.0	47.7	42.0 - 65.0	95.5
1,2,3,7,8,9-HXCDF		1.23	50.0	49.8	39.0 - 65.0	99.5
2,3,4,6,7,8-HXCDF		1.22	53.1	50.6	37.2 - 82.8	95.3
1,2,3,4,6,7,8-HPCDF		1.01	50.0	51.7	41.0 - 61.0	103
1,2,3,4,7,8,9-HPCDF		1.02	50.0	47.6	39.0 - 69.0	95.1
OCDF		0.89	109	99.2	68.4 - 185	91.3

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-102_Form8A_SJ857270.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8B
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_193 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-102 :4496
Extraction Date:	23-Apr-2008	**Analysis Date:**	06-May-2008 **Time:** 22:13:53

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.79	100	39.9	20.0-175	39.9
13C-1,2,3,7,8-PECDD [4]		0.62	100	33.2	21.0-227	33.2
13C-1,2,3,4,7,8-HXCDD		1.27	100	36.0	21.0-193	36.0
13C-1,2,3,6,7,8-HXCDD		1.24	100	36.5	25.0-163	36.5
13C-1,2,3,4,6,7,8-HPCDD		1.03	100	37.2	26.0-166	37.2
13C-OCDD		0.89	200	72.4	26.0-397	36.2
13C-2,3,7,8-TCDF		0.78	100	34.7	22.0-152	34.7
13C-1,2,3,7,8-PECDF		1.56	100	36.4	21.0-192	36.4
13C-2,3,4,7,8-PECDF		1.56	100	31.3	13.0-328	31.3
13C-1,2,3,4,7,8-HXCDF		0.51	100	38.4	19.0-202	38.4
13C-1,2,3,6,7,8-HXCDF		0.52	100	40.2	21.0-159	40.2
13C-1,2,3,7,8,9-HXCDF		0.52	100	37.6	17.0-205	37.6
13C-2,3,4,6,7,8-HXCDF		0.51	100	36.2	22.0-176	36.2
13C-1,2,3,4,6,7,8-HPCDF		0.44	100	38.1	21.0-158	38.1
13C-1,2,3,4,7,8,9-HPCDF		0.45	100	37.0	20.0-186	37.0
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD			10.0	11.4	3.10-19.1	114

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8B.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-102_Form8B_SJ857270.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 067
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-1
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 02:48:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.03

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1890	0.853	0.77	1.001
1,2,3,7,8-PECDD [3]		22.7	1.45	0.70	1.001
1,2,3,4,7,8-HXCDD		3.96	1.55	1.38	1.000
1,2,3,6,7,8-HXCDD		7.50	1.55	1.23	1.000
1,2,3,7,8,9-HXCDD		6.43	1.55	1.23	1.010
1,2,3,4,6,7,8-HPCDD		126	1.62	1.06	1.000
OCDD		1550	2.14	0.88	1.000
2,3,7,8-TCDF		52.5	0.859	0.76	1.002
1,2,3,7,8-PECDF		2.96	0.864	1.49	1.001
2,3,4,7,8-PECDF		5.50	0.864	1.32	1.000
1,2,3,4,7,8-HXCDF		4.15	0.675	1.37	1.000
1,2,3,6,7,8-HXCDF		2.16	0.675	1.14	1.001
1,2,3,7,8,9-HXCDF	NDR	1.78	0.675	1.88	1.000
2,3,4,6,7,8-HXCDF	NDR	3.57	0.675	0.85	1.000
1,2,3,4,6,7,8-HPCDF		21.3	2.03	1.06	1.000
1,2,3,4,7,8,9-HPCDF	ND		2.03		
OCDF		70.8	1.16	0.82	1.002
TOTAL TETRA-DIOXINS		1970	0.853		
TOTAL PENTA-DIOXINS		61.7	1.45		
TOTAL HEXA-DIOXINS		50.0	1.55		
TOTAL HEPTA-DIOXINS		231	1.62		
TOTAL TETRA-FURANS		325	0.859		
TOTAL PENTA-FURANS		188	0.864		
TOTAL HEXA-FURANS		33.4	0.675		
TOTAL HEPTA-FURANS		58.5	2.03		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-1_Form1A_DX8C_193S7_SJ857276.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 067
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-1
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 02:48:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.03

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	31100	77.7	0.78	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28900	72.3	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	33600	84.1	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	34100	85.2	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	35100	87.8	1.04	1.094
13C-OCDD		80000	64900	81.2	0.88	1.178
13C-2,3,7,8-TCDF		40000	28200	70.5	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	28700	71.7	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	28300	70.6	1.57	1.352
13C-1,2,3,4,7,8-HXCDF		40000	34100	85.2	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34500	86.3	0.51	0.959
13C-1,2,3,7,8,9-HXCDF		40000	34000	85.0	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	33800	84.6	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	33200	83.0	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	34600	86.4	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	219	110		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-1_Form2_DX8C_193S7_SJ857276.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 03:43:25	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	14.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		1770	2.26	0.62	1.000
1,2,3,4,7,8-HXCDD		137	9.88	1.18	1.000
1,2,3,6,7,8-HXCDD		1370	9.88	1.22	1.000
1,2,3,7,8,9-HXCDD		559	9.88	1.22	1.010
1,2,3,4,6,7,8-HPCDD		5930	4.84	1.02	1.000
OCDD		14000	1.89	0.87	1.000
2,3,7,8-TCDF		9150	14.7	0.76	1.004
1,2,3,7,8-PECDF		36.7	1.88	1.44	1.001
2,3,4,7,8-PECDF		260	1.88	1.44	1.000
1,2,3,4,7,8-HXCDF		203	3.04	1.25	1.000
1,2,3,6,7,8-HXCDF		42.4	3.04	1.27	1.000
1,2,3,7,8,9-HXCDF		4.59	3.04	1.20	1.000
2,3,4,6,7,8-HXCDF		67.4	3.04	1.23	1.001
1,2,3,4,6,7,8-HPCDF		853	4.95	1.01	1.000
1,2,3,4,7,8,9-HPCDF		36.2	4.95	1.16	1.000
OCDF		846	1.40	0.90	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		15600	2.26		
TOTAL HEXA-DIOXINS		17000	9.88		
TOTAL HEPTA-DIOXINS		12500	4.84		
TOTAL TETRA-FURANS		41200	14.7		
TOTAL PENTA-FURANS		27500	1.88		
TOTAL HEXA-FURANS		3960	3.04		
TOTAL HEPTA-FURANS		1670	4.95		

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form1A_DX8C_193S8_SJ857277.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2 W
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 05:36:44	**GC Column ID:**	DB5
Extract Volume (uL):	200	**Sample Data Filename:**	**DX82_171 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	10	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	14.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	298000	65.5	0.79	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	313000	65.5		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form1A_DX82_171S12_SJ859416.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 03:43:25	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	14.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	17300	43.2	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	14800	37.1	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	16800	42.0	1.24	0.987
13C-1,2,3,6,7,8-HXCDD		40000	17400	43.4	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	17100	42.9	1.03	1.094
13C-OCDD		80000	29900	37.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	15200	38.0	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	14600	36.5	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	14800	36.9	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	17100	42.8	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	17600	43.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	17100	42.8	0.51	1.004
13C-2,3,4,6,7,8-HXCDF		40000	17600	44.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	16400	41.0	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	16500	41.2	0.45	1.103

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	X

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2 W
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 05:36:44	**GC Column ID:**	DB5
Extract Volume (uL):	200	**Sample Data Filename:**	**DX82_171 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	10	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	14.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	19300	48.2	0.73	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	4000	4000	100		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-2_Form2_DX82_171S12_SJ859416.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 04:38:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	17.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		1040	2.77	0.62	1.000
1,2,3,4,7,8-HXCDD		93.9	8.17	1.14	1.000
1,2,3,6,7,8-HXCDD		831	8.17	1.32	1.000
1,2,3,7,8,9-HXCDD		339	8.17	1.28	1.010
1,2,3,4,6,7,8-HPCDD		3410	7.59	1.02	1.000
OCDD		7340	2.91	0.88	1.000
2,3,7,8-TCDF		5650	11.0	0.77	1.003
1,2,3,7,8-PECDF		18.2	2.43	1.57	1.001
2,3,4,7,8-PECDF		150	2.43	1.65	1.000
1,2,3,4,7,8-HXCDF		115	2.98	1.34	1.000
1,2,3,6,7,8-HXCDF		23.5	2.98	1.06	1.000
1,2,3,7,8,9-HXCDF	ND		2.98		
2,3,4,6,7,8-HXCDF		38.7	2.98	1.21	1.000
1,2,3,4,6,7,8-HPCDF		490	6.94	1.00	1.000
1,2,3,4,7,8,9-HPCDF		19.9	6.94	0.92	1.000
OCDF		461	4.34	0.89	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		7020	2.77		
TOTAL HEXA-DIOXINS		8200	8.17		
TOTAL HEPTA-DIOXINS		6490	7.59		
TOTAL TETRA-FURANS		24900	11.0		
TOTAL PENTA-FURANS		16000	2.43		
TOTAL HEXA-FURANS		2320	2.98		
TOTAL HEPTA-FURANS		944	6.94		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form1A_DX8C_193S9_SJ857278.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3 W
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 02:53:34	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	17.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	184000	38.1	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	193000	38.1		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form1A_DX82_171S9_SJ859413.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 04:38:16	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	17.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	14700	36.7	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	12800	32.1	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		40000	14200	35.5	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	14800	37.1	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	16000	40.1	1.05	1.094
13C-OCDD		80000	30100	37.6	0.88	1.177
13C-2,3,7,8-TCDF		40000	13200	32.9	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	12900	32.2	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	12600	31.6	1.59	1.352
13C-1,2,3,4,7,8-HXCDF		40000	14600	36.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	14800	37.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	14600	36.6	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	15300	38.3	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	14600	36.5	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	15000	37.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form2_DX8C_193S9_SJ857278.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3 W
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 02:53:34	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	17.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	16900	42.2	0.75	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	200	99.8		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-3_Form2_DX82_171S9_SJ859413.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 05:37:37	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.14

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		320	0.832	0.61	1.001
1,2,3,4,7,8-HXCDD		30.5	2.61	1.14	1.000
1,2,3,6,7,8-HXCDD		196	2.61	1.26	1.000
1,2,3,7,8,9-HXCDD		83.8	2.61	1.16	1.011
1,2,3,4,6,7,8-HPCDD		795	4.95	1.06	1.000
OCDD		1660	8.18	0.87	1.000
2,3,7,8-TCDF		1250	7.08	0.77	1.003
1,2,3,7,8-PECDF		10.1	1.22	1.34	1.001
2,3,4,7,8-PECDF		37.7	1.22	1.50	1.000
1,2,3,4,7,8-HXCDF		21.6	1.20	1.13	1.000
1,2,3,6,7,8-HXCDF		6.85	1.20	1.13	1.000
1,2,3,7,8,9-HXCDF	NDR	1.56	1.20	2.91	1.000
2,3,4,6,7,8-HXCDF		8.74	1.20	1.34	1.000
1,2,3,4,6,7,8-HPCDF		103	1.06	1.02	1.000
1,2,3,4,7,8,9-HPCDF		4.48	1.06	0.98	1.000
OCDF		96.5	2.35	0.89	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		1570	0.832		
TOTAL HEXA-DIOXINS		1910	2.61		
TOTAL HEPTA-DIOXINS		1570	4.95		
TOTAL TETRA-FURANS		6420	7.08		
TOTAL PENTA-FURANS		3950	1.22		
TOTAL HEXA-FURANS		658	1.20		
TOTAL HEPTA-FURANS		191	1.06		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form1A_DX8C_195AS9_SJ857308.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-4 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.06 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 04:42:17	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	100	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 11**
Dilution Factor:	5	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	3.14

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	46900	13.7	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	49100	13.7		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form1A_DX82_171S11_SJ859415.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 05:37:37	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.14

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	38000	95.0	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	31900	79.8	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	38300	95.9	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	39100	97.7	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	34800	87.1	1.04	1.094
13C-OCDD		80000	60000	75.0	0.90	1.177
13C-2,3,7,8-TCDF		40000	36800	92.1	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	33300	83.2	1.55	1.286
13C-2,3,4,7,8-PECDF		40000	32600	81.6	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	41300	103	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40600	102	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	38300	95.8	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		40000	39600	99.0	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	35900	89.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	36200	90.6	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form2_DX8C_195AS9_SJ857308.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4 W
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 04:42:17	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.14

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	37400	93.4	0.80	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	189	94.3		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-4_Form2_DX82_171S11_SJ859415.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-5 (A)
Matrix:	SOLID	**Sample Size:**	3.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 06:32:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	0.82

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		115	0.944	0.77	1.001
1,2,3,7,8-PECDD [3]		4.23	0.596	0.53	1.001
1,2,3,4,7,8-HXCDD		0.856	0.678	1.41	1.000
1,2,3,6,7,8-HXCDD	NDR	2.51	0.678	0.73	1.000
1,2,3,7,8,9-HXCDD		1.69	0.678	1.33	1.010
1,2,3,4,6,7,8-HPCDD	NDR	10.7	0.471	1.31	1.000
OCDD		63.4	0.528	0.95	1.000
2,3,7,8-TCDF		7.91	0.600	0.69	1.003
1,2,3,7,8-PECDF	ND		0.633		
2,3,4,7,8-PECDF	NDR	2.81	0.633	0.88	1.000
1,2,3,4,7,8-HXCDF	NDR	1.74	0.559	1.60	1.000
1,2,3,6,7,8-HXCDF	NDR	0.714	0.559	1.68	1.000
1,2,3,7,8,9-HXCDF	ND		0.559		
2,3,4,6,7,8-HXCDF	NDR	0.603	0.559	0.75	1.000
1,2,3,4,6,7,8-HPCDF		3.32	0.583	1.03	1.001
1,2,3,4,7,8,9-HPCDF	ND		0.583		
OCDF		5.69	0.737	0.91	1.002
TOTAL TETRA-DIOXINS		118	0.944		
TOTAL PENTA-DIOXINS		6.76	0.596		
TOTAL HEXA-DIOXINS		5.89	0.678		
TOTAL HEPTA-DIOXINS		9.23	0.471		
TOTAL TETRA-FURANS		78.4	0.600		
TOTAL PENTA-FURANS		39.9	0.633		
TOTAL HEXA-FURANS		5.01	0.559		
TOTAL HEPTA-FURANS		3.32	0.583		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-5_Form1A_DX8C_195AS10_SJ857309.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-5 (A)
Matrix:	SOLID	**Sample Size:**	3.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 06:32:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg absolute	**% Moisture:**	0.82

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	35500	88.8	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	33700	84.4	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	35500	88.8	1.33	0.987
13C-1,2,3,6,7,8-HXCDD		40000	36600	91.5	1.20	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	35600	88.9	1.06	1.093
13C-OCDD		80000	60100	75.2	0.90	1.177
13C-2,3,7,8-TCDF		40000	36100	90.2	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	34700	86.7	1.53	1.286
13C-2,3,4,7,8-PECDF		40000	34700	86.7	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	37000	92.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	38100	95.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	37200	93.1	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	36900	92.2	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	35200	87.9	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	36400	91.1	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	219	110		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 05:33:08	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.37

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		91.3	1.08	0.65	1.001
1,2,3,4,7,8-HXCDD	NDR	7.43	1.22	0.82	1.000
1,2,3,6,7,8-HXCDD		17.7	1.22	1.32	1.000
1,2,3,7,8,9-HXCDD		10.6	1.22	1.41	1.010
1,2,3,4,6,7,8-HPCDD		160	1.41	1.09	1.000
OCDD		1670	0.972	0.86	1.001
2,3,7,8-TCDF		537	2.57	0.76	1.003
1,2,3,7,8-PECDF	NDR	5.43	1.33	1.05	1.001
2,3,4,7,8-PECDF		8.26	1.33	1.34	1.000
1,2,3,4,7,8-HXCDF		6.12	1.00	1.29	1.001
1,2,3,6,7,8-HXCDF		3.01	1.00	1.06	1.001
1,2,3,7,8,9-HXCDF	NDR	1.92	1.00	0.42	1.000
2,3,4,6,7,8-HXCDF		4.00	1.00	1.10	1.000
1,2,3,4,6,7,8-HPCDF		29.1	2.71	1.17	1.000
1,2,3,4,7,8,9-HPCDF		3.60	2.71	1.17	1.000
OCDF		48.8	1.37	0.85	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		322	1.08		
TOTAL HEXA-DIOXINS		160	1.22		
TOTAL HEPTA-DIOXINS		303	1.41		
TOTAL TETRA-FURANS		2250	2.57		
TOTAL PENTA-FURANS		1440	1.33		
TOTAL HEXA-FURANS		123	1.00		
TOTAL HEPTA-FURANS		66.2	2.71		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form1A_DX8C_193S10_SJ857279.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-6 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.09 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	15-May-2008 **Time:** 03:47:55	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	100	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_171 S: 10**
Dilution Factor:	5	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_171 S: 1
		% Moisture:	3.37

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	65400	11.4	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	66700	11.4		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 27-Jun-2008 11:22:29; Application: XMLTransformer-1.9.9;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form1A_DX82_171S10_SJ859414.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 05:33:08	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.37

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	24400	61.1	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	21900	54.7	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	24900	62.3	1.29	0.987
13C-1,2,3,6,7,8-HXCDD		40000	25700	64.2	1.21	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	27500	68.8	1.05	1.094
13C-OCDD		80000	52300	65.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	22300	55.7	0.77	0.965
13C-1,2,3,7,8-PECDF		40000	21900	54.7	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	22000	55.0	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	24700	61.8	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	25200	63.0	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	24500	61.2	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		40000	25000	62.5	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	25200	63.1	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	26200	65.5	0.44	1.103

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	X

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form2_DX8C_193S10_SJ857279.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6 W
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 03:47:55	**GC Column ID:**	DB5
Extract Volume (uL):	100	**Sample Data Filename:**	**DX82_171 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	5	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.37

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	40000	35300	88.3	0.80	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	163	81.5		1.016

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-6_Form2_DX82_171S10_SJ859414.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 087
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-7 i
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 00:10:20	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_171 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		450	2.21	0.76	1.001
1,2,3,7,8-PECDD [3]		6.29	2.40	0.52	1.001
1,2,3,4,7,8-HXCDD	ND		3.18		
1,2,3,6,7,8-HXCDD	NDR	4.10	3.18	0.70	1.000
1,2,3,7,8,9-HXCDD		4.73	3.18	1.35	1.010
1,2,3,4,6,7,8-HPCDD		23.2	2.25	1.19	1.000
OCDD		147	1.57	0.95	1.001
2,3,7,8-TCDF		56.0	2.62	0.76	1.003
1,2,3,7,8-PECDF	NDR	1.47	1.23	1.00	1.001
2,3,4,7,8-PECDF	NDR	3.15	1.23	1.90	1.000
1,2,3,4,7,8-HXCDF	NDR	2.27	1.24	1.52	1.000
1,2,3,6,7,8-HXCDF	ND		1.24		
1,2,3,7,8,9-HXCDF		1.31	1.24	1.41	1.000
2,3,4,6,7,8-HXCDF	NDR	1.61	1.24	0.91	1.001
1,2,3,4,6,7,8-HPCDF		7.21	1.31	0.91	1.000
1,2,3,4,7,8,9-HPCDF	ND		1.31		
OCDF		16.7	1.62	0.98	1.002
TOTAL TETRA-DIOXINS		485	2.21		
TOTAL PENTA-DIOXINS		10.1	2.40		
TOTAL HEXA-DIOXINS		15.7	3.18		
TOTAL HEPTA-DIOXINS		40.0	2.25		
TOTAL TETRA-FURANS		603	2.62		
TOTAL PENTA-FURANS		129	1.23		
TOTAL HEXA-FURANS		7.57	1.24		
TOTAL HEPTA-FURANS		16.0	1.31		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-7_Form1A_DX82_171S6_SJ859412.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 087
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-7 i
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 00:10:20	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_171 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_171 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.69

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	34700	86.7	0.80	1.015
13C-1,2,3,7,8-PECDD [4]		40000	35000	87.4	0.65	1.387
13C-1,2,3,4,7,8-HXCDD		40000	34400	86.0	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35900	89.7	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32900	82.3	1.01	1.094
13C-OCDD		80000	66100	82.7	0.91	1.177
13C-2,3,7,8-TCDF		40000	37300	93.2	0.80	0.967
13C-1,2,3,7,8-PECDF		40000	39200	98.0	1.58	1.289
13C-2,3,4,7,8-PECDF		40000	37400	93.5	1.62	1.357
13C-1,2,3,4,7,8-HXCDF		40000	39900	99.7	0.54	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40600	101	0.54	0.958
13C-1,2,3,7,8,9-HXCDF		40000	40600	101	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		40000	40500	101	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	34100	85.2	0.48	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	36200	90.4	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	179	89.3		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-7_Form2_DX82_171S6_SJ859412.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-8
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 07:23:01	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	2.84

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		115	0.802	0.74	1.001
1,2,3,7,8-PECDD [3]	NDR	1.74	1.19	1.25	1.001
1,2,3,4,7,8-HXCDD	NDR	1.28	1.21	2.17	1.000
1,2,3,6,7,8-HXCDD		6.54	1.21	1.31	1.000
1,2,3,7,8,9-HXCDD	NDR	4.33	1.21	1.00	1.010
1,2,3,4,6,7,8-HPCDD		127	1.41	1.10	1.000
OCDD		1160	0.912	0.87	1.000
2,3,7,8-TCDF	NDR	5.02	0.736	0.55	1.003
1,2,3,7,8-PECDF	NDR	2.52	1.06	0.80	1.001
2,3,4,7,8-PECDF	NDR	3.21	1.06	1.25	1.000
1,2,3,4,7,8-HXCDF	NDR	2.06	0.992	1.07	1.001
1,2,3,6,7,8-HXCDF	NDR	1.63	0.992	2.09	1.000
1,2,3,7,8,9-HXCDF	NDR	1.55	0.992	0.70	1.000
2,3,4,6,7,8-HXCDF		2.46	0.992	1.19	1.000
1,2,3,4,6,7,8-HPCDF		39.5	3.49	0.96	1.000
1,2,3,4,7,8,9-HPCDF	ND		3.49		
OCDF		200	1.65	0.85	1.002
TOTAL TETRA-DIOXINS		115	0.802		
TOTAL PENTA-DIOXINS	ND		1.19		
TOTAL HEXA-DIOXINS		6.54	1.21		
TOTAL HEPTA-DIOXINS		172	1.41		
TOTAL TETRA-FURANS		16.6	0.736		
TOTAL PENTA-FURANS		6.01	1.06		
TOTAL HEXA-FURANS		42.3	0.992		
TOTAL HEPTA-FURANS		136	3.49		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-8_Form1A_DX8C_193S12_SJ857281.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-8
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 07:23:01	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute	**% Moisture:**	2.84

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	24600	61.5	0.79	1.013
13C-1,2,3,7,8-PECDD [4]		40000	23600	59.0	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29000	72.6	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	29200	73.0	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30800	77.0	1.04	1.094
13C-OCDD		80000	61900	77.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	22100	55.1	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	23200	57.9	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	23700	59.3	1.56	1.353
13C-1,2,3,4,7,8-HXCDF		40000	29000	72.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	29500	73.9	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	28600	71.5	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	29200	73.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	29400	73.4	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30400	76.1	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	149	74.3		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-8_Form2_DX8C_193S12_SJ857281.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-9
Matrix:	SOLID	**Sample Size:**	2.90 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 11:31:58	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	7.98

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	12.6	0.860	0.56	1.001
1,2,3,7,8-PECDD [3]	NDR	1.81	1.01	1.58	1.001
1,2,3,4,7,8-HXCDD		1.66	1.04	1.13	1.000
1,2,3,6,7,8-HXCDD		2.56	1.04	1.20	1.000
1,2,3,7,8,9-HXCDD		3.39	1.04	1.06	1.010
1,2,3,4,6,7,8-HPCDD	NDR	6.04	1.13	1.34	1.000
OCDD		20.5	0.923	0.84	1.000
2,3,7,8-TCDF		2.24	0.569	0.73	1.001
1,2,3,7,8-PECDF	NDR	1.96	0.860	2.06	1.001
2,3,4,7,8-PECDF		3.26	0.860	1.44	1.000
1,2,3,4,7,8-HXCDF		1.62	0.804	1.19	1.000
1,2,3,6,7,8-HXCDF		1.66	0.804	1.26	1.001
1,2,3,7,8,9-HXCDF	NDR	1.08	0.804	1.71	1.000
2,3,4,6,7,8-HXCDF		2.18	0.804	1.11	1.000
1,2,3,4,6,7,8-HPCDF		3.69	1.29	1.02	1.001
1,2,3,4,7,8,9-HPCDF	NDR	1.83	1.29	0.67	1.000
OCDF		4.95	1.17	0.89	1.002
TOTAL TETRA-DIOXINS	ND		0.860		
TOTAL PENTA-DIOXINS	ND		1.01		
TOTAL HEXA-DIOXINS		7.61	1.04		
TOTAL HEPTA-DIOXINS	ND		1.13		
TOTAL TETRA-FURANS		3.30	0.569		
TOTAL PENTA-FURANS		3.26	0.860		
TOTAL HEXA-FURANS		6.34	0.804		
TOTAL HEPTA-FURANS		3.69	1.29		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-9_Form1A_DX8C_194S4_SJ857826.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-9
Matrix:	SOLID	**Sample Size:**	2.90 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 11:31:58	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	7.98

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	27400	68.5	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	26800	67.1	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	31100	77.7	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31900	79.7	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32300	80.8	1.05	1.094
13C-OCDD		80000	61300	76.6	0.89	1.177
13C-2,3,7,8-TCDF		40000	25200	63.0	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	26400	65.9	1.54	1.285
13C-2,3,4,7,8-PECDF		40000	26700	66.8	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	30500	76.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	32100	80.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	29500	73.8	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	31000	77.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	30500	76.3	0.45	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30800	77.1	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	170	85.0		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-9_Form2_DX8C_194S4_SJ857826.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 097
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-10
Matrix:	SOLID	**Sample Size:**	3.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 12:26:51	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	5.81

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	11.5	0.751	0.57	1.001
1,2,3,7,8-PECDD [3]		1.93	0.679	0.55	1.000
1,2,3,4,7,8-HXCDD		1.77	0.706	1.09	1.000
1,2,3,6,7,8-HXCDD		4.10	0.706	1.42	1.000
1,2,3,7,8,9-HXCDD		3.09	0.706	1.42	1.010
1,2,3,4,6,7,8-HPCDD		80.5	1.11	1.08	1.000
OCDD		810	0.795	0.87	1.000
2,3,7,8-TCDF		2.77	0.496	0.88	1.001
1,2,3,7,8-PECDF	NDR	1.42	0.482	1.19	1.001
2,3,4,7,8-PECDF		3.27	0.482	1.34	1.000
1,2,3,4,7,8-HXCDF	NDR	2.49	0.617	1.56	1.000
1,2,3,6,7,8-HXCDF	NDR	1.80	0.617	0.58	1.000
1,2,3,7,8,9-HXCDF	NDR	1.78	0.617	1.55	1.000
2,3,4,6,7,8-HXCDF		2.27	0.617	1.12	1.001
1,2,3,4,6,7,8-HPCDF		18.1	0.787	1.08	1.000
1,2,3,4,7,8,9-HPCDF		2.64	0.787	0.89	1.000
OCDF		81.4	1.35	0.86	1.002
TOTAL TETRA-DIOXINS		1.09	0.751		
TOTAL PENTA-DIOXINS		1.93	0.679		
TOTAL HEXA-DIOXINS		14.5	0.706		
TOTAL HEPTA-DIOXINS		146	1.11		
TOTAL TETRA-FURANS		7.33	0.496		
TOTAL PENTA-FURANS		8.19	0.482		
TOTAL HEXA-FURANS		14.7	0.617		
TOTAL HEPTA-FURANS		61.9	0.787		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-10_Form1A_DX8C_194S5_SJ857827.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 097
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-10
Matrix:	SOLID	**Sample Size:**	3.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 12:26:51	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	5.81

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30000	75.0	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28500	71.3	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	32600	81.4	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		40000	34000	85.0	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	31200	78.1	1.04	1.094
13C-OCDD		80000	54700	68.4	0.89	1.177
13C-2,3,7,8-TCDF		40000	27900	69.8	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	28400	71.0	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	28200	70.4	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		40000	32600	81.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34000	85.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	31800	79.6	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	32600	81.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	30900	77.2	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30600	76.6	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	192	96.1		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 108
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-11
Matrix:	SOLID	**Sample Size:**	1.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 13:21:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	46.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1170	1.64	0.79	1.001
1,2,3,7,8-PECDD [3]		27.8	1.76	0.54	1.001
1,2,3,4,7,8-HXCDD		14.7	2.32	1.14	1.000
1,2,3,6,7,8-HXCDD		46.9	2.32	1.29	1.000
1,2,3,7,8,9-HXCDD		43.2	2.32	1.27	1.010
1,2,3,4,6,7,8-HPCDD		766	2.93	1.06	1.000
OCDD		6570	1.02	0.89	1.000
2,3,7,8-TCDF		81.3	1.42	0.76	1.001
1,2,3,7,8-PECDF		6.81	1.61	1.36	1.001
2,3,4,7,8-PECDF		15.7	1.61	1.74	1.000
1,2,3,4,7,8-HXCDF		17.6	2.53	1.35	1.001
1,2,3,6,7,8-HXCDF		12.5	2.53	1.39	1.000
1,2,3,7,8,9-HXCDF	ND		2.53		
2,3,4,6,7,8-HXCDF	NDR	10.5	2.53	1.57	1.000
1,2,3,4,6,7,8-HPCDF		123	2.18	0.91	1.000
1,2,3,4,7,8,9-HPCDF		7.74	2.18	0.91	1.000
OCDF		204	1.52	0.86	1.002
TOTAL TETRA-DIOXINS		1290	1.64		
TOTAL PENTA-DIOXINS		196	1.76		
TOTAL HEXA-DIOXINS		421	2.32		
TOTAL HEPTA-DIOXINS		1490	2.93		
TOTAL TETRA-FURANS		424	1.42		
TOTAL PENTA-FURANS		416	1.61		
TOTAL HEXA-FURANS		232	2.53		
TOTAL HEPTA-FURANS		304	2.18		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-11_Form1A_DX8C_194S6_SJ857828.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 108
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-11
Matrix:	SOLID	**Sample Size:**	1.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 13:21:41	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	46.9

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28200	70.5	0.79	1.013
13C-1,2,3,7,8-PECDD [4]		40000	27000	67.5	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29700	74.2	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30500	76.2	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30700	76.8	1.03	1.094
13C-OCDD		80000	59500	74.3	0.90	1.177
13C-2,3,7,8-TCDF		40000	27100	67.7	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	25800	64.4	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	26600	66.4	1.53	1.353
13C-1,2,3,4,7,8-HXCDF		40000	28100	70.1	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	28800	72.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	28100	70.3	0.51	1.004
13C-2,3,4,6,7,8-HXCDF		40000	29000	72.4	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	28000	70.0	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	29500	73.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	195	97.7		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-11_Form2_DX8C_194S6_SJ857828.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 109
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-12
Matrix:	SOLID	**Sample Size:**	1.85 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 14:16:34	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	41.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		2650	1.63	0.78	1.001
1,2,3,7,8-PECDD [3]		45.0	1.60	0.69	1.001
1,2,3,4,7,8-HXCDD		15.6	4.08	1.09	1.000
1,2,3,6,7,8-HXCDD		55.9	4.08	1.39	1.000
1,2,3,7,8,9-HXCDD		37.1	4.08	1.10	1.010
1,2,3,4,6,7,8-HPCDD		978	4.50	1.05	1.000
OCDD		9480	2.47	0.90	1.000
2,3,7,8-TCDF		495	1.12	0.79	1.001
1,2,3,7,8-PECDF		10.6	1.48	1.64	1.001
2,3,4,7,8-PECDF		14.4	1.48	1.52	1.000
1,2,3,4,7,8-HXCDF		23.0	2.32	1.41	1.000
1,2,3,6,7,8-HXCDF		13.7	2.32	1.18	1.000
1,2,3,7,8,9-HXCDF	ND		2.32		
2,3,4,6,7,8-HXCDF		11.9	2.32	1.16	1.000
1,2,3,4,6,7,8-HPCDF		131	1.86	0.93	1.000
1,2,3,4,7,8,9-HPCDF		9.30	1.86	1.10	1.000
OCDF		181	1.60	0.87	1.002
TOTAL TETRA-DIOXINS		3020	1.63		
TOTAL PENTA-DIOXINS		367	1.60		
TOTAL HEXA-DIOXINS		542	4.08		
TOTAL HEPTA-DIOXINS		1920	4.50		
TOTAL TETRA-FURANS		1320	1.12		
TOTAL PENTA-FURANS		901	1.48		
TOTAL HEXA-FURANS		327	2.32		
TOTAL HEPTA-FURANS		311	1.86		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-12_Form1A_DX8C_194S7_SJ857829.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 109
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-12
Matrix:	SOLID	**Sample Size:**	1.85 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 14:16:34	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	41.0

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	26100	65.3	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	23800	59.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	27900	69.8	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	28000	70.1	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30000	75.0	1.03	1.094
13C-OCDD		80000	57700	72.1	0.90	1.177
13C-2,3,7,8-TCDF		40000	25100	62.8	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	23400	58.4	1.54	1.285
13C-2,3,4,7,8-PECDF		40000	23400	58.5	1.57	1.353
13C-1,2,3,4,7,8-HXCDF		40000	27400	68.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	27900	69.7	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	26600	66.6	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	26900	67.3	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	25500	63.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	28300	70.7	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	205	102		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 111
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-13
Matrix:	SOLID	**Sample Size:**	2.01 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 15:11:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		5810	1.59	0.77	1.001
1,2,3,7,8-PECDD [3]		59.4	1.62	0.60	1.000
1,2,3,4,7,8-HXCDD		32.5	3.75	1.06	1.000
1,2,3,6,7,8-HXCDD		219	3.75	1.25	1.000
1,2,3,7,8,9-HXCDD		134	3.75	1.28	1.010
1,2,3,4,6,7,8-HPCDD		1070	3.02	1.01	1.000
OCDD		2890	1.02	0.88	1.000
2,3,7,8-TCDF		508	1.62	0.77	1.001
1,2,3,7,8-PECDF	NDR	7.11	0.954	2.08	1.001
2,3,4,7,8-PECDF		11.1	0.954	1.47	1.000
1,2,3,4,7,8-HXCDF	NDR	7.50	2.32	1.76	1.000
1,2,3,6,7,8-HXCDF		7.22	2.32	1.23	1.001
1,2,3,7,8,9-HXCDF	ND		2.32		
2,3,4,6,7,8-HXCDF		5.50	2.32	1.06	1.001
1,2,3,4,6,7,8-HPCDF		60.9	1.13	1.13	1.000
1,2,3,4,7,8,9-HPCDF		3.57	1.13	1.16	1.000
OCDF		76.8	1.79	0.86	1.002
TOTAL TETRA-DIOXINS		6210	1.59		
TOTAL PENTA-DIOXINS		746	1.62		
TOTAL HEXA-DIOXINS		1380	3.75		
TOTAL HEPTA-DIOXINS		1730	3.02		
TOTAL TETRA-FURANS		1280	1.62		
TOTAL PENTA-FURANS		1010	0.954		
TOTAL HEXA-FURANS		210	2.32		
TOTAL HEPTA-FURANS		120	1.13		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-13_Form1A_DX8C_194S8_SJ857830.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 111
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-13
Matrix:	SOLID	**Sample Size:**	2.01 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 15:11:26	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	49.1

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28400	71.0	0.80	1.012
13C-1,2,3,7,8-PECDD [4]		40000	26700	66.7	0.62	1.383
13C-1,2,3,4,7,8-HXCDD		40000	30300	75.8	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30400	76.1	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	33500	83.8	1.05	1.094
13C-OCDD		80000	66800	83.5	0.89	1.177
13C-2,3,7,8-TCDF		40000	26900	67.2	0.78	0.964
13C-1,2,3,7,8-PECDF		40000	26000	65.1	1.55	1.284
13C-2,3,4,7,8-PECDF		40000	26300	65.7	1.55	1.352
13C-1,2,3,4,7,8-HXCDF		40000	28700	71.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	29200	72.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	28700	71.8	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	29600	74.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	29900	74.8	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	31900	79.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	190	95.1		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 114
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-14
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 16:06:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.30

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		521	0.681	0.75	1.001
1,2,3,7,8-PECDD [3]		14.9	0.767	0.60	1.001
1,2,3,4,7,8-HXCDD		13.7	0.943	1.40	1.000
1,2,3,6,7,8-HXCDD		40.9	0.943	1.20	1.000
1,2,3,7,8,9-HXCDD		33.2	0.943	1.36	1.010
1,2,3,4,6,7,8-HPCDD		828	2.09	1.03	1.000
OCDD		8700	0.807	0.88	1.000
2,3,7,8-TCDF		90.7	0.646	0.72	1.001
1,2,3,7,8-PECDF		8.34	1.02	1.33	1.001
2,3,4,7,8-PECDF		9.48	1.02	1.76	1.000
1,2,3,4,7,8-HXCDF		13.2	1.20	1.31	1.000
1,2,3,6,7,8-HXCDF		8.46	1.20	1.18	1.000
1,2,3,7,8,9-HXCDF	ND		1.20		
2,3,4,6,7,8-HXCDF	NDR	8.74	1.20	1.01	1.000
1,2,3,4,6,7,8-HPCDF		109	0.843	0.98	1.000
1,2,3,4,7,8,9-HPCDF		8.27	0.843	1.12	1.000
OCDF		212	0.499	0.87	1.002
TOTAL TETRA-DIOXINS		566	0.681		
TOTAL PENTA-DIOXINS		107	0.767		
TOTAL HEXA-DIOXINS		331	0.943		
TOTAL HEPTA-DIOXINS		1530	2.09		
TOTAL TETRA-FURANS		288	0.646		
TOTAL PENTA-FURANS		317	1.02		
TOTAL HEXA-FURANS		170	1.20		
TOTAL HEPTA-FURANS		286	0.843		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-14_Form1A_DX8C_194S9_SJ857831.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 114
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-14
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 16:06:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.30

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33000	82.4	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	30100	75.3	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	36200	90.5	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35900	89.8	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	39600	98.9	1.04	1.094
13C-OCDD		80000	75400	94.2	0.89	1.178
13C-2,3,7,8-TCDF		40000	30700	76.8	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	29600	74.1	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	29700	74.3	1.54	1.353
13C-1,2,3,4,7,8-HXCDF		40000	35400	88.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	35900	89.8	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	34700	86.8	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	35400	88.5	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	34400	85.9	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	37400	93.6	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	203	101		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-14_Form2_DX8C_194S9_SJ857831.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 116
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-15
Matrix:	SOLID	**Sample Size:**	2.98 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 17:01:09	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.96

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		844	0.813	0.78	1.001
1,2,3,7,8-PECDD [3]		12.8	0.886	0.68	1.000
1,2,3,4,7,8-HXCDD		16.3	1.77	1.06	1.000
1,2,3,6,7,8-HXCDD		47.7	1.77	1.26	1.000
1,2,3,7,8,9-HXCDD		37.6	1.77	1.26	1.010
1,2,3,4,6,7,8-HPCDD		1180	2.52	1.05	1.000
OCDD		10600	0.699	0.89	1.000
2,3,7,8-TCDF		36.9	1.05	0.76	1.002
1,2,3,7,8-PECDF		9.04	0.604	1.68	1.001
2,3,4,7,8-PECDF		14.4	0.604	1.45	1.000
1,2,3,4,7,8-HXCDF		24.5	0.864	1.26	1.000
1,2,3,6,7,8-HXCDF		12.5	0.864	1.12	1.000
1,2,3,7,8,9-HXCDF	ND		0.864		
2,3,4,6,7,8-HXCDF		13.6	0.864	1.38	1.000
1,2,3,4,6,7,8-HPCDF		142	0.987	1.06	1.000
1,2,3,4,7,8,9-HPCDF		11.9	0.987	1.06	1.000
OCDF		265	0.751	0.88	1.002
TOTAL TETRA-DIOXINS		891	0.813		
TOTAL PENTA-DIOXINS		94.7	0.886		
TOTAL HEXA-DIOXINS		332	1.77		
TOTAL HEPTA-DIOXINS		2030	2.52		
TOTAL TETRA-FURANS		126	1.05		
TOTAL PENTA-FURANS		197	0.604		
TOTAL HEXA-FURANS		276	0.864		
TOTAL HEPTA-FURANS		340	0.987		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-15_Form1A_DX8C_194S10_SJ857832.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 116
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-15
Matrix:	SOLID	**Sample Size:**	2.98 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 17:01:09	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.96

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	31600	79.0	0.79	1.012
13C-1,2,3,7,8-PECDD [4]		40000	30200	75.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	34600	86.4	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35300	88.3	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	36800	92.0	1.04	1.094
13C-OCDD		80000	70900	88.7	0.89	1.177
13C-2,3,7,8-TCDF		40000	28500	71.3	0.78	0.964
13C-1,2,3,7,8-PECDF		40000	29700	74.1	1.54	1.284
13C-2,3,4,7,8-PECDF		40000	29900	74.7	1.52	1.352
13C-1,2,3,4,7,8-HXCDF		40000	33800	84.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	35000	87.5	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	33600	83.9	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	34200	85.6	0.51	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	34100	85.4	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	35400	88.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	194	97.1		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-15_Form2_DX8C_194S10_SJ857832.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 120
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-16
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.15 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	07-May-2008 **Time:** 17:56:00	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_194 S: 11**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
		% Moisture:	1.48

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		221	0.621	0.75	1.001
1,2,3,7,8-PECDD [3]		16.5	0.664	0.53	1.001
1,2,3,4,7,8-HXCDD		18.4	1.24	1.37	1.000
1,2,3,6,7,8-HXCDD		70.3	1.24	1.20	1.000
1,2,3,7,8,9-HXCDD		53.5	1.24	1.23	1.010
1,2,3,4,6,7,8-HPCDD		1910	4.27	1.01	1.000
OCDD		12900	0.941	0.88	1.000
2,3,7,8-TCDF		30.5	0.608	0.81	1.002
1,2,3,7,8-PECDF		9.44	0.633	1.41	1.001
2,3,4,7,8-PECDF		16.5	0.633	1.38	1.000
1,2,3,4,7,8-HXCDF		28.0	0.676	1.21	1.000
1,2,3,6,7,8-HXCDF		17.0	0.676	1.31	1.000
1,2,3,7,8,9-HXCDF		2.31	0.676	1.13	1.001
2,3,4,6,7,8-HXCDF		15.7	0.676	1.30	1.000
1,2,3,4,6,7,8-HPCDF		142	1.18	1.05	1.000
1,2,3,4,7,8,9-HPCDF		9.54	1.18	1.13	1.000
OCDF		214	2.12	0.89	1.002
TOTAL TETRA-DIOXINS		263	0.621		
TOTAL PENTA-DIOXINS		131	0.664		
TOTAL HEXA-DIOXINS		551	1.24		
TOTAL HEPTA-DIOXINS		3230	4.27		
TOTAL TETRA-FURANS		156	0.608		
TOTAL PENTA-FURANS		219	0.633		
TOTAL HEXA-FURANS		315	0.676		
TOTAL HEPTA-FURANS		326	1.18		

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-16_Form1A_DX8C_194S11_SJ857833.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 120
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-16
Matrix:	SOLID	**Sample Size:**	3.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 17:56:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.48

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33600	84.1	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	29800	74.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	36700	91.8	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	36700	91.6	1.23	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	37400	93.6	1.05	1.094
13C-OCDD		80000	72100	90.1	0.89	1.178
13C-2,3,7,8-TCDF		40000	31400	78.6	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	29800	74.6	1.56	1.285
13C-2,3,4,7,8-PECDF		40000	29700	74.3	1.54	1.353
13C-1,2,3,4,7,8-HXCDF		40000	35700	89.3	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	36700	91.8	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	35400	88.6	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	36000	90.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	35100	87.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	36500	91.2	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		400	415	104		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-16_Form2_DX8C_194S11_SJ857833.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 123
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-17
Matrix:	SOLID	**Sample Size:**	2.64 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 18:50:52	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	15.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1310	0.722	0.77	1.001
1,2,3,7,8-PECDD [3]		16.5	0.723	0.70	1.000
1,2,3,4,7,8-HXCDD	NDR	2.65	1.21	0.84	1.000
1,2,3,6,7,8-HXCDD		11.6	1.21	1.20	1.000
1,2,3,7,8,9-HXCDD		8.18	1.21	1.42	1.010
1,2,3,4,6,7,8-HPCDD		155	1.07	1.06	1.000
OCDD		1670	0.975	0.86	1.000
2,3,7,8-TCDF		40.0	0.538	0.72	1.003
1,2,3,7,8-PECDF	NDR	2.57	0.568	0.94	1.001
2,3,4,7,8-PECDF		3.62	0.568	1.67	1.000
1,2,3,4,7,8-HXCDF		3.92	0.613	1.17	1.000
1,2,3,6,7,8-HXCDF		2.59	0.613	1.08	1.000
1,2,3,7,8,9-HXCDF	NDR	1.11	0.613	2.18	1.000
2,3,4,6,7,8-HXCDF	NDR	2.80	0.613	0.73	1.001
1,2,3,4,6,7,8-HPCDF		23.1	0.693	1.16	1.000
1,2,3,4,7,8,9-HPCDF	NDR	1.85	0.693	2.21	1.000
OCDF		63.1	1.08	0.84	1.002
TOTAL TETRA-DIOXINS		1380	0.722		
TOTAL PENTA-DIOXINS		57.3	0.723		
TOTAL HEXA-DIOXINS		101	1.21		
TOTAL HEPTA-DIOXINS		302	1.07		
TOTAL TETRA-FURANS		178	0.538		
TOTAL PENTA-FURANS		154	0.568		
TOTAL HEXA-FURANS		54.9	0.613		
TOTAL HEPTA-FURANS		50.9	0.693		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-17_Form1A_DX8C_194S12_SJ857834.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 123
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-17
Matrix:	SOLID	**Sample Size:**	2.64 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 18:50:52	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_194 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_194 S: 1
Concentration Units:	pg absolute	**% Moisture:**	15.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	31900	79.7	0.81	1.012
13C-1,2,3,7,8-PECDD [4]		40000	29400	73.6	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	34000	84.9	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	35100	87.7	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	36200	90.6	1.05	1.094
13C-OCDD		80000	67800	84.8	0.88	1.177
13C-2,3,7,8-TCDF		40000	29300	73.2	0.79	0.964
13C-1,2,3,7,8-PECDF		40000	29000	72.5	1.54	1.284
13C-2,3,4,7,8-PECDF		40000	28900	72.3	1.54	1.352
13C-1,2,3,4,7,8-HXCDF		40000	33700	84.1	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34600	86.4	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	33100	82.7	0.52	1.004
13C-2,3,4,6,7,8-HXCDF		40000	33500	83.8	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	32700	81.7	0.43	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	35000	87.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	197	98.4		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-101 :4496
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 00:58:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg/g		

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	4.12	0.690	0.34	1.001
1,2,3,7,8-PECDD [3]	NDR	2.28	1.12	0.28	1.000
1,2,3,4,7,8-HXCDD		2.17	1.56	1.11	1.000
1,2,3,6,7,8-HXCDD	ND		1.56		
1,2,3,7,8,9-HXCDD		3.31	1.56	1.24	1.011
1,2,3,4,6,7,8-HPCDD		5.76	1.26	0.91	1.000
OCDD		6.03	1.59	0.96	1.000
2,3,7,8-TCDF	NDR	1.97	0.533	0.96	1.001
1,2,3,7,8-PECDF	NDR	1.83	0.971	0.98	1.000
2,3,4,7,8-PECDF		4.44	0.971	1.58	1.000
1,2,3,4,7,8-HXCDF	NDR	2.07	1.23	0.99	1.000
1,2,3,6,7,8-HXCDF		2.24	1.23	1.12	1.001
1,2,3,7,8,9-HXCDF	ND		1.23		
2,3,4,6,7,8-HXCDF	NDR	2.79	1.23	0.73	1.000
1,2,3,4,6,7,8-HPCDF	NDR	3.58	1.22	0.86	1.000
1,2,3,4,7,8,9-HPCDF		2.37	1.22	1.09	1.000
OCDF		4.29	1.28	0.81	1.002
TOTAL TETRA-DIOXINS	ND		0.690		
TOTAL PENTA-DIOXINS	ND		1.12		
TOTAL HEXA-DIOXINS		5.48	1.56		
TOTAL HEPTA-DIOXINS		5.76	1.26		
TOTAL TETRA-FURANS	ND		0.533		
TOTAL PENTA-FURANS		4.44	0.971		
TOTAL HEXA-FURANS		2.24	1.23		
TOTAL HEPTA-FURANS		2.37	1.22		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-101_Form1A_DX8C_193S5_SJ857274.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.		N/A	
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-101 :4496
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	07-May-2008 **Time:** 00:58:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_193 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_193 S: 1
Concentration Units:	pg absolute		

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28500	71.3	0.80	1.012
13C-1,2,3,7,8-PECDD [4]		40000	25500	63.7	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29200	73.1	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30300	75.8	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	29700	74.3	1.04	1.094
13C-OCDD		80000	56300	70.4	0.90	1.177
13C-2,3,7,8-TCDF		40000	26900	67.2	0.78	0.965
13C-1,2,3,7,8-PECDF		40000	25600	63.9	1.54	1.285
13C-2,3,4,7,8-PECDF		40000	25200	63.0	1.57	1.352
13C-1,2,3,4,7,8-HXCDF		40000	29300	73.2	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	30800	77.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	29000	72.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	30000	74.9	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	28700	71.8	0.45	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	28600	71.6	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	224	112		1.013

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25088-101_Form2_DX8C_193S5_SJ857274.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8A

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_193 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-102 :4496
Extraction Date:	23-Apr-2008	**Analysis Date:**	06-May-2008 **Time:** 22:13:53

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.77	10.6	10.0	7.10 - 16.7	94.4
1,2,3,7,8-PECDD [4]		0.61	56.6	56.1	39.6 - 80.4	99.1
1,2,3,4,7,8-HXCDD		1.24	59.2	57.4	41.4 - 97.1	97.0
1,2,3,6,7,8-HXCDD		1.24	51.8	52.3	39.4 - 69.4	101
1,2,3,7,8,9-HXCDD		1.23	56.7	58.2	36.3 - 91.9	103
1,2,3,4,6,7,8-HPCDD		1.03	50.0	46.2	35.0 - 70.0	92.4
OCDD		0.88	108	94.5	84.2 - 155	87.6
2,3,7,8-TCDF		0.76	10.9	11.1	8.18 - 17.2	102
1,2,3,7,8-PECDF		1.52	50.0	50.2	40.0 - 67.0	100
2,3,4,7,8-PECDF		1.52	50.0	49.8	34.0 - 80.0	99.7
1,2,3,4,7,8-HXCDF		1.22	54.4	53.1	39.2 - 72.9	97.5
1,2,3,6,7,8-HXCDF		1.21	50.0	47.7	42.0 - 65.0	95.5
1,2,3,7,8,9-HXCDF		1.23	50.0	49.8	39.0 - 65.0	99.5
2,3,4,6,7,8-HXCDF		1.22	53.1	50.6	37.2 - 82.8	95.3
1,2,3,4,6,7,8-HPCDF		1.01	50.0	51.7	41.0 - 61.0	103
1,2,3,4,7,8,9-HPCDF		1.02	50.0	47.6	39.0 - 69.0	95.1
OCDF		0.89	109	99.2	68.4 - 185	91.3

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25088-102_Form8A_SJ857270.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8B

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_193 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-102 :4496
Extraction Date:	23-Apr-2008	**Analysis Date:**	06-May-2008 **Time:** 22:13:53

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.79	100	39.9	20.0-175	39.9
13C-1,2,3,7,8-PECDD [4]		0.62	100	33.2	21.0-227	33.2
13C-1,2,3,4,7,8-HXCDD		1.27	100	36.0	21.0-193	36.0
13C-1,2,3,6,7,8-HXCDD		1.24	100	36.5	25.0-163	36.5
13C-1,2,3,4,6,7,8-HPCDD		1.03	100	37.2	26.0-166	37.2
13C-OCDD		0.89	200	72.4	26.0-397	36.2
13C-2,3,7,8-TCDF		0.78	100	34.7	22.0-152	34.7
13C-1,2,3,7,8-PECDF		1.56	100	36.4	21.0-192	36.4
13C-2,3,4,7,8-PECDF		1.56	100	31.3	13.0-328	31.3
13C-1,2,3,4,7,8-HXCDF		0.51	100	38.4	19.0-202	38.4
13C-1,2,3,6,7,8-HXCDF		0.52	100	40.2	21.0-159	40.2
13C-1,2,3,7,8,9-HXCDF		0.52	100	37.6	17.0-205	37.6
13C-2,3,4,6,7,8-HXCDF		0.51	100	36.2	22.0-176	36.2
13C-1,2,3,4,6,7,8-HPCDF		0.44	100	38.1	21.0-158	38.1
13C-1,2,3,4,7,8,9-HPCDF		0.45	100	37.0	20.0-186	37.0
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD			10.0	11.4	3.10-19.1	114

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8B.xsl; Created: 29-May-2008 11:33:12; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25088-102_Form8B_SJ857270.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	3.12 g (dry)
Extraction Date:	23-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 07:27:20	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_195A S: 11**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_193 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
		% Moisture:	2.34

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		105	0.685	0.80	1.001
1,2,3,7,8-PECDD [3]	NDR	3.26	0.606	1.23	1.000
1,2,3,4,7,8-HXCDD	NDR	0.865	0.844	1.01	1.000
1,2,3,6,7,8-HXCDD	NDR	2.02	0.844	1.01	1.000
1,2,3,7,8,9-HXCDD		1.17	0.844	1.21	1.011
1,2,3,4,6,7,8-HPCDD		11.2	0.824	1.00	1.000
OCDD		61.1	0.743	0.89	1.000
2,3,7,8-TCDF		6.90	0.596	0.67	1.002
1,2,3,7,8-PECDF	ND		0.801		
2,3,4,7,8-PECDF		3.33	0.801	1.68	1.001
1,2,3,4,7,8-HXCDF		1.21	0.622	1.32	1.000
1,2,3,6,7,8-HXCDF	NDR	0.882	0.622	0.69	1.000
1,2,3,7,8,9-HXCDF	ND		0.622		
2,3,4,6,7,8-HXCDF	NDR	0.961	0.622	0.91	1.001
1,2,3,4,6,7,8-HPCDF		3.05	0.715	1.03	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.715		
OCDF		7.63	0.534	0.92	1.002
TOTAL TETRA-DIOXINS		111	0.685		
TOTAL PENTA-DIOXINS		4.93	0.606		
TOTAL HEXA-DIOXINS		10.4	0.844		
TOTAL HEPTA-DIOXINS		21.3	0.824		
TOTAL TETRA-FURANS		65.5	0.596		
TOTAL PENTA-FURANS		33.8	0.801		
TOTAL HEXA-FURANS		4.61	0.622		
TOTAL HEPTA-FURANS		3.05	0.715		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25088-103_Form1A_DX8C_195AS11_SJ857310.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 07:27:20	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_195A S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_193 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_195A S: 1
Concentration Units:	pg absolute	**% Moisture:**	2.34

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	37400	93.5	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	35500	88.9	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	37800	94.5	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	39300	98.3	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	38500	96.3	1.05	1.094
13C-OCDD		80000	68000	85.0	0.90	1.177
13C-2,3,7,8-TCDF		40000	37300	93.2	0.78	0.966
13C-1,2,3,7,8-PECDF		40000	35900	89.8	1.56	1.287
13C-2,3,4,7,8-PECDF		40000	36600	91.6	1.56	1.353
13C-1,2,3,4,7,8-HXCDF		40000	39000	97.5	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40000	100	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	39200	97.9	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	39600	99.1	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	37700	94.2	0.43	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	39800	99.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		4000	5450	136		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25088-103_Form2_DX8C_195AS11_SJ857310.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 067
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-1
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 02:44:17	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.03

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	43.8	3.52	0.52	1.002

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-1_Form1A_DB83_119S13_SJ858628.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-2
Matrix:	SOLID	**Sample Size:**	2.74 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 21:30:03	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 4**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	14.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		1450	24.5	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-3
Matrix:	SOLID	**Sample Size:**	2.94 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 22:05:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	17.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		893	38.8	0.71	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-3_Form1A_DB83_121S5_SJ859672.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 082
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-4
Matrix:	SOLID	**Sample Size:**	3.06 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 22:41:14	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.14

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		275	12.5	0.82	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-4_Form1A_DB83_121S6_SJ859673.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-5 (A)
Matrix:	SOLID	**Sample Size:**	3.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 01:33:04	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	0.82

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.69		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-5_Form1A_DB83_119S11_SJ858626.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 084
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-6
Matrix:	SOLID	**Sample Size:**	3.09 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 15:27:56	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 15**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.37

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		96.9	6.17	0.85	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-6_Form1A_DB83_120S15_SJ859663.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 087
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-7
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 03:19:55	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		6.60	4.58	0.84	1.000

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-7_Form1A_DB83_119S14_SJ858629.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-8
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 23:46:11	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	2.84

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.73		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-8_Form1A_DB83_119S8_SJ858623.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.		PROJECT 00057781	
Contract No.:	4496	**Lab Sample I.D.:**	L11075-9
Matrix:	SOLID	**Sample Size:**	2.90 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 00:21:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	7.98

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.74		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-9_Form1A_DB83_119S9_SJ858624.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 097
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-10
Matrix:	SOLID	**Sample Size:**	3.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 00:57:25	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	5.81

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		3.94		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 108
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-11
Matrix:	SOLID	**Sample Size:**	1.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 03:55:34	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 15**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	46.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		63.0	5.14	0.66	1.000

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-11_Form1A_DB83_119S15_SJ858630.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 109
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-12
Matrix:	SOLID	**Sample Size:**	1.85 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 14:16:47	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	41.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		470	8.94	0.66	1.000

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-12_Form1A_DB83_120S13_SJ859661.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 111
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-13
Matrix:	SOLID	**Sample Size:**	2.01 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 14:52:21	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	49.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		453	6.91	0.79	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-13_Form1A_DB83_120S14_SJ859662.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 114
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-14
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 04:31:11	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 16**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.30

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		84.2	2.55	0.67	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-14_Form1A_DB83_119S16_SJ858631.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 116
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-15
Matrix:	SOLID	**Sample Size:**	2.98 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 05:06:46	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 17**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.96

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	26.0	2.55	0.73	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-15_Form1A_DB83_119S17_SJ858632.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 120
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-16
Matrix:	SOLID	**Sample Size:**	3.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 05:42:23	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 18**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.48

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	24.3	1.85	1.04	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-16_Form1A_DB83_119S18_SJ858633.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 123
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-17
Matrix:	SOLID	**Sample Size:**	2.64 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 13:05:34	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	15.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	20.8	2.46	1.43	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-17_Form1A_DB83_120S11_SJ859660.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.		N/A	
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-101 :4496
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 21:59:21	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g		

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		3.06		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_WG25088-101_Form1A_DB83_119S5_SJ859665.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Matrix:	SOLID	**Sample Size:**	3.12 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	23-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 02:08:42	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_119 S: 12**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_119 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_119 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	2.34

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	9.79	2.47	0.73	1.002

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 11:33:58; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_WG25088-103_Form1A_DB83_119S12_SJ858627.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 067

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-1
Sample Size:	3.06 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 13** **DX8C_193 S: 7**
		Sample Collection:	N/A

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1890	0.853	1	1.89e+03	1.89e+03	
1,2,3,7,8-PECDD		22.7	1.45	1	2.27e+01	2.27e+01	
1,2,3,4,7,8-HXCDD		3.96	1.55	0.1	3.96e-01	3.96e-01	
1,2,3,6,7,8-HXCDD		7.50	1.55	0.1	7.50e-01	7.50e-01	
1,2,3,7,8,9-HXCDD		6.43	1.55	0.1	6.43e-01	6.43e-01	
1,2,3,4,6,7,8-HPCDD		126	1.62	0.01	1.26e+00	1.26e+00	
OCDD		1550	2.14	0.0001	1.55e-01	1.55e-01	
2,3,7,8-TCDF	ND		3.52	0.1	0.00e+00	1.76e-01	
1,2,3,7,8-PECDF		2.96	0.864	0.05	1.48e-01	1.48e-01	
2,3,4,7,8-PECDF		5.50	0.864	0.5	2.75e+00	2.75e+00	
1,2,3,4,7,8-HXCDF		4.15	0.675	0.1	4.15e-01	4.15e-01	
1,2,3,6,7,8-HXCDF		2.16	0.675	0.1	2.16e-01	2.16e-01	
1,2,3,7,8,9-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
2,3,4,6,7,8-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
1,2,3,4,6,7,8-HPCDF		21.3	2.03	0.01	2.13e-01	2.13e-01	
1,2,3,4,7,8,9-HPCDF	ND		2.03	0.01	0.00e+00	1.02e-02	
OCDF		70.8	1.16	0.0001	7.08e-03	7.08e-03	
			TOTAL TEQ		1920	1920	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1890	0.853	1	1.89e+03	1.89e+03	
1,2,3,7,8-PECDD		22.7	1.45	1	2.27e+01	2.27e+01	
1,2,3,4,7,8-HXCDD		3.96	1.55	0.1	3.96e-01	3.96e-01	
1,2,3,6,7,8-HXCDD		7.50	1.55	0.1	7.50e-01	7.50e-01	
1,2,3,7,8,9-HXCDD		6.43	1.55	0.1	6.43e-01	6.43e-01	
1,2,3,4,6,7,8-HPCDD		126	1.62	0.01	1.26e+00	1.26e+00	
OCDD		1550	2.14	0.0003	4.65e-01	4.65e-01	
2,3,7,8-TCDF	ND		3.52	0.1	0.00e+00	1.76e-01	
1,2,3,7,8-PECDF		2.96	0.864	0.03	8.88e-02	8.88e-02	
2,3,4,7,8-PECDF		5.50	0.864	0.3	1.65e+00	1.65e+00	
1,2,3,4,7,8-HXCDF		4.15	0.675	0.1	4.15e-01	4.15e-01	
1,2,3,6,7,8-HXCDF		2.16	0.675	0.1	2.16e-01	2.16e-01	
1,2,3,7,8,9-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
2,3,4,6,7,8-HXCDF	ND		0.675	0.1	0.00e+00	3.38e-02	
1,2,3,4,6,7,8-HPCDF		21.3	2.03	0.01	2.13e-01	2.13e-01	
1,2,3,4,7,8,9-HPCDF	ND		2.03	0.01	0.00e+00	1.02e-02	
OCDF		70.8	1.16	0.0003	2.12e-02	2.12e-02	
			TOTAL TEQ		1920	1920	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 080-3

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.74 g (dry)	**Lab Sample I.D.:**	L11075-2
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_121 S: 4** **DX82_171 S: 12** **DX8C_193 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		298000	65.5	1	2.98e+05	2.98e+05	
1,2,3,7,8-PECDD		1770	2.26	1	1.77e+03	1.77e+03	
1,2,3,4,7,8-HXCDD		137	9.88	0.1	1.37e+01	1.37e+01	
1,2,3,6,7,8-HXCDD		1370	9.88	0.1	1.37e+02	1.37e+02	
1,2,3,7,8,9-HXCDD		559	9.88	0.1	5.59e+01	5.59e+01	
1,2,3,4,6,7,8-HPCDD		5930	4.84	0.01	5.93e+01	5.93e+01	
OCDD		14000	1.89	0.0001	1.40e+00	1.40e+00	
2,3,7,8-TCDF		1450	24.5	0.1	1.45e+02	1.45e+02	
1,2,3,7,8-PECDF		36.7	1.88	0.05	1.84e+00	1.84e+00	
2,3,4,7,8-PECDF		260	1.88	0.5	1.30e+02	1.30e+02	
1,2,3,4,7,8-HXCDF		203	3.04	0.1	2.03e+01	2.03e+01	
1,2,3,6,7,8-HXCDF		42.4	3.04	0.1	4.24e+00	4.24e+00	
1,2,3,7,8,9-HXCDF		4.59	3.04	0.1	4.59e-01	4.59e-01	
2,3,4,6,7,8-HXCDF		67.4	3.04	0.1	6.74e+00	6.74e+00	
1,2,3,4,6,7,8-HPCDF		853	4.95	0.01	8.53e+00	8.53e+00	
1,2,3,4,7,8,9-HPCDF		36.2	4.95	0.01	3.62e-01	3.62e-01	
OCDF		846	1.40	0.0001	8.46e-02	8.46e-02	
			TOTAL TEQ		300000	300000	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		298000	65.5	1	2.98e+05	2.98e+05	
1,2,3,7,8-PECDD		1770	2.26	1	1.77e+03	1.77e+03	
1,2,3,4,7,8-HXCDD		137	9.88	0.1	1.37e+01	1.37e+01	
1,2,3,6,7,8-HXCDD		1370	9.88	0.1	1.37e+02	1.37e+02	
1,2,3,7,8,9-HXCDD		559	9.88	0.1	5.59e+01	5.59e+01	
1,2,3,4,6,7,8-HPCDD		5930	4.84	0.01	5.93e+01	5.93e+01	
OCDD		14000	1.89	0.0003	4.20e+00	4.20e+00	
2,3,7,8-TCDF		1450	24.5	0.1	1.45e+02	1.45e+02	
1,2,3,7,8-PECDF		36.7	1.88	0.03	1.10e+00	1.10e+00	
2,3,4,7,8-PECDF		260	1.88	0.3	7.80e+01	7.80e+01	
1,2,3,4,7,8-HXCDF		203	3.04	0.1	2.03e+01	2.03e+01	
1,2,3,6,7,8-HXCDF		42.4	3.04	0.1	4.24e+00	4.24e+00	
1,2,3,7,8,9-HXCDF		4.59	3.04	0.1	4.59e-01	4.59e-01	
2,3,4,6,7,8-HXCDF		67.4	3.04	0.1	6.74e+00	6.74e+00	
1,2,3,4,6,7,8-HPCDF		853	4.95	0.01	8.53e+00	8.53e+00	
1,2,3,4,7,8,9-HPCDF		36.2	4.95	0.01	3.62e-01	3.62e-01	
OCDF		846	1.40	0.0003	2.54e-01	2.54e-01	
			TOTAL TEQ		300000	300000	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 080-6

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.94 g (dry)	**Lab Sample I.D.:**	L11075-3
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 5** **DX82_171 S: 9** **DX8C_193 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		184000	38.1	1	1.84e+05	1.84e+05	
1,2,3,7,8-PECDD		1040	2.77	1	1.04e+03	1.04e+03	
1,2,3,4,7,8-HXCDD		93.9	8.17	0.1	9.39e+00	9.39e+00	
1,2,3,6,7,8-HXCDD		831	8.17	0.1	8.31e+01	8.31e+01	
1,2,3,7,8,9-HXCDD		339	8.17	0.1	3.39e+01	3.39e+01	
1,2,3,4,6,7,8-HPCDD		3410	7.59	0.01	3.41e+01	3.41e+01	
OCDD		7340	2.91	0.0001	7.34e-01	7.34e-01	
2,3,7,8-TCDF		893	38.8	0.1	8.93e+01	8.93e+01	
1,2,3,7,8-PECDF		18.2	2.43	0.05	9.10e-01	9.10e-01	
2,3,4,7,8-PECDF		150	2.43	0.5	7.50e+01	7.50e+01	
1,2,3,4,7,8-HXCDF		115	2.98	0.1	1.15e+01	1.15e+01	
1,2,3,6,7,8-HXCDF		23.5	2.98	0.1	2.35e+00	2.35e+00	
1,2,3,7,8,9-HXCDF	ND		2.98	0.1	0.00e+00	1.49e-01	
2,3,4,6,7,8-HXCDF		38.7	2.98	0.1	3.87e+00	3.87e+00	
1,2,3,4,6,7,8-HPCDF		490	6.94	0.01	4.90e+00	4.90e+00	
1,2,3,4,7,8,9-HPCDF		19.9	6.94	0.01	1.99e-01	1.99e-01	
OCDF		461	4.34	0.0001	4.61e-02	4.61e-02	
			TOTAL TEQ		185000	185000	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		184000	38.1	1	1.84e+05	1.84e+05	
1,2,3,7,8-PECDD		1040	2.77	1	1.04e+03	1.04e+03	
1,2,3,4,7,8-HXCDD		93.9	8.17	0.1	9.39e+00	9.39e+00	
1,2,3,6,7,8-HXCDD		831	8.17	0.1	8.31e+01	8.31e+01	
1,2,3,7,8,9-HXCDD		339	8.17	0.1	3.39e+01	3.39e+01	
1,2,3,4,6,7,8-HPCDD		3410	7.59	0.01	3.41e+01	3.41e+01	
OCDD		7340	2.91	0.0003	2.20e+00	2.20e+00	
2,3,7,8-TCDF		893	38.8	0.1	8.93e+01	8.93e+01	
1,2,3,7,8-PECDF		18.2	2.43	0.03	5.46e-01	5.46e-01	
2,3,4,7,8-PECDF		150	2.43	0.3	4.50e+01	4.50e+01	
1,2,3,4,7,8-HXCDF		115	2.98	0.1	1.15e+01	1.15e+01	
1,2,3,6,7,8-HXCDF		23.5	2.98	0.1	2.35e+00	2.35e+00	
1,2,3,7,8,9-HXCDF	ND		2.98	0.1	0.00e+00	1.49e-01	
2,3,4,6,7,8-HXCDF		38.7	2.98	0.1	3.87e+00	3.87e+00	
1,2,3,4,6,7,8-HPCDF		490	6.94	0.01	4.90e+00	4.90e+00	
1,2,3,4,7,8,9-HPCDF		19.9	6.94	0.01	1.99e-01	1.99e-01	
OCDF		461	4.34	0.0003	1.38e-01	1.38e-01	
			TOTAL TEQ		185000	185000	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-3_TEQ_SJ857278.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 082

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.06 g (dry)	**Lab Sample I.D.:**	L11075-4
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 6** **DX82_171 S: 11** **DX8C_195A S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		46900	13.7	1	4.69e+04	4.69e+04	
1,2,3,7,8-PECDD		320	0.832	1	3.20e+02	3.20e+02	
1,2,3,4,7,8-HXCDD		30.5	2.61	0.1	3.05e+00	3.05e+00	
1,2,3,6,7,8-HXCDD		196	2.61	0.1	1.96e+01	1.96e+01	
1,2,3,7,8,9-HXCDD		83.8	2.61	0.1	8.38e+00	8.38e+00	
1,2,3,4,6,7,8-HPCDD		795	4.95	0.01	7.95e+00	7.95e+00	
OCDD		1660	8.18	0.0001	1.66e-01	1.66e-01	
2,3,7,8-TCDF		275	12.5	0.1	2.75e+01	2.75e+01	
1,2,3,7,8-PECDF		10.1	1.22	0.05	5.05e-01	5.05e-01	
2,3,4,7,8-PECDF		37.7	1.22	0.5	1.89e+01	1.89e+01	
1,2,3,4,7,8-HXCDF		21.6	1.20	0.1	2.16e+00	2.16e+00	
1,2,3,6,7,8-HXCDF		6.85	1.20	0.1	6.85e-01	6.85e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF		8.74	1.20	0.1	8.74e-01	8.74e-01	
1,2,3,4,6,7,8-HPCDF		103	1.06	0.01	1.03e+00	1.03e+00	
1,2,3,4,7,8,9-HPCDF		4.48	1.06	0.01	4.48e-02	4.48e-02	
OCDF		96.5	2.35	0.0001	9.65e-03	9.65e-03	
			TOTAL TEQ		47300	47300	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		46900	13.7	1	4.69e+04	4.69e+04	
1,2,3,7,8-PECDD		320	0.832	1	3.20e+02	3.20e+02	
1,2,3,4,7,8-HXCDD		30.5	2.61	0.1	3.05e+00	3.05e+00	
1,2,3,6,7,8-HXCDD		196	2.61	0.1	1.96e+01	1.96e+01	
1,2,3,7,8,9-HXCDD		83.8	2.61	0.1	8.38e+00	8.38e+00	
1,2,3,4,6,7,8-HPCDD		795	4.95	0.01	7.95e+00	7.95e+00	
OCDD		1660	8.18	0.0003	4.98e-01	4.98e-01	
2,3,7,8-TCDF		275	12.5	0.1	2.75e+01	2.75e+01	
1,2,3,7,8-PECDF		10.1	1.22	0.03	3.03e-01	3.03e-01	
2,3,4,7,8-PECDF		37.7	1.22	0.3	1.13e+01	1.13e+01	
1,2,3,4,7,8-HXCDF		21.6	1.20	0.1	2.16e+00	2.16e+00	
1,2,3,6,7,8-HXCDF		6.85	1.20	0.1	6.85e-01	6.85e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF		8.74	1.20	0.1	8.74e-01	8.74e-01	
1,2,3,4,6,7,8-HPCDF		103	1.06	0.01	1.03e+00	1.03e+00	
1,2,3,4,7,8,9-HPCDF		4.48	1.06	0.01	4.48e-02	4.48e-02	
OCDF		96.5	2.35	0.0003	2.90e-02	2.90e-02	
			TOTAL TEQ		47300	47300	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-4_TEQ_SJ857308.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 083

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.49 g (dry)	**Lab Sample I.D.:**	L11075-5 (A)
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 11** **DX8C_195A S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.944	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD		4.23	0.596	1	4.23e+00	4.23e+00	
1,2,3,4,7,8-HXCDD		0.856	0.678	0.1	8.56e-02	8.56e-02	
1,2,3,6,7,8-HXCDD	ND		0.678	0.1	0.00e+00	3.39e-02	
1,2,3,7,8,9-HXCDD		1.69	0.678	0.1	1.69e-01	1.69e-01	
1,2,3,4,6,7,8-HPCDD	ND		0.471	0.01	0.00e+00	2.36e-03	
OCDD		63.4	0.528	0.0001	6.34e-03	6.34e-03	
2,3,7,8-TCDF	ND		2.69	0.1	0.00e+00	1.35e-01	
1,2,3,7,8-PECDF	ND		0.633	0.05	0.00e+00	1.58e-02	
2,3,4,7,8-PECDF	ND		0.633	0.5	0.00e+00	1.58e-01	
1,2,3,4,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,7,8,9-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
2,3,4,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,4,6,7,8-HPCDF		3.32	0.583	0.01	3.32e-02	3.32e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.583	0.01	0.00e+00	2.92e-03	
OCDF		5.69	0.737	0.0001	5.69e-04	5.69e-04	
			TOTAL TEQ		120	120	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.944	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD		4.23	0.596	1	4.23e+00	4.23e+00	
1,2,3,4,7,8-HXCDD		0.856	0.678	0.1	8.56e-02	8.56e-02	
1,2,3,6,7,8-HXCDD	ND		0.678	0.1	0.00e+00	3.39e-02	
1,2,3,7,8,9-HXCDD		1.69	0.678	0.1	1.69e-01	1.69e-01	
1,2,3,4,6,7,8-HPCDD	ND		0.471	0.01	0.00e+00	2.36e-03	
OCDD		63.4	0.528	0.0003	1.90e-02	1.90e-02	
2,3,7,8-TCDF	ND		2.69	0.1	0.00e+00	1.35e-01	
1,2,3,7,8-PECDF	ND		0.633	0.03	0.00e+00	9.50e-03	
2,3,4,7,8-PECDF	ND		0.633	0.3	0.00e+00	9.50e-02	
1,2,3,4,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,7,8,9-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
2,3,4,6,7,8-HXCDF	ND		0.559	0.1	0.00e+00	2.80e-02	
1,2,3,4,6,7,8-HPCDF		3.32	0.583	0.01	3.32e-02	3.32e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.583	0.01	0.00e+00	2.92e-03	
OCDF		5.69	0.737	0.0003	1.71e-03	1.71e-03	
			TOTAL TEQ		120	120	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-5_TEQ_SJ857309.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 084

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.09 g (dry)	**Lab Sample I.D.:**	L11075-6
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_120 S: 15** **DX82_171 S: 10** **DX8C_193 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		65400	11.4	1	6.54e+04	6.54e+04	
1,2,3,7,8-PECDD		91.3	1.08	1	9.13e+01	9.13e+01	
1,2,3,4,7,8-HXCDD	ND		1.22	0.1	0.00e+00	6.10e-02	
1,2,3,6,7,8-HXCDD		17.7	1.22	0.1	1.77e+00	1.77e+00	
1,2,3,7,8,9-HXCDD		10.6	1.22	0.1	1.06e+00	1.06e+00	
1,2,3,4,6,7,8-HPCDD		160	1.41	0.01	1.60e+00	1.60e+00	
OCDD		1670	0.972	0.0001	1.67e-01	1.67e-01	
2,3,7,8-TCDF		96.9	6.17	0.1	9.69e+00	9.69e+00	
1,2,3,7,8-PECDF	ND		1.33	0.05	0.00e+00	3.33e-02	
2,3,4,7,8-PECDF		8.26	1.33	0.5	4.13e+00	4.13e+00	
1,2,3,4,7,8-HXCDF		6.12	1.00	0.1	6.12e-01	6.12e-01	
1,2,3,6,7,8-HXCDF		3.01	1.00	0.1	3.01e-01	3.01e-01	
1,2,3,7,8,9-HXCDF	ND		1.00	0.1	0.00e+00	5.00e-02	
2,3,4,6,7,8-HXCDF		4.00	1.00	0.1	4.00e-01	4.00e-01	
1,2,3,4,6,7,8-HPCDF		29.1	2.71	0.01	2.91e-01	2.91e-01	
1,2,3,4,7,8,9-HPCDF		3.60	2.71	0.01	3.60e-02	3.60e-02	
OCDF		48.8	1.37	0.0001	4.88e-03	4.88e-03	
			TOTAL TEQ		65500	65500	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		65400	11.4	1	6.54e+04	6.54e+04	
1,2,3,7,8-PECDD		91.3	1.08	1	9.13e+01	9.13e+01	
1,2,3,4,7,8-HXCDD	ND		1.22	0.1	0.00e+00	6.10e-02	
1,2,3,6,7,8-HXCDD		17.7	1.22	0.1	1.77e+00	1.77e+00	
1,2,3,7,8,9-HXCDD		10.6	1.22	0.1	1.06e+00	1.06e+00	
1,2,3,4,6,7,8-HPCDD		160	1.41	0.01	1.60e+00	1.60e+00	
OCDD		1670	0.972	0.0003	5.01e-01	5.01e-01	
2,3,7,8-TCDF		96.9	6.17	0.1	9.69e+00	9.69e+00	
1,2,3,7,8-PECDF	ND		1.33	0.03	0.00e+00	2.00e-02	
2,3,4,7,8-PECDF		8.26	1.33	0.3	2.48e+00	2.48e+00	
1,2,3,4,7,8-HXCDF		6.12	1.00	0.1	6.12e-01	6.12e-01	
1,2,3,6,7,8-HXCDF		3.01	1.00	0.1	3.01e-01	3.01e-01	
1,2,3,7,8,9-HXCDF	ND		1.00	0.1	0.00e+00	5.00e-02	
2,3,4,6,7,8-HXCDF		4.00	1.00	0.1	4.00e-01	4.00e-01	
1,2,3,4,6,7,8-HPCDF		29.1	2.71	0.01	2.91e-01	2.91e-01	
1,2,3,4,7,8,9-HPCDF		3.60	2.71	0.01	3.60e-02	3.60e-02	
OCDF		48.8	1.37	0.0003	1.46e-02	1.46e-02	
			TOTAL TEQ		65500	65500	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-6_TEQ_SJ857279.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 087

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.99 g (dry)	**Lab Sample I.D.:**	L11075-7
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 14** **DX82_171 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		450	2.21	1	4.50e+02	4.50e+02	
1,2,3,7,8-PECDD		6.29	2.40	1	6.29e+00	6.29e+00	
1,2,3,4,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,6,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,7,8,9-HXCDD		4.73	3.18	0.1	4.73e-01	4.73e-01	
1,2,3,4,6,7,8-HPCDD		23.2	2.25	0.01	2.32e-01	2.32e-01	
OCDD		147	1.57	0.0001	1.47e-02	1.47e-02	
2,3,7,8-TCDF		6.60	4.58	0.1	6.60e-01	6.60e-01	
1,2,3,7,8-PECDF	ND		1.23	0.05	0.00e+00	3.08e-02	
2,3,4,7,8-PECDF	ND		1.23	0.5	0.00e+00	3.08e-01	
1,2,3,4,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,7,8,9-HXCDF		1.31	1.24	0.1	1.31e-01	1.31e-01	
2,3,4,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,4,6,7,8-HPCDF		7.21	1.31	0.01	7.21e-02	7.21e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.31	0.01	0.00e+00	6.55e-03	
OCDF		16.7	1.62	0.0001	1.67e-03	1.67e-03	
			TOTAL TEQ		458	459	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		450	2.21	1	4.50e+02	4.50e+02	
1,2,3,7,8-PECDD		6.29	2.40	1	6.29e+00	6.29e+00	
1,2,3,4,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,6,7,8-HXCDD	ND		3.18	0.1	0.00e+00	1.59e-01	
1,2,3,7,8,9-HXCDD		4.73	3.18	0.1	4.73e-01	4.73e-01	
1,2,3,4,6,7,8-HPCDD		23.2	2.25	0.01	2.32e-01	2.32e-01	
OCDD		147	1.57	0.0003	4.41e-02	4.41e-02	
2,3,7,8-TCDF		6.60	4.58	0.1	6.60e-01	6.60e-01	
1,2,3,7,8-PECDF	ND		1.23	0.03	0.00e+00	1.85e-02	
2,3,4,7,8-PECDF	ND		1.23	0.3	0.00e+00	1.85e-01	
1,2,3,4,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,7,8,9-HXCDF		1.31	1.24	0.1	1.31e-01	1.31e-01	
2,3,4,6,7,8-HXCDF	ND		1.24	0.1	0.00e+00	6.20e-02	
1,2,3,4,6,7,8-HPCDF		7.21	1.31	0.01	7.21e-02	7.21e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.31	0.01	0.00e+00	6.55e-03	
OCDF		16.7	1.62	0.0003	5.01e-03	5.01e-03	
			TOTAL TEQ		458	459	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-7_TEQ_SJ858629.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 088

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.12 g (dry)	**Lab Sample I.D.:**	L11075-8
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 8** **DX8C_193 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.802	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD	ND		1.19	1	0.00e+00	5.95e-01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		6.54	1.21	0.1	6.54e-01	6.54e-01	
1,2,3,7,8,9-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,4,6,7,8-HPCDD		127	1.41	0.01	1.27e+00	1.27e+00	
OCDD		1160	0.912	0.0001	1.16e-01	1.16e-01	
2,3,7,8-TCDF	ND		2.73	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		1.06	0.05	0.00e+00	2.65e-02	
2,3,4,7,8-PECDF	ND		1.06	0.5	0.00e+00	2.65e-01	
1,2,3,4,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,6,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,7,8,9-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
2,3,4,6,7,8-HXCDF		2.46	0.992	0.1	2.46e-01	2.46e-01	
1,2,3,4,6,7,8-HPCDF		39.5	3.49	0.01	3.95e-01	3.95e-01	
1,2,3,4,7,8,9-HPCDF	ND		3.49	0.01	0.00e+00	1.75e-02	
OCDF		200	1.65	0.0001	2.00e-02	2.00e-02	
			TOTAL TEQ		118	119	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		115	0.802	1	1.15e+02	1.15e+02	
1,2,3,7,8-PECDD	ND		1.19	1	0.00e+00	5.95e-01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		6.54	1.21	0.1	6.54e-01	6.54e-01	
1,2,3,7,8,9-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,4,6,7,8-HPCDD		127	1.41	0.01	1.27e+00	1.27e+00	
OCDD		1160	0.912	0.0003	3.48e-01	3.48e-01	
2,3,7,8-TCDF	ND		2.73	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		1.06	0.03	0.00e+00	1.59e-02	
2,3,4,7,8-PECDF	ND		1.06	0.3	0.00e+00	1.59e-01	
1,2,3,4,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,6,7,8-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
1,2,3,7,8,9-HXCDF	ND		0.992	0.1	0.00e+00	4.96e-02	
2,3,4,6,7,8-HXCDF		2.46	0.992	0.1	2.46e-01	2.46e-01	
1,2,3,4,6,7,8-HPCDF		39.5	3.49	0.01	3.95e-01	3.95e-01	
1,2,3,4,7,8,9-HPCDF	ND		3.49	0.01	0.00e+00	1.75e-02	
OCDF		200	1.65	0.0003	6.00e-02	6.00e-02	
			TOTAL TEQ		118	119	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-8_TEQ_SJ857281.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 088-3

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.90 g (dry)	**Lab Sample I.D.:**	L11075-9
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 9** **DX8C_194 S: 4**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.860	1	0.00e+00	4.30e-01	
1,2,3,7,8-PECDD	ND		1.01	1	0.00e+00	5.05e-01	
1,2,3,4,7,8-HXCDD		1.66	1.04	0.1	1.66e-01	1.66e-01	
1,2,3,6,7,8-HXCDD		2.56	1.04	0.1	2.56e-01	2.56e-01	
1,2,3,7,8,9-HXCDD		3.39	1.04	0.1	3.39e-01	3.39e-01	
1,2,3,4,6,7,8-HPCDD	ND		1.13	0.01	0.00e+00	5.65e-03	
OCDD		20.5	0.923	0.0001	2.05e-03	2.05e-03	
2,3,7,8-TCDF	ND		2.74	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		0.860	0.05	0.00e+00	2.15e-02	
2,3,4,7,8-PECDF		3.26	0.860	0.5	1.63e+00	1.63e+00	
1,2,3,4,7,8-HXCDF		1.62	0.804	0.1	1.62e-01	1.62e-01	
1,2,3,6,7,8-HXCDF		1.66	0.804	0.1	1.66e-01	1.66e-01	
1,2,3,7,8,9-HXCDF	ND		0.804	0.1	0.00e+00	4.02e-02	
2,3,4,6,7,8-HXCDF		2.18	0.804	0.1	2.18e-01	2.18e-01	
1,2,3,4,6,7,8-HPCDF		3.69	1.29	0.01	3.69e-02	3.69e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.29	0.01	0.00e+00	6.45e-03	
OCDF		4.95	1.17	0.0001	4.95e-04	4.95e-04	
			TOTAL TEQ		2.98	4.12	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.860	1	0.00e+00	4.30e-01	
1,2,3,7,8-PECDD	ND		1.01	1	0.00e+00	5.05e-01	
1,2,3,4,7,8-HXCDD		1.66	1.04	0.1	1.66e-01	1.66e-01	
1,2,3,6,7,8-HXCDD		2.56	1.04	0.1	2.56e-01	2.56e-01	
1,2,3,7,8,9-HXCDD		3.39	1.04	0.1	3.39e-01	3.39e-01	
1,2,3,4,6,7,8-HPCDD	ND		1.13	0.01	0.00e+00	5.65e-03	
OCDD		20.5	0.923	0.0003	6.15e-03	6.15e-03	
2,3,7,8-TCDF	ND		2.74	0.1	0.00e+00	1.37e-01	
1,2,3,7,8-PECDF	ND		0.860	0.03	0.00e+00	1.29e-02	
2,3,4,7,8-PECDF		3.26	0.860	0.3	9.78e-01	9.78e-01	
1,2,3,4,7,8-HXCDF		1.62	0.804	0.1	1.62e-01	1.62e-01	
1,2,3,6,7,8-HXCDF		1.66	0.804	0.1	1.66e-01	1.66e-01	
1,2,3,7,8,9-HXCDF	ND		0.804	0.1	0.00e+00	4.02e-02	
2,3,4,6,7,8-HXCDF		2.18	0.804	0.1	2.18e-01	2.18e-01	
1,2,3,4,6,7,8-HPCDF		3.69	1.29	0.01	3.69e-02	3.69e-02	
1,2,3,4,7,8,9-HPCDF	ND		1.29	0.01	0.00e+00	6.45e-03	
OCDF		4.95	1.17	0.0003	1.49e-03	1.49e-03	
			TOTAL TEQ		2.33	3.47	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-9_TEQ_SJ857826.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 097

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.07 g (dry)	**Lab Sample I.D.:**	L11075-10
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 10** **DX8C_194 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.751	1	0.00e+00	3.76e-01	
1,2,3,7,8-PECDD		1.93	0.679	1	1.93e+00	1.93e+00	
1,2,3,4,7,8-HXCDD		1.77	0.706	0.1	1.77e-01	1.77e-01	
1,2,3,6,7,8-HXCDD		4.10	0.706	0.1	4.10e-01	4.10e-01	
1,2,3,7,8,9-HXCDD		3.09	0.706	0.1	3.09e-01	3.09e-01	
1,2,3,4,6,7,8-HPCDD		80.5	1.11	0.01	8.05e-01	8.05e-01	
OCDD		810	0.795	0.0001	8.10e-02	8.10e-02	
2,3,7,8-TCDF	ND		3.94	0.1	0.00e+00	1.97e-01	
1,2,3,7,8-PECDF	ND		0.482	0.05	0.00e+00	1.21e-02	
2,3,4,7,8-PECDF		3.27	0.482	0.5	1.64e+00	1.64e+00	
1,2,3,4,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,6,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,7,8,9-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
2,3,4,6,7,8-HXCDF		2.27	0.617	0.1	2.27e-01	2.27e-01	
1,2,3,4,6,7,8-HPCDF		18.1	0.787	0.01	1.81e-01	1.81e-01	
1,2,3,4,7,8,9-HPCDF		2.64	0.787	0.01	2.64e-02	2.64e-02	
OCDF		81.4	1.35	0.0001	8.14e-03	8.14e-03	
			TOTAL TEQ		5.79	6.47	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.751	1	0.00e+00	3.76e-01	
1,2,3,7,8-PECDD		1.93	0.679	1	1.93e+00	1.93e+00	
1,2,3,4,7,8-HXCDD		1.77	0.706	0.1	1.77e-01	1.77e-01	
1,2,3,6,7,8-HXCDD		4.10	0.706	0.1	4.10e-01	4.10e-01	
1,2,3,7,8,9-HXCDD		3.09	0.706	0.1	3.09e-01	3.09e-01	
1,2,3,4,6,7,8-HPCDD		80.5	1.11	0.01	8.05e-01	8.05e-01	
OCDD		810	0.795	0.0003	2.43e-01	2.43e-01	
2,3,7,8-TCDF	ND		3.94	0.1	0.00e+00	1.97e-01	
1,2,3,7,8-PECDF	ND		0.482	0.03	0.00e+00	7.23e-03	
2,3,4,7,8-PECDF		3.27	0.482	0.3	9.81e-01	9.81e-01	
1,2,3,4,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,6,7,8-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
1,2,3,7,8,9-HXCDF	ND		0.617	0.1	0.00e+00	3.09e-02	
2,3,4,6,7,8-HXCDF		2.27	0.617	0.1	2.27e-01	2.27e-01	
1,2,3,4,6,7,8-HPCDF		18.1	0.787	0.01	1.81e-01	1.81e-01	
1,2,3,4,7,8,9-HPCDF		2.64	0.787	0.01	2.64e-02	2.64e-02	
OCDF		81.4	1.35	0.0003	2.44e-02	2.44e-02	
			TOTAL TEQ		5.31	5.99	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-10_TEQ_SJ857827.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 108

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	1.87 g (dry)	**Lab Sample I.D.:**	L11075-11
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 15** **DX8C_194 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1170	1.64	1	1.17e+03	1.17e+03	
1,2,3,7,8-PECDD		27.8	1.76	1	2.78e+01	2.78e+01	
1,2,3,4,7,8-HXCDD		14.7	2.32	0.1	1.47e+00	1.47e+00	
1,2,3,6,7,8-HXCDD		46.9	2.32	0.1	4.69e+00	4.69e+00	
1,2,3,7,8,9-HXCDD		43.2	2.32	0.1	4.32e+00	4.32e+00	
1,2,3,4,6,7,8-HPCDD		766	2.93	0.01	7.66e+00	7.66e+00	
OCDD		6570	1.02	0.0001	6.57e-01	6.57e-01	
2,3,7,8-TCDF		63.0	5.14	0.1	6.30e+00	6.30e+00	
1,2,3,7,8-PECDF		6.81	1.61	0.05	3.41e-01	3.41e-01	
2,3,4,7,8-PECDF		15.7	1.61	0.5	7.85e+00	7.85e+00	
1,2,3,4,7,8-HXCDF		17.6	2.53	0.1	1.76e+00	1.76e+00	
1,2,3,6,7,8-HXCDF		12.5	2.53	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
2,3,4,6,7,8-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
1,2,3,4,6,7,8-HPCDF		123	2.18	0.01	1.23e+00	1.23e+00	
1,2,3,4,7,8,9-HPCDF		7.74	2.18	0.01	7.74e-02	7.74e-02	
OCDF		204	1.52	0.0001	2.04e-02	2.04e-02	
			TOTAL TEQ		1240	1240	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1170	1.64	1	1.17e+03	1.17e+03	
1,2,3,7,8-PECDD		27.8	1.76	1	2.78e+01	2.78e+01	
1,2,3,4,7,8-HXCDD		14.7	2.32	0.1	1.47e+00	1.47e+00	
1,2,3,6,7,8-HXCDD		46.9	2.32	0.1	4.69e+00	4.69e+00	
1,2,3,7,8,9-HXCDD		43.2	2.32	0.1	4.32e+00	4.32e+00	
1,2,3,4,6,7,8-HPCDD		766	2.93	0.01	7.66e+00	7.66e+00	
OCDD		6570	1.02	0.0003	1.97e+00	1.97e+00	
2,3,7,8-TCDF		63.0	5.14	0.1	6.30e+00	6.30e+00	
1,2,3,7,8-PECDF		6.81	1.61	0.03	2.04e-01	2.04e-01	
2,3,4,7,8-PECDF		15.7	1.61	0.3	4.71e+00	4.71e+00	
1,2,3,4,7,8-HXCDF		17.6	2.53	0.1	1.76e+00	1.76e+00	
1,2,3,6,7,8-HXCDF		12.5	2.53	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
2,3,4,6,7,8-HXCDF	ND		2.53	0.1	0.00e+00	1.27e-01	
1,2,3,4,6,7,8-HPCDF		123	2.18	0.01	1.23e+00	1.23e+00	
1,2,3,4,7,8,9-HPCDF		7.74	2.18	0.01	7.74e-02	7.74e-02	
OCDF		204	1.52	0.0003	6.12e-02	6.12e-02	
			TOTAL TEQ		1230	1230	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-11_TEQ_SJ857828.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 109

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	1.85 g (dry)	**Lab Sample I.D.:**	L11075-12
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 13** **DX8C_194 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2650	1.63	1	2.65e+03	2.65e+03	
1,2,3,7,8-PECDD		45.0	1.60	1	4.50e+01	4.50e+01	
1,2,3,4,7,8-HXCDD		15.6	4.08	0.1	1.56e+00	1.56e+00	
1,2,3,6,7,8-HXCDD		55.9	4.08	0.1	5.59e+00	5.59e+00	
1,2,3,7,8,9-HXCDD		37.1	4.08	0.1	3.71e+00	3.71e+00	
1,2,3,4,6,7,8-HPCDD		978	4.50	0.01	9.78e+00	9.78e+00	
OCDD		9480	2.47	0.0001	9.48e-01	9.48e-01	
2,3,7,8-TCDF		470	8.94	0.1	4.70e+01	4.70e+01	
1,2,3,7,8-PECDF		10.6	1.48	0.05	5.30e-01	5.30e-01	
2,3,4,7,8-PECDF		14.4	1.48	0.5	7.20e+00	7.20e+00	
1,2,3,4,7,8-HXCDF		23.0	2.32	0.1	2.30e+00	2.30e+00	
1,2,3,6,7,8-HXCDF		13.7	2.32	0.1	1.37e+00	1.37e+00	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		11.9	2.32	0.1	1.19e+00	1.19e+00	
1,2,3,4,6,7,8-HPCDF		131	1.86	0.01	1.31e+00	1.31e+00	
1,2,3,4,7,8,9-HPCDF		9.30	1.86	0.01	9.30e-02	9.30e-02	
OCDF		181	1.60	0.0001	1.81e-02	1.81e-02	
			TOTAL TEQ		2780	2780	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2650	1.63	1	2.65e+03	2.65e+03	
1,2,3,7,8-PECDD		45.0	1.60	1	4.50e+01	4.50e+01	
1,2,3,4,7,8-HXCDD		15.6	4.08	0.1	1.56e+00	1.56e+00	
1,2,3,6,7,8-HXCDD		55.9	4.08	0.1	5.59e+00	5.59e+00	
1,2,3,7,8,9-HXCDD		37.1	4.08	0.1	3.71e+00	3.71e+00	
1,2,3,4,6,7,8-HPCDD		978	4.50	0.01	9.78e+00	9.78e+00	
OCDD		9480	2.47	0.0003	2.84e+00	2.84e+00	
2,3,7,8-TCDF		470	8.94	0.1	4.70e+01	4.70e+01	
1,2,3,7,8-PECDF		10.6	1.48	0.03	3.18e-01	3.18e-01	
2,3,4,7,8-PECDF		14.4	1.48	0.3	4.32e+00	4.32e+00	
1,2,3,4,7,8-HXCDF		23.0	2.32	0.1	2.30e+00	2.30e+00	
1,2,3,6,7,8-HXCDF		13.7	2.32	0.1	1.37e+00	1.37e+00	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		11.9	2.32	0.1	1.19e+00	1.19e+00	
1,2,3,4,6,7,8-HPCDF		131	1.86	0.01	1.31e+00	1.31e+00	
1,2,3,4,7,8,9-HPCDF		9.30	1.86	0.01	9.30e-02	9.30e-02	
OCDF		181	1.60	0.0003	5.43e-02	5.43e-02	
			TOTAL TEQ		2780	2780	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-12_TEQ_SJ857829.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 111

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.01 g (dry)	**Lab Sample I.D.:**	L11075-13
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 14** **DX8C_194 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		5810	1.59	1	5.81e+03	5.81e+03	
1,2,3,7,8-PECDD		59.4	1.62	1	5.94e+01	5.94e+01	
1,2,3,4,7,8-HXCDD		32.5	3.75	0.1	3.25e+00	3.25e+00	
1,2,3,6,7,8-HXCDD		219	3.75	0.1	2.19e+01	2.19e+01	
1,2,3,7,8,9-HXCDD		134	3.75	0.1	1.34e+01	1.34e+01	
1,2,3,4,6,7,8-HPCDD		1070	3.02	0.01	1.07e+01	1.07e+01	
OCDD		2890	1.02	0.0001	2.89e-01	2.89e-01	
2,3,7,8-TCDF		453	6.91	0.1	4.53e+01	4.53e+01	
1,2,3,7,8-PECDF	ND		0.954	0.05	0.00e+00	2.39e-02	
2,3,4,7,8-PECDF		11.1	0.954	0.5	5.55e+00	5.55e+00	
1,2,3,4,7,8-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
1,2,3,6,7,8-HXCDF		7.22	2.32	0.1	7.22e-01	7.22e-01	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		5.50	2.32	0.1	5.50e-01	5.50e-01	
1,2,3,4,6,7,8-HPCDF		60.9	1.13	0.01	6.09e-01	6.09e-01	
1,2,3,4,7,8,9-HPCDF		3.57	1.13	0.01	3.57e-02	3.57e-02	
OCDF		76.8	1.79	0.0001	7.68e-03	7.68e-03	
			TOTAL TEQ		5970	5970	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		5810	1.59	1	5.81e+03	5.81e+03	
1,2,3,7,8-PECDD		59.4	1.62	1	5.94e+01	5.94e+01	
1,2,3,4,7,8-HXCDD		32.5	3.75	0.1	3.25e+00	3.25e+00	
1,2,3,6,7,8-HXCDD		219	3.75	0.1	2.19e+01	2.19e+01	
1,2,3,7,8,9-HXCDD		134	3.75	0.1	1.34e+01	1.34e+01	
1,2,3,4,6,7,8-HPCDD		1070	3.02	0.01	1.07e+01	1.07e+01	
OCDD		2890	1.02	0.0003	8.67e-01	8.67e-01	
2,3,7,8-TCDF		453	6.91	0.1	4.53e+01	4.53e+01	
1,2,3,7,8-PECDF	ND		0.954	0.03	0.00e+00	1.43e-02	
2,3,4,7,8-PECDF		11.1	0.954	0.3	3.33e+00	3.33e+00	
1,2,3,4,7,8-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
1,2,3,6,7,8-HXCDF		7.22	2.32	0.1	7.22e-01	7.22e-01	
1,2,3,7,8,9-HXCDF	ND		2.32	0.1	0.00e+00	1.16e-01	
2,3,4,6,7,8-HXCDF		5.50	2.32	0.1	5.50e-01	5.50e-01	
1,2,3,4,6,7,8-HPCDF		60.9	1.13	0.01	6.09e-01	6.09e-01	
1,2,3,4,7,8,9-HPCDF		3.57	1.13	0.01	3.57e-02	3.57e-02	
OCDF		76.8	1.79	0.0003	2.30e-02	2.30e-02	
			TOTAL TEQ		5970	5970	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-13_TEQ_SJ857830.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 114

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.99 g (dry)	**Lab Sample I.D.:**	L11075-14
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 16** **DX8C_194 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		521	0.681	1	5.21e+02	5.21e+02	
1,2,3,7,8-PECDD		14.9	0.767	1	1.49e+01	1.49e+01	
1,2,3,4,7,8-HXCDD		13.7	0.943	0.1	1.37e+00	1.37e+00	
1,2,3,6,7,8-HXCDD		40.9	0.943	0.1	4.09e+00	4.09e+00	
1,2,3,7,8,9-HXCDD		33.2	0.943	0.1	3.32e+00	3.32e+00	
1,2,3,4,6,7,8-HPCDD		828	2.09	0.01	8.28e+00	8.28e+00	
OCDD		8700	0.807	0.0001	8.70e-01	8.70e-01	
2,3,7,8-TCDF		84.2	2.55	0.1	8.42e+00	8.42e+00	
1,2,3,7,8-PECDF		8.34	1.02	0.05	4.17e-01	4.17e-01	
2,3,4,7,8-PECDF		9.48	1.02	0.5	4.74e+00	4.74e+00	
1,2,3,4,7,8-HXCDF		13.2	1.20	0.1	1.32e+00	1.32e+00	
1,2,3,6,7,8-HXCDF		8.46	1.20	0.1	8.46e-01	8.46e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
1,2,3,4,6,7,8-HPCDF		109	0.843	0.01	1.09e+00	1.09e+00	
1,2,3,4,7,8,9-HPCDF		8.27	0.843	0.01	8.27e-02	8.27e-02	
OCDF		212	0.499	0.0001	2.12e-02	2.12e-02	
			TOTAL TEQ		571	571	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		521	0.681	1	5.21e+02	5.21e+02	
1,2,3,7,8-PECDD		14.9	0.767	1	1.49e+01	1.49e+01	
1,2,3,4,7,8-HXCDD		13.7	0.943	0.1	1.37e+00	1.37e+00	
1,2,3,6,7,8-HXCDD		40.9	0.943	0.1	4.09e+00	4.09e+00	
1,2,3,7,8,9-HXCDD		33.2	0.943	0.1	3.32e+00	3.32e+00	
1,2,3,4,6,7,8-HPCDD		828	2.09	0.01	8.28e+00	8.28e+00	
OCDD		8700	0.807	0.0003	2.61e+00	2.61e+00	
2,3,7,8-TCDF		84.2	2.55	0.1	8.42e+00	8.42e+00	
1,2,3,7,8-PECDF		8.34	1.02	0.03	2.50e-01	2.50e-01	
2,3,4,7,8-PECDF		9.48	1.02	0.3	2.84e+00	2.84e+00	
1,2,3,4,7,8-HXCDF		13.2	1.20	0.1	1.32e+00	1.32e+00	
1,2,3,6,7,8-HXCDF		8.46	1.20	0.1	8.46e-01	8.46e-01	
1,2,3,7,8,9-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
2,3,4,6,7,8-HXCDF	ND		1.20	0.1	0.00e+00	6.00e-02	
1,2,3,4,6,7,8-HPCDF		109	0.843	0.01	1.09e+00	1.09e+00	
1,2,3,4,7,8,9-HPCDF		8.27	0.843	0.01	8.27e-02	8.27e-02	
OCDF		212	0.499	0.0003	6.36e-02	6.36e-02	
			TOTAL TEQ		570	571	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-14_TEQ_SJ857831.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 116

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.98 g (dry)	**Lab Sample I.D.:**	L11075-15
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 17** **DX8C_194 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		844	0.813	1	8.44e+02	8.44e+02	
1,2,3,7,8-PECDD		12.8	0.886	1	1.28e+01	1.28e+01	
1,2,3,4,7,8-HXCDD		16.3	1.77	0.1	1.63e+00	1.63e+00	
1,2,3,6,7,8-HXCDD		47.7	1.77	0.1	4.77e+00	4.77e+00	
1,2,3,7,8,9-HXCDD		37.6	1.77	0.1	3.76e+00	3.76e+00	
1,2,3,4,6,7,8-HPCDD		1180	2.52	0.01	1.18e+01	1.18e+01	
OCDD		10600	0.699	0.0001	1.06e+00	1.06e+00	
2,3,7,8-TCDF	ND		2.55	0.1	0.00e+00	1.28e-01	
1,2,3,7,8-PECDF		9.04	0.604	0.05	4.52e-01	4.52e-01	
2,3,4,7,8-PECDF		14.4	0.604	0.5	7.20e+00	7.20e+00	
1,2,3,4,7,8-HXCDF		24.5	0.864	0.1	2.45e+00	2.45e+00	
1,2,3,6,7,8-HXCDF		12.5	0.864	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		0.864	0.1	0.00e+00	4.32e-02	
2,3,4,6,7,8-HXCDF		13.6	0.864	0.1	1.36e+00	1.36e+00	
1,2,3,4,6,7,8-HPCDF		142	0.987	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		11.9	0.987	0.01	1.19e-01	1.19e-01	
OCDF		265	0.751	0.0001	2.65e-02	2.65e-02	
			TOTAL TEQ		894	894	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		844	0.813	1	8.44e+02	8.44e+02	
1,2,3,7,8-PECDD		12.8	0.886	1	1.28e+01	1.28e+01	
1,2,3,4,7,8-HXCDD		16.3	1.77	0.1	1.63e+00	1.63e+00	
1,2,3,6,7,8-HXCDD		47.7	1.77	0.1	4.77e+00	4.77e+00	
1,2,3,7,8,9-HXCDD		37.6	1.77	0.1	3.76e+00	3.76e+00	
1,2,3,4,6,7,8-HPCDD		1180	2.52	0.01	1.18e+01	1.18e+01	
OCDD		10600	0.699	0.0003	3.18e+00	3.18e+00	
2,3,7,8-TCDF	ND		2.55	0.1	0.00e+00	1.28e-01	
1,2,3,7,8-PECDF		9.04	0.604	0.03	2.71e-01	2.71e-01	
2,3,4,7,8-PECDF		14.4	0.604	0.3	4.32e+00	4.32e+00	
1,2,3,4,7,8-HXCDF		24.5	0.864	0.1	2.45e+00	2.45e+00	
1,2,3,6,7,8-HXCDF		12.5	0.864	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDF	ND		0.864	0.1	0.00e+00	4.32e-02	
2,3,4,6,7,8-HXCDF		13.6	0.864	0.1	1.36e+00	1.36e+00	
1,2,3,4,6,7,8-HPCDF		142	0.987	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		11.9	0.987	0.01	1.19e-01	1.19e-01	
OCDF		265	0.751	0.0003	7.95e-02	7.95e-02	
			TOTAL TEQ		893	893	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-15_TEQ_SJ857832.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 120

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.15 g (dry)	**Lab Sample I.D.:**	L11075-16
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 18** **DX8C_194 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		221	0.621	1	2.21e+02	2.21e+02	
1,2,3,7,8-PECDD		16.5	0.664	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD		18.4	1.24	0.1	1.84e+00	1.84e+00	
1,2,3,6,7,8-HXCDD		70.3	1.24	0.1	7.03e+00	7.03e+00	
1,2,3,7,8,9-HXCDD		53.5	1.24	0.1	5.35e+00	5.35e+00	
1,2,3,4,6,7,8-HPCDD		1910	4.27	0.01	1.91e+01	1.91e+01	
OCDD		12900	0.941	0.0001	1.29e+00	1.29e+00	
2,3,7,8-TCDF	ND		1.85	0.1	0.00e+00	9.25e-02	
1,2,3,7,8-PECDF		9.44	0.633	0.05	4.72e-01	4.72e-01	
2,3,4,7,8-PECDF		16.5	0.633	0.5	8.25e+00	8.25e+00	
1,2,3,4,7,8-HXCDF		28.0	0.676	0.1	2.80e+00	2.80e+00	
1,2,3,6,7,8-HXCDF		17.0	0.676	0.1	1.70e+00	1.70e+00	
1,2,3,7,8,9-HXCDF		2.31	0.676	0.1	2.31e-01	2.31e-01	
2,3,4,6,7,8-HXCDF		15.7	0.676	0.1	1.57e+00	1.57e+00	
1,2,3,4,6,7,8-HPCDF		142	1.18	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		9.54	1.18	0.01	9.54e-02	9.54e-02	
OCDF		214	2.12	0.0001	2.14e-02	2.14e-02	
			TOTAL TEQ		289	289	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		221	0.621	1	2.21e+02	2.21e+02	
1,2,3,7,8-PECDD		16.5	0.664	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD		18.4	1.24	0.1	1.84e+00	1.84e+00	
1,2,3,6,7,8-HXCDD		70.3	1.24	0.1	7.03e+00	7.03e+00	
1,2,3,7,8,9-HXCDD		53.5	1.24	0.1	5.35e+00	5.35e+00	
1,2,3,4,6,7,8-HPCDD		1910	4.27	0.01	1.91e+01	1.91e+01	
OCDD		12900	0.941	0.0003	3.87e+00	3.87e+00	
2,3,7,8-TCDF	ND		1.85	0.1	0.00e+00	9.25e-02	
1,2,3,7,8-PECDF		9.44	0.633	0.03	2.83e-01	2.83e-01	
2,3,4,7,8-PECDF		16.5	0.633	0.3	4.95e+00	4.95e+00	
1,2,3,4,7,8-HXCDF		28.0	0.676	0.1	2.80e+00	2.80e+00	
1,2,3,6,7,8-HXCDF		17.0	0.676	0.1	1.70e+00	1.70e+00	
1,2,3,7,8,9-HXCDF		2.31	0.676	0.1	2.31e-01	2.31e-01	
2,3,4,6,7,8-HXCDF		15.7	0.676	0.1	1.57e+00	1.57e+00	
1,2,3,4,6,7,8-HPCDF		142	1.18	0.01	1.42e+00	1.42e+00	
1,2,3,4,7,8,9-HPCDF		9.54	1.18	0.01	9.54e-02	9.54e-02	
OCDF		214	2.12	0.0003	6.42e-02	6.42e-02	
			TOTAL TEQ		288	288	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-16_TEQ_SJ857833.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 123

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.64 g (dry)	**Lab Sample I.D.:**	L11075-17
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 11** **DX8C_194 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1310	0.722	1	1.31e+03	1.31e+03	
1,2,3,7,8-PECDD		16.5	0.723	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		11.6	1.21	0.1	1.16e+00	1.16e+00	
1,2,3,7,8,9-HXCDD		8.18	1.21	0.1	8.18e-01	8.18e-01	
1,2,3,4,6,7,8-HPCDD		155	1.07	0.01	1.55e+00	1.55e+00	
OCDD		1670	0.975	0.0001	1.67e-01	1.67e-01	
2,3,7,8-TCDF	ND		2.46	0.1	0.00e+00	1.23e-01	
1,2,3,7,8-PECDF	ND		0.568	0.05	0.00e+00	1.42e-02	
2,3,4,7,8-PECDF		3.62	0.568	0.5	1.81e+00	1.81e+00	
1,2,3,4,7,8-HXCDF		3.92	0.613	0.1	3.92e-01	3.92e-01	
1,2,3,6,7,8-HXCDF		2.59	0.613	0.1	2.59e-01	2.59e-01	
1,2,3,7,8,9-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
2,3,4,6,7,8-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
1,2,3,4,6,7,8-HPCDF		23.1	0.693	0.01	2.31e-01	2.31e-01	
1,2,3,4,7,8,9-HPCDF	ND		0.693	0.01	0.00e+00	3.47e-03	
OCDF		63.1	1.08	0.0001	6.31e-03	6.31e-03	
			TOTAL TEQ		1330	1330	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1310	0.722	1	1.31e+03	1.31e+03	
1,2,3,7,8-PECDD		16.5	0.723	1	1.65e+01	1.65e+01	
1,2,3,4,7,8-HXCDD	ND		1.21	0.1	0.00e+00	6.05e-02	
1,2,3,6,7,8-HXCDD		11.6	1.21	0.1	1.16e+00	1.16e+00	
1,2,3,7,8,9-HXCDD		8.18	1.21	0.1	8.18e-01	8.18e-01	
1,2,3,4,6,7,8-HPCDD		155	1.07	0.01	1.55e+00	1.55e+00	
OCDD		1670	0.975	0.0003	5.01e-01	5.01e-01	
2,3,7,8-TCDF	ND		2.46	0.1	0.00e+00	1.23e-01	
1,2,3,7,8-PECDF	ND		0.568	0.03	0.00e+00	8.52e-03	
2,3,4,7,8-PECDF		3.62	0.568	0.3	1.09e+00	1.09e+00	
1,2,3,4,7,8-HXCDF		3.92	0.613	0.1	3.92e-01	3.92e-01	
1,2,3,6,7,8-HXCDF		2.59	0.613	0.1	2.59e-01	2.59e-01	
1,2,3,7,8,9-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
2,3,4,6,7,8-HXCDF	ND		0.613	0.1	0.00e+00	3.07e-02	
1,2,3,4,6,7,8-HPCDF		23.1	0.693	0.01	2.31e-01	2.31e-01	
1,2,3,4,7,8,9-HPCDF	ND		0.693	0.01	0.00e+00	3.47e-03	
OCDF		63.1	1.08	0.0003	1.89e-02	1.89e-02	
			TOTAL TEQ		1330	1330	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-17_TEQ_SJ857834.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
Lab Blank

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	N/A
Sample Size:	3.00 g	**Lab Sample I.D.:**	WG25088-101 :4496
Concentration Units:	pg/g	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_119 S: 5** **DX8C_193 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.690	1	0.00e+00	3.45e-01	
1,2,3,7,8-PECDD	ND		1.12	1	0.00e+00	5.60e-01	
1,2,3,4,7,8-HXCDD		2.17	1.56	0.1	2.17e-01	2.17e-01	
1,2,3,6,7,8-HXCDD	ND		1.56	0.1	0.00e+00	7.80e-02	
1,2,3,7,8,9-HXCDD		3.31	1.56	0.1	3.31e-01	3.31e-01	
1,2,3,4,6,7,8-HPCDD		5.76	1.26	0.01	5.76e-02	5.76e-02	
OCDD		6.03	1.59	0.0001	6.03e-04	6.03e-04	
2,3,7,8-TCDF	ND		3.06	0.1	0.00e+00	1.53e-01	
1,2,3,7,8-PECDF	ND		0.971	0.05	0.00e+00	2.43e-02	
2,3,4,7,8-PECDF		4.44	0.971	0.5	2.22e+00	2.22e+00	
1,2,3,4,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,6,7,8-HXCDF		2.24	1.23	0.1	2.24e-01	2.24e-01	
1,2,3,7,8,9-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
2,3,4,6,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.22	0.01	0.00e+00	6.10e-03	
1,2,3,4,7,8,9-HPCDF		2.37	1.22	0.01	2.37e-02	2.37e-02	
OCDF		4.29	1.28	0.0001	4.29e-04	4.29e-04	
			TOTAL TEQ		3.07	4.43	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.690	1	0.00e+00	3.45e-01	
1,2,3,7,8-PECDD	ND		1.12	1	0.00e+00	5.60e-01	
1,2,3,4,7,8-HXCDD		2.17	1.56	0.1	2.17e-01	2.17e-01	
1,2,3,6,7,8-HXCDD	ND		1.56	0.1	0.00e+00	7.80e-02	
1,2,3,7,8,9-HXCDD		3.31	1.56	0.1	3.31e-01	3.31e-01	
1,2,3,4,6,7,8-HPCDD		5.76	1.26	0.01	5.76e-02	5.76e-02	
OCDD		6.03	1.59	0.0003	1.81e-03	1.81e-03	
2,3,7,8-TCDF	ND		3.06	0.1	0.00e+00	1.53e-01	
1,2,3,7,8-PECDF	ND		0.971	0.03	0.00e+00	1.46e-02	
2,3,4,7,8-PECDF		4.44	0.971	0.3	1.33e+00	1.33e+00	
1,2,3,4,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,6,7,8-HXCDF		2.24	1.23	0.1	2.24e-01	2.24e-01	
1,2,3,7,8,9-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
2,3,4,6,7,8-HXCDF	ND		1.23	0.1	0.00e+00	6.15e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.22	0.01	0.00e+00	6.10e-03	
1,2,3,4,7,8,9-HPCDF		2.37	1.22	0.01	2.37e-02	2.37e-02	
OCDF		4.29	1.28	0.0003	1.29e-03	1.29e-03	
			TOTAL TEQ		2.19	3.53	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25088-101_TEQ_SJ857274.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 083 (Duplicate)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	WG25088-103 (DUP L11075-5)
Sample Size:	3.12 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_119 S: 12** **DX8C_195A S: 11**
		Sample Collection:	N/A

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		105	0.685	1	1.05e+02	1.05e+02	
1,2,3,7,8-PECDD	ND		0.606	1	0.00e+00	3.03e-01	
1,2,3,4,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,6,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,7,8,9-HXCDD		1.17	0.844	0.1	1.17e-01	1.17e-01	
1,2,3,4,6,7,8-HPCDD		11.2	0.824	0.01	1.12e-01	1.12e-01	
OCDD		61.1	0.743	0.0001	6.11e-03	6.11e-03	
2,3,7,8-TCDF	ND		2.47	0.1	0.00e+00	1.24e-01	
1,2,3,7,8-PECDF	ND		0.801	0.05	0.00e+00	2.00e-02	
2,3,4,7,8-PECDF		3.33	0.801	0.5	1.67e+00	1.67e+00	
1,2,3,4,7,8-HXCDF		1.21	0.622	0.1	1.21e-01	1.21e-01	
1,2,3,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,7,8,9-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
2,3,4,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,4,6,7,8-HPCDF		3.05	0.715	0.01	3.05e-02	3.05e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.715	0.01	0.00e+00	3.58e-03	
OCDF		7.63	0.534	0.0001	7.63e-04	7.63e-04	
			TOTAL TEQ		107	108	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		105	0.685	1	1.05e+02	1.05e+02	
1,2,3,7,8-PECDD	ND		0.606	1	0.00e+00	3.03e-01	
1,2,3,4,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,6,7,8-HXCDD	ND		0.844	0.1	0.00e+00	4.22e-02	
1,2,3,7,8,9-HXCDD		1.17	0.844	0.1	1.17e-01	1.17e-01	
1,2,3,4,6,7,8-HPCDD		11.2	0.824	0.01	1.12e-01	1.12e-01	
OCDD		61.1	0.743	0.0003	1.83e-02	1.83e-02	
2,3,7,8-TCDF	ND		2.47	0.1	0.00e+00	1.24e-01	
1,2,3,7,8-PECDF	ND		0.801	0.03	0.00e+00	1.20e-02	
2,3,4,7,8-PECDF		3.33	0.801	0.3	9.99e-01	9.99e-01	
1,2,3,4,7,8-HXCDF		1.21	0.622	0.1	1.21e-01	1.21e-01	
1,2,3,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,7,8,9-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
2,3,4,6,7,8-HXCDF	ND		0.622	0.1	0.00e+00	3.11e-02	
1,2,3,4,6,7,8-HPCDF		3.05	0.715	0.01	3.05e-02	3.05e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.715	0.01	0.00e+00	3.58e-03	
OCDF		7.63	0.534	0.0003	2.29e-03	2.29e-03	
			TOTAL TEQ		106	107	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 11:34:31; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25088-103_TEQ_SJ857310.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. PROJECT 00057781

Contract No.: 4496

Client ID: 08 VNBH 083

Concentration Units: pg/g (dry weight basis)

COMPOUND	L11075-5 (A)		WG25088-103		MEAN	RELATIVE PERCENT DIFFERENCE
	LAB FLAG [1]	CONC. FOUND	LAB FLAG [1]	CONC. FOUND		
2,3,7,8-TCDD		115		105	110	8.88
1,2,3,7,8-PECDD		4.23	NDR	3.26		
1,2,3,4,7,8-HXCDD		0.856	NDR	0.865		
1,2,3,6,7,8-HXCDD	NDR	2.51	NDR	2.02		
1,2,3,7,8,9-HXCDD		1.69		1.17	1.43	36.0
1,2,3,4,6,7,8-HPCDD	NDR	10.7		11.2		
OCDD		63.4		61.1	62.3	3.64
2,3,7,8-TCDF	ND		NDR	9.79		
1,2,3,7,8-PECDF	ND		ND			
2,3,4,7,8-PECDF	NDR	2.81		3.33		
1,2,3,4,7,8-HXCDF	NDR	1.74		1.21		
1,2,3,6,7,8-HXCDF	NDR	0.714	NDR	0.882		
1,2,3,7,8,9-HXCDF	ND		ND			
2,3,4,6,7,8-HXCDF	NDR	0.603	NDR	0.961		
1,2,3,4,6,7,8-HPCDF		3.32		3.05	3.19	8.57
1,2,3,4,7,8,9-HPCDF	ND		ND			
OCDF		5.69		7.63	6.66	29.1

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: RPD.xsl; Created: 29-May-2008 11:35:00; Application: XMLTransformer-1.9.5;
Report Filename: RPD_DIOXINS_1613-RPD_WG25088-103_L11075-5_.html; Workgroup: WG25088; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 124
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-18
Matrix:	SOLID	**Sample Size:**	2.80 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 13:44:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	7.11

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		387	0.524	0.78	1.001
1,2,3,7,8-PECDD [3]		5.39	0.475	0.60	1.000
1,2,3,4,7,8-HXCDD	ND		1.47		
1,2,3,6,7,8-HXCDD		3.27	1.47	1.13	1.000
1,2,3,7,8,9-HXCDD	ND		1.47		
1,2,3,4,6,7,8-HPCDD		40.3	0.588	1.00	1.000
OCDD		455	0.804	0.88	1.000
2,3,7,8-TCDF		12.3	0.351	0.84	1.003
1,2,3,7,8-PECDF	NDR	1.51	0.449	0.91	1.000
2,3,4,7,8-PECDF		2.62	0.449	1.39	1.001
1,2,3,4,7,8-HXCDF	NDR	2.05	0.606	0.72	1.001
1,2,3,6,7,8-HXCDF	NDR	1.16	0.606	1.69	1.000
1,2,3,7,8,9-HXCDF	NDR	0.692	0.606	0.58	1.000
2,3,4,6,7,8-HXCDF	NDR	1.69	0.606	0.89	1.000
1,2,3,4,6,7,8-HPCDF		7.03	0.442	0.93	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.442		
OCDF	NDR	11.4	1.14	1.10	1.002
TOTAL TETRA-DIOXINS		412	0.524		
TOTAL PENTA-DIOXINS		19.4	0.475		
TOTAL HEXA-DIOXINS		14.0	1.47		
TOTAL HEPTA-DIOXINS		77.9	0.588		
TOTAL TETRA-FURANS		50.9	0.351		
TOTAL PENTA-FURANS		43.0	0.449		
TOTAL HEXA-FURANS		7.64	0.606		
TOTAL HEPTA-FURANS		13.3	0.442		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-18_Form1A_DX8C_196S5_SJ857405.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 124
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-18
Matrix:	SOLID	**Sample Size:**	2.80 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 13:44:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg absolute	**% Moisture:**	7.11

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30000	75.1	0.79	1.013
13C-1,2,3,7,8-PECDD [4]		40000	29800	74.5	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		40000	30000	75.1	1.27	0.986
13C-1,2,3,6,7,8-HXCDD		40000	32900	82.1	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	31600	79.0	1.06	1.094
13C-OCDD		80000	54900	68.6	0.90	1.177
13C-2,3,7,8-TCDF		40000	29200	73.1	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	30200	75.6	1.56	1.287
13C-2,3,4,7,8-PECDF		40000	29900	74.8	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	31900	79.6	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	33300	83.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	31700	79.3	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	32100	80.2	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	31000	77.6	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	30800	77.1	0.43	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	189	94.4		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-18_Form2_DX8C_196S5_SJ857405.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 124

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.80 g (dry)	**Lab Sample I.D.:**	L11075-18
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_122 S: 16** **DX8C_196 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		387	0.524	1	3.87e+02	3.87e+02	
1,2,3,7,8-PECDD		5.39	0.475	1	5.39e+00	5.39e+00	
1,2,3,4,7,8-HXCDD	ND		1.47	0.1	0.00e+00	7.35e-02	
1,2,3,6,7,8-HXCDD		3.27	1.47	0.1	3.27e-01	3.27e-01	
1,2,3,7,8,9-HXCDD	ND		1.47	0.1	0.00e+00	7.35e-02	
1,2,3,4,6,7,8-HPCDD		40.3	0.588	0.01	4.03e-01	4.03e-01	
OCDD		455	0.804	0.0001	4.55e-02	4.55e-02	
2,3,7,8-TCDF	ND		3.48	0.1	0.00e+00	1.74e-01	
1,2,3,7,8-PECDF	ND		0.449	0.05	0.00e+00	1.12e-02	
2,3,4,7,8-PECDF		2.62	0.449	0.5	1.31e+00	1.31e+00	
1,2,3,4,7,8-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
1,2,3,6,7,8-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
1,2,3,7,8,9-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
2,3,4,6,7,8-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
1,2,3,4,6,7,8-HPCDF		7.03	0.442	0.01	7.03e-02	7.03e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.442	0.01	0.00e+00	2.21e-03	
OCDF	ND		1.14	0.0001	0.00e+00	5.70e-05	
			TOTAL TEQ		395	395	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		387	0.524	1	3.87e+02	3.87e+02	
1,2,3,7,8-PECDD		5.39	0.475	1	5.39e+00	5.39e+00	
1,2,3,4,7,8-HXCDD	ND		1.47	0.1	0.00e+00	7.35e-02	
1,2,3,6,7,8-HXCDD		3.27	1.47	0.1	3.27e-01	3.27e-01	
1,2,3,7,8,9-HXCDD	ND		1.47	0.1	0.00e+00	7.35e-02	
1,2,3,4,6,7,8-HPCDD		40.3	0.588	0.01	4.03e-01	4.03e-01	
OCDD		455	0.804	0.0003	1.37e-01	1.37e-01	
2,3,7,8-TCDF	ND		3.48	0.1	0.00e+00	1.74e-01	
1,2,3,7,8-PECDF	ND		0.449	0.03	0.00e+00	6.74e-03	
2,3,4,7,8-PECDF		2.62	0.449	0.3	7.86e-01	7.86e-01	
1,2,3,4,7,8-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
1,2,3,6,7,8-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
1,2,3,7,8,9-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
2,3,4,6,7,8-HXCDF	ND		0.606	0.1	0.00e+00	3.03e-02	
1,2,3,4,6,7,8-HPCDF		7.03	0.442	0.01	7.03e-02	7.03e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.442	0.01	0.00e+00	2.21e-03	
OCDF	ND		1.14	0.0003	0.00e+00	1.71e-04	
			TOTAL TEQ		394	395	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-18_TEQ_SJ857405.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 126
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-19
Matrix:	SOLID	**Sample Size:**	2.93 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 14:38:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	2.82

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		70.8	0.929	0.77	1.001
1,2,3,7,8-PECDD [3]		1.71	0.792	0.57	1.001
1,2,3,4,7,8-HXCDD	NDR	1.74	1.19	0.61	1.000
1,2,3,6,7,8-HXCDD		3.15	1.19	1.30	1.000
1,2,3,7,8,9-HXCDD	ND		1.19		
1,2,3,4,6,7,8-HPCDD		34.4	1.09	1.10	1.000
OCDD		347	0.996	0.84	1.000
2,3,7,8-TCDF		6.48	0.511	0.71	1.001
1,2,3,7,8-PECDF	NDR	0.849	0.570	0.51	1.000
2,3,4,7,8-PECDF	NDR	2.59	0.570	1.22	1.000
1,2,3,4,7,8-HXCDF		1.58	0.647	1.41	1.000
1,2,3,6,7,8-HXCDF	NDR	0.872	0.647	2.26	1.000
1,2,3,7,8,9-HXCDF	NDR	0.654	0.647	1.63	1.000
2,3,4,6,7,8-HXCDF	NDR	1.52	0.647	1.53	1.001
1,2,3,4,6,7,8-HPCDF	NDR	4.98	0.947	1.39	1.000
1,2,3,4,7,8,9-HPCDF	NDR	1.55	0.947	1.73	1.001
OCDF		10.7	1.24	0.79	1.002
TOTAL TETRA-DIOXINS		74.6	0.929		
TOTAL PENTA-DIOXINS		5.50	0.792		
TOTAL HEXA-DIOXINS		10.2	1.19		
TOTAL HEPTA-DIOXINS		64.0	1.09		
TOTAL TETRA-FURANS		21.1	0.511		
TOTAL PENTA-FURANS		4.19	0.570		
TOTAL HEXA-FURANS		12.1	0.647		
TOTAL HEPTA-FURANS		6.00	0.947		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-19_Form1A_DX8C_196S6_SJ857406.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 126
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-19
Matrix:	SOLID	**Sample Size:**	2.93 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 14:38:57	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg absolute	**% Moisture:**	2.82

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28100	70.4	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28500	71.4	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		40000	32500	81.3	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		40000	33600	83.9	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32100	80.2	1.06	1.094
13C-OCDD		80000	55000	68.8	0.89	1.177
13C-2,3,7,8-TCDF		40000	28400	71.0	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	29400	73.4	1.55	1.286
13C-2,3,4,7,8-PECDF		40000	28900	72.2	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	33500	83.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	35700	89.3	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	32300	80.9	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		40000	33900	84.8	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	30700	76.8	0.43	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	31100	77.7	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	179	89.3		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-19_Form2_DX8C_196S6_SJ857406.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 126

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.93 g (dry)	**Lab Sample I.D.:**	L11075-19
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_122 S: 12** **DX8C_196 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		70.8	0.929	1	7.08e+01	7.08e+01	
1,2,3,7,8-PECDD		1.71	0.792	1	1.71e+00	1.71e+00	
1,2,3,4,7,8-HXCDD	ND		1.19	0.1	0.00e+00	5.95e-02	
1,2,3,6,7,8-HXCDD		3.15	1.19	0.1	3.15e-01	3.15e-01	
1,2,3,7,8,9-HXCDD	ND		1.19	0.1	0.00e+00	5.95e-02	
1,2,3,4,6,7,8-HPCDD		34.4	1.09	0.01	3.44e-01	3.44e-01	
OCDD		347	0.996	0.0001	3.47e-02	3.47e-02	
2,3,7,8-TCDF	ND		4.28	0.1	0.00e+00	2.14e-01	
1,2,3,7,8-PECDF	ND		0.570	0.05	0.00e+00	1.43e-02	
2,3,4,7,8-PECDF	ND		0.570	0.5	0.00e+00	1.43e-01	
1,2,3,4,7,8-HXCDF		1.58	0.647	0.1	1.58e-01	1.58e-01	
1,2,3,6,7,8-HXCDF	ND		0.647	0.1	0.00e+00	3.24e-02	
1,2,3,7,8,9-HXCDF	ND		0.647	0.1	0.00e+00	3.24e-02	
2,3,4,6,7,8-HXCDF	ND		0.647	0.1	0.00e+00	3.24e-02	
1,2,3,4,6,7,8-HPCDF	ND		0.947	0.01	0.00e+00	4.74e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.947	0.01	0.00e+00	4.74e-03	
OCDF		10.7	1.24	0.0001	1.07e-03	1.07e-03	
			TOTAL TEQ		73.4	74.0	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		70.8	0.929	1	7.08e+01	7.08e+01	
1,2,3,7,8-PECDD		1.71	0.792	1	1.71e+00	1.71e+00	
1,2,3,4,7,8-HXCDD	ND		1.19	0.1	0.00e+00	5.95e-02	
1,2,3,6,7,8-HXCDD		3.15	1.19	0.1	3.15e-01	3.15e-01	
1,2,3,7,8,9-HXCDD	ND		1.19	0.1	0.00e+00	5.95e-02	
1,2,3,4,6,7,8-HPCDD		34.4	1.09	0.01	3.44e-01	3.44e-01	
OCDD		347	0.996	0.0003	1.04e-01	1.04e-01	
2,3,7,8-TCDF	ND		4.28	0.1	0.00e+00	2.14e-01	
1,2,3,7,8-PECDF	ND		0.570	0.03	0.00e+00	8.55e-03	
2,3,4,7,8-PECDF	ND		0.570	0.3	0.00e+00	8.55e-02	
1,2,3,4,7,8-HXCDF		1.58	0.647	0.1	1.58e-01	1.58e-01	
1,2,3,6,7,8-HXCDF	ND		0.647	0.1	0.00e+00	3.24e-02	
1,2,3,7,8,9-HXCDF	ND		0.647	0.1	0.00e+00	3.24e-02	
2,3,4,6,7,8-HXCDF	ND		0.647	0.1	0.00e+00	3.24e-02	
1,2,3,4,6,7,8-HPCDF	ND		0.947	0.01	0.00e+00	4.74e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.947	0.01	0.00e+00	4.74e-03	
OCDF		10.7	1.24	0.0003	3.21e-03	3.21e-03	
			TOTAL TEQ		73.4	74.0	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 15:59:04; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-19_TEQ_SJ857406.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 132
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-20
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.26 g (dry)
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 15:33:50	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_196 S: 7**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
		% Moisture:	28.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		405	1.39	0.77	1.001
1,2,3,7,8-PECDD [3]	NDR	12.6	1.05	0.48	1.001
1,2,3,4,7,8-HXCDD	NDR	2.42	1.93	0.65	1.000
1,2,3,6,7,8-HXCDD		9.04	1.93	1.12	1.000
1,2,3,7,8,9-HXCDD		6.94	1.93	1.39	1.010
1,2,3,4,6,7,8-HPCDD		92.2	1.31	0.88	1.000
OCDD		777	1.48	0.88	1.000
2,3,7,8-TCDF		27.3	0.888	0.80	1.002
1,2,3,7,8-PECDF		1.50	0.777	1.71	1.000
2,3,4,7,8-PECDF		3.96	0.777	1.54	1.000
1,2,3,4,7,8-HXCDF		3.90	0.935	1.35	1.000
1,2,3,6,7,8-HXCDF		2.79	0.935	1.10	1.000
1,2,3,7,8,9-HXCDF	NDR	1.14	0.935	0.93	1.001
2,3,4,6,7,8-HXCDF	NDR	1.81	0.935	0.73	1.001
1,2,3,4,6,7,8-HPCDF	NDR	18.3	1.11	1.27	1.000
1,2,3,4,7,8,9-HPCDF	ND		1.11		
OCDF		34.1	1.14	0.99	1.002
TOTAL TETRA-DIOXINS		439	1.39		
TOTAL PENTA-DIOXINS		35.5	1.05		
TOTAL HEXA-DIOXINS		80.1	1.93		
TOTAL HEPTA-DIOXINS		176	1.31		
TOTAL TETRA-FURANS		120	0.888		
TOTAL PENTA-FURANS		93.0	0.777		
TOTAL HEXA-FURANS		33.0	0.935		
TOTAL HEPTA-FURANS		17.7	1.11		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-20_Form1A_DX8C_196S7_SJ857407.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 132
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-20
Matrix:	SOLID	**Sample Size:**	2.26 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 15:33:50	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg absolute	**% Moisture:**	28.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	27700	69.1	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	26200	65.4	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		40000	28500	71.3	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	30100	75.1	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30400	76.1	1.04	1.094
13C-OCDD		80000	53300	66.6	0.89	1.177
13C-2,3,7,8-TCDF		40000	26800	66.9	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	26500	66.2	1.55	1.287
13C-2,3,4,7,8-PECDF		40000	26800	67.1	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	30200	75.4	0.53	0.954
13C-1,2,3,6,7,8-HXCDF		40000	32100	80.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	29800	74.6	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		40000	30400	75.9	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	29500	73.8	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	29900	74.7	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	199	99.5		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-20_Form2_DX8C_196S7_SJ857407.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 132

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.26 g (dry)	**Lab Sample I.D.:**	L11075-20
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_122 S: 17** **DX8C_196 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		405	1.39	1	4.05e+02	4.05e+02	
1,2,3,7,8-PECDD	ND		1.05	1	0.00e+00	5.25e-01	
1,2,3,4,7,8-HXCDD	ND		1.93	0.1	0.00e+00	9.65e-02	
1,2,3,6,7,8-HXCDD		9.04	1.93	0.1	9.04e-01	9.04e-01	
1,2,3,7,8,9-HXCDD		6.94	1.93	0.1	6.94e-01	6.94e-01	
1,2,3,4,6,7,8-HPCDD		92.2	1.31	0.01	9.22e-01	9.22e-01	
OCDD		777	1.48	0.0001	7.77e-02	7.77e-02	
2,3,7,8-TCDF		15.1	2.58	0.1	1.51e+00	1.51e+00	
1,2,3,7,8-PECDF		1.50	0.777	0.05	7.50e-02	7.50e-02	
2,3,4,7,8-PECDF		3.96	0.777	0.5	1.98e+00	1.98e+00	
1,2,3,4,7,8-HXCDF		3.90	0.935	0.1	3.90e-01	3.90e-01	
1,2,3,6,7,8-HXCDF		2.79	0.935	0.1	2.79e-01	2.79e-01	
1,2,3,7,8,9-HXCDF	ND		0.935	0.1	0.00e+00	4.68e-02	
2,3,4,6,7,8-HXCDF	ND		0.935	0.1	0.00e+00	4.68e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.11	0.01	0.00e+00	5.55e-03	
1,2,3,4,7,8,9-HPCDF	ND		1.11	0.01	0.00e+00	5.55e-03	
OCDF		34.1	1.14	0.0001	3.41e-03	3.41e-03	
			TOTAL TEQ		412	413	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		405	1.39	1	4.05e+02	4.05e+02	
1,2,3,7,8-PECDD	ND		1.05	1	0.00e+00	5.25e-01	
1,2,3,4,7,8-HXCDD	ND		1.93	0.1	0.00e+00	9.65e-02	
1,2,3,6,7,8-HXCDD		9.04	1.93	0.1	9.04e-01	9.04e-01	
1,2,3,7,8,9-HXCDD		6.94	1.93	0.1	6.94e-01	6.94e-01	
1,2,3,4,6,7,8-HPCDD		92.2	1.31	0.01	9.22e-01	9.22e-01	
OCDD		777	1.48	0.0003	2.33e-01	2.33e-01	
2,3,7,8-TCDF		15.1	2.58	0.1	1.51e+00	1.51e+00	
1,2,3,7,8-PECDF		1.50	0.777	0.03	4.50e-02	4.50e-02	
2,3,4,7,8-PECDF		3.96	0.777	0.3	1.19e+00	1.19e+00	
1,2,3,4,7,8-HXCDF		3.90	0.935	0.1	3.90e-01	3.90e-01	
1,2,3,6,7,8-HXCDF		2.79	0.935	0.1	2.79e-01	2.79e-01	
1,2,3,7,8,9-HXCDF	ND		0.935	0.1	0.00e+00	4.68e-02	
2,3,4,6,7,8-HXCDF	ND		0.935	0.1	0.00e+00	4.68e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.11	0.01	0.00e+00	5.55e-03	
1,2,3,4,7,8,9-HPCDF	ND		1.11	0.01	0.00e+00	5.55e-03	
OCDF		34.1	1.14	0.0003	1.02e-02	1.02e-02	
			TOTAL TEQ		411	412	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 15:59:04; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-20_TEQ_SJ857407.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 135
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Lab Sample I.D.:**	L11075-21
Matrix:	SOLID	**Sample Size:**	2.88 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 16:28:48	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	4.26

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		2620	0.787	0.79	1.001
1,2,3,7,8-PECDD [3]		41.8	0.834	0.63	1.001
1,2,3,4,7,8-HXCDD		4.52	1.27	1.35	1.000
1,2,3,6,7,8-HXCDD		12.5	1.27	1.17	1.000
1,2,3,7,8,9-HXCDD	NDR	5.48	1.27	2.00	1.010
1,2,3,4,6,7,8-HPCDD		97.2	0.962	1.06	1.000
OCDD		581	0.527	0.88	1.000
2,3,7,8-TCDF		89.1	0.790	0.81	1.002
1,2,3,7,8-PECDF		3.82	0.567	1.35	1.001
2,3,4,7,8-PECDF		6.24	0.567	1.37	1.000
1,2,3,4,7,8-HXCDF	NDR	3.45	0.861	1.58	1.000
1,2,3,6,7,8-HXCDF	NDR	1.08	0.861	0.87	1.000
1,2,3,7,8,9-HXCDF	ND		0.861		
2,3,4,6,7,8-HXCDF		1.52	0.861	1.16	1.001
1,2,3,4,6,7,8-HPCDF	NDR	16.0	1.33	1.39	1.000
1,2,3,4,7,8,9-HPCDF	ND		1.33		
OCDF		14.8	0.927	0.79	1.002
TOTAL TETRA-DIOXINS		2770	0.787		
TOTAL PENTA-DIOXINS		154	0.834		
TOTAL HEXA-DIOXINS		139	1.27		
TOTAL HEPTA-DIOXINS		182	0.962		
TOTAL TETRA-FURANS		394	0.790		
TOTAL PENTA-FURANS		591	0.567		
TOTAL HEXA-FURANS		164	0.861		
TOTAL HEPTA-FURANS		15.7	1.33		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-21_Form1A_DX8C_196S8_SJ857408.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 135
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-21
Matrix:	SOLID	**Sample Size:**	2.88 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 16:28:48	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg absolute	**% Moisture:**	4.26

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	27500	68.6	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	27600	69.0	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		40000	29900	74.8	1.25	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31500	78.8	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30100	75.3	1.06	1.094
13C-OCDD		80000	55400	69.2	0.90	1.177
13C-2,3,7,8-TCDF		40000	27000	67.5	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	27900	69.8	1.57	1.286
13C-2,3,4,7,8-PECDF		40000	27500	68.8	1.57	1.354
13C-1,2,3,4,7,8-HXCDF		40000	31000	77.6	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	32700	81.8	0.51	0.958
13C-1,2,3,7,8,9-HXCDF		40000	30600	76.6	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	31400	78.5	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	29300	73.3	0.43	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	29600	73.9	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	182	91.0		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-21_Form2_DX8C_196S8_SJ857408.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 135

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.88 g (dry)	**Lab Sample I.D.:**	L11075-21
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_123A S: 16** **DX8C_196 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2620	0.787	1	2.62e+03	2.62e+03	
1,2,3,7,8-PECDD		41.8	0.834	1	4.18e+01	4.18e+01	
1,2,3,4,7,8-HXCDD		4.52	1.27	0.1	4.52e-01	4.52e-01	
1,2,3,6,7,8-HXCDD		12.5	1.27	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDD	ND		1.27	0.1	0.00e+00	6.35e-02	
1,2,3,4,6,7,8-HPCDD		97.2	0.962	0.01	9.72e-01	9.72e-01	
OCDD		581	0.527	0.0001	5.81e-02	5.81e-02	
2,3,7,8-TCDF	ND		2.59	0.1	0.00e+00	1.30e-01	
1,2,3,7,8-PECDF		3.82	0.567	0.05	1.91e-01	1.91e-01	
2,3,4,7,8-PECDF		6.24	0.567	0.5	3.12e+00	3.12e+00	
1,2,3,4,7,8-HXCDF	ND		0.861	0.1	0.00e+00	4.31e-02	
1,2,3,6,7,8-HXCDF	ND		0.861	0.1	0.00e+00	4.31e-02	
1,2,3,7,8,9-HXCDF	ND		0.861	0.1	0.00e+00	4.31e-02	
2,3,4,6,7,8-HXCDF		1.52	0.861	0.1	1.52e-01	1.52e-01	
1,2,3,4,6,7,8-HPCDF	ND		1.33	0.01	0.00e+00	6.65e-03	
1,2,3,4,7,8,9-HPCDF	ND		1.33	0.01	0.00e+00	6.65e-03	
OCDF		14.8	0.927	0.0001	1.48e-03	1.48e-03	
			TOTAL TEQ		2670	2670	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2620	0.787	1	2.62e+03	2.62e+03	
1,2,3,7,8-PECDD		41.8	0.834	1	4.18e+01	4.18e+01	
1,2,3,4,7,8-HXCDD		4.52	1.27	0.1	4.52e-01	4.52e-01	
1,2,3,6,7,8-HXCDD		12.5	1.27	0.1	1.25e+00	1.25e+00	
1,2,3,7,8,9-HXCDD	ND		1.27	0.1	0.00e+00	6.35e-02	
1,2,3,4,6,7,8-HPCDD		97.2	0.962	0.01	9.72e-01	9.72e-01	
OCDD		581	0.527	0.0003	1.74e-01	1.74e-01	
2,3,7,8-TCDF	ND		2.59	0.1	0.00e+00	1.30e-01	
1,2,3,7,8-PECDF		3.82	0.567	0.03	1.15e-01	1.15e-01	
2,3,4,7,8-PECDF		6.24	0.567	0.3	1.87e+00	1.87e+00	
1,2,3,4,7,8-HXCDF	ND		0.861	0.1	0.00e+00	4.31e-02	
1,2,3,6,7,8-HXCDF	ND		0.861	0.1	0.00e+00	4.31e-02	
1,2,3,7,8,9-HXCDF	ND		0.861	0.1	0.00e+00	4.31e-02	
2,3,4,6,7,8-HXCDF		1.52	0.861	0.1	1.52e-01	1.52e-01	
1,2,3,4,6,7,8-HPCDF	ND		1.33	0.01	0.00e+00	6.65e-03	
1,2,3,4,7,8,9-HPCDF	ND		1.33	0.01	0.00e+00	6.65e-03	
OCDF		14.8	0.927	0.0003	4.44e-03	4.44e-03	
			TOTAL TEQ		2670	2670	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 139
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-22 i
Matrix:	SOLID	**Sample Size:**	2.72 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 15:35:55	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_166A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_166 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	9.80

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		22.8	0.797	0.68	1.001
1,2,3,7,8-PECDD [3]	NDR	4.51	1.29	0.95	1.000
1,2,3,4,7,8-HXCDD	ND		2.03		
1,2,3,6,7,8-HXCDD		4.37	2.03	1.30	1.000
1,2,3,7,8,9-HXCDD		3.67	2.03	1.36	1.010
1,2,3,4,6,7,8-HPCDD		10.8	1.46	1.02	1.000
OCDD		102	3.27	0.93	1.000
2,3,7,8-TCDF		5.74	3.69	0.84	1.001
1,2,3,7,8-PECDF	ND		0.768		
2,3,4,7,8-PECDF	NDR	3.20	0.768	2.40	1.000
1,2,3,4,7,8-HXCDF		1.03	0.788	1.36	1.000
1,2,3,6,7,8-HXCDF	NDR	1.38	0.788	0.90	1.000
1,2,3,7,8,9-HXCDF	NDR	1.43	0.788	1.45	1.000
2,3,4,6,7,8-HXCDF	ND		0.788		
1,2,3,4,6,7,8-HPCDF		3.40	0.920	1.18	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.920		
OCDF	NDR	8.17	2.88	0.58	1.002
TOTAL TETRA-DIOXINS		22.8	0.797		
TOTAL PENTA-DIOXINS		2.88	1.29		
TOTAL HEXA-DIOXINS		13.2	2.03		
TOTAL HEPTA-DIOXINS		10.8	1.46		
TOTAL TETRA-FURANS		11.2	3.69		
TOTAL PENTA-FURANS		12.2	0.768		
TOTAL HEXA-FURANS		1.03	0.788		
TOTAL HEPTA-FURANS		3.40	0.920		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-22_Form1A_DX82_166AS9_SJ859902.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 139
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-22 i
Matrix:	SOLID	**Sample Size:**	2.72 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 15:35:55	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_166A S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_166 S: 1
Concentration Units:	pg absolute	**% Moisture:**	9.80

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33300	83.2	0.82	1.013
13C-1,2,3,7,8-PECDD [4]		40000	37100	92.8	0.63	1.386
13C-1,2,3,4,7,8-HXCDD		40000	35700	89.3	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		40000	34500	86.2	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	31900	79.7	1.02	1.094
13C-OCDD		80000	64900	81.1	0.90	1.177
13C-2,3,7,8-TCDF		40000	36000	90.1	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	39500	98.9	1.64	1.287
13C-2,3,4,7,8-PECDF		40000	38400	95.9	1.62	1.355
13C-1,2,3,4,7,8-HXCDF		40000	41300	103	0.53	0.954
13C-1,2,3,6,7,8-HXCDF		40000	42100	105	0.54	0.958
13C-1,2,3,7,8,9-HXCDF		40000	37300	93.1	0.54	1.005
13C-2,3,4,6,7,8-HXCDF		40000	39300	98.2	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	34100	85.2	0.48	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	34900	87.1	0.48	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	175	87.6		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-22_Form2_DX82_166AS9_SJ859902.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 139

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.72 g (dry)	**Lab Sample I.D.:**	L11075-22 i
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_122 S: 13** **DX82_166A S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		22.8	0.797	1	2.28e+01	2.28e+01	
1,2,3,7,8-PECDD	ND		1.29	1	0.00e+00	6.45e-01	
1,2,3,4,7,8-HXCDD	ND		2.03	0.1	0.00e+00	1.02e-01	
1,2,3,6,7,8-HXCDD		4.37	2.03	0.1	4.37e-01	4.37e-01	
1,2,3,7,8,9-HXCDD		3.67	2.03	0.1	3.67e-01	3.67e-01	
1,2,3,4,6,7,8-HPCDD		10.8	1.46	0.01	1.08e-01	1.08e-01	
OCDD		102	3.27	0.0001	1.02e-02	1.02e-02	
2,3,7,8-TCDF	ND		2.82	0.1	0.00e+00	1.41e-01	
1,2,3,7,8-PECDF	ND		0.768	0.05	0.00e+00	1.92e-02	
2,3,4,7,8-PECDF	ND		0.768	0.5	0.00e+00	1.92e-01	
1,2,3,4,7,8-HXCDF		1.03	0.788	0.1	1.03e-01	1.03e-01	
1,2,3,6,7,8-HXCDF	ND		0.788	0.1	0.00e+00	3.94e-02	
1,2,3,7,8,9-HXCDF	ND		0.788	0.1	0.00e+00	3.94e-02	
2,3,4,6,7,8-HXCDF	ND		0.788	0.1	0.00e+00	3.94e-02	
1,2,3,4,6,7,8-HPCDF		3.40	0.920	0.01	3.40e-02	3.40e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.920	0.01	0.00e+00	4.60e-03	
OCDF	ND		2.88	0.0001	0.00e+00	1.44e-04	
			TOTAL TEQ		23.9	25.1	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		22.8	0.797	1	2.28e+01	2.28e+01	
1,2,3,7,8-PECDD	ND		1.29	1	0.00e+00	6.45e-01	
1,2,3,4,7,8-HXCDD	ND		2.03	0.1	0.00e+00	1.02e-01	
1,2,3,6,7,8-HXCDD		4.37	2.03	0.1	4.37e-01	4.37e-01	
1,2,3,7,8,9-HXCDD		3.67	2.03	0.1	3.67e-01	3.67e-01	
1,2,3,4,6,7,8-HPCDD		10.8	1.46	0.01	1.08e-01	1.08e-01	
OCDD		102	3.27	0.0003	3.06e-02	3.06e-02	
2,3,7,8-TCDF	ND		2.82	0.1	0.00e+00	1.41e-01	
1,2,3,7,8-PECDF	ND		0.768	0.03	0.00e+00	1.15e-02	
2,3,4,7,8-PECDF	ND		0.768	0.3	0.00e+00	1.15e-01	
1,2,3,4,7,8-HXCDF		1.03	0.788	0.1	1.03e-01	1.03e-01	
1,2,3,6,7,8-HXCDF	ND		0.788	0.1	0.00e+00	3.94e-02	
1,2,3,7,8,9-HXCDF	ND		0.788	0.1	0.00e+00	3.94e-02	
2,3,4,6,7,8-HXCDF	ND		0.788	0.1	0.00e+00	3.94e-02	
1,2,3,4,6,7,8-HPCDF		3.40	0.920	0.01	3.40e-02	3.40e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.920	0.01	0.00e+00	4.60e-03	
OCDF	ND		2.88	0.0003	0.00e+00	4.32e-04	
			TOTAL TEQ		23.9	25.0	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-22_TEQ_SJ859902.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 141-3
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-23
Matrix:	SOLID	**Sample Size:**	2.91 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 18:18:35	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.61

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		8330	1.18	0.78	1.001
1,2,3,7,8-PECDD [3]		51.2	1.42	0.56	1.000
1,2,3,4,7,8-HXCDD		4.07	1.66	1.29	1.000
1,2,3,6,7,8-HXCDD		28.8	1.66	1.19	1.000
1,2,3,7,8,9-HXCDD		10.7	1.66	1.13	1.010
1,2,3,4,6,7,8-HPCDD		90.6	1.64	0.94	1.000
OCDD		472	1.14	0.85	1.001
2,3,7,8-TCDF		263	2.22	0.78	1.003
1,2,3,7,8-PECDF	NDR	3.67	1.23	2.11	1.001
2,3,4,7,8-PECDF	NDR	10.7	1.23	1.18	1.001
1,2,3,4,7,8-HXCDF	NDR	6.36	1.37	1.71	1.001
1,2,3,6,7,8-HXCDF	NDR	3.64	1.37	1.64	1.000
1,2,3,7,8,9-HXCDF	NDR	2.01	1.37	2.00	1.000
2,3,4,6,7,8-HXCDF	NDR	3.86	1.37	0.97	1.000
1,2,3,4,6,7,8-HPCDF	NDR	35.9	2.52	1.42	1.001
1,2,3,4,7,8,9-HPCDF	ND		2.52		
OCDF		44.1	1.32	0.95	1.002
TOTAL TETRA-DIOXINS		8920	1.18		
TOTAL PENTA-DIOXINS		385	1.42		
TOTAL HEXA-DIOXINS		329	1.66		
TOTAL HEPTA-DIOXINS		214	1.64		
TOTAL TETRA-FURANS		1540	2.22		
TOTAL PENTA-FURANS		1270	1.23		
TOTAL HEXA-FURANS		223	1.37		
TOTAL HEPTA-FURANS		37.3	2.52		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-23_Form1A_DX8C_196S10_SJ857410.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 141-3
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-23
Matrix:	SOLID	**Sample Size:**	2.91 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 18:18:35	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_196 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_196 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.61

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	22600	56.5	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	22900	57.2	0.65	1.385
13C-1,2,3,4,7,8-HXCDD		40000	23800	59.6	1.28	0.986
13C-1,2,3,6,7,8-HXCDD		40000	25800	64.4	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	26000	64.9	1.06	1.094
13C-OCDD		80000	46400	58.0	0.89	1.177
13C-2,3,7,8-TCDF		40000	21500	53.7	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	22400	56.1	1.54	1.287
13C-2,3,4,7,8-PECDF		40000	22200	55.4	1.55	1.354
13C-1,2,3,4,7,8-HXCDF		40000	25200	63.0	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	26000	65.0	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	25300	63.2	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	25200	63.0	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	25400	63.4	0.43	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	24900	62.3	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	193	96.6		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-23_Form2_DX8C_196S10_SJ857410.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 141-3

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.91 g (dry)	**Lab Sample I.D.:**	L11075-23
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_123A S: 17** **DX8C_196 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		8330	1.18	1	8.33e+03	8.33e+03	
1,2,3,7,8-PECDD		51.2	1.42	1	5.12e+01	5.12e+01	
1,2,3,4,7,8-HXCDD		4.07	1.66	0.1	4.07e-01	4.07e-01	
1,2,3,6,7,8-HXCDD		28.8	1.66	0.1	2.88e+00	2.88e+00	
1,2,3,7,8,9-HXCDD		10.7	1.66	0.1	1.07e+00	1.07e+00	
1,2,3,4,6,7,8-HPCDD		90.6	1.64	0.01	9.06e-01	9.06e-01	
OCDD		472	1.14	0.0001	4.72e-02	4.72e-02	
2,3,7,8-TCDF	ND		4.56	0.1	0.00e+00	2.28e-01	
1,2,3,7,8-PECDF	ND		1.23	0.05	0.00e+00	3.08e-02	
2,3,4,7,8-PECDF	ND		1.23	0.5	0.00e+00	3.08e-01	
1,2,3,4,7,8-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
1,2,3,6,7,8-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
1,2,3,7,8,9-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
2,3,4,6,7,8-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
1,2,3,4,6,7,8-HPCDF	ND		2.52	0.01	0.00e+00	1.26e-02	
1,2,3,4,7,8,9-HPCDF	ND		2.52	0.01	0.00e+00	1.26e-02	
OCDF		44.1	1.32	0.0001	4.41e-03	4.41e-03	
			TOTAL TEQ		8390	8390	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		8330	1.18	1	8.33e+03	8.33e+03	
1,2,3,7,8-PECDD		51.2	1.42	1	5.12e+01	5.12e+01	
1,2,3,4,7,8-HXCDD		4.07	1.66	0.1	4.07e-01	4.07e-01	
1,2,3,6,7,8-HXCDD		28.8	1.66	0.1	2.88e+00	2.88e+00	
1,2,3,7,8,9-HXCDD		10.7	1.66	0.1	1.07e+00	1.07e+00	
1,2,3,4,6,7,8-HPCDD		90.6	1.64	0.01	9.06e-01	9.06e-01	
OCDD		472	1.14	0.0003	1.42e-01	1.42e-01	
2,3,7,8-TCDF	ND		4.56	0.1	0.00e+00	2.28e-01	
1,2,3,7,8-PECDF	ND		1.23	0.03	0.00e+00	1.85e-02	
2,3,4,7,8-PECDF	ND		1.23	0.3	0.00e+00	1.85e-01	
1,2,3,4,7,8-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
1,2,3,6,7,8-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
1,2,3,7,8,9-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
2,3,4,6,7,8-HXCDF	ND		1.37	0.1	0.00e+00	6.85e-02	
1,2,3,4,6,7,8-HPCDF	ND		2.52	0.01	0.00e+00	1.26e-02	
1,2,3,4,7,8,9-HPCDF	ND		2.52	0.01	0.00e+00	1.26e-02	
OCDF		44.1	1.32	0.0003	1.32e-02	1.32e-02	
			TOTAL TEQ		8390	8390	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-23_TEQ_SJ857410.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 143
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-24 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.92 g (dry)
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	12-May-2008 **Time:** 16:30:22	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_166A S: 10**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_166 S: 1
		% Moisture:	3.71

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		84.1	1.44	0.75	1.001
1,2,3,7,8-PECDD [3]		15.0	1.52	0.65	1.000
1,2,3,4,7,8-HXCDD		8.65	2.40	1.12	1.000
1,2,3,6,7,8-HXCDD		18.5	2.36	1.42	1.000
1,2,3,7,8,9-HXCDD		22.0	2.31	1.29	1.010
1,2,3,4,6,7,8-HPCDD		392	2.58	1.08	1.000
OCDD		3770	5.69	0.89	1.000
2,3,7,8-TCDF		10.5	5.87	0.80	1.001
1,2,3,7,8-PECDF	NDR	2.33	1.16	2.82	1.000
2,3,4,7,8-PECDF		4.96	1.11	1.70	1.000
1,2,3,4,7,8-HXCDF		7.14	2.59	1.14	1.000
1,2,3,6,7,8-HXCDF	NDR	4.95	2.59	0.95	1.000
1,2,3,7,8,9-HXCDF	ND		2.59		
2,3,4,6,7,8-HXCDF		3.91	2.59	1.09	1.000
1,2,3,4,6,7,8-HPCDF		67.4	3.13	1.10	1.000
1,2,3,4,7,8,9-HPCDF	ND		3.13		
OCDF		100	2.51	0.93	1.002
TOTAL TETRA-DIOXINS		110	1.44		
TOTAL PENTA-DIOXINS		49.2	1.52		
TOTAL HEXA-DIOXINS		142	2.40		
TOTAL HEPTA-DIOXINS		716	2.58		
TOTAL TETRA-FURANS		20.2	5.87		
TOTAL PENTA-FURANS		52.9	1.16		
TOTAL HEXA-FURANS		58.2	2.59		
TOTAL HEPTA-FURANS		135	3.13		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-24_Form1A_DX82_166AS10_SJ859903.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 143
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-24 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.92 g (dry)
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	12-May-2008 **Time:** 16:30:22	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_166A S: 10**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX82_166 S: 1
		% Moisture:	3.71

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	21200	52.9	0.82	1.013
13C-1,2,3,7,8-PECDD [4]		40000	23800	59.5	0.65	1.386
13C-1,2,3,4,7,8-HXCDD		40000	21900	54.7	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		40000	21400	53.5	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	22200	55.5	1.01	1.094
13C-OCDD		80000	42300	52.9	0.90	1.177
13C-2,3,7,8-TCDF		40000	23600	58.9	0.81	0.966
13C-1,2,3,7,8-PECDF		40000	25500	63.8	1.58	1.287
13C-2,3,4,7,8-PECDF		40000	24000	60.1	1.57	1.355
13C-1,2,3,4,7,8-HXCDF		40000	25200	62.9	0.53	0.954
13C-1,2,3,6,7,8-HXCDF		40000	25600	63.9	0.54	0.959
13C-1,2,3,7,8,9-HXCDF		40000	24600	61.5	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	24600	61.5	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	22200	55.5	0.48	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	24400	61.0	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	121	60.7		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-24_Form2_DX82_166AS10_SJ859903.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 143

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.92 g (dry)	**Lab Sample I.D.:**	L11075-24 i
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_122 S: 14** **DX82_166A S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		84.1	1.44	1	8.41e+01	8.41e+01	
1,2,3,7,8-PECDD		15.0	1.52	1	1.50e+01	1.50e+01	
1,2,3,4,7,8-HXCDD		8.65	2.40	0.1	8.65e-01	8.65e-01	
1,2,3,6,7,8-HXCDD		18.5	2.36	0.1	1.85e+00	1.85e+00	
1,2,3,7,8,9-HXCDD		22.0	2.31	0.1	2.20e+00	2.20e+00	
1,2,3,4,6,7,8-HPCDD		392	2.58	0.01	3.92e+00	3.92e+00	
OCDD		3770	5.69	0.0001	3.77e-01	3.77e-01	
2,3,7,8-TCDF	ND		3.88	0.1	0.00e+00	1.94e-01	
1,2,3,7,8-PECDF	ND		1.16	0.05	0.00e+00	2.90e-02	
2,3,4,7,8-PECDF		4.96	1.11	0.5	2.48e+00	2.48e+00	
1,2,3,4,7,8-HXCDF		7.14	2.59	0.1	7.14e-01	7.14e-01	
1,2,3,6,7,8-HXCDF	ND		2.59	0.1	0.00e+00	1.30e-01	
1,2,3,7,8,9-HXCDF	ND		2.59	0.1	0.00e+00	1.30e-01	
2,3,4,6,7,8-HXCDF		3.91	2.59	0.1	3.91e-01	3.91e-01	
1,2,3,4,6,7,8-HPCDF		67.4	3.13	0.01	6.74e-01	6.74e-01	
1,2,3,4,7,8,9-HPCDF	ND		3.13	0.01	0.00e+00	1.57e-02	
OCDF		100	2.51	0.0001	1.00e-02	1.00e-02	
			TOTAL TEQ		113	113	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		84.1	1.44	1	8.41e+01	8.41e+01	
1,2,3,7,8-PECDD		15.0	1.52	1	1.50e+01	1.50e+01	
1,2,3,4,7,8-HXCDD		8.65	2.40	0.1	8.65e-01	8.65e-01	
1,2,3,6,7,8-HXCDD		18.5	2.36	0.1	1.85e+00	1.85e+00	
1,2,3,7,8,9-HXCDD		22.0	2.31	0.1	2.20e+00	2.20e+00	
1,2,3,4,6,7,8-HPCDD		392	2.58	0.01	3.92e+00	3.92e+00	
OCDD		3770	5.69	0.0003	1.13e+00	1.13e+00	
2,3,7,8-TCDF	ND		3.88	0.1	0.00e+00	1.94e-01	
1,2,3,7,8-PECDF	ND		1.16	0.03	0.00e+00	1.74e-02	
2,3,4,7,8-PECDF		4.96	1.11	0.3	1.49e+00	1.49e+00	
1,2,3,4,7,8-HXCDF		7.14	2.59	0.1	7.14e-01	7.14e-01	
1,2,3,6,7,8-HXCDF	ND		2.59	0.1	0.00e+00	1.30e-01	
1,2,3,7,8,9-HXCDF	ND		2.59	0.1	0.00e+00	1.30e-01	
2,3,4,6,7,8-HXCDF		3.91	2.59	0.1	3.91e-01	3.91e-01	
1,2,3,4,6,7,8-HPCDF		67.4	3.13	0.01	6.74e-01	6.74e-01	
1,2,3,4,7,8,9-HPCDF	ND		3.13	0.01	0.00e+00	1.57e-02	
OCDF		100	2.51	0.0003	3.00e-02	3.00e-02	
			TOTAL TEQ		112	113	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 145
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-25
Matrix:	SOLID	**Sample Size:**	3.02 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 00:51:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	2.06

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		74.2	0.975	0.75	1.001
1,2,3,7,8-PECDD [3]		8.72	0.710	0.56	1.001
1,2,3,4,7,8-HXCDD	NDR	1.72	1.11	1.80	1.000
1,2,3,6,7,8-HXCDD	NDR	6.16	1.11	0.93	1.000
1,2,3,7,8,9-HXCDD		4.39	1.11	1.23	1.010
1,2,3,4,6,7,8-HPCDD		48.5	0.878	1.07	1.000
OCDD		350	0.447	0.87	1.000
2,3,7,8-TCDF		11.1	0.435	0.75	1.003
1,2,3,7,8-PECDF		1.06	0.534	1.36	1.001
2,3,4,7,8-PECDF	ND		0.534		
1,2,3,4,7,8-HXCDF		1.88	0.656	1.09	1.001
1,2,3,6,7,8-HXCDF	NDR	1.24	0.656	1.60	1.001
1,2,3,7,8,9-HXCDF	ND		0.656		
2,3,4,6,7,8-HXCDF	NDR	1.08	0.656	0.73	1.000
1,2,3,4,6,7,8-HPCDF		9.83	0.647	1.18	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.647		
OCDF		13.7	0.788	0.97	1.002
TOTAL TETRA-DIOXINS		90.6	0.975		
TOTAL PENTA-DIOXINS		37.4	0.710		
TOTAL HEXA-DIOXINS		33.7	1.11		
TOTAL HEPTA-DIOXINS		92.1	0.878		
TOTAL TETRA-FURANS		73.2	0.435		
TOTAL PENTA-FURANS		72.5	0.534		
TOTAL HEXA-FURANS		26.1	0.656		
TOTAL HEPTA-FURANS		20.6	0.647		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-25_Form1A_DX8C_197S6_SJ857379.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 145
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-25
Matrix:	SOLID	**Sample Size:**	3.02 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 00:51:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	2.06

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33100	82.7	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	35100	87.9	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		40000	35000	87.5	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	36000	89.9	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	35200	88.1	1.04	1.093
13C-OCDD		80000	60400	75.5	0.89	1.177
13C-2,3,7,8-TCDF		40000	33000	82.4	0.78	0.966
13C-1,2,3,7,8-PECDF		40000	34300	85.7	1.57	1.287
13C-2,3,4,7,8-PECDF		40000	35100	87.6	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	35000	87.4	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	36900	92.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	36100	90.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	36200	90.5	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	35800	89.4	0.45	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	36000	90.1	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	207	104		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-25_Form2_DX8C_197S6_SJ857379.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 145

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	3.02 g (dry)	**Lab Sample I.D.:**	L11075-25
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_122 S: 18** **DX8C_197 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		74.2	0.975	1	7.42e+01	7.42e+01	
1,2,3,7,8-PECDD		8.72	0.710	1	8.72e+00	8.72e+00	
1,2,3,4,7,8-HXCDD	ND		1.11	0.1	0.00e+00	5.55e-02	
1,2,3,6,7,8-HXCDD	ND		1.11	0.1	0.00e+00	5.55e-02	
1,2,3,7,8,9-HXCDD		4.39	1.11	0.1	4.39e-01	4.39e-01	
1,2,3,4,6,7,8-HPCDD		48.5	0.878	0.01	4.85e-01	4.85e-01	
OCDD		350	0.447	0.0001	3.50e-02	3.50e-02	
2,3,7,8-TCDF	ND		3.37	0.1	0.00e+00	1.69e-01	
1,2,3,7,8-PECDF		1.06	0.534	0.05	5.30e-02	5.30e-02	
2,3,4,7,8-PECDF	ND		0.534	0.5	0.00e+00	1.34e-01	
1,2,3,4,7,8-HXCDF		1.88	0.656	0.1	1.88e-01	1.88e-01	
1,2,3,6,7,8-HXCDF	ND		0.656	0.1	0.00e+00	3.28e-02	
1,2,3,7,8,9-HXCDF	ND		0.656	0.1	0.00e+00	3.28e-02	
2,3,4,6,7,8-HXCDF	ND		0.656	0.1	0.00e+00	3.28e-02	
1,2,3,4,6,7,8-HPCDF		9.83	0.647	0.01	9.83e-02	9.83e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.647	0.01	0.00e+00	3.24e-03	
OCDF		13.7	0.788	0.0001	1.37e-03	1.37e-03	
			TOTAL TEQ		84.2	84.7	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		74.2	0.975	1	7.42e+01	7.42e+01	
1,2,3,7,8-PECDD		8.72	0.710	1	8.72e+00	8.72e+00	
1,2,3,4,7,8-HXCDD	ND		1.11	0.1	0.00e+00	5.55e-02	
1,2,3,6,7,8-HXCDD	ND		1.11	0.1	0.00e+00	5.55e-02	
1,2,3,7,8,9-HXCDD		4.39	1.11	0.1	4.39e-01	4.39e-01	
1,2,3,4,6,7,8-HPCDD		48.5	0.878	0.01	4.85e-01	4.85e-01	
OCDD		350	0.447	0.0003	1.05e-01	1.05e-01	
2,3,7,8-TCDF	ND		3.37	0.1	0.00e+00	1.69e-01	
1,2,3,7,8-PECDF		1.06	0.534	0.03	3.18e-02	3.18e-02	
2,3,4,7,8-PECDF	ND		0.534	0.3	0.00e+00	8.01e-02	
1,2,3,4,7,8-HXCDF		1.88	0.656	0.1	1.88e-01	1.88e-01	
1,2,3,6,7,8-HXCDF	ND		0.656	0.1	0.00e+00	3.28e-02	
1,2,3,7,8,9-HXCDF	ND		0.656	0.1	0.00e+00	3.28e-02	
2,3,4,6,7,8-HXCDF	ND		0.656	0.1	0.00e+00	3.28e-02	
1,2,3,4,6,7,8-HPCDF		9.83	0.647	0.01	9.83e-02	9.83e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.647	0.01	0.00e+00	3.24e-03	
OCDF		13.7	0.788	0.0003	4.11e-03	4.11e-03	
			TOTAL TEQ		84.3	84.7	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 15:59:04; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-25_TEQ_SJ857379.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 157
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Lab Sample I.D.:**	L11075-26
Matrix:	SOLID	**Sample Size:**	1.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 01:46:47	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	55.8

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1740	1.63	0.77	1.001
1,2,3,7,8-PECDD [3]		37.7	1.40	0.63	1.000
1,2,3,4,7,8-HXCDD		10.8	1.54	1.24	1.000
1,2,3,6,7,8-HXCDD		34.1	1.54	1.06	1.000
1,2,3,7,8,9-HXCDD		24.3	1.54	1.24	1.010
1,2,3,4,6,7,8-HPCDD		393	2.34	0.99	1.000
OCDD		2960	1.44	0.89	1.000
2,3,7,8-TCDF		97.3	1.41	0.76	1.001
1,2,3,7,8-PECDF	NDR	5.29	1.18	1.96	1.000
2,3,4,7,8-PECDF	NDR	10.1	1.18	1.13	1.000
1,2,3,4,7,8-HXCDF	NDR	9.43	0.900	0.83	1.001
1,2,3,6,7,8-HXCDF	NDR	6.02	0.900	1.79	1.000
1,2,3,7,8,9-HXCDF	NDR	3.77	0.900	0.86	1.000
2,3,4,6,7,8-HXCDF	NDR	5.84	0.900	0.88	1.001
1,2,3,4,6,7,8-HPCDF		70.1	1.63	1.10	1.000
1,2,3,4,7,8,9-HPCDF	NDR	5.75	1.63	1.30	1.000
OCDF		133	1.58	0.85	1.002
TOTAL TETRA-DIOXINS		1850	1.63		
TOTAL PENTA-DIOXINS		197	1.40		
TOTAL HEXA-DIOXINS		336	1.54		
TOTAL HEPTA-DIOXINS		752	2.34		
TOTAL TETRA-FURANS		395	1.41		
TOTAL PENTA-FURANS		405	1.18		
TOTAL HEXA-FURANS		141	0.900		
TOTAL HEPTA-FURANS		157	1.63		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-26_Form1A_DX8C_197S7_SJ857380.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 157
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-26
Matrix:	SOLID	**Sample Size:**	1.49 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 01:46:47	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	55.8

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30000	75.1	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	30500	76.1	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		40000	31200	78.1	1.27	0.986
13C-1,2,3,6,7,8-HXCDD		40000	33200	82.9	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32200	80.4	1.05	1.094
13C-OCDD		80000	57300	71.6	0.90	1.177
13C-2,3,7,8-TCDF		40000	29400	73.6	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	30200	75.5	1.57	1.287
13C-2,3,4,7,8-PECDF		40000	30400	76.0	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	32400	81.0	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	33700	84.2	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	32800	82.1	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	32600	81.6	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	32700	81.7	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	32300	80.8	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	194	96.9		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-26_Form2_DX8C_197S7_SJ857380.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 157

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	1.49 g (dry)	**Lab Sample I.D.:**	L11075-26
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_123A S: 12** **DX8C_197 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1740	1.63	1	1.74e+03	1.74e+03	
1,2,3,7,8-PECDD		37.7	1.40	1	3.77e+01	3.77e+01	
1,2,3,4,7,8-HXCDD		10.8	1.54	0.1	1.08e+00	1.08e+00	
1,2,3,6,7,8-HXCDD		34.1	1.54	0.1	3.41e+00	3.41e+00	
1,2,3,7,8,9-HXCDD		24.3	1.54	0.1	2.43e+00	2.43e+00	
1,2,3,4,6,7,8-HPCDD		393	2.34	0.01	3.93e+00	3.93e+00	
OCDD		2960	1.44	0.0001	2.96e-01	2.96e-01	
2,3,7,8-TCDF	ND		4.68	0.1	0.00e+00	2.34e-01	
1,2,3,7,8-PECDF	ND		1.18	0.05	0.00e+00	2.95e-02	
2,3,4,7,8-PECDF	ND		1.18	0.5	0.00e+00	2.95e-01	
1,2,3,4,7,8-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
1,2,3,6,7,8-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
1,2,3,7,8,9-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
2,3,4,6,7,8-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
1,2,3,4,6,7,8-HPCDF		70.1	1.63	0.01	7.01e-01	7.01e-01	
1,2,3,4,7,8,9-HPCDF	ND		1.63	0.01	0.00e+00	8.15e-03	
OCDF		133	1.58	0.0001	1.33e-02	1.33e-02	
			TOTAL TEQ		1790	1790	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1740	1.63	1	1.74e+03	1.74e+03	
1,2,3,7,8-PECDD		37.7	1.40	1	3.77e+01	3.77e+01	
1,2,3,4,7,8-HXCDD		10.8	1.54	0.1	1.08e+00	1.08e+00	
1,2,3,6,7,8-HXCDD		34.1	1.54	0.1	3.41e+00	3.41e+00	
1,2,3,7,8,9-HXCDD		24.3	1.54	0.1	2.43e+00	2.43e+00	
1,2,3,4,6,7,8-HPCDD		393	2.34	0.01	3.93e+00	3.93e+00	
OCDD		2960	1.44	0.0003	8.88e-01	8.88e-01	
2,3,7,8-TCDF	ND		4.68	0.1	0.00e+00	2.34e-01	
1,2,3,7,8-PECDF	ND		1.18	0.03	0.00e+00	1.77e-02	
2,3,4,7,8-PECDF	ND		1.18	0.3	0.00e+00	1.77e-01	
1,2,3,4,7,8-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
1,2,3,6,7,8-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
1,2,3,7,8,9-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
2,3,4,6,7,8-HXCDF	ND		0.900	0.1	0.00e+00	4.50e-02	
1,2,3,4,6,7,8-HPCDF		70.1	1.63	0.01	7.01e-01	7.01e-01	
1,2,3,4,7,8,9-HPCDF	ND		1.63	0.01	0.00e+00	8.15e-03	
OCDF		133	1.58	0.0003	3.99e-02	3.99e-02	
			TOTAL TEQ		1790	1790	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 159
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-27
Matrix:	SOLID	**Sample Size:**	1.32 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 02:41:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	56.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		878	2.19	0.77	1.001
1,2,3,7,8-PECDD [3]		21.3	1.59	0.63	1.001
1,2,3,4,7,8-HXCDD	NDR	5.03	1.85	1.62	1.000
1,2,3,6,7,8-HXCDD		17.5	1.85	1.08	1.000
1,2,3,7,8,9-HXCDD		12.3	1.85	1.23	1.010
1,2,3,4,6,7,8-HPCDD		172	2.34	1.05	1.000
OCDD		1320	1.16	0.86	1.000
2,3,7,8-TCDF		52.3	1.63	0.82	1.001
1,2,3,7,8-PECDF	ND		1.36		
2,3,4,7,8-PECDF	NDR	8.62	1.36	0.97	1.000
1,2,3,4,7,8-HXCDF		5.12	0.976	1.17	1.001
1,2,3,6,7,8-HXCDF	NDR	4.42	0.976	1.55	1.000
1,2,3,7,8,9-HXCDF	ND		0.976		
2,3,4,6,7,8-HXCDF	NDR	4.78	0.976	0.87	1.000
1,2,3,4,6,7,8-HPCDF	NDR	46.7	2.92	1.28	1.000
1,2,3,4,7,8,9-HPCDF	ND		2.92		
OCDF		138	1.96	0.79	1.002
TOTAL TETRA-DIOXINS		951	2.19		
TOTAL PENTA-DIOXINS		102	1.59		
TOTAL HEXA-DIOXINS		152	1.85		
TOTAL HEPTA-DIOXINS		338	2.34		
TOTAL TETRA-FURANS		201	1.63		
TOTAL PENTA-FURANS		181	1.36		
TOTAL HEXA-FURANS		42.9	0.976		
TOTAL HEPTA-FURANS		65.7	2.92		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-27_Form1A_DX8C_197S8_SJ857381.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 159
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-27
Matrix:	SOLID	**Sample Size:**	1.32 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 02:41:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	56.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30000	75.1	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	30100	75.3	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		40000	31000	77.6	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31800	79.4	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	31300	78.3	1.04	1.094
13C-OCDD		80000	55600	69.4	0.90	1.177
13C-2,3,7,8-TCDF		40000	29500	73.8	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	29700	74.2	1.57	1.287
13C-2,3,4,7,8-PECDF		40000	30200	75.5	1.57	1.354
13C-1,2,3,4,7,8-HXCDF		40000	31400	78.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	33100	82.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	31600	79.0	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	31900	79.8	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	31300	78.3	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	31500	78.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	199	99.3		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-27_Form2_DX8C_197S8_SJ857381.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 159

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	1.32 g (dry)	**Lab Sample I.D.:**	L11075-27
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_123A S: 13** **DX8C_197 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		878	2.19	1	8.78e+02	8.78e+02	
1,2,3,7,8-PECDD		21.3	1.59	1	2.13e+01	2.13e+01	
1,2,3,4,7,8-HXCDD	ND		1.85	0.1	0.00e+00	9.25e-02	
1,2,3,6,7,8-HXCDD		17.5	1.85	0.1	1.75e+00	1.75e+00	
1,2,3,7,8,9-HXCDD		12.3	1.85	0.1	1.23e+00	1.23e+00	
1,2,3,4,6,7,8-HPCDD		172	2.34	0.01	1.72e+00	1.72e+00	
OCDD		1320	1.16	0.0001	1.32e-01	1.32e-01	
2,3,7,8-TCDF	ND		6.74	0.1	0.00e+00	3.37e-01	
1,2,3,7,8-PECDF	ND		1.36	0.05	0.00e+00	3.40e-02	
2,3,4,7,8-PECDF	ND		1.36	0.5	0.00e+00	3.40e-01	
1,2,3,4,7,8-HXCDF		5.12	0.976	0.1	5.12e-01	5.12e-01	
1,2,3,6,7,8-HXCDF	ND		0.976	0.1	0.00e+00	4.88e-02	
1,2,3,7,8,9-HXCDF	ND		0.976	0.1	0.00e+00	4.88e-02	
2,3,4,6,7,8-HXCDF	ND		0.976	0.1	0.00e+00	4.88e-02	
1,2,3,4,6,7,8-HPCDF	ND		2.92	0.01	0.00e+00	1.46e-02	
1,2,3,4,7,8,9-HPCDF	ND		2.92	0.01	0.00e+00	1.46e-02	
OCDF		138	1.96	0.0001	1.38e-02	1.38e-02	
			TOTAL TEQ		905	906	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		878	2.19	1	8.78e+02	8.78e+02	
1,2,3,7,8-PECDD		21.3	1.59	1	2.13e+01	2.13e+01	
1,2,3,4,7,8-HXCDD	ND		1.85	0.1	0.00e+00	9.25e-02	
1,2,3,6,7,8-HXCDD		17.5	1.85	0.1	1.75e+00	1.75e+00	
1,2,3,7,8,9-HXCDD		12.3	1.85	0.1	1.23e+00	1.23e+00	
1,2,3,4,6,7,8-HPCDD		172	2.34	0.01	1.72e+00	1.72e+00	
OCDD		1320	1.16	0.0003	3.96e-01	3.96e-01	
2,3,7,8-TCDF	ND		6.74	0.1	0.00e+00	3.37e-01	
1,2,3,7,8-PECDF	ND		1.36	0.03	0.00e+00	2.04e-02	
2,3,4,7,8-PECDF	ND		1.36	0.3	0.00e+00	2.04e-01	
1,2,3,4,7,8-HXCDF		5.12	0.976	0.1	5.12e-01	5.12e-01	
1,2,3,6,7,8-HXCDF	ND		0.976	0.1	0.00e+00	4.88e-02	
1,2,3,7,8,9-HXCDF	ND		0.976	0.1	0.00e+00	4.88e-02	
2,3,4,6,7,8-HXCDF	ND		0.976	0.1	0.00e+00	4.88e-02	
1,2,3,4,6,7,8-HPCDF	ND		2.92	0.01	0.00e+00	1.46e-02	
1,2,3,4,7,8,9-HPCDF	ND		2.92	0.01	0.00e+00	1.46e-02	
OCDF		138	1.96	0.0003	4.14e-02	4.14e-02	
			TOTAL TEQ		905	906	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 15:59:04; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-27_TEQ_SJ857381.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 162
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-28 (A)
Matrix:	SOLID	**Sample Size:**	2.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 03:36:32	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	33.3

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		393	1.19	0.78	1.001
1,2,3,7,8-PECDD [3]		15.1	0.769	0.68	1.000
1,2,3,4,7,8-HXCDD	NDR	15.4	1.53	0.96	1.000
1,2,3,6,7,8-HXCDD		52.8	1.53	1.15	1.000
1,2,3,7,8,9-HXCDD		43.6	1.53	1.29	1.010
1,2,3,4,6,7,8-HPCDD		1560	3.73	1.03	1.000
OCDD		10300	1.02	0.89	1.000
2,3,7,8-TCDF		34.9	0.908	0.76	1.001
1,2,3,7,8-PECDF		5.20	0.718	1.42	1.000
2,3,4,7,8-PECDF		8.14	0.718	1.46	1.000
1,2,3,4,7,8-HXCDF	NDR	17.1	0.737	1.58	1.000
1,2,3,6,7,8-HXCDF		8.79	0.737	1.09	1.000
1,2,3,7,8,9-HXCDF		1.72	0.737	1.19	1.001
2,3,4,6,7,8-HXCDF		7.81	0.737	1.20	1.000
1,2,3,4,6,7,8-HPCDF		144	1.22	1.03	1.000
1,2,3,4,7,8,9-HPCDF		8.57	1.22	1.01	1.000
OCDF		247	0.938	0.91	1.002
TOTAL TETRA-DIOXINS		434	1.19		
TOTAL PENTA-DIOXINS		82.3	0.769		
TOTAL HEXA-DIOXINS		407	1.53		
TOTAL HEPTA-DIOXINS		2840	3.73		
TOTAL TETRA-FURANS		136	0.908		
TOTAL PENTA-FURANS		157	0.718		
TOTAL HEXA-FURANS		203	0.737		
TOTAL HEPTA-FURANS		334	1.22		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-28_Form1A_DX8C_197S9_SJ857382.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 162
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-28 (A)
Matrix:	SOLID	**Sample Size:**	2.07 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 03:36:32	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	33.3

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28700	71.7	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	29400	73.4	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		40000	30300	75.8	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31400	78.4	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30700	76.8	1.04	1.094
13C-OCDD		80000	58200	72.7	0.89	1.177
13C-2,3,7,8-TCDF		40000	28000	69.9	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	29300	73.1	1.57	1.287
13C-2,3,4,7,8-PECDF		40000	29400	73.5	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	31100	77.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	32000	79.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	31300	78.3	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	31700	79.3	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	31000	77.5	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	31800	79.6	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	200	100		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-28_Form2_DX8C_197S9_SJ857382.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 162

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.07 g (dry)	**Lab Sample I.D.:**	L11075-28 (A)
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_123A S: 14** **DX8C_197 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		393	1.19	1	3.93e+02	3.93e+02	
1,2,3,7,8-PECDD		15.1	0.769	1	1.51e+01	1.51e+01	
1,2,3,4,7,8-HXCDD	ND		1.53	0.1	0.00e+00	7.65e-02	
1,2,3,6,7,8-HXCDD		52.8	1.53	0.1	5.28e+00	5.28e+00	
1,2,3,7,8,9-HXCDD		43.6	1.53	0.1	4.36e+00	4.36e+00	
1,2,3,4,6,7,8-HPCDD		1560	3.73	0.01	1.56e+01	1.56e+01	
OCDD		10300	1.02	0.0001	1.03e+00	1.03e+00	
2,3,7,8-TCDF	ND		2.82	0.1	0.00e+00	1.41e-01	
1,2,3,7,8-PECDF		5.20	0.718	0.05	2.60e-01	2.60e-01	
2,3,4,7,8-PECDF		8.14	0.718	0.5	4.07e+00	4.07e+00	
1,2,3,4,7,8-HXCDF	ND		0.737	0.1	0.00e+00	3.69e-02	
1,2,3,6,7,8-HXCDF		8.79	0.737	0.1	8.79e-01	8.79e-01	
1,2,3,7,8,9-HXCDF		1.72	0.737	0.1	1.72e-01	1.72e-01	
2,3,4,6,7,8-HXCDF		7.81	0.737	0.1	7.81e-01	7.81e-01	
1,2,3,4,6,7,8-HPCDF		144	1.22	0.01	1.44e+00	1.44e+00	
1,2,3,4,7,8,9-HPCDF		8.57	1.22	0.01	8.57e-02	8.57e-02	
OCDF		247	0.938	0.0001	2.47e-02	2.47e-02	
			TOTAL TEQ		442	442	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		393	1.19	1	3.93e+02	3.93e+02	
1,2,3,7,8-PECDD		15.1	0.769	1	1.51e+01	1.51e+01	
1,2,3,4,7,8-HXCDD	ND		1.53	0.1	0.00e+00	7.65e-02	
1,2,3,6,7,8-HXCDD		52.8	1.53	0.1	5.28e+00	5.28e+00	
1,2,3,7,8,9-HXCDD		43.6	1.53	0.1	4.36e+00	4.36e+00	
1,2,3,4,6,7,8-HPCDD		1560	3.73	0.01	1.56e+01	1.56e+01	
OCDD		10300	1.02	0.0003	3.09e+00	3.09e+00	
2,3,7,8-TCDF	ND		2.82	0.1	0.00e+00	1.41e-01	
1,2,3,7,8-PECDF		5.20	0.718	0.03	1.56e-01	1.56e-01	
2,3,4,7,8-PECDF		8.14	0.718	0.3	2.44e+00	2.44e+00	
1,2,3,4,7,8-HXCDF	ND		0.737	0.1	0.00e+00	3.69e-02	
1,2,3,6,7,8-HXCDF		8.79	0.737	0.1	8.79e-01	8.79e-01	
1,2,3,7,8,9-HXCDF		1.72	0.737	0.1	1.72e-01	1.72e-01	
2,3,4,6,7,8-HXCDF		7.81	0.737	0.1	7.81e-01	7.81e-01	
1,2,3,4,6,7,8-HPCDF		144	1.22	0.01	1.44e+00	1.44e+00	
1,2,3,4,7,8,9-HPCDF		8.57	1.22	0.01	8.57e-02	8.57e-02	
OCDF		247	0.938	0.0003	7.41e-02	7.41e-02	
			TOTAL TEQ		442	443	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 162 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25089-103 (DUP L11075-28)
Matrix:	SOLID	**Sample Size:**	2.05 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 04:31:27	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	33.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		423	1.52	0.80	1.001
1,2,3,7,8-PECDD [3]		16.4	1.19	0.52	1.000
1,2,3,4,7,8-HXCDD		18.3	2.45	1.35	1.000
1,2,3,6,7,8-HXCDD		45.0	2.45	1.28	1.000
1,2,3,7,8,9-HXCDD		42.4	2.45	1.41	1.010
1,2,3,4,6,7,8-HPCDD		1640	7.96	1.02	1.000
OCDD		10900	2.11	0.88	1.000
2,3,7,8-TCDF		34.8	0.958	0.77	1.001
1,2,3,7,8-PECDF		4.85	1.53	1.72	1.001
2,3,4,7,8-PECDF	NDR	7.43	1.53	2.28	1.001
1,2,3,4,7,8-HXCDF		18.3	1.41	1.22	1.000
1,2,3,6,7,8-HXCDF	NDR	9.40	1.41	0.99	1.000
1,2,3,7,8,9-HXCDF	NDR	2.49	1.41	1.64	1.000
2,3,4,6,7,8-HXCDF	NDR	8.38	1.41	0.97	1.000
1,2,3,4,6,7,8-HPCDF		144	2.33	1.09	1.000
1,2,3,4,7,8,9-HPCDF	NDR	8.20	2.33	1.35	1.000
OCDF		271	2.86	0.89	1.002
TOTAL TETRA-DIOXINS		482	1.52		
TOTAL PENTA-DIOXINS		38.1	1.19		
TOTAL HEXA-DIOXINS		442	2.45		
TOTAL HEPTA-DIOXINS		3020	7.96		
TOTAL TETRA-FURANS		134	0.958		
TOTAL PENTA-FURANS		167	1.53		
TOTAL HEXA-FURANS		223	1.41		
TOTAL HEPTA-FURANS		349	2.33		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25089-103_Form1A_DX8C_197S10_SJ857383.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 162 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25089-103 (DUP L11075-28)
Matrix:	SOLID	**Sample Size:**	2.05 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 04:31:27	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	33.0

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	24500	61.2	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	21700	54.3	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		40000	25400	63.6	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		40000	26400	66.0	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	22900	57.4	1.05	1.094
13C-OCDD		80000	37900	47.3	0.90	1.177
13C-2,3,7,8-TCDF		40000	24500	61.3	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	22800	57.1	1.57	1.287
13C-2,3,4,7,8-PECDF		40000	21500	53.7	1.57	1.354
13C-1,2,3,4,7,8-HXCDF		40000	27800	69.4	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	28500	71.4	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	25900	64.7	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	26800	67.1	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	24000	59.9	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	23100	57.8	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	194	96.9		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25089-103_Form2_DX8C_197S10_SJ857383.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 162 (Duplicate)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.05 g (dry)	**Lab Sample I.D.:**	WG25089-103 (DUP L11075-28)
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_123A S: 15** **DX8C_197 S: 10**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		423	1.52	1	4.23e+02	4.23e+02	
1,2,3,7,8-PECDD		16.4	1.19	1	1.64e+01	1.64e+01	
1,2,3,4,7,8-HXCDD		18.3	2.45	0.1	1.83e+00	1.83e+00	
1,2,3,6,7,8-HXCDD		45.0	2.45	0.1	4.50e+00	4.50e+00	
1,2,3,7,8,9-HXCDD		42.4	2.45	0.1	4.24e+00	4.24e+00	
1,2,3,4,6,7,8-HPCDD		1640	7.96	0.01	1.64e+01	1.64e+01	
OCDD		10900	2.11	0.0001	1.09e+00	1.09e+00	
2,3,7,8-TCDF	ND		3.91	0.1	0.00e+00	1.96e-01	
1,2,3,7,8-PECDF		4.85	1.53	0.05	2.43e-01	2.43e-01	
2,3,4,7,8-PECDF	ND		1.53	0.5	0.00e+00	3.83e-01	
1,2,3,4,7,8-HXCDF		18.3	1.41	0.1	1.83e+00	1.83e+00	
1,2,3,6,7,8-HXCDF	ND		1.41	0.1	0.00e+00	7.05e-02	
1,2,3,7,8,9-HXCDF	ND		1.41	0.1	0.00e+00	7.05e-02	
2,3,4,6,7,8-HXCDF	ND		1.41	0.1	0.00e+00	7.05e-02	
1,2,3,4,6,7,8-HPCDF		144	2.33	0.01	1.44e+00	1.44e+00	
1,2,3,4,7,8,9-HPCDF	ND		2.33	0.01	0.00e+00	1.17e-02	
OCDF		271	2.86	0.0001	2.71e-02	2.71e-02	
			TOTAL TEQ		471	472	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		423	1.52	1	4.23e+02	4.23e+02	
1,2,3,7,8-PECDD		16.4	1.19	1	1.64e+01	1.64e+01	
1,2,3,4,7,8-HXCDD		18.3	2.45	0.1	1.83e+00	1.83e+00	
1,2,3,6,7,8-HXCDD		45.0	2.45	0.1	4.50e+00	4.50e+00	
1,2,3,7,8,9-HXCDD		42.4	2.45	0.1	4.24e+00	4.24e+00	
1,2,3,4,6,7,8-HPCDD		1640	7.96	0.01	1.64e+01	1.64e+01	
OCDD		10900	2.11	0.0003	3.27e+00	3.27e+00	
2,3,7,8-TCDF	ND		3.91	0.1	0.00e+00	1.96e-01	
1,2,3,7,8-PECDF		4.85	1.53	0.03	1.46e-01	1.46e-01	
2,3,4,7,8-PECDF	ND		1.53	0.3	0.00e+00	2.30e-01	
1,2,3,4,7,8-HXCDF		18.3	1.41	0.1	1.83e+00	1.83e+00	
1,2,3,6,7,8-HXCDF	ND		1.41	0.1	0.00e+00	7.05e-02	
1,2,3,7,8,9-HXCDF	ND		1.41	0.1	0.00e+00	7.05e-02	
2,3,4,6,7,8-HXCDF	ND		1.41	0.1	0.00e+00	7.05e-02	
1,2,3,4,6,7,8-HPCDF		144	2.33	0.01	1.44e+00	1.44e+00	
1,2,3,4,7,8,9-HPCDF	ND		2.33	0.01	0.00e+00	1.17e-02	
OCDF		271	2.86	0.0003	8.13e-02	8.13e-02	
			TOTAL TEQ		473	474	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. PROJECT 00057781

Contract No.: 4496

Client ID: 08 VNBH 162

Concentration Units: pg/g (dry weight basis)

COMPOUND	L11075-28 (A)		WG25089-103		MEAN	RELATIVE PERCENT DIFFERENCE
	LAB FLAG [1]	CONC. FOUND	LAB FLAG [1]	CONC. FOUND		
2,3,7,8-TCDD		393		423	408	7.35
1,2,3,7,8-PECDD		15.1		16.4	15.8	8.26
1,2,3,4,7,8-HXCDD	NDR	15.4		18.3		
1,2,3,6,7,8-HXCDD		52.8		45.0	48.9	15.8
1,2,3,7,8,9-HXCDD		43.6		42.4	43.0	2.80
1,2,3,4,6,7,8-HPCDD		1560		1640	1600	4.69
OCDD		10300		10900	10600	5.29
2,3,7,8-TCDF	NDR	19.8	NDR	26.3		
1,2,3,7,8-PECDF		5.20		4.85	5.02	6.97
2,3,4,7,8-PECDF		8.14	NDR	7.43		
1,2,3,4,7,8-HXCDF	NDR	17.1		18.3		
1,2,3,6,7,8-HXCDF		8.79	NDR	9.40		
1,2,3,7,8,9-HXCDF		1.72	NDR	2.49		
2,3,4,6,7,8-HXCDF		7.81	NDR	8.38		
1,2,3,4,6,7,8-HPCDF		144		144	144	0.525
1,2,3,4,7,8,9-HPCDF		8.57	NDR	8.20		
OCDF		247		271	259	9.25

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: RPD_DIOXINS_1613-RPD_WG25089-103_L11075-28_.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 170
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-29
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.90 g (dry)
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	09-May-2008 **Time:** 05:26:18	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_197 S: 11**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
		% Moisture:	6.25

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		11100	0.812	0.79	1.001
1,2,3,7,8-PECDD [3]		685	0.609	0.63	1.000
1,2,3,4,7,8-HXCDD	NDR	29.9	1.33	1.52	1.000
1,2,3,6,7,8-HXCDD		256	1.33	1.23	1.000
1,2,3,7,8,9-HXCDD		108	1.33	1.17	1.010
1,2,3,4,6,7,8-HPCDD		1240	2.76	1.03	1.000
OCDD		5030	1.60	0.89	1.001
2,3,7,8-TCDF		1420	6.30	0.77	1.003
1,2,3,7,8-PECDF		8.18	0.842	1.70	1.001
2,3,4,7,8-PECDF		81.8	0.842	1.45	1.000
1,2,3,4,7,8-HXCDF		53.8	0.820	1.13	1.001
1,2,3,6,7,8-HXCDF		11.5	0.820	1.34	1.000
1,2,3,7,8,9-HXCDF	ND		0.820		
2,3,4,6,7,8-HXCDF		14.5	0.820	1.20	1.000
1,2,3,4,6,7,8-HPCDF		208	0.934	1.03	1.000
1,2,3,4,7,8,9-HPCDF	NDR	8.94	0.934	0.68	1.000
OCDF		211	0.659	0.85	1.002
TOTAL TETRA-DIOXINS		13200	0.812		
TOTAL PENTA-DIOXINS		2720	0.609		
TOTAL HEXA-DIOXINS		2720	1.33		
TOTAL HEPTA-DIOXINS		2460	2.76		
TOTAL TETRA-FURANS		9710	6.30		
TOTAL PENTA-FURANS		6750	0.842		
TOTAL HEXA-FURANS		1030	0.820		
TOTAL HEPTA-FURANS		393	0.934		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-29_Form1A_DX8C_197S11_SJ857384.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 170
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-29
Matrix:	SOLID	**Sample Size:**	2.90 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 05:26:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	6.25

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	33300	83.2	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	33400	83.6	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		40000	33700	84.4	1.27	0.986
13C-1,2,3,6,7,8-HXCDD		40000	37300	93.2	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	35600	89.0	1.03	1.093
13C-OCDD		80000	63300	79.1	0.90	1.177
13C-2,3,7,8-TCDF		40000	32200	80.5	0.78	0.966
13C-1,2,3,7,8-PECDF		40000	33600	83.9	1.57	1.287
13C-2,3,4,7,8-PECDF		40000	34200	85.4	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		40000	35600	89.0	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	37400	93.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	36600	91.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	36500	91.3	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	35200	87.9	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	36000	90.1	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	222	111		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-29_Form2_DX8C_197S11_SJ857384.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 170

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.90 g (dry)	**Lab Sample I.D.:**	L11075-29
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_123A S: 18** **DX8C_197 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		11100	0.812	1	1.11e+04	1.11e+04	
1,2,3,7,8-PECDD		685	0.609	1	6.85e+02	6.85e+02	
1,2,3,4,7,8-HXCDD	ND		1.33	0.1	0.00e+00	6.65e-02	
1,2,3,6,7,8-HXCDD		256	1.33	0.1	2.56e+01	2.56e+01	
1,2,3,7,8,9-HXCDD		108	1.33	0.1	1.08e+01	1.08e+01	
1,2,3,4,6,7,8-HPCDD		1240	2.76	0.01	1.24e+01	1.24e+01	
OCDD		5030	1.60	0.0001	5.03e-01	5.03e-01	
2,3,7,8-TCDF		408	8.84	0.1	4.08e+01	4.08e+01	
1,2,3,7,8-PECDF		8.18	0.842	0.05	4.09e-01	4.09e-01	
2,3,4,7,8-PECDF		81.8	0.842	0.5	4.09e+01	4.09e+01	
1,2,3,4,7,8-HXCDF		53.8	0.820	0.1	5.38e+00	5.38e+00	
1,2,3,6,7,8-HXCDF		11.5	0.820	0.1	1.15e+00	1.15e+00	
1,2,3,7,8,9-HXCDF	ND		0.820	0.1	0.00e+00	4.10e-02	
2,3,4,6,7,8-HXCDF		14.5	0.820	0.1	1.45e+00	1.45e+00	
1,2,3,4,6,7,8-HPCDF		208	0.934	0.01	2.08e+00	2.08e+00	
1,2,3,4,7,8,9-HPCDF	ND		0.934	0.01	0.00e+00	4.67e-03	
OCDF		211	0.659	0.0001	2.11e-02	2.11e-02	
			TOTAL TEQ		11900	11900	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		11100	0.812	1	1.11e+04	1.11e+04	
1,2,3,7,8-PECDD		685	0.609	1	6.85e+02	6.85e+02	
1,2,3,4,7,8-HXCDD	ND		1.33	0.1	0.00e+00	6.65e-02	
1,2,3,6,7,8-HXCDD		256	1.33	0.1	2.56e+01	2.56e+01	
1,2,3,7,8,9-HXCDD		108	1.33	0.1	1.08e+01	1.08e+01	
1,2,3,4,6,7,8-HPCDD		1240	2.76	0.01	1.24e+01	1.24e+01	
OCDD		5030	1.60	0.0003	1.51e+00	1.51e+00	
2,3,7,8-TCDF		408	8.84	0.1	4.08e+01	4.08e+01	
1,2,3,7,8-PECDF		8.18	0.842	0.03	2.45e-01	2.45e-01	
2,3,4,7,8-PECDF		81.8	0.842	0.3	2.45e+01	2.45e+01	
1,2,3,4,7,8-HXCDF		53.8	0.820	0.1	5.38e+00	5.38e+00	
1,2,3,6,7,8-HXCDF		11.5	0.820	0.1	1.15e+00	1.15e+00	
1,2,3,7,8,9-HXCDF	ND		0.820	0.1	0.00e+00	4.10e-02	
2,3,4,6,7,8-HXCDF		14.5	0.820	0.1	1.45e+00	1.45e+00	
1,2,3,4,6,7,8-HPCDF		208	0.934	0.01	2.08e+00	2.08e+00	
1,2,3,4,7,8,9-HPCDF	ND		0.934	0.01	0.00e+00	4.67e-03	
OCDF		211	0.659	0.0003	6.33e-02	6.33e-02	
			TOTAL TEQ		11900	11900	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 15:59:04; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-29_TEQ_SJ857384.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 150
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-30
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.91 g (dry)
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	09-May-2008 **Time:** 06:21:15	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_197 S: 12**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
		% Moisture:	3.81

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		19.6	0.672	0.71	1.001
1,2,3,7,8-PECDD [3]		1.81	0.516	0.59	1.001
1,2,3,4,7,8-HXCDD	NDR	1.14	0.952	1.95	1.000
1,2,3,6,7,8-HXCDD		2.46	0.938	1.09	1.000
1,2,3,7,8,9-HXCDD	NDR	2.88	0.916	1.83	1.010
1,2,3,4,6,7,8-HPCDD		31.1	0.688	1.14	1.000
OCDD		297	0.496	0.88	1.000
2,3,7,8-TCDF		3.07	0.399	0.85	1.002
1,2,3,7,8-PECDF	NDR	0.923	0.477	0.55	1.000
2,3,4,7,8-PECDF	NDR	3.21	0.463	1.93	1.000
1,2,3,4,7,8-HXCDF	NDR	1.26	0.467	2.04	1.000
1,2,3,6,7,8-HXCDF	NDR	0.776	0.416	0.65	1.000
1,2,3,7,8,9-HXCDF		1.00	0.555	1.33	1.000
2,3,4,6,7,8-HXCDF	NDR	0.701	0.502	0.86	1.001
1,2,3,4,6,7,8-HPCDF		5.88	0.414	1.17	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.508		
OCDF		8.73	0.639	0.83	1.002
TOTAL TETRA-DIOXINS		19.6	0.672		
TOTAL PENTA-DIOXINS		3.97	0.516		
TOTAL HEXA-DIOXINS		2.46	0.952		
TOTAL HEPTA-DIOXINS		55.2	0.688		
TOTAL TETRA-FURANS		14.7	0.399		
TOTAL PENTA-FURANS		7.49	0.477		
TOTAL HEXA-FURANS		4.72	0.555		
TOTAL HEPTA-FURANS		11.3	0.508		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-30_Form1A_DX8C_197S12_SJ857385.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 150
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-30
Matrix:	SOLID	**Sample Size:**	2.91 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	25-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 06:21:15	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_195A S: 8
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.81

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30000	75.0	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	30900	77.2	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		40000	32300	80.9	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	32700	81.7	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	32500	81.3	1.04	1.094
13C-OCDD		80000	61200	76.5	0.90	1.177
13C-2,3,7,8-TCDF		40000	29200	72.9	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	30900	77.2	1.56	1.287
13C-2,3,4,7,8-PECDF		40000	30800	77.1	1.57	1.354
13C-1,2,3,4,7,8-HXCDF		40000	32600	81.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	34700	86.8	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		40000	32800	81.9	0.51	1.005
13C-2,3,4,6,7,8-HXCDF		40000	33300	83.2	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		40000	33000	82.4	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	33300	83.3	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	193	96.3		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-30_Form2_DX8C_197S12_SJ857385.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 150

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.91 g (dry)	**Lab Sample I.D.:**	L11075-30
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_122 S: 15** **DX8C_197 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		19.6	0.672	1	1.96e+01	1.96e+01	
1,2,3,7,8-PECDD		1.81	0.516	1	1.81e+00	1.81e+00	
1,2,3,4,7,8-HXCDD	ND		0.952	0.1	0.00e+00	4.76e-02	
1,2,3,6,7,8-HXCDD		2.46	0.938	0.1	2.46e-01	2.46e-01	
1,2,3,7,8,9-HXCDD	ND		0.916	0.1	0.00e+00	4.58e-02	
1,2,3,4,6,7,8-HPCDD		31.1	0.688	0.01	3.11e-01	3.11e-01	
OCDD		297	0.496	0.0001	2.97e-02	2.97e-02	
2,3,7,8-TCDF	ND		3.44	0.1	0.00e+00	1.72e-01	
1,2,3,7,8-PECDF	ND		0.477	0.05	0.00e+00	1.19e-02	
2,3,4,7,8-PECDF	ND		0.463	0.5	0.00e+00	1.16e-01	
1,2,3,4,7,8-HXCDF	ND		0.467	0.1	0.00e+00	2.34e-02	
1,2,3,6,7,8-HXCDF	ND		0.416	0.1	0.00e+00	2.08e-02	
1,2,3,7,8,9-HXCDF		1.00	0.555	0.1	1.00e-01	1.00e-01	
2,3,4,6,7,8-HXCDF	ND		0.502	0.1	0.00e+00	2.51e-02	
1,2,3,4,6,7,8-HPCDF		5.88	0.414	0.01	5.88e-02	5.88e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.508	0.01	0.00e+00	2.54e-03	
OCDF		8.73	0.639	0.0001	8.73e-04	8.73e-04	
			TOTAL TEQ		22.2	22.6	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		19.6	0.672	1	1.96e+01	1.96e+01	
1,2,3,7,8-PECDD		1.81	0.516	1	1.81e+00	1.81e+00	
1,2,3,4,7,8-HXCDD	ND		0.952	0.1	0.00e+00	4.76e-02	
1,2,3,6,7,8-HXCDD		2.46	0.938	0.1	2.46e-01	2.46e-01	
1,2,3,7,8,9-HXCDD	ND		0.916	0.1	0.00e+00	4.58e-02	
1,2,3,4,6,7,8-HPCDD		31.1	0.688	0.01	3.11e-01	3.11e-01	
OCDD		297	0.496	0.0003	8.91e-02	8.91e-02	
2,3,7,8-TCDF	ND		3.44	0.1	0.00e+00	1.72e-01	
1,2,3,7,8-PECDF	ND		0.477	0.03	0.00e+00	7.16e-03	
2,3,4,7,8-PECDF	ND		0.463	0.3	0.00e+00	6.95e-02	
1,2,3,4,7,8-HXCDF	ND		0.467	0.1	0.00e+00	2.34e-02	
1,2,3,6,7,8-HXCDF	ND		0.416	0.1	0.00e+00	2.08e-02	
1,2,3,7,8,9-HXCDF		1.00	0.555	0.1	1.00e-01	1.00e-01	
2,3,4,6,7,8-HXCDF	ND		0.502	0.1	0.00e+00	2.51e-02	
1,2,3,4,6,7,8-HPCDF		5.88	0.414	0.01	5.88e-02	5.88e-02	
1,2,3,4,7,8,9-HPCDF	ND		0.508	0.01	0.00e+00	2.54e-03	
OCDF		8.73	0.639	0.0003	2.62e-03	2.62e-03	
			TOTAL TEQ		22.2	22.6	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-30_TEQ_SJ857385.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG25089-101
Sample Receipt Date:	N/A	**Sample Size:**	3.00 g
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 04:42:44	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_195A S: 8**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg/g	**Cal. Ver. Data Filename:**	DX8C_195A S: 1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	3.43	0.466	0.29	1.001
1,2,3,7,8-PECDD [3]	NDR	1.02	0.577	0.93	1.001
1,2,3,4,7,8-HXCDD	NDR	1.10	0.469	0.78	1.000
1,2,3,6,7,8-HXCDD		1.32	0.469	1.12	1.000
1,2,3,7,8,9-HXCDD	NDR	1.34	0.469	1.64	1.010
1,2,3,4,6,7,8-HPCDD		2.49	0.598	0.95	1.000
OCDD		4.28	0.646	0.78	1.000
2,3,7,8-TCDF		1.53	0.430	0.68	1.002
1,2,3,7,8-PECDF		0.987	0.366	1.43	1.001
2,3,4,7,8-PECDF		3.02	0.366	1.41	1.000
1,2,3,4,7,8-HXCDF	NDR	0.781	0.395	2.44	1.001
1,2,3,6,7,8-HXCDF		0.667	0.395	1.38	1.001
1,2,3,7,8,9-HXCDF	NDR	0.776	0.395	2.18	1.001
2,3,4,6,7,8-HXCDF	NDR	1.23	0.395	1.79	1.001
1,2,3,4,6,7,8-HPCDF	NDR	1.37	0.642	0.64	1.000
1,2,3,4,7,8,9-HPCDF	NDR	1.17	0.642	2.04	1.000
OCDF	NDR	1.98	0.656	0.58	1.002
TOTAL TETRA-DIOXINS	ND		0.466		
TOTAL PENTA-DIOXINS	ND		0.577		
TOTAL HEXA-DIOXINS		1.32	0.469		
TOTAL HEPTA-DIOXINS		2.49	0.598		
TOTAL TETRA-FURANS		2.51	0.430		
TOTAL PENTA-FURANS		4.00	0.366		
TOTAL HEXA-FURANS		0.667	0.395		
TOTAL HEPTA-FURANS	ND		0.642		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25089-101_Form1A_DX8C_195AS8_SJ857333.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG25089-101
Sample Receipt Date:	N/A	**Sample Size:**	3.00 g
Extraction Date:	25-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 04:42:44	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_195A S: 8**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_195A S: 8
Concentration Units:	pg absolute	**Cal. Ver. Data Filename:**	DX8C_195A S: 1

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	28000	69.9	0.82	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28300	70.9	0.63	1.383
13C-1,2,3,4,7,8-HXCDD		40000	29500	73.7	1.31	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31500	78.8	1.21	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30200	75.6	1.06	1.094
13C-OCDD		80000	52600	65.7	0.90	1.177
13C-2,3,7,8-TCDF		40000	27900	69.8	0.79	0.965
13C-1,2,3,7,8-PECDF		40000	29100	72.8	1.55	1.285
13C-2,3,4,7,8-PECDF		40000	29100	72.8	1.56	1.353
13C-1,2,3,4,7,8-HXCDF		40000	31000	77.6	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	32500	81.4	0.52	0.959
13C-1,2,3,7,8,9-HXCDF		40000	31200	77.9	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	32100	80.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	30000	74.9	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	29900	74.7	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	178	88.8		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25089-101_Form2_DX8C_195AS8_SJ857333.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
Lab Blank

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	N/A
Sample Size:	3.00 g	**Lab Sample I.D.:**	WG25089-101
Concentration Units:	pg/g	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_122 S: 6** **DX8C_195A S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.466	1	0.00e+00	2.33e-01	
1,2,3,7,8-PECDD	ND		0.577	1	0.00e+00	2.89e-01	
1,2,3,4,7,8-HXCDD	ND		0.469	0.1	0.00e+00	2.35e-02	
1,2,3,6,7,8-HXCDD		1.32	0.469	0.1	1.32e-01	1.32e-01	
1,2,3,7,8,9-HXCDD	ND		0.469	0.1	0.00e+00	2.35e-02	
1,2,3,4,6,7,8-HPCDD		2.49	0.598	0.01	2.49e-02	2.49e-02	
OCDD		4.28	0.646	0.0001	4.28e-04	4.28e-04	
2,3,7,8-TCDF	ND		3.17	0.1	0.00e+00	1.59e-01	
1,2,3,7,8-PECDF		0.987	0.366	0.05	4.94e-02	4.94e-02	
2,3,4,7,8-PECDF		3.02	0.366	0.5	1.51e+00	1.51e+00	
1,2,3,4,7,8-HXCDF	ND		0.395	0.1	0.00e+00	1.98e-02	
1,2,3,6,7,8-HXCDF		0.667	0.395	0.1	6.67e-02	6.67e-02	
1,2,3,7,8,9-HXCDF	ND		0.395	0.1	0.00e+00	1.98e-02	
2,3,4,6,7,8-HXCDF	ND		0.395	0.1	0.00e+00	1.98e-02	
1,2,3,4,6,7,8-HPCDF	ND		0.642	0.01	0.00e+00	3.21e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.642	0.01	0.00e+00	3.21e-03	
OCDF	ND		0.656	0.0001	0.00e+00	3.28e-05	
			TOTAL TEQ		1.78	2.58	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.466	1	0.00e+00	2.33e-01	
1,2,3,7,8-PECDD	ND		0.577	1	0.00e+00	2.89e-01	
1,2,3,4,7,8-HXCDD	ND		0.469	0.1	0.00e+00	2.35e-02	
1,2,3,6,7,8-HXCDD		1.32	0.469	0.1	1.32e-01	1.32e-01	
1,2,3,7,8,9-HXCDD	ND		0.469	0.1	0.00e+00	2.35e-02	
1,2,3,4,6,7,8-HPCDD		2.49	0.598	0.01	2.49e-02	2.49e-02	
OCDD		4.28	0.646	0.0003	1.28e-03	1.28e-03	
2,3,7,8-TCDF	ND		3.17	0.1	0.00e+00	1.59e-01	
1,2,3,7,8-PECDF		0.987	0.366	0.03	2.96e-02	2.96e-02	
2,3,4,7,8-PECDF		3.02	0.366	0.3	9.06e-01	9.06e-01	
1,2,3,4,7,8-HXCDF	ND		0.395	0.1	0.00e+00	1.98e-02	
1,2,3,6,7,8-HXCDF		0.667	0.395	0.1	6.67e-02	6.67e-02	
1,2,3,7,8,9-HXCDF	ND		0.395	0.1	0.00e+00	1.98e-02	
2,3,4,6,7,8-HXCDF	ND		0.395	0.1	0.00e+00	1.98e-02	
1,2,3,4,6,7,8-HPCDF	ND		0.642	0.01	0.00e+00	3.21e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.642	0.01	0.00e+00	3.21e-03	
OCDF	ND		0.656	0.0003	0.00e+00	9.84e-05	
			TOTAL TEQ		1.16	1.95	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 29-May-2008 15:59:04; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25089-101_TEQ_SJ857333.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8A
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_195A S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25089-102
Extraction Date:	25-Apr-2008	**Analysis Date:**	07-May-2008 **Time:** 23:13:26

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.77	10.6	10.3	7.10 - 16.7	97.5
1,2,3,7,8-PECDD [4]		0.62	56.6	57.1	39.6 - 80.4	101
1,2,3,4,7,8-HXCDD		1.24	59.2	57.2	41.4 - 97.1	96.7
1,2,3,6,7,8-HXCDD		1.24	51.8	51.7	39.4 - 69.4	99.7
1,2,3,7,8,9-HXCDD		1.27	56.7	54.9	36.3 - 91.9	96.7
1,2,3,4,6,7,8-HPCDD		1.04	50.0	46.3	35.0 - 70.0	92.6
OCDD		0.87	108	94.7	84.2 - 155	87.8
2,3,7,8-TCDF		0.75	10.9	11.3	8.18 - 17.2	104
1,2,3,7,8-PECDF		1.51	50.0	48.3	40.0 - 67.0	96.6
2,3,4,7,8-PECDF		1.48	50.0	48.1	34.0 - 80.0	96.3
1,2,3,4,7,8-HXCDF		1.22	54.4	51.9	39.2 - 72.9	95.5
1,2,3,6,7,8-HXCDF		1.22	50.0	48.2	42.0 - 65.0	96.3
1,2,3,7,8,9-HXCDF		1.23	50.0	48.2	39.0 - 65.0	96.5
2,3,4,6,7,8-HXCDF		1.20	53.1	50.7	37.2 - 82.8	95.5
1,2,3,4,6,7,8-HPCDF		1.02	50.0	49.8	41.0 - 61.0	99.7
1,2,3,4,7,8,9-HPCDF		1.02	50.0	47.0	39.0 - 69.0	94.0
OCDF		0.90	109	98.6	68.4 - 185	90.8

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8A.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25089-102_Form8A_SJ857323.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8B
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_195A S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25089-102
Extraction Date:	25-Apr-2008	**Analysis Date:**	07-May-2008 **Time:** 23:13:26

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.80	100	71.9	20.0-175	71.9
13C-1,2,3,7,8-PECDD [4]		0.63	100	70.4	21.0-227	70.4
13C-1,2,3,4,7,8-HXCDD		1.26	100	74.8	21.0-193	74.8
13C-1,2,3,6,7,8-HXCDD		1.26	100	76.4	25.0-163	76.4
13C-1,2,3,4,6,7,8-HPCDD		1.04	100	75.1	26.0-166	75.1
13C-OCDD		0.89	200	131	26.0-397	65.5
13C-2,3,7,8-TCDF		0.78	100	71.8	22.0-152	71.8
13C-1,2,3,7,8-PECDF		1.57	100	72.7	21.0-192	72.7
13C-2,3,4,7,8-PECDF		1.56	100	72.9	13.0-328	72.9
13C-1,2,3,4,7,8-HXCDF		0.52	100	77.6	19.0-202	77.6
13C-1,2,3,6,7,8-HXCDF		0.52	100	80.8	21.0-159	80.8
13C-1,2,3,7,8,9-HXCDF		0.52	100	77.5	17.0-205	77.5
13C-2,3,4,6,7,8-HXCDF		0.52	100	78.0	22.0-176	78.0
13C-1,2,3,4,6,7,8-HPCDF		0.45	100	76.3	21.0-158	76.3
13C-1,2,3,4,7,8,9-HPCDF		0.44	100	75.5	20.0-186	75.5
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD			10.0	10.2	3.10-19.1	102

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8B.xsl; Created: 29-May-2008 15:57:40; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25089-102_Form8B_SJ857323.html; Workgroup: WG25089; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 001
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-34
Matrix:	SOLID	**Sample Size:**	8.92 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 11:08:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	11.7

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		335	0.0561	0.62	1.001
1,2,3,4,7,8-HXCDD		9.68	0.324	1.26	1.000
1,2,3,6,7,8-HXCDD		84.0	0.324	1.26	1.000
1,2,3,7,8,9-HXCDD		20.7	0.324	1.27	1.010
1,2,3,4,6,7,8-HPCDD		130	0.147	1.02	1.000
OCDD		260	0.0561	0.89	1.000
2,3,7,8-TCDF	OLR				
1,2,3,7,8-PECDF		12.4	0.0695	1.48	1.001
2,3,4,7,8-PECDF		36.5	0.0695	1.51	1.000
1,2,3,4,7,8-HXCDF		26.7	0.104	1.24	1.000
1,2,3,6,7,8-HXCDF		5.18	0.104	1.28	1.000
1,2,3,7,8,9-HXCDF	NDR	0.179	0.104	0.79	1.000
2,3,4,6,7,8-HXCDF		5.50	0.104	1.19	1.000
1,2,3,4,6,7,8-HPCDF		106	0.0809	1.01	1.000
1,2,3,4,7,8,9-HPCDF		2.80	0.0809	0.93	1.000
OCDF		59.3	0.0561	0.88	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		1630	0.0561		
TOTAL HEXA-DIOXINS		835	0.324		
TOTAL HEPTA-DIOXINS		292	0.147		
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS		5840	0.0695		
TOTAL HEXA-FURANS		573	0.104		
TOTAL HEPTA-FURANS		199	0.0809		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-34_Form1A_DX8C_198S4_SJ857693.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 001
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-34 N
Matrix:	SOLID	**Sample Size:**	8.92 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 15:58:57	**GC Column ID:**	DB5
Extract Volume (uL):	1000	**Sample Data Filename:**	**DX82_172 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	50	**Cal. Ver. Data Filename:**	DX82_172 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	11.7

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	32800	2.31	0.79	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	D	1730	5.06	0.77	1.003
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	37200	2.31		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	D	8530	5.06		
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-34_Form1A_DX82_172S10_SJ860444.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 001
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-34
Matrix:	SOLID	**Sample Size:**	8.92 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 11:08:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg absolute	**% Moisture:**	11.7

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	9940	99.4	0.81	1.014
13C-1,2,3,7,8-PECDD [4]		10000	7220	72.2	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		10000	7730	77.3	1.27	0.986
13C-1,2,3,6,7,8-HXCDD		10000	8520	85.2	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	7400	74.0	1.05	1.094
13C-OCDD		20000	13200	66.0	0.89	1.177
13C-2,3,7,8-TCDF		10000	7770	77.7	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	7560	75.6	1.56	1.287
13C-2,3,4,7,8-PECDF		10000	7260	72.6	1.55	1.355
13C-1,2,3,4,7,8-HXCDF		10000	8470	84.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		10000	8950	89.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	7980	79.8	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	8320	83.2	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		10000	7710	77.1	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	7420	74.2	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-34_Form2_DX8C_198S4_SJ857693.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 001
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-34 N
Matrix:	SOLID	**Sample Size:**	8.92 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 15:58:57	**GC Column ID:**	DB5
Extract Volume (uL):	1000	**Sample Data Filename:**	**DX82_172 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	50	**Cal. Ver. Data Filename:**	DX82_172 S: 2
Concentration Units:	pg absolute	**% Moisture:**	11.7

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	10000	8890	88.9	0.82	1.014
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	D	10000	10000	100	0.79	0.967
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	252	126		1.015

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-34_Form2_DX82_172S10_SJ860444.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-35
Matrix:	SOLID	**Sample Size:**	9.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 12:03:32	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		1030	0.0546	0.63	1.000
1,2,3,4,7,8-HXCDD		71.4	4.54	1.22	1.000
1,2,3,6,7,8-HXCDD		852	4.54	1.23	1.000
1,2,3,7,8,9-HXCDD		280	4.54	1.25	1.010
1,2,3,4,6,7,8-HPCDD	OLR				
OCDD	OLR				
2,3,7,8-TCDF	OLR				
1,2,3,7,8-PECDF		49.2	0.679	1.46	1.001
2,3,4,7,8-PECDF		97.4	0.679	1.49	1.000
1,2,3,4,7,8-HXCDF		65.6	0.296	1.22	1.001
1,2,3,6,7,8-HXCDF		19.7	0.296	1.21	1.000
1,2,3,7,8,9-HXCDF		1.01	0.296	1.12	1.001
2,3,4,6,7,8-HXCDF		26.3	0.296	1.19	1.000
1,2,3,4,6,7,8-HPCDF		377	0.419	0.99	1.000
1,2,3,4,7,8,9-HPCDF		9.98	0.419	0.96	1.000
OCDF		257	0.150	0.88	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		5520	0.0546		
TOTAL HEXA-DIOXINS		8010	4.54		
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS		17600	0.679		
TOTAL HEXA-FURANS		3200	0.296		
TOTAL HEPTA-FURANS		761	0.419		

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-35_Form1A_DX8C_198S5_SJ857694.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-35 N
Matrix:	SOLID	**Sample Size:**	9.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 16:53:19	**GC Column ID:**	DB5
Extract Volume (uL):	1000	**Sample Data Filename:**	**DX82_172 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	50	**Cal. Ver. Data Filename:**	DX82_172 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	D	3330	4.42	1.09	1.000
OCDD	D	7560	1.58	0.89	1.000
2,3,7,8-TCDF	D	3940	11.3	0.77	1.003
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	D	6450	4.42		
TOTAL TETRA-FURANS	D	17700	11.3		
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-35_Form1A_DX82_172S11_SJ860445.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-35 NW
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	9.15 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	20-May-2008 **Time:** 14:49:46	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	7500	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_176A S: 6**
Dilution Factor:	375	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_176A S: 1
		% Moisture:	13.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	73100	12.1	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	76600	12.1		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-35_Form1A_DX82_176AS6_SJ860517.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-35
Matrix:	SOLID	**Sample Size:**	9.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 12:03:32	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg absolute	**% Moisture:**	13.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	11800	118	0.81	1.015
13C-1,2,3,7,8-PECDD [4]		10000	8500	85.0	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		10000	8250	82.5	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8110	81.1	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	8560	85.6	1.05	1.094
13C-OCDD		20000	17400	87.2	0.90	1.177
13C-2,3,7,8-TCDF		10000	9180	91.8	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	8650	86.5	1.55	1.286
13C-2,3,4,7,8-PECDF		10000	8570	85.7	1.57	1.354
13C-1,2,3,4,7,8-HXCDF		10000	8370	83.7	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	8970	89.7	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	8140	81.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	8180	81.8	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		10000	8060	80.6	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	8110	81.1	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-35_Form2_DX8C_198S5_SJ857694.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-35 N
Matrix:	SOLID	**Sample Size:**	9.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 16:53:19	**GC Column ID:**	DB5
Extract Volume (uL):	1000	**Sample Data Filename:**	**DX82_172 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	50	**Cal. Ver. Data Filename:**	DX82_172 S: 2
Concentration Units:	pg absolute	**% Moisture:**	13.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	X					
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	D	10000	8010	80.1	1.00	1.094
13C-OCDD	D	20000	14800	73.8	0.91	1.177
13C-2,3,7,8-TCDF	D	10000	10300	103	0.80	0.966
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-35_Form2_DX82_172S11_SJ860445.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-35 NW
Matrix:	SOLID	**Sample Size:**	9.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	20-May-2008 **Time:** 14:49:46	**GC Column ID:**	DB5
Extract Volume (uL):	7500	**Sample Data Filename:**	**DX82_176A S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	375	**Cal. Ver. Data Filename:**	DX82_176A S: 1
Concentration Units:	pg absolute	**% Moisture:**	13.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	10000	7710	77.1	0.89	1.014
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	354	177		1.015

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-35_Form2_DX82_176AS6_SJ860517.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 012
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-36
Matrix:	SOLID	**Sample Size:**	7.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 12:58:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	22.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		193	0.0696	0.62	1.001
1,2,3,4,7,8-HXCDD		12.2	0.616	1.22	1.000
1,2,3,6,7,8-HXCDD		108	0.616	1.23	1.000
1,2,3,7,8,9-HXCDD		32.9	0.616	1.23	1.010
1,2,3,4,6,7,8-HPCDD		298	0.299	1.01	1.000
OCDD		1160	0.0813	0.89	1.000
2,3,7,8-TCDF	OLR				
1,2,3,7,8-PECDF		20.0	0.190	1.58	1.001
2,3,4,7,8-PECDF		20.8	0.190	1.51	1.000
1,2,3,4,7,8-HXCDF		13.1	0.0818	1.28	1.000
1,2,3,6,7,8-HXCDF		4.44	0.0818	1.16	1.000
1,2,3,7,8,9-HXCDF	ND		0.0818		
2,3,4,6,7,8-HXCDF		5.49	0.0818	1.24	1.000
1,2,3,4,6,7,8-HPCDF		57.8	0.0729	1.01	1.000
1,2,3,4,7,8,9-HPCDF		1.57	0.0729	0.96	1.000
OCDF		29.6	0.0629	0.88	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		1200	0.0696		
TOTAL HEXA-DIOXINS		1250	0.616		
TOTAL HEPTA-DIOXINS		657	0.299		
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS		3850	0.190		
TOTAL HEXA-FURANS		515	0.0818		
TOTAL HEPTA-FURANS		113	0.0729		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-36_Form1A_DX8C_198S6_SJ857695.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 012
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-36 N
Matrix:	SOLID	**Sample Size:**	7.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 15:04:34	**GC Column ID:**	DB5
Extract Volume (uL):	1000	**Sample Data Filename:**	**DX82_172 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	50	**Cal. Ver. Data Filename:**	DX82_172 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	22.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	22900	5.27	0.78	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	D	1210	10.8	0.77	1.002
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	24700	5.27		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	D	3770	10.8		
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-36_Form1A_DX82_172S9_SJ860443.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 012
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-36
Matrix:	SOLID	**Sample Size:**	7.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 12:58:23	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg absolute	**% Moisture:**	22.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	8830	88.3	0.80	1.014
13C-1,2,3,7,8-PECDD [4]		10000	7240	72.4	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		10000	7150	71.5	1.27	0.986
13C-1,2,3,6,7,8-HXCDD		10000	7790	77.9	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	7560	75.6	1.05	1.094
13C-OCDD		20000	13800	68.8	0.89	1.177
13C-2,3,7,8-TCDF		10000	7340	73.4	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	7360	73.6	1.55	1.287
13C-2,3,4,7,8-PECDF		10000	7340	73.4	1.55	1.355
13C-1,2,3,4,7,8-HXCDF		10000	7540	75.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	7910	79.1	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	7310	73.1	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	7510	75.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		10000	7250	72.5	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	7330	73.3	0.44	1.103

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	X

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-36_Form2_DX8C_198S6_SJ857695.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 012
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-36 N
Matrix:	SOLID	**Sample Size:**	7.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 15:04:34	**GC Column ID:**	DB5
Extract Volume (uL):	1000	**Sample Data Filename:**	**DX82_172 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	50	**Cal. Ver. Data Filename:**	DX82_172 S: 2
Concentration Units:	pg absolute	**% Moisture:**	22.6

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	10000	6390	63.9	0.81	1.014
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	D	10000	7680	76.8	0.76	0.967
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	240	120		1.015

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-36_Form2_DX82_172S9_SJ860443.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 017
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-37 i (A)
Matrix:	SOLID	**Sample Size:**	8.96 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 12:02:22	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	11.8

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		4.32	0.0558	0.78	1.001
1,2,3,7,8-PECDD [3]	NDR	0.097	0.0558	1.00	1.001
1,2,3,4,7,8-HXCDD	ND		0.0920		
1,2,3,6,7,8-HXCDD		0.440	0.0920	1.14	1.000
1,2,3,7,8,9-HXCDD		0.690	0.0920	1.33	1.010
1,2,3,4,6,7,8-HPCDD		3.87	0.175	1.06	1.000
OCDD		441	2.71	0.91	1.001
2,3,7,8-TCDF		0.449	0.0558	0.88	1.001
1,2,3,7,8-PECDF	ND		0.0558		
2,3,4,7,8-PECDF		0.183	0.0558	1.75	1.001
1,2,3,4,7,8-HXCDF	ND		0.0558		
1,2,3,6,7,8-HXCDF	ND		0.0558		
1,2,3,7,8,9-HXCDF	ND		0.0558		
2,3,4,6,7,8-HXCDF	ND		0.0558		
1,2,3,4,6,7,8-HPCDF		0.128	0.0558	1.19	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0558		
OCDF	NDR	0.170	0.0558	1.05	1.002
TOTAL TETRA-DIOXINS		4.61	0.0558		
TOTAL PENTA-DIOXINS		0.174	0.0558		
TOTAL HEXA-DIOXINS		3.55	0.0920		
TOTAL HEPTA-DIOXINS		9.06	0.175		
TOTAL TETRA-FURANS		1.90	0.0558		
TOTAL PENTA-FURANS		1.34	0.0558		
TOTAL HEXA-FURANS		0.120	0.0558		
TOTAL HEPTA-FURANS		0.128	0.0558		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-37_Form1A_DX82_168S6_SJ858532.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 017
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-37 i (A)
Matrix:	SOLID	**Sample Size:**	8.96 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 12:02:22	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	11.8

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	10000	100	0.80	1.014
13C-1,2,3,7,8-PECDD [4]		10000	10000	100	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		10000	9640	96.4	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		10000	9220	92.2	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	8480	84.8	1.02	1.093
13C-OCDD		20000	16000	79.9	0.92	1.177
13C-2,3,7,8-TCDF		10000	10300	103	0.80	0.967
13C-1,2,3,7,8-PECDF		10000	11000	110	1.59	1.288
13C-2,3,4,7,8-PECDF		10000	10400	104	1.61	1.356
13C-1,2,3,4,7,8-HXCDF		10000	11200	112	0.53	0.955
13C-1,2,3,6,7,8-HXCDF		10000	10600	106	0.53	0.959
13C-1,2,3,7,8,9-HXCDF		10000	10400	104	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	10600	106	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9050	90.5	0.48	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	9790	97.9	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	216	108		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 018
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-38
Matrix:	SOLID	**Sample Size:**	9.66 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 15:43:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	5.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		702	0.0518	0.78	1.001
1,2,3,7,8-PECDD [3]		7.17	0.0518	0.61	1.000
1,2,3,4,7,8-HXCDD		1.45	0.158	1.26	1.000
1,2,3,6,7,8-HXCDD		6.88	0.158	1.25	1.000
1,2,3,7,8,9-HXCDD		3.64	0.158	1.19	1.010
1,2,3,4,6,7,8-HPCDD		38.8	0.163	1.01	1.000
OCDD		218	0.115	0.88	1.000
2,3,7,8-TCDF		92.6	0.215	0.77	1.001
1,2,3,7,8-PECDF		4.08	0.0518	1.46	1.001
2,3,4,7,8-PECDF		1.11	0.0518	1.61	1.000
1,2,3,4,7,8-HXCDF		1.03	0.0518	1.26	1.000
1,2,3,6,7,8-HXCDF		0.604	0.0518	1.06	1.000
1,2,3,7,8,9-HXCDF		0.054	0.0518	1.27	1.000
2,3,4,6,7,8-HXCDF		0.468	0.0518	1.12	1.000
1,2,3,4,6,7,8-HPCDF		5.22	0.0523	1.00	1.000
1,2,3,4,7,8,9-HPCDF		0.329	0.0523	1.13	1.000
OCDF		6.44	0.0518	0.89	1.002
TOTAL TETRA-DIOXINS		741	0.0518		
TOTAL PENTA-DIOXINS		54.2	0.0518		
TOTAL HEXA-DIOXINS		69.9	0.158		
TOTAL HEPTA-DIOXINS		74.2	0.163		
TOTAL TETRA-FURANS		185	0.215		
TOTAL PENTA-FURANS		124	0.0518		
TOTAL HEXA-FURANS		21.3	0.0518		
TOTAL HEPTA-FURANS		10.7	0.0523		

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-38_Form1A_DX8C_198S9_SJ857698.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 018
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-38
Matrix:	SOLID	**Sample Size:**	9.66 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 15:43:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg absolute	**% Moisture:**	5.69

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	6410	64.1	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	6100	61.0	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		10000	6430	64.3	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	6300	63.0	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	6610	66.1	1.05	1.094
13C-OCDD		20000	12400	62.1	0.90	1.177
13C-2,3,7,8-TCDF		10000	6250	62.5	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	6190	61.9	1.55	1.287
13C-2,3,4,7,8-PECDF		10000	6170	61.7	1.55	1.354
13C-1,2,3,4,7,8-HXCDF		10000	6500	65.0	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	6780	67.8	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	6490	64.9	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	6430	64.3	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	6340	63.4	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	6740	67.4	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	190	94.9		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-38_Form2_DX8C_198S9_SJ857698.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 020
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-39 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	8.95 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	13-May-2008 **Time:** 13:51:18	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_168 S: 8**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_168 S: 1
		% Moisture:	11.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		2.24	0.0559	0.78	1.001
1,2,3,7,8-PECDD [3]	NDR	0.087	0.0559	0.75	1.000
1,2,3,4,7,8-HXCDD	ND		0.0898		
1,2,3,6,7,8-HXCDD		0.848	0.0898	1.18	1.000
1,2,3,7,8,9-HXCDD		1.10	0.0898	1.15	1.010
1,2,3,4,6,7,8-HPCDD		2.03	0.115	0.95	1.000
OCDD		106	0.784	0.90	1.000
2,3,7,8-TCDF		0.228	0.0559	0.76	1.001
1,2,3,7,8-PECDF	ND		0.0559		
2,3,4,7,8-PECDF		0.157	0.0559	1.35	1.001
1,2,3,4,7,8-HXCDF	ND		0.0559		
1,2,3,6,7,8-HXCDF		0.089	0.0559	1.36	1.000
1,2,3,7,8,9-HXCDF	ND		0.0559		
2,3,4,6,7,8-HXCDF	ND		0.0559		
1,2,3,4,6,7,8-HPCDF	NDR	0.090	0.0758	1.83	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0758		
OCDF	ND		0.0804		
TOTAL TETRA-DIOXINS		2.34	0.0559		
TOTAL PENTA-DIOXINS	ND		0.0559		
TOTAL HEXA-DIOXINS		3.11	0.0898		
TOTAL HEPTA-DIOXINS		4.05	0.115		
TOTAL TETRA-FURANS		0.474	0.0559		
TOTAL PENTA-FURANS		0.750	0.0559		
TOTAL HEXA-FURANS		0.243	0.0559		
TOTAL HEPTA-FURANS	ND		0.0758		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-39_Form1A_DX82_168S8_SJ858534.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 020
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-39 i
Matrix:	SOLID	**Sample Size:**	8.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 13:51:18	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	11.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	9630	96.3	0.80	1.015
13C-1,2,3,7,8-PECDD [4]		10000	9540	95.4	0.63	1.386
13C-1,2,3,4,7,8-HXCDD		10000	9760	97.6	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8530	85.3	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	9060	90.6	1.02	1.093
13C-OCDD		20000	17000	84.9	0.92	1.177
13C-2,3,7,8-TCDF		10000	10600	106	0.79	0.967
13C-1,2,3,7,8-PECDF		10000	10500	105	1.60	1.288
13C-2,3,4,7,8-PECDF		10000	10100	101	1.60	1.355
13C-1,2,3,4,7,8-HXCDF		10000	10500	105	0.53	0.954
13C-1,2,3,6,7,8-HXCDF		10000	10100	101	0.53	0.959
13C-1,2,3,7,8,9-HXCDF		10000	10300	103	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	9850	98.5	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9300	93.0	0.47	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	10200	102	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	196	98.0		1.016

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-39_Form2_DX82_168S8_SJ858534.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 024
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-40
Matrix:	SOLID	**Sample Size:**	8.55 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 17:32:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	16.7

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1.67	0.0585	0.83	1.001
1,2,3,7,8-PECDD [3]	NDR	0.062	0.0585	1.04	1.001
1,2,3,4,7,8-HXCDD	ND		0.0585		
1,2,3,6,7,8-HXCDD	NDR	0.111	0.0585	1.59	1.000
1,2,3,7,8,9-HXCDD		0.195	0.0585	1.28	1.011
1,2,3,4,6,7,8-HPCDD		1.53	0.0585	1.11	1.000
OCDD		89.5	0.0585	0.89	1.000
2,3,7,8-TCDF		0.166	0.0585	0.85	1.002
1,2,3,7,8-PECDF	ND		0.0585		
2,3,4,7,8-PECDF		0.166	0.0585	1.47	1.000
1,2,3,4,7,8-HXCDF	ND		0.0585		
1,2,3,6,7,8-HXCDF	ND		0.0585		
1,2,3,7,8,9-HXCDF	ND		0.0585		
2,3,4,6,7,8-HXCDF	ND		0.0585		
1,2,3,4,6,7,8-HPCDF	NDR	0.133	0.0585	1.76	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0585		
OCDF		0.084	0.0585	0.86	1.002
TOTAL TETRA-DIOXINS		1.67	0.0585		
TOTAL PENTA-DIOXINS	ND		0.0585		
TOTAL HEXA-DIOXINS		0.408	0.0585		
TOTAL HEPTA-DIOXINS		3.24	0.0585		
TOTAL TETRA-FURANS		0.315	0.0585		
TOTAL PENTA-FURANS		0.507	0.0585		
TOTAL HEXA-FURANS		0.071	0.0585		
TOTAL HEPTA-FURANS		0.074	0.0585		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-40_Form1A_DX8C_198S11_SJ857700.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 024
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-40
Matrix:	SOLID	**Sample Size:**	8.55 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 17:32:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg absolute	**% Moisture:**	16.7

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	6900	69.0	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	6760	67.6	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		10000	6970	69.7	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	7150	71.5	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	7720	77.2	1.06	1.093
13C-OCDD		20000	14900	74.5	0.90	1.177
13C-2,3,7,8-TCDF		10000	6610	66.1	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	6790	67.9	1.56	1.288
13C-2,3,4,7,8-PECDF		10000	6710	67.1	1.55	1.354
13C-1,2,3,4,7,8-HXCDF		10000	7160	71.6	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	7270	72.7	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	7210	72.1	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	7150	71.5	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	7260	72.6	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	7750	77.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	167	83.7		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-40_Form2_DX8C_198S11_SJ857700.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 026
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-41
Matrix:	SOLID	**Sample Size:**	8.66 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 18:27:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		1.02	0.0577	0.77	1.001
1,2,3,7,8-PECDD [3]	ND		0.0577		
1,2,3,4,7,8-HXCDD	ND		0.0577		
1,2,3,6,7,8-HXCDD	ND		0.0577		
1,2,3,7,8,9-HXCDD		0.198	0.0577	1.18	1.010
1,2,3,4,6,7,8-HPCDD		0.631	0.0577	1.00	1.000
OCDD		27.4	0.0577	0.90	1.000
2,3,7,8-TCDF		0.108	0.0577	0.67	1.002
1,2,3,7,8-PECDF	ND		0.0577		
2,3,4,7,8-PECDF		0.153	0.0577	1.54	1.000
1,2,3,4,7,8-HXCDF	ND		0.0577		
1,2,3,6,7,8-HXCDF	ND		0.0577		
1,2,3,7,8,9-HXCDF	ND		0.0577		
2,3,4,6,7,8-HXCDF	ND		0.0577		
1,2,3,4,6,7,8-HPCDF	NDR	0.080	0.0577	1.51	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0577		
OCDF	ND		0.0577		
TOTAL TETRA-DIOXINS		1.02	0.0577		
TOTAL PENTA-DIOXINS	ND		0.0577		
TOTAL HEXA-DIOXINS		0.318	0.0577		
TOTAL HEPTA-DIOXINS		1.18	0.0577		
TOTAL TETRA-FURANS		0.108	0.0577		
TOTAL PENTA-FURANS		0.293	0.0577		
TOTAL HEXA-FURANS	ND		0.0577		
TOTAL HEPTA-FURANS	ND		0.0577		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-41_Form1A_DX8C_198S12_SJ857701.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 026
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-41
Matrix:	SOLID	**Sample Size:**	8.66 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 18:27:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_198 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_198 S: 1
Concentration Units:	pg absolute	**% Moisture:**	13.9

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	8650	86.5	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	8780	87.8	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		10000	8680	86.8	1.33	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8920	89.2	1.21	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	9830	98.3	1.05	1.094
13C-OCDD		20000	19400	97.0	0.90	1.178
13C-2,3,7,8-TCDF		10000	8430	84.3	0.78	0.966
13C-1,2,3,7,8-PECDF		10000	8710	87.1	1.56	1.287
13C-2,3,4,7,8-PECDF		10000	8640	86.4	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		10000	8730	87.3	0.52	0.955
13C-1,2,3,6,7,8-HXCDF		10000	9050	90.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	9010	90.1	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	8850	88.5	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9200	92.0	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	9850	98.5	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	222	111		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 031
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-42
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 23:14:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.38

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		5.34	0.0499	0.77	1.001
1,2,3,7,8-PECDD [3]		41.2	0.0499	0.61	1.001
1,2,3,4,7,8-HXCDD		65.5	1.37	1.32	1.000
1,2,3,6,7,8-HXCDD		254	1.37	1.22	1.000
1,2,3,7,8,9-HXCDD		242	1.37	1.24	1.010
1,2,3,4,6,7,8-HPCDD	OLR				
OCDD	OLR				
2,3,7,8-TCDF		5.38	0.0771	0.78	1.001
1,2,3,7,8-PECDF		3.07	0.0499	1.54	1.000
2,3,4,7,8-PECDF		7.61	0.0499	1.50	1.000
1,2,3,4,7,8-HXCDF		17.0	0.0806	1.22	1.000
1,2,3,6,7,8-HXCDF		11.2	0.0806	1.23	1.000
1,2,3,7,8,9-HXCDF		0.354	0.0806	1.38	1.000
2,3,4,6,7,8-HXCDF		13.7	0.0806	1.21	1.000
1,2,3,4,6,7,8-HPCDF		186	0.0711	1.01	1.000
1,2,3,4,7,8,9-HPCDF		8.09	0.0711	1.04	1.000
OCDF		256	0.0499	0.88	1.002
TOTAL TETRA-DIOXINS		33.5	0.0499		
TOTAL PENTA-DIOXINS		256	0.0499		
TOTAL HEXA-DIOXINS		2800	1.37		
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS		39.0	0.0771		
TOTAL PENTA-FURANS		121	0.0499		
TOTAL HEXA-FURANS		319	0.0806		
TOTAL HEPTA-FURANS		457	0.0711		

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-42_Form1A_DX8C_199S5_SJ857719.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 031
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-42 W
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	10.0 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	14-May-2008 **Time:** 02:48:33	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	300	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_169 S: 9**
Dilution Factor:	15	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_169 S: 1
		% Moisture:	3.38

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	X				
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	D	12000	2.46	1.05	1.000
OCDD	D	41900	7.72	0.90	1.000
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	D	23100	2.46		
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-42_Form1A_DX82_169S9_SJ860414.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 031
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-42
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	09-May-2008 **Time:** 23:14:00	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.38

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	8900	89.0	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	8670	86.7	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		10000	8750	87.5	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8920	89.2	1.24	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	11100	111	1.05	1.093
13C-OCDD		20000	23200	116	0.90	1.178
13C-2,3,7,8-TCDF		10000	8670	86.7	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	8550	85.5	1.56	1.287
13C-2,3,4,7,8-PECDF		10000	8530	85.3	1.56	1.353
13C-1,2,3,4,7,8-HXCDF		10000	9080	90.8	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	9190	91.9	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	8820	88.2	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	8840	88.4	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	8750	87.5	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	9310	93.1	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	217	108		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 031
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-42 W
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 02:48:33	**GC Column ID:**	DB5
Extract Volume (uL):	300	**Sample Data Filename:**	**DX82_169 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	15	**Cal. Ver. Data Filename:**	DX82_169 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.38

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	X					
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	D	10000	9880	98.8	1.01	1.093
13C-OCDD	D	20000	19300	96.4	0.90	1.176
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-42_Form2_DX82_169S9_SJ860414.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 035
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-43 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	9.70 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	13-May-2008 **Time:** 17:29:05	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_168 S: 12**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_168 S: 1
		% Moisture:	3.98

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		0.664	0.0515	0.69	1.001
1,2,3,7,8-PECDD [3]		1.35	0.0515	0.63	1.000
1,2,3,4,7,8-HXCDD		1.97	0.0515	1.28	1.000
1,2,3,6,7,8-HXCDD		4.71	0.0515	1.24	1.000
1,2,3,7,8,9-HXCDD		4.61	0.0515	1.24	1.010
1,2,3,4,6,7,8-HPCDD		117	0.0597	1.06	1.000
OCDD		1250	0.798	0.90	1.000
2,3,7,8-TCDF		1.45	0.0515	0.74	1.001
1,2,3,7,8-PECDF		0.549	0.0515	1.77	1.000
2,3,4,7,8-PECDF		1.26	0.0515	1.60	1.000
1,2,3,4,7,8-HXCDF		1.64	0.0515	1.28	1.000
1,2,3,6,7,8-HXCDF		0.979	0.0515	1.16	1.000
1,2,3,7,8,9-HXCDF		0.139	0.0515	1.31	1.000
2,3,4,6,7,8-HXCDF		1.15	0.0515	1.29	1.000
1,2,3,4,6,7,8-HPCDF		13.0	0.0515	1.00	1.000
1,2,3,4,7,8,9-HPCDF		0.871	0.0515	1.06	1.000
OCDF		29.2	0.0515	0.90	1.002
TOTAL TETRA-DIOXINS		2.34	0.0515		
TOTAL PENTA-DIOXINS		6.25	0.0515		
TOTAL HEXA-DIOXINS		37.9	0.0515		
TOTAL HEPTA-DIOXINS		269	0.0597		
TOTAL TETRA-FURANS		8.89	0.0515		
TOTAL PENTA-FURANS		9.12	0.0515		
TOTAL HEXA-FURANS		17.8	0.0515		
TOTAL HEPTA-FURANS		30.1	0.0515		

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-43_Form1A_DX82_168S12_SJ858538.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 035
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-43 i
Matrix:	SOLID	**Sample Size:**	9.70 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 17:29:05	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.98

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	9160	91.6	0.81	1.014
13C-1,2,3,7,8-PECDD [4]		10000	9930	99.3	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		10000	9450	94.5	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		10000	9340	93.4	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	9940	99.4	1.01	1.093
13C-OCDD		20000	19100	95.6	0.92	1.177
13C-2,3,7,8-TCDF		10000	9090	90.9	0.80	0.966
13C-1,2,3,7,8-PECDF		10000	10500	105	1.59	1.288
13C-2,3,4,7,8-PECDF		10000	10300	103	1.59	1.354
13C-1,2,3,4,7,8-HXCDF		10000	10400	104	0.53	0.955
13C-1,2,3,6,7,8-HXCDF		10000	10400	104	0.53	0.959
13C-1,2,3,7,8,9-HXCDF		10000	10500	105	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	10300	103	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9670	96.7	0.47	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	10700	107	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	186	93.2		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 038
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-44
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	9.68 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	10-May-2008 **Time:** 01:03:48	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_199 S: 7**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
		% Moisture:	8.25

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		0.927	0.0517	0.77	1.001
1,2,3,7,8-PECDD [3]		0.572	0.0517	0.62	1.000
1,2,3,4,7,8-HXCDD		1.21	0.0968	1.37	1.000
1,2,3,6,7,8-HXCDD		4.55	0.0968	1.19	1.000
1,2,3,7,8,9-HXCDD		2.82	0.0968	1.25	1.010
1,2,3,4,6,7,8-HPCDD		200	0.224	1.04	1.000
OCDD		1560	0.313	0.88	1.000
2,3,7,8-TCDF		3.74	0.0517	0.77	1.001
1,2,3,7,8-PECDF		1.16	0.0517	1.55	1.001
2,3,4,7,8-PECDF		2.73	0.0517	1.54	1.000
1,2,3,4,7,8-HXCDF		3.81	0.0517	1.23	1.000
1,2,3,6,7,8-HXCDF		1.50	0.0517	1.25	1.000
1,2,3,7,8,9-HXCDF		0.533	0.0517	1.31	1.000
2,3,4,6,7,8-HXCDF		1.38	0.0517	1.27	1.000
1,2,3,4,6,7,8-HPCDF		12.8	0.0517	1.03	1.000
1,2,3,4,7,8,9-HPCDF		1.16	0.0517	1.04	1.000
OCDF		16.5	0.0517	0.90	1.002
TOTAL TETRA-DIOXINS		1.80	0.0517		
TOTAL PENTA-DIOXINS		3.70	0.0517		
TOTAL HEXA-DIOXINS		57.8	0.0968		
TOTAL HEPTA-DIOXINS		640	0.224		
TOTAL TETRA-FURANS		14.8	0.0517		
TOTAL PENTA-FURANS		18.8	0.0517		
TOTAL HEXA-FURANS		29.0	0.0517		
TOTAL HEPTA-FURANS		30.9	0.0517		

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-44_Form1A_DX8C_199S7_SJ857721.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 038
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-44
Matrix:	SOLID	**Sample Size:**	9.68 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 01:03:48	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg absolute	**% Moisture:**	8.25

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	9560	95.6	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	10000	100	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		10000	9190	91.9	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		10000	9940	99.4	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	9710	97.1	1.05	1.093
13C-OCDD		20000	21400	107	0.89	1.177
13C-2,3,7,8-TCDF		10000	9350	93.5	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	9280	92.8	1.56	1.287
13C-2,3,4,7,8-PECDF		10000	9440	94.4	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		10000	9440	94.4	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	9450	94.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	9370	93.7	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	9330	93.3	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9520	95.2	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	9850	98.5	0.44	1.102
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	234	117		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-44_Form2_DX8C_199S7_SJ857721.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 052
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-45 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	8.76 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	13-May-2008 **Time:** 15:40:11	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_168 S: 10**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_168 S: 1
		% Moisture:	13.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		0.442	0.0571	0.68	1.001
1,2,3,7,8-PECDD [3]		0.063	0.0571	0.63	1.000
1,2,3,4,7,8-HXCDD	ND		0.0571		
1,2,3,6,7,8-HXCDD		0.143	0.0571	1.27	1.000
1,2,3,7,8,9-HXCDD	NDR	0.182	0.0571	1.55	1.010
1,2,3,4,6,7,8-HPCDD		2.12	0.0571	1.05	1.000
OCDD		182	0.129	0.90	1.001
2,3,7,8-TCDF		0.139	0.0571	0.80	1.001
1,2,3,7,8-PECDF	ND		0.0571		
2,3,4,7,8-PECDF		0.186	0.0571	1.64	1.001
1,2,3,4,7,8-HXCDF	NDR	0.073	0.0571	2.06	1.000
1,2,3,6,7,8-HXCDF	ND		0.0571		
1,2,3,7,8,9-HXCDF	ND		0.0571		
2,3,4,6,7,8-HXCDF	ND		0.0571		
1,2,3,4,6,7,8-HPCDF	NDR	0.231	0.0571	1.35	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0571		
OCDF	NDR	0.140	0.0571	0.94	1.002
TOTAL TETRA-DIOXINS		0.442	0.0571		
TOTAL PENTA-DIOXINS		0.063	0.0571		
TOTAL HEXA-DIOXINS		0.689	0.0571		
TOTAL HEPTA-DIOXINS		4.64	0.0571		
TOTAL TETRA-FURANS		0.658	0.0571		
TOTAL PENTA-FURANS		0.424	0.0571		
TOTAL HEXA-FURANS		0.124	0.0571		
TOTAL HEPTA-FURANS	ND		0.0571		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-45_Form1A_DX82_168S10_SJ858536.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 052
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-45 i
Matrix:	SOLID	**Sample Size:**	8.76 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 15:40:11	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	13.5

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	8370	83.7	0.81	1.014
13C-1,2,3,7,8-PECDD [4]		10000	9240	92.4	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		10000	8810	88.1	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8370	83.7	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	8570	85.7	1.01	1.093
13C-OCDD		20000	17300	86.3	0.91	1.177
13C-2,3,7,8-TCDF		10000	8900	89.0	0.80	0.966
13C-1,2,3,7,8-PECDF		10000	10300	103	1.60	1.287
13C-2,3,4,7,8-PECDF		10000	9560	95.6	1.59	1.353
13C-1,2,3,4,7,8-HXCDF		10000	9580	95.8	0.53	0.955
13C-1,2,3,6,7,8-HXCDF		10000	9620	96.2	0.54	0.959
13C-1,2,3,7,8,9-HXCDF		10000	9340	93.4	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	9240	92.4	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	8990	89.9	0.47	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	9380	93.8	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	169	84.6		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 056
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-46
Matrix:	SOLID	**Sample Size:**	6.84 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 02:53:38	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	34.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		66.5	0.0731	0.78	1.001
1,2,3,7,8-PECDD [3]		1.20	0.0731	0.67	1.001
1,2,3,4,7,8-HXCDD	NDR	0.297	0.0731	0.87	1.000
1,2,3,6,7,8-HXCDD		1.11	0.0731	1.18	1.000
1,2,3,7,8,9-HXCDD		0.813	0.0731	1.38	1.010
1,2,3,4,6,7,8-HPCDD		9.92	0.0774	1.02	1.000
OCDD		134	0.0731	0.88	1.000
2,3,7,8-TCDF		8.35	0.0731	0.75	1.001
1,2,3,7,8-PECDF		0.537	0.0731	1.36	1.000
2,3,4,7,8-PECDF		0.762	0.0731	1.36	1.000
1,2,3,4,7,8-HXCDF		0.602	0.0731	1.14	1.000
1,2,3,6,7,8-HXCDF	NDR	0.350	0.0731	1.45	1.000
1,2,3,7,8,9-HXCDF	ND		0.0731		
2,3,4,6,7,8-HXCDF		0.327	0.0731	1.05	1.000
1,2,3,4,6,7,8-HPCDF		2.03	0.0731	0.93	1.000
1,2,3,4,7,8,9-HPCDF		0.165	0.0731	1.06	1.000
OCDF		2.44	0.0731	0.81	1.002
TOTAL TETRA-DIOXINS		70.7	0.0731		
TOTAL PENTA-DIOXINS		6.61	0.0731		
TOTAL HEXA-DIOXINS		11.6	0.0731		
TOTAL HEPTA-DIOXINS		20.5	0.0774		
TOTAL TETRA-FURANS		23.5	0.0731		
TOTAL PENTA-FURANS		21.2	0.0731		
TOTAL HEXA-FURANS		6.93	0.0731		
TOTAL HEPTA-FURANS		3.95	0.0731		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-46_Form1A_DX8C_199S9_SJ857723.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 056
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-46
Matrix:	SOLID	**Sample Size:**	6.84 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 02:53:38	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg absolute	**% Moisture:**	34.0

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	7190	71.9	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	7530	75.3	0.63	1.384
13C-1,2,3,4,7,8-HXCDD		10000	7510	75.1	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8000	80.0	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	8100	81.0	1.05	1.093
13C-OCDD		20000	14300	71.5	0.89	1.178
13C-2,3,7,8-TCDF		10000	6840	68.4	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	7480	74.8	1.55	1.287
13C-2,3,4,7,8-PECDF		10000	7380	73.8	1.55	1.353
13C-1,2,3,4,7,8-HXCDF		10000	7900	79.0	0.52	0.955
13C-1,2,3,6,7,8-HXCDF		10000	8240	82.4	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	7680	76.8	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	7870	78.7	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	7590	75.9	0.44	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	8120	81.2	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	178	89.0		1.014

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-46_Form2_DX8C_199S9_SJ857723.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 059
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-47 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	6.72 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	13-May-2008 **Time:** 14:45:44	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_168 S: 9**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_168 S: 1
		% Moisture:	35.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		3.84	0.0744	0.74	1.001
1,2,3,7,8-PECDD [3]	NDR	0.136	0.0744	0.90	1.000
1,2,3,4,7,8-HXCDD	NDR	0.082	0.0744	1.61	1.000
1,2,3,6,7,8-HXCDD	NDR	0.153	0.0744	1.55	1.000
1,2,3,7,8,9-HXCDD	NDR	0.112	0.0744	0.83	1.010
1,2,3,4,6,7,8-HPCDD		1.41	0.0744	1.13	1.000
OCDD		33.6	0.125	0.90	1.000
2,3,7,8-TCDF		0.718	0.0744	0.78	1.001
1,2,3,7,8-PECDF	ND		0.0744		
2,3,4,7,8-PECDF		0.279	0.0744	1.46	1.000
1,2,3,4,7,8-HXCDF		0.088	0.0744	1.24	1.000
1,2,3,6,7,8-HXCDF	ND		0.0744		
1,2,3,7,8,9-HXCDF	ND		0.0744		
2,3,4,6,7,8-HXCDF	ND		0.0744		
1,2,3,4,6,7,8-HPCDF		0.351	0.0744	1.17	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0744		
OCDF		0.411	0.0744	0.80	1.002
TOTAL TETRA-DIOXINS		4.52	0.0744		
TOTAL PENTA-DIOXINS		0.210	0.0744		
TOTAL HEXA-DIOXINS		0.358	0.0744		
TOTAL HEPTA-DIOXINS		2.61	0.0744		
TOTAL TETRA-FURANS		2.72	0.0744		
TOTAL PENTA-FURANS		1.55	0.0744		
TOTAL HEXA-FURANS		0.445	0.0744		
TOTAL HEPTA-FURANS		0.597	0.0744		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-47_Form1A_DX82_168S9_SJ858535.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 059
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-47 i
Matrix:	SOLID	**Sample Size:**	6.72 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 14:45:44	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	35.0

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	9800	98.0	0.81	1.014
13C-1,2,3,7,8-PECDD [4]		10000	10700	107	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		10000	10100	101	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		10000	10000	100	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	10400	104	1.02	1.093
13C-OCDD		20000	20000	100	0.91	1.177
13C-2,3,7,8-TCDF		10000	11200	112	0.79	0.967
13C-1,2,3,7,8-PECDF		10000	11200	112	1.62	1.288
13C-2,3,4,7,8-PECDF		10000	11200	112	1.59	1.355
13C-1,2,3,4,7,8-HXCDF		10000	11000	110	0.53	0.955
13C-1,2,3,6,7,8-HXCDF		10000	11200	112	0.53	0.959
13C-1,2,3,7,8,9-HXCDF		10000	10800	108	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	10900	109	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9800	98.0	0.48	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	11400	114	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	215	108		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-47_Form2_DX82_168S9_SJ858535.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 063
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-48
Matrix:	SOLID	**Sample Size:**	7.56 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 04:43:25	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	24.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		7.06	0.0661	0.77	1.001
1,2,3,7,8-PECDD [3]		0.557	0.0661	0.61	1.000
1,2,3,4,7,8-HXCDD	NDR	0.461	0.0661	1.53	1.000
1,2,3,6,7,8-HXCDD		1.22	0.0661	1.15	1.000
1,2,3,7,8,9-HXCDD		1.42	0.0661	1.29	1.010
1,2,3,4,6,7,8-HPCDD		29.9	0.121	1.01	1.000
OCDD		298	0.0661	0.88	1.000
2,3,7,8-TCDF		3.45	0.0661	0.77	1.001
1,2,3,7,8-PECDF		0.803	0.0661	1.46	1.001
2,3,4,7,8-PECDF		1.82	0.0661	1.55	1.000
1,2,3,4,7,8-HXCDF		1.44	0.0661	1.13	1.000
1,2,3,6,7,8-HXCDF		0.749	0.0661	1.10	1.000
1,2,3,7,8,9-HXCDF	NDR	0.086	0.0661	0.92	1.000
2,3,4,6,7,8-HXCDF		0.881	0.0661	1.25	1.000
1,2,3,4,6,7,8-HPCDF		4.21	0.104	0.99	1.000
1,2,3,4,7,8,9-HPCDF		0.299	0.104	0.93	1.000
OCDF		5.82	0.0661	0.87	1.002
TOTAL TETRA-DIOXINS		8.05	0.0661		
TOTAL PENTA-DIOXINS		3.22	0.0661		
TOTAL HEXA-DIOXINS		13.5	0.0661		
TOTAL HEPTA-DIOXINS		67.9	0.121		
TOTAL TETRA-FURANS		22.0	0.0661		
TOTAL PENTA-FURANS		32.1	0.0661		
TOTAL HEXA-FURANS		18.3	0.0661		
TOTAL HEPTA-FURANS		9.09	0.104		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-48_Form1A_DX8C_199S11_SJ857725.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 063
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-48
Matrix:	SOLID	**Sample Size:**	7.56 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 04:43:25	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg absolute	**% Moisture:**	24.9

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	8990	89.9	0.80	1.014
13C-1,2,3,7,8-PECDD [4]		10000	8350	83.5	0.63	1.385
13C-1,2,3,4,7,8-HXCDD		10000	8310	83.1	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8510	85.1	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	9360	93.6	1.05	1.093
13C-OCDD		20000	18200	90.8	0.90	1.177
13C-2,3,7,8-TCDF		10000	8010	80.1	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	8010	80.1	1.57	1.287
13C-2,3,4,7,8-PECDF		10000	7960	79.6	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		10000	8650	86.5	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	8760	87.6	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	8580	85.8	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	8690	86.9	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	8840	88.4	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	9930	99.3	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	245	123		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 014-1
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-49
Matrix:	SOLID	**Sample Size:**	9.89 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 05:38:17	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	OLR				
1,2,3,7,8-PECDD [3]		36.0	0.0506	0.62	1.000
1,2,3,4,7,8-HXCDD		2.51	0.161	1.21	1.000
1,2,3,6,7,8-HXCDD		17.0	0.161	1.26	1.000
1,2,3,7,8,9-HXCDD		5.69	0.161	1.24	1.010
1,2,3,4,6,7,8-HPCDD		64.4	0.121	1.03	1.000
OCDD		265	0.0506	0.88	1.000
2,3,7,8-TCDF		112	0.230	0.77	1.003
1,2,3,7,8-PECDF		4.34	0.0506	1.54	1.001
2,3,4,7,8-PECDF		3.35	0.0506	1.46	1.000
1,2,3,4,7,8-HXCDF		2.85	0.0506	1.25	1.000
1,2,3,6,7,8-HXCDF		0.983	0.0506	1.17	1.000
1,2,3,7,8,9-HXCDF		0.085	0.0506	1.10	1.000
2,3,4,6,7,8-HXCDF		0.990	0.0506	1.33	1.000
1,2,3,4,6,7,8-HPCDF		13.4	0.0554	1.02	1.000
1,2,3,4,7,8,9-HPCDF		0.481	0.0554	1.04	1.000
OCDF		13.6	0.0506	0.86	1.002
TOTAL TETRA-DIOXINS	X				
TOTAL PENTA-DIOXINS		154	0.0506		
TOTAL HEXA-DIOXINS		173	0.161		
TOTAL HEPTA-DIOXINS		134	0.121		
TOTAL TETRA-FURANS		405	0.230		
TOTAL PENTA-FURANS		505	0.0506		
TOTAL HEXA-FURANS		128	0.0506		
TOTAL HEPTA-FURANS		28.6	0.0554		

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-49_Form1A_DX8C_199S12_SJ857726.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 014-1
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-49 W
Matrix:	SOLID	**Sample Size:**	9.89 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 01:54:06	**GC Column ID:**	DB5
Extract Volume (uL):	200	**Sample Data Filename:**	**DX82_169 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	10	**Cal. Ver. Data Filename:**	DX82_169 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	D	1760	0.208	0.79	1.001
1,2,3,7,8-PECDD [3]	X				
1,2,3,4,7,8-HXCDD	X				
1,2,3,6,7,8-HXCDD	X				
1,2,3,7,8,9-HXCDD	X				
1,2,3,4,6,7,8-HPCDD	X				
OCDD	X				
2,3,7,8-TCDF	X				
1,2,3,7,8-PECDF	X				
2,3,4,7,8-PECDF	X				
1,2,3,4,7,8-HXCDF	X				
1,2,3,6,7,8-HXCDF	X				
1,2,3,7,8,9-HXCDF	X				
2,3,4,6,7,8-HXCDF	X				
1,2,3,4,6,7,8-HPCDF	X				
1,2,3,4,7,8,9-HPCDF	X				
OCDF	X				
TOTAL TETRA-DIOXINS	D	1850	0.208		
TOTAL PENTA-DIOXINS	X				
TOTAL HEXA-DIOXINS	X				
TOTAL HEPTA-DIOXINS	X				
TOTAL TETRA-FURANS	X				
TOTAL PENTA-FURANS	X				
TOTAL HEXA-FURANS	X				
TOTAL HEPTA-FURANS	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-49_Form1A_DX82_169S8_SJ860413.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 014-1
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-49
Matrix:	SOLID	**Sample Size:**	9.89 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	10-May-2008 **Time:** 05:38:17	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_199 S: 12**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_199 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.69

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	8420	84.2	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	8100	81.0	0.64	1.385
13C-1,2,3,4,7,8-HXCDD		10000	8510	85.1	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	9430	94.3	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	9140	91.4	1.05	1.093
13C-OCDD		20000	18400	91.9	0.90	1.177
13C-2,3,7,8-TCDF		10000	7990	79.9	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	7870	78.7	1.56	1.287
13C-2,3,4,7,8-PECDF		10000	7830	78.3	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		10000	8920	89.2	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	9050	90.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	8770	87.7	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	8830	88.3	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	8980	89.8	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	9200	92.0	0.45	1.103

CLEANUP STANDARD

37CL-2,3,7,8-TCDD	X

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 014-1
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-49 W
Matrix:	SOLID	**Sample Size:**	9.89 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 01:54:06	**GC Column ID:**	DB5
Extract Volume (uL):	200	**Sample Data Filename:**	**DX82_169 S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	10	**Cal. Ver. Data Filename:**	DX82_169 S: 1
Concentration Units:	pg absolute	**% Moisture:**	3.69

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD	D	10000	8850	88.5	0.79	1.015
13C-1,2,3,7,8-PECDD [4]	X					
13C-1,2,3,4,7,8-HXCDD	X					
13C-1,2,3,6,7,8-HXCDD	X					
13C-1,2,3,4,6,7,8-HPCDD	X					
13C-OCDD	X					
13C-2,3,7,8-TCDF	X					
13C-1,2,3,7,8-PECDF	X					
13C-2,3,4,7,8-PECDF	X					
13C-1,2,3,4,7,8-HXCDF	X					
13C-1,2,3,6,7,8-HXCDF	X					
13C-1,2,3,7,8,9-HXCDF	X					
13C-2,3,4,6,7,8-HXCDF	X					
13C-1,2,3,4,6,7,8-HPCDF	X					
13C-1,2,3,4,7,8,9-HPCDF	X					
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD	D	200	191	95.5		1.015

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-49_Form2_DX82_169S8_SJ860413.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 061
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-50 i
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	7.87 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Analysis Date:	13-May-2008 **Time:** 16:34:37	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX82_168 S: 11**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX82_168 S: 1
		% Moisture:	22.8

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		9.88	0.0635	0.77	1.001
1,2,3,7,8-PECDD [3]		1.84	0.0635	0.61	1.001
1,2,3,4,7,8-HXCDD		2.45	0.0635	1.29	1.000
1,2,3,6,7,8-HXCDD		4.33	0.0635	1.24	1.000
1,2,3,7,8,9-HXCDD		6.94	0.0635	1.31	1.010
1,2,3,4,6,7,8-HPCDD		66.3	0.0635	1.05	1.000
OCDD		387	0.136	0.90	1.000
2,3,7,8-TCDF		5.82	0.103	0.78	1.001
1,2,3,7,8-PECDF		1.61	0.0635	1.66	1.000
2,3,4,7,8-PECDF		2.98	0.0635	1.61	1.000
1,2,3,4,7,8-HXCDF		1.91	0.0635	1.19	1.000
1,2,3,6,7,8-HXCDF		1.71	0.0635	1.27	1.000
1,2,3,7,8,9-HXCDF		0.173	0.0635	1.09	1.000
2,3,4,6,7,8-HXCDF		1.14	0.0635	1.22	1.000
1,2,3,4,6,7,8-HPCDF		3.80	0.0635	1.01	1.000
1,2,3,4,7,8,9-HPCDF		0.544	0.0635	1.01	1.000
OCDF		4.68	0.0635	0.87	1.002
TOTAL TETRA-DIOXINS		13.8	0.0635		
TOTAL PENTA-DIOXINS		12.2	0.0635		
TOTAL HEXA-DIOXINS		40.0	0.0635		
TOTAL HEPTA-DIOXINS		130	0.0635		
TOTAL TETRA-FURANS		30.6	0.103		
TOTAL PENTA-FURANS		41.0	0.0635		
TOTAL HEXA-FURANS		22.9	0.0635		
TOTAL HEPTA-FURANS		8.67	0.0635		

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-50_Form1A_DX82_168S11_SJ858537.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNPC 061
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-50 i
Matrix:	SOLID	**Sample Size:**	7.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 16:34:37	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	22.8

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	10000	100	0.80	1.015
13C-1,2,3,7,8-PECDD [4]		10000	10600	106	0.63	1.386
13C-1,2,3,4,7,8-HXCDD		10000	9700	97.0	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	9670	96.7	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	10000	100	1.01	1.093
13C-OCDD		20000	20500	102	0.91	1.177
13C-2,3,7,8-TCDF		10000	10700	107	0.80	0.967
13C-1,2,3,7,8-PECDF		10000	11300	113	1.59	1.288
13C-2,3,4,7,8-PECDF		10000	11200	112	1.59	1.355
13C-1,2,3,4,7,8-HXCDF		10000	10900	109	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		10000	10800	108	0.53	0.958
13C-1,2,3,7,8,9-HXCDF		10000	10900	109	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	10700	107	0.53	0.980
13C-1,2,3,4,6,7,8-HPCDF		10000	9900	99.0	0.47	1.061
13C-1,2,3,4,7,8,9-HPCDF		10000	10500	105	0.48	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	213	106		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG25091-101
Sample Receipt Date:	N/A	**Sample Size:**	10.0 g
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	08-May-2008 **Time:** 23:56:56	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_197 S: 5**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_197 S: 5
Concentration Units:	pg/g	**Cal. Ver. Data Filename:**	DX8C_197 S: 1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD	NDR	0.118	0.0500	0.53	1.001
1,2,3,7,8-PECDD [3]	ND		0.0500		
1,2,3,4,7,8-HXCDD	ND		0.0500		
1,2,3,6,7,8-HXCDD	ND		0.0500		
1,2,3,7,8,9-HXCDD	ND		0.0500		
1,2,3,4,6,7,8-HPCDD		0.175	0.0500	1.16	1.000
OCDD	NDR	0.116	0.0500	0.69	1.000
2,3,7,8-TCDF	ND		0.0500		
1,2,3,7,8-PECDF	ND		0.0500		
2,3,4,7,8-PECDF		0.150	0.0500	1.77	1.000
1,2,3,4,7,8-HXCDF	ND		0.0500		
1,2,3,6,7,8-HXCDF	ND		0.0500		
1,2,3,7,8,9-HXCDF	ND		0.0500		
2,3,4,6,7,8-HXCDF	ND		0.0500		
1,2,3,4,6,7,8-HPCDF	ND		0.0500		
1,2,3,4,7,8,9-HPCDF	ND		0.0500		
OCDF	ND		0.0500		
TOTAL TETRA-DIOXINS	ND		0.0500		
TOTAL PENTA-DIOXINS	ND		0.0500		
TOTAL HEXA-DIOXINS	ND		0.0500		
TOTAL HEPTA-DIOXINS		0.175	0.0500		
TOTAL TETRA-FURANS	ND		0.0500		
TOTAL PENTA-FURANS		0.150	0.0500		
TOTAL HEXA-FURANS	ND		0.0500		
TOTAL HEPTA-FURANS	ND		0.0500		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25091-101_Form1A_DX8C_197S5_SJ857680.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 2

PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4496	**Lab Sample I.D.:**	WG25091-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	08-May-2008 **Time:** 23:56:56	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_197 S: 5**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_197 S: 1
Concentration Units:	pg absolute		

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	6390	63.9	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		10000	6450	64.5	0.64	1.384
13C-1,2,3,4,7,8-HXCDD		10000	6610	66.1	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	6940	69.4	1.25	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	6220	62.2	1.03	1.094
13C-OCDD		20000	10600	52.8	0.90	1.177
13C-2,3,7,8-TCDF		10000	6200	62.0	0.78	0.966
13C-1,2,3,7,8-PECDF		10000	6550	65.5	1.57	1.286
13C-2,3,4,7,8-PECDF		10000	6500	65.0	1.56	1.354
13C-1,2,3,4,7,8-HXCDF		10000	6800	68.0	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		10000	7310	73.1	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		10000	6740	67.4	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		10000	6940	69.4	0.52	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	6430	64.3	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	6270	62.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	169	84.3		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25091-101_Form2_DX8C_197S5_SJ857680.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8A

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_197 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25091-102
Extraction Date:	29-Apr-2008	**Analysis Date:**	08-May-2008 **Time:** 21:12:16

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.78	10.6	10.5	7.10 - 16.7	99.4
1,2,3,7,8-PECDD [4]		0.62	56.6	59.8	39.6 - 80.4	106
1,2,3,4,7,8-HXCDD		1.25	59.2	59.0	41.4 - 97.1	99.6
1,2,3,6,7,8-HXCDD		1.24	51.8	53.6	39.4 - 69.4	103
1,2,3,7,8,9-HXCDD		1.24	56.7	54.9	36.3 - 91.9	96.8
1,2,3,4,6,7,8-HPCDD		1.05	50.0	49.0	35.0 - 70.0	98.0
OCDD		0.89	108	99.2	84.2 - 155	91.9
2,3,7,8-TCDF		0.77	10.9	11.3	8.18 - 17.2	104
1,2,3,7,8-PECDF		1.54	50.0	51.7	40.0 - 67.0	103
2,3,4,7,8-PECDF		1.54	50.0	51.3	34.0 - 80.0	103
1,2,3,4,7,8-HXCDF		1.21	54.4	54.4	39.2 - 72.9	100
1,2,3,6,7,8-HXCDF		1.23	50.0	49.3	42.0 - 65.0	98.7
1,2,3,7,8,9-HXCDF		1.23	50.0	50.2	39.0 - 65.0	100
2,3,4,6,7,8-HXCDF		1.22	53.1	52.0	37.2 - 82.8	97.9
1,2,3,4,6,7,8-HPCDF		1.02	50.0	53.1	41.0 - 61.0	106
1,2,3,4,7,8,9-HPCDF		1.01	50.0	49.1	39.0 - 69.0	98.2
OCDF		0.89	109	102	68.4 - 185	94.3

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8A.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25091-102_Form8A_SJ857676.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8B

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_197 S: 2**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25091-102
Extraction Date:	29-Apr-2008	**Analysis Date:**	08-May-2008 **Time:** 21:12:16

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.81	500	398	100-875	79.6
13C-1,2,3,7,8-PECDD [4]		0.64	500	378	105-1140	75.6
13C-1,2,3,4,7,8-HXCDD		1.27	500	364	105-965	72.8
13C-1,2,3,6,7,8-HXCDD		1.25	500	376	125-815	75.3
13C-1,2,3,4,6,7,8-HPCDD		1.03	500	346	130-830	69.3
13C-OCDD		0.90	1000	623	130-1990	62.3
13C-2,3,7,8-TCDF		0.79	500	397	110-760	79.5
13C-1,2,3,7,8-PECDF		1.56	500	396	105-960	79.2
13C-2,3,4,7,8-PECDF		1.57	500	389	65.0-1640	77.9
13C-1,2,3,4,7,8-HXCDF		0.51	500	382	95.0-1010	76.3
13C-1,2,3,6,7,8-HXCDF		0.52	500	409	105-795	81.8
13C-1,2,3,7,8,9-HXCDF		0.52	500	373	85.0-1030	74.6
13C-2,3,4,6,7,8-HXCDF		0.52	500	392	110-880	78.4
13C-1,2,3,4,6,7,8-HPCDF		0.45	500	364	105-790	72.8
13C-1,2,3,4,7,8,9-HPCDF		0.45	500	356	100-930	71.3
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD			10.0	12.0	3.10-19.1	120

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8B.xsl; Created: 28-May-2008 09:18:59; Application: XMLTransformer-1.9.5; Report Filename: 1613_DIOXINS_1613DB5_WG25091-102_Form8B_SJ857676.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 017 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25091-103 i (DUP L11075-37)
Matrix:	SOLID	**Sample Size:**	9.14 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 12:56:51	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		3.65	0.0547	0.77	1.001
1,2,3,7,8-PECDD [3]	NDR	0.084	0.0547	1.11	1.001
1,2,3,4,7,8-HXCDD	ND		0.0967		
1,2,3,6,7,8-HXCDD		0.471	0.0967	1.22	1.000
1,2,3,7,8,9-HXCDD		0.702	0.0967	1.14	1.010
1,2,3,4,6,7,8-HPCDD		4.10	0.147	1.08	1.000
OCDD		545	6.76	0.91	1.001
2,3,7,8-TCDF		0.410	0.0547	0.79	1.001
1,2,3,7,8-PECDF	ND		0.0547		
2,3,4,7,8-PECDF		0.169	0.0547	1.71	1.000
1,2,3,4,7,8-HXCDF	ND		0.0547		
1,2,3,6,7,8-HXCDF		0.058	0.0547	1.38	1.001
1,2,3,7,8,9-HXCDF		0.060	0.0547	1.14	1.000
2,3,4,6,7,8-HXCDF	ND		0.0547		
1,2,3,4,6,7,8-HPCDF	NDR	0.194	0.0577	1.91	1.000
1,2,3,4,7,8,9-HPCDF	ND		0.0577		
OCDF	NDR	0.214	0.0572	0.96	1.002
TOTAL TETRA-DIOXINS		3.80	0.0547		
TOTAL PENTA-DIOXINS	ND		0.0547		
TOTAL HEXA-DIOXINS		3.62	0.0967		
TOTAL HEPTA-DIOXINS		9.21	0.147		
TOTAL TETRA-FURANS		1.51	0.0547		
TOTAL PENTA-FURANS		1.11	0.0547		
TOTAL HEXA-FURANS		0.287	0.0547		
TOTAL HEPTA-FURANS	ND		0.0577		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25091-103_Form1A_DX82_168S7_SJ858533.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 017 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25091-103 i (DUP L11075-37)
Matrix:	SOLID	**Sample Size:**	9.14 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	05-Mar-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	13-May-2008 **Time:** 12:56:51	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX82_168 S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_197 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX82_168 S: 1
Concentration Units:	pg absolute	**% Moisture:**	13.1

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		10000	9230	92.3	0.81	1.014
13C-1,2,3,7,8-PECDD [4]		10000	8840	88.4	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		10000	9830	98.3	1.27	0.987
13C-1,2,3,6,7,8-HXCDD		10000	8350	83.5	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		10000	8800	88.0	1.01	1.093
13C-OCDD		20000	16400	82.2	0.91	1.177
13C-2,3,7,8-TCDF		10000	10100	101	0.79	0.966
13C-1,2,3,7,8-PECDF		10000	9930	99.3	1.59	1.288
13C-2,3,4,7,8-PECDF		10000	9530	95.3	1.59	1.355
13C-1,2,3,4,7,8-HXCDF		10000	10400	104	0.53	0.955
13C-1,2,3,6,7,8-HXCDF		10000	9980	99.8	0.53	0.959
13C-1,2,3,7,8,9-HXCDF		10000	9940	99.4	0.53	1.005
13C-2,3,4,6,7,8-HXCDF		10000	9940	99.4	0.53	0.981
13C-1,2,3,4,6,7,8-HPCDF		10000	9260	92.6	0.47	1.062
13C-1,2,3,4,7,8,9-HPCDF		10000	9860	98.6	0.47	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	190	95.0		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 001
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-34 W
Matrix:	SOLID	**Sample Size:**	8.92 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 16:03:29	**GC Column ID:**	DB225
Extract Volume (uL):	400	**Sample Data Filename:**	**DB83_120 S: 16**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	20	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	11.7

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	D	274	11.6	0.75	1.001

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-34_Form1A_DB83_120S16_SJ860010.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 002
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-35 W
Matrix:	SOLID	**Sample Size:**	9.15 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 17:14:37	**GC Column ID:**	DB225
Extract Volume (uL):	400	**Sample Data Filename:**	**DB83_120 S: 18**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	20	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	D	1800	18.3	0.73	1.001

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-35_Form1A_DB83_120S18_SJ860012.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 012
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-36 W
Matrix:	SOLID	**Sample Size:**	7.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 16:39:04	**GC Column ID:**	DB225
Extract Volume (uL):	400	**Sample Data Filename:**	**DB83_120 S: 17**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	20	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	22.6

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	D	833	3.30	0.83	1.002

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-36_Form1A_DB83_120S17_SJ860011.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 017
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-37 (A)
Matrix:	SOLID	**Sample Size:**	8.96 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 11:18:45	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	11.8

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	0.284	0.0600	0.67	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-37_Form1A_DB83_120S8_SJ860008.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 018
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-38
Matrix:	SOLID	**Sample Size:**	9.66 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 05:13:00	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 17**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	5.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		80.2	0.130	0.74	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-38_Form1A_DB83_121S17_SJ860026.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 020
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-39
Matrix:	SOLID	**Sample Size:**	8.95 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 23:52:29	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 8**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	11.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	0.192	0.0559	0.71	1.002

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-39_Form1A_DB83_121S8_SJ860017.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 024
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-40
Matrix:	SOLID	**Sample Size:**	8.55 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 10:07:34	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 6**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	16.7

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		0.0585		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-40_Form1A_DB83_120S6_SJ860006.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 026
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-41
Matrix:	SOLID	**Sample Size:**	8.66 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 10:43:10	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 7**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		0.0577		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-41_Form1A_DB83_120S7_SJ860007.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 031
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-42
Matrix:	SOLID	**Sample Size:**	10.0 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 01:39:26	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 11**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.38

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		3.73	0.107	0.70	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-42_Form1A_DB83_121S11_SJ860020.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 035
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-43
Matrix:	SOLID	**Sample Size:**	9.70 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 02:15:04	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 12**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.98

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	0.728	0.0553	0.99	1.001

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-43_Form1A_DB83_121S12_SJ860021.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 038
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-44
Matrix:	SOLID	**Sample Size:**	9.68 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 02:50:39	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 13**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	8.25

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		2.70	0.0547	0.73	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-44_Form1A_DB83_121S13_SJ860022.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 052
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-45
Matrix:	SOLID	**Sample Size:**	8.76 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 00:28:08	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.5

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		0.0701		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-45_Form1A_DB83_121S9_SJ860018.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 056
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-46
Matrix:	SOLID	**Sample Size:**	6.84 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 03:26:13	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 14**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	34.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		6.14	0.0731	0.69	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-46_Form1A_DB83_121S14_SJ860023.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 059
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-47
Matrix:	SOLID	**Sample Size:**	6.72 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 01:03:47	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 10**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	35.0

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	0.351	0.0744	0.83	1.000

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 063
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-48
Matrix:	SOLID	**Sample Size:**	7.56 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 04:01:48	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 15**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	24.9

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		2.93	0.0661	0.68	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-48_Form1A_DB83_121S15_SJ860024.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 014-1
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.		PROJECT 00057781	
Contract No.:	4496	**Lab Sample I.D.:**	L11075-49
Matrix:	SOLID	**Sample Size:**	9.89 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 05:48:38	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 18**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	3.69

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		60.4	0.671	0.70	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-49_Form1A_DB83_121S18_SJ860027.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 061
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-50
Matrix:	SOLID	**Sample Size:**	7.87 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	15-May-2008 **Time:** 04:37:22	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_121 S: 16**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_121 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	22.8

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		4.79	0.0635	0.67	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-50_Form1A_DB83_121S16_SJ860025.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4496	**Lab Sample I.D.:**	WG25091-101
Matrix:	SOLID	**Sample Size:**	10.0 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 09:31:59	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 5**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g		

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		0.0500		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_WG25091-101_Form1A_DB83_120S5_SJ860004.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNPC 017 (Duplicate)
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	WG25091-103 (DUP L11075-37)
Matrix:	SOLID	**Sample Size:**	9.14 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	13-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	14-May-2008 **Time:** 11:54:24	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB83_120 S: 9**
Injection Volume (uL):	2.0	**Blank Data Filename:**	DB83_120 S: 5
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB83_120 S: 2
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	13.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	NDR	0.300	0.0547	0.88	1.003

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 28-May-2008 09:19:52; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_WG25091-103_Form1A_DB83_120S9_SJ860009.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 001

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	8.92 g (dry)	**Lab Sample I.D.:**	L11075-34
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 16** **DX82_172 S: 10** **DX8C_198 S: 4**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		32800	2.31	1	3.28e+04	3.28e+04	
1,2,3,7,8-PECDD		335	0.0561	1	3.35e+02	3.35e+02	
1,2,3,4,7,8-HXCDD		9.68	0.324	0.1	9.68e-01	9.68e-01	
1,2,3,6,7,8-HXCDD		84.0	0.324	0.1	8.40e+00	8.40e+00	
1,2,3,7,8,9-HXCDD		20.7	0.324	0.1	2.07e+00	2.07e+00	
1,2,3,4,6,7,8-HPCDD		130	0.147	0.01	1.30e+00	1.30e+00	
OCDD		260	0.0561	0.0001	2.60e-02	2.60e-02	
2,3,7,8-TCDF		274	11.6	0.1	2.74e+01	2.74e+01	
1,2,3,7,8-PECDF		12.4	0.0695	0.05	6.20e-01	6.20e-01	
2,3,4,7,8-PECDF		36.5	0.0695	0.5	1.83e+01	1.83e+01	
1,2,3,4,7,8-HXCDF		26.7	0.104	0.1	2.67e+00	2.67e+00	
1,2,3,6,7,8-HXCDF		5.18	0.104	0.1	5.18e-01	5.18e-01	
1,2,3,7,8,9-HXCDF	ND		0.104	0.1	0.00e+00	5.20e-03	
2,3,4,6,7,8-HXCDF		5.50	0.104	0.1	5.50e-01	5.50e-01	
1,2,3,4,6,7,8-HPCDF		106	0.0809	0.01	1.06e+00	1.06e+00	
1,2,3,4,7,8,9-HPCDF		2.80	0.0809	0.01	2.80e-02	2.80e-02	
OCDF		59.3	0.0561	0.0001	5.93e-03	5.93e-03	
			TOTAL TEQ		33200	33200	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		32800	2.31	1	3.28e+04	3.28e+04	
1,2,3,7,8-PECDD		335	0.0561	1	3.35e+02	3.35e+02	
1,2,3,4,7,8-HXCDD		9.68	0.324	0.1	9.68e-01	9.68e-01	
1,2,3,6,7,8-HXCDD		84.0	0.324	0.1	8.40e+00	8.40e+00	
1,2,3,7,8,9-HXCDD		20.7	0.324	0.1	2.07e+00	2.07e+00	
1,2,3,4,6,7,8-HPCDD		130	0.147	0.01	1.30e+00	1.30e+00	
OCDD		260	0.0561	0.0003	7.80e-02	7.80e-02	
2,3,7,8-TCDF		274	11.6	0.1	2.74e+01	2.74e+01	
1,2,3,7,8-PECDF		12.4	0.0695	0.03	3.72e-01	3.72e-01	
2,3,4,7,8-PECDF		36.5	0.0695	0.3	1.10e+01	1.10e+01	
1,2,3,4,7,8-HXCDF		26.7	0.104	0.1	2.67e+00	2.67e+00	
1,2,3,6,7,8-HXCDF		5.18	0.104	0.1	5.18e-01	5.18e-01	
1,2,3,7,8,9-HXCDF	ND		0.104	0.1	0.00e+00	5.20e-03	
2,3,4,6,7,8-HXCDF		5.50	0.104	0.1	5.50e-01	5.50e-01	
1,2,3,4,6,7,8-HPCDF		106	0.0809	0.01	1.06e+00	1.06e+00	
1,2,3,4,7,8,9-HPCDF		2.80	0.0809	0.01	2.80e-02	2.80e-02	
OCDF		59.3	0.0561	0.0003	1.78e-02	1.78e-02	
			TOTAL TEQ		33200	33200	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-34_TEQ_SJ857693.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 002

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	9.15 g (dry)	**Lab Sample I.D.:**	L11075-35
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_120 S: 18** **DX82_172 S: 11** **DX82_176A S: 6** **DX8C_198 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		73100	12.1	1	7.31e+04	7.31e+04	
1,2,3,7,8-PECDD		1030	0.0546	1	1.03e+03	1.03e+03	
1,2,3,4,7,8-HXCDD		71.4	4.54	0.1	7.14e+00	7.14e+00	
1,2,3,6,7,8-HXCDD		852	4.54	0.1	8.52e+01	8.52e+01	
1,2,3,7,8,9-HXCDD		280	4.54	0.1	2.80e+01	2.80e+01	
1,2,3,4,6,7,8-HPCDD		3330	4.42	0.01	3.33e+01	3.33e+01	
OCDD		7560	1.58	0.0001	7.56e-01	7.56e-01	
2,3,7,8-TCDF		1800	18.3	0.1	1.80e+02	1.80e+02	
1,2,3,7,8-PECDF		49.2	0.679	0.05	2.46e+00	2.46e+00	
2,3,4,7,8-PECDF		97.4	0.679	0.5	4.87e+01	4.87e+01	
1,2,3,4,7,8-HXCDF		65.6	0.296	0.1	6.56e+00	6.56e+00	
1,2,3,6,7,8-HXCDF		19.7	0.296	0.1	1.97e+00	1.97e+00	
1,2,3,7,8,9-HXCDF		1.01	0.296	0.1	1.01e-01	1.01e-01	
2,3,4,6,7,8-HXCDF		26.3	0.296	0.1	2.63e+00	2.63e+00	
1,2,3,4,6,7,8-HPCDF		377	0.419	0.01	3.77e+00	3.77e+00	
1,2,3,4,7,8,9-HPCDF		9.98	0.419	0.01	9.98e-02	9.98e-02	
OCDF		257	0.150	0.0001	2.57e-02	2.57e-02	
			TOTAL TEQ		74500	74500	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		73100	12.1	1	7.31e+04	7.31e+04	
1,2,3,7,8-PECDD		1030	0.0546	1	1.03e+03	1.03e+03	
1,2,3,4,7,8-HXCDD		71.4	4.54	0.1	7.14e+00	7.14e+00	
1,2,3,6,7,8-HXCDD		852	4.54	0.1	8.52e+01	8.52e+01	
1,2,3,7,8,9-HXCDD		280	4.54	0.1	2.80e+01	2.80e+01	
1,2,3,4,6,7,8-HPCDD		3330	4.42	0.01	3.33e+01	3.33e+01	
OCDD		7560	1.58	0.0003	2.27e+00	2.27e+00	
2,3,7,8-TCDF		1800	18.3	0.1	1.80e+02	1.80e+02	
1,2,3,7,8-PECDF		49.2	0.679	0.03	1.48e+00	1.48e+00	
2,3,4,7,8-PECDF		97.4	0.679	0.3	2.92e+01	2.92e+01	
1,2,3,4,7,8-HXCDF		65.6	0.296	0.1	6.56e+00	6.56e+00	
1,2,3,6,7,8-HXCDF		19.7	0.296	0.1	1.97e+00	1.97e+00	
1,2,3,7,8,9-HXCDF		1.01	0.296	0.1	1.01e-01	1.01e-01	
2,3,4,6,7,8-HXCDF		26.3	0.296	0.1	2.63e+00	2.63e+00	
1,2,3,4,6,7,8-HPCDF		377	0.419	0.01	3.77e+00	3.77e+00	
1,2,3,4,7,8,9-HPCDF		9.98	0.419	0.01	9.98e-02	9.98e-02	
OCDF		257	0.150	0.0003	7.71e-02	7.71e-02	
			TOTAL TEQ		74500	74500	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 012

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	7.95 g (dry)	**Lab Sample I.D.:**	L11075-36
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 17** **DX82_172 S: 9** **DX8C_198 S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		22900	5.27	1	2.29e+04	2.29e+04	
1,2,3,7,8-PECDD		193	0.0696	1	1.93e+02	1.93e+02	
1,2,3,4,7,8-HXCDD		12.2	0.616	0.1	1.22e+00	1.22e+00	
1,2,3,6,7,8-HXCDD		108	0.616	0.1	1.08e+01	1.08e+01	
1,2,3,7,8,9-HXCDD		32.9	0.616	0.1	3.29e+00	3.29e+00	
1,2,3,4,6,7,8-HPCDD		298	0.299	0.01	2.98e+00	2.98e+00	
OCDD		1160	0.0813	0.0001	1.16e-01	1.16e-01	
2,3,7,8-TCDF		833	3.30	0.1	8.33e+01	8.33e+01	
1,2,3,7,8-PECDF		20.0	0.190	0.05	1.00e+00	1.00e+00	
2,3,4,7,8-PECDF		20.8	0.190	0.5	1.04e+01	1.04e+01	
1,2,3,4,7,8-HXCDF		13.1	0.0818	0.1	1.31e+00	1.31e+00	
1,2,3,6,7,8-HXCDF		4.44	0.0818	0.1	4.44e-01	4.44e-01	
1,2,3,7,8,9-HXCDF	ND		0.0818	0.1	0.00e+00	4.09e-03	
2,3,4,6,7,8-HXCDF		5.49	0.0818	0.1	5.49e-01	5.49e-01	
1,2,3,4,6,7,8-HPCDF		57.8	0.0729	0.01	5.78e-01	5.78e-01	
1,2,3,4,7,8,9-HPCDF		1.57	0.0729	0.01	1.57e-02	1.57e-02	
OCDF		29.6	0.0629	0.0001	2.96e-03	2.96e-03	
			TOTAL TEQ		23200	23200	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		22900	5.27	1	2.29e+04	2.29e+04	
1,2,3,7,8-PECDD		193	0.0696	1	1.93e+02	1.93e+02	
1,2,3,4,7,8-HXCDD		12.2	0.616	0.1	1.22e+00	1.22e+00	
1,2,3,6,7,8-HXCDD		108	0.616	0.1	1.08e+01	1.08e+01	
1,2,3,7,8,9-HXCDD		32.9	0.616	0.1	3.29e+00	3.29e+00	
1,2,3,4,6,7,8-HPCDD		298	0.299	0.01	2.98e+00	2.98e+00	
OCDD		1160	0.0813	0.0003	3.48e-01	3.48e-01	
2,3,7,8-TCDF		833	3.30	0.1	8.33e+01	8.33e+01	
1,2,3,7,8-PECDF		20.0	0.190	0.03	6.00e-01	6.00e-01	
2,3,4,7,8-PECDF		20.8	0.190	0.3	6.24e+00	6.24e+00	
1,2,3,4,7,8-HXCDF		13.1	0.0818	0.1	1.31e+00	1.31e+00	
1,2,3,6,7,8-HXCDF		4.44	0.0818	0.1	4.44e-01	4.44e-01	
1,2,3,7,8,9-HXCDF	ND		0.0818	0.1	0.00e+00	4.09e-03	
2,3,4,6,7,8-HXCDF		5.49	0.0818	0.1	5.49e-01	5.49e-01	
1,2,3,4,6,7,8-HPCDF		57.8	0.0729	0.01	5.78e-01	5.78e-01	
1,2,3,4,7,8,9-HPCDF		1.57	0.0729	0.01	1.57e-02	1.57e-02	
OCDF		29.6	0.0629	0.0003	8.88e-03	8.88e-03	
			TOTAL TEQ		23200	23200	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-36_TEQ_SJ857695.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 017

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-37 i (A)
Sample Size:	8.96 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 8** **DX82_168 S: 6**
		Sample Collection:	N/A

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		4.32	0.0558	1	4.32e+00	4.32e+00	
1,2,3,7,8-PECDD	ND		0.0558	1	0.00e+00	2.79e-02	
1,2,3,4,7,8-HXCDD	ND		0.0920	0.1	0.00e+00	4.60e-03	
1,2,3,6,7,8-HXCDD		0.440	0.0920	0.1	4.40e-02	4.40e-02	
1,2,3,7,8,9-HXCDD		0.690	0.0920	0.1	6.90e-02	6.90e-02	
1,2,3,4,6,7,8-HPCDD		3.87	0.175	0.01	3.87e-02	3.87e-02	
OCDD		441	2.71	0.0001	4.41e-02	4.41e-02	
2,3,7,8-TCDF	ND		0.0600	0.1	0.00e+00	3.00e-03	
1,2,3,7,8-PECDF	ND		0.0558	0.05	0.00e+00	1.40e-03	
2,3,4,7,8-PECDF		0.183	0.0558	0.5	9.15e-02	9.15e-02	
1,2,3,4,7,8-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
1,2,3,6,7,8-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
1,2,3,7,8,9-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
2,3,4,6,7,8-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
1,2,3,4,6,7,8-HPCDF		0.128	0.0558	0.01	1.28e-03	1.28e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.0558	0.01	0.00e+00	2.79e-04	
OCDF	ND		0.0558	0.0001	0.00e+00	2.79e-06	
			TOTAL TEQ		4.61	4.66	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		4.32	0.0558	1	4.32e+00	4.32e+00	
1,2,3,7,8-PECDD	ND		0.0558	1	0.00e+00	2.79e-02	
1,2,3,4,7,8-HXCDD	ND		0.0920	0.1	0.00e+00	4.60e-03	
1,2,3,6,7,8-HXCDD		0.440	0.0920	0.1	4.40e-02	4.40e-02	
1,2,3,7,8,9-HXCDD		0.690	0.0920	0.1	6.90e-02	6.90e-02	
1,2,3,4,6,7,8-HPCDD		3.87	0.175	0.01	3.87e-02	3.87e-02	
OCDD		441	2.71	0.0003	1.32e-01	1.32e-01	
2,3,7,8-TCDF	ND		0.0600	0.1	0.00e+00	3.00e-03	
1,2,3,7,8-PECDF	ND		0.0558	0.03	0.00e+00	8.37e-04	
2,3,4,7,8-PECDF		0.183	0.0558	0.3	5.49e-02	5.49e-02	
1,2,3,4,7,8-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
1,2,3,6,7,8-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
1,2,3,7,8,9-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
2,3,4,6,7,8-HXCDF	ND		0.0558	0.1	0.00e+00	2.79e-03	
1,2,3,4,6,7,8-HPCDF		0.128	0.0558	0.01	1.28e-03	1.28e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.0558	0.01	0.00e+00	2.79e-04	
OCDF	ND		0.0558	0.0003	0.00e+00	8.37e-06	
			TOTAL TEQ		4.66	4.71	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-37_TEQ_SJ858532.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 018

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	9.66 g (dry)	**Lab Sample I.D.:**	L11075-38
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 17** **DX8C_198 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		702	0.0518	1	7.02e+02	7.02e+02	
1,2,3,7,8-PECDD		7.17	0.0518	1	7.17e+00	7.17e+00	
1,2,3,4,7,8-HXCDD		1.45	0.158	0.1	1.45e-01	1.45e-01	
1,2,3,6,7,8-HXCDD		6.88	0.158	0.1	6.88e-01	6.88e-01	
1,2,3,7,8,9-HXCDD		3.64	0.158	0.1	3.64e-01	3.64e-01	
1,2,3,4,6,7,8-HPCDD		38.8	0.163	0.01	3.88e-01	3.88e-01	
OCDD		218	0.115	0.0001	2.18e-02	2.18e-02	
2,3,7,8-TCDF		80.2	0.130	0.1	8.02e+00	8.02e+00	
1,2,3,7,8-PECDF		4.08	0.0518	0.05	2.04e-01	2.04e-01	
2,3,4,7,8-PECDF		1.11	0.0518	0.5	5.55e-01	5.55e-01	
1,2,3,4,7,8-HXCDF		1.03	0.0518	0.1	1.03e-01	1.03e-01	
1,2,3,6,7,8-HXCDF		0.604	0.0518	0.1	6.04e-02	6.04e-02	
1,2,3,7,8,9-HXCDF		0.054	0.0518	0.1	5.40e-03	5.40e-03	
2,3,4,6,7,8-HXCDF		0.468	0.0518	0.1	4.68e-02	4.68e-02	
1,2,3,4,6,7,8-HPCDF		5.22	0.0523	0.01	5.22e-02	5.22e-02	
1,2,3,4,7,8,9-HPCDF		0.329	0.0523	0.01	3.29e-03	3.29e-03	
OCDF		6.44	0.0518	0.0001	6.44e-04	6.44e-04	
			TOTAL TEQ		720	720	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		702	0.0518	1	7.02e+02	7.02e+02	
1,2,3,7,8-PECDD		7.17	0.0518	1	7.17e+00	7.17e+00	
1,2,3,4,7,8-HXCDD		1.45	0.158	0.1	1.45e-01	1.45e-01	
1,2,3,6,7,8-HXCDD		6.88	0.158	0.1	6.88e-01	6.88e-01	
1,2,3,7,8,9-HXCDD		3.64	0.158	0.1	3.64e-01	3.64e-01	
1,2,3,4,6,7,8-HPCDD		38.8	0.163	0.01	3.88e-01	3.88e-01	
OCDD		218	0.115	0.0003	6.54e-02	6.54e-02	
2,3,7,8-TCDF		80.2	0.130	0.1	8.02e+00	8.02e+00	
1,2,3,7,8-PECDF		4.08	0.0518	0.03	1.22e-01	1.22e-01	
2,3,4,7,8-PECDF		1.11	0.0518	0.3	3.33e-01	3.33e-01	
1,2,3,4,7,8-HXCDF		1.03	0.0518	0.1	1.03e-01	1.03e-01	
1,2,3,6,7,8-HXCDF		0.604	0.0518	0.1	6.04e-02	6.04e-02	
1,2,3,7,8,9-HXCDF		0.054	0.0518	0.1	5.40e-03	5.40e-03	
2,3,4,6,7,8-HXCDF		0.468	0.0518	0.1	4.68e-02	4.68e-02	
1,2,3,4,6,7,8-HPCDF		5.22	0.0523	0.01	5.22e-02	5.22e-02	
1,2,3,4,7,8,9-HPCDF		0.329	0.0523	0.01	3.29e-03	3.29e-03	
OCDF		6.44	0.0518	0.0003	1.93e-03	1.93e-03	
			TOTAL TEQ		720	720	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-38_TEQ_SJ857698.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 020

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	8.95 g (dry)	**Lab Sample I.D.:**	L11075-39 i
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 8** **DX82_168 S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2.24	0.0559	1	2.24e+00	2.24e+00	
1,2,3,7,8-PECDD	ND		0.0559	1	0.00e+00	2.80e-02	
1,2,3,4,7,8-HXCDD	ND		0.0898	0.1	0.00e+00	4.49e-03	
1,2,3,6,7,8-HXCDD		0.848	0.0898	0.1	8.48e-02	8.48e-02	
1,2,3,7,8,9-HXCDD		1.10	0.0898	0.1	1.10e-01	1.10e-01	
1,2,3,4,6,7,8-HPCDD		2.03	0.115	0.01	2.03e-02	2.03e-02	
OCDD		106	0.784	0.0001	1.06e-02	1.06e-02	
2,3,7,8-TCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
1,2,3,7,8-PECDF	ND		0.0559	0.05	0.00e+00	1.40e-03	
2,3,4,7,8-PECDF		0.157	0.0559	0.5	7.85e-02	7.85e-02	
1,2,3,4,7,8-HXCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
1,2,3,6,7,8-HXCDF		0.089	0.0559	0.1	8.90e-03	8.90e-03	
1,2,3,7,8,9-HXCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
2,3,4,6,7,8-HXCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0758	0.01	0.00e+00	3.79e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0758	0.01	0.00e+00	3.79e-04	
OCDF	ND		0.0804	0.0001	0.00e+00	4.02e-06	
			TOTAL TEQ		2.55	2.60	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2.24	0.0559	1	2.24e+00	2.24e+00	
1,2,3,7,8-PECDD	ND		0.0559	1	0.00e+00	2.80e-02	
1,2,3,4,7,8-HXCDD	ND		0.0898	0.1	0.00e+00	4.49e-03	
1,2,3,6,7,8-HXCDD		0.848	0.0898	0.1	8.48e-02	8.48e-02	
1,2,3,7,8,9-HXCDD		1.10	0.0898	0.1	1.10e-01	1.10e-01	
1,2,3,4,6,7,8-HPCDD		2.03	0.115	0.01	2.03e-02	2.03e-02	
OCDD		106	0.784	0.0003	3.18e-02	3.18e-02	
2,3,7,8-TCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
1,2,3,7,8-PECDF	ND		0.0559	0.03	0.00e+00	8.39e-04	
2,3,4,7,8-PECDF		0.157	0.0559	0.3	4.71e-02	4.71e-02	
1,2,3,4,7,8-HXCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
1,2,3,6,7,8-HXCDF		0.089	0.0559	0.1	8.90e-03	8.90e-03	
1,2,3,7,8,9-HXCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
2,3,4,6,7,8-HXCDF	ND		0.0559	0.1	0.00e+00	2.80e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0758	0.01	0.00e+00	3.79e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0758	0.01	0.00e+00	3.79e-04	
OCDF	ND		0.0804	0.0003	0.00e+00	1.21e-05	
			TOTAL TEQ		2.54	2.59	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-39_TEQ_SJ858534.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 024

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	8.55 g (dry)	**Lab Sample I.D.:**	L11075-40
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 6** **DX8C_198 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1.67	0.0585	1	1.67e+00	1.67e+00	
1,2,3,7,8-PECDD	ND		0.0585	1	0.00e+00	2.93e-02	
1,2,3,4,7,8-HXCDD	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,6,7,8-HXCDD	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,7,8,9-HXCDD		0.195	0.0585	0.1	1.95e-02	1.95e-02	
1,2,3,4,6,7,8-HPCDD		1.53	0.0585	0.01	1.53e-02	1.53e-02	
OCDD		89.5	0.0585	0.0001	8.95e-03	8.95e-03	
2,3,7,8-TCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,7,8-PECDF	ND		0.0585	0.05	0.00e+00	1.46e-03	
2,3,4,7,8-PECDF		0.166	0.0585	0.5	8.30e-02	8.30e-02	
1,2,3,4,7,8-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,6,7,8-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,7,8,9-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
2,3,4,6,7,8-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0585	0.01	0.00e+00	2.93e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0585	0.01	0.00e+00	2.93e-04	
OCDF		0.084	0.0585	0.0001	8.40e-06	8.40e-06	
			TOTAL TEQ		1.80	1.85	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1.67	0.0585	1	1.67e+00	1.67e+00	
1,2,3,7,8-PECDD	ND		0.0585	1	0.00e+00	2.93e-02	
1,2,3,4,7,8-HXCDD	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,6,7,8-HXCDD	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,7,8,9-HXCDD		0.195	0.0585	0.1	1.95e-02	1.95e-02	
1,2,3,4,6,7,8-HPCDD		1.53	0.0585	0.01	1.53e-02	1.53e-02	
OCDD		89.5	0.0585	0.0003	2.69e-02	2.69e-02	
2,3,7,8-TCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,7,8-PECDF	ND		0.0585	0.03	0.00e+00	8.78e-04	
2,3,4,7,8-PECDF		0.166	0.0585	0.3	4.98e-02	4.98e-02	
1,2,3,4,7,8-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,6,7,8-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,7,8,9-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
2,3,4,6,7,8-HXCDF	ND		0.0585	0.1	0.00e+00	2.93e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0585	0.01	0.00e+00	2.93e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0585	0.01	0.00e+00	2.93e-04	
OCDF		0.084	0.0585	0.0003	2.52e-05	2.52e-05	
			TOTAL TEQ		1.78	1.83	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-40_TEQ_SJ857700.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 026

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	8.66 g (dry)	**Lab Sample I.D.:**	L11075-41
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_120 S: 7** **DX8C_198 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1.02	0.0577	1	1.02e+00	1.02e+00	
1,2,3,7,8-PECDD	ND		0.0577	1	0.00e+00	2.89e-02	
1,2,3,4,7,8-HXCDD	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,6,7,8-HXCDD	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,7,8,9-HXCDD		0.198	0.0577	0.1	1.98e-02	1.98e-02	
1,2,3,4,6,7,8-HPCDD		0.631	0.0577	0.01	6.31e-03	6.31e-03	
OCDD		27.4	0.0577	0.0001	2.74e-03	2.74e-03	
2,3,7,8-TCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,7,8-PECDF	ND		0.0577	0.05	0.00e+00	1.44e-03	
2,3,4,7,8-PECDF		0.153	0.0577	0.5	7.65e-02	7.65e-02	
1,2,3,4,7,8-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,6,7,8-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,7,8,9-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
2,3,4,6,7,8-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
OCDF	ND		0.0577	0.0001	0.00e+00	2.89e-06	
			TOTAL TEQ		1.13	1.18	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1.02	0.0577	1	1.02e+00	1.02e+00	
1,2,3,7,8-PECDD	ND		0.0577	1	0.00e+00	2.89e-02	
1,2,3,4,7,8-HXCDD	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,6,7,8-HXCDD	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,7,8,9-HXCDD		0.198	0.0577	0.1	1.98e-02	1.98e-02	
1,2,3,4,6,7,8-HPCDD		0.631	0.0577	0.01	6.31e-03	6.31e-03	
OCDD		27.4	0.0577	0.0003	8.22e-03	8.22e-03	
2,3,7,8-TCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,7,8-PECDF	ND		0.0577	0.03	0.00e+00	8.66e-04	
2,3,4,7,8-PECDF		0.153	0.0577	0.3	4.59e-02	4.59e-02	
1,2,3,4,7,8-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,6,7,8-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,7,8,9-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
2,3,4,6,7,8-HXCDF	ND		0.0577	0.1	0.00e+00	2.89e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
OCDF	ND		0.0577	0.0003	0.00e+00	8.66e-06	
			TOTAL TEQ		1.10	1.15	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-41_TEQ_SJ857701.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 031

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	10.0 g (dry)	**Lab Sample I.D.:**	L11075-42
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_121 S: 11** **DX82_169 S: 9** **DX8C_199 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		5.34	0.0499	1	5.34e+00	5.34e+00	
1,2,3,7,8-PECDD		41.2	0.0499	1	4.12e+01	4.12e+01	
1,2,3,4,7,8-HXCDD		65.5	1.37	0.1	6.55e+00	6.55e+00	
1,2,3,6,7,8-HXCDD		254	1.37	0.1	2.54e+01	2.54e+01	
1,2,3,7,8,9-HXCDD		242	1.37	0.1	2.42e+01	2.42e+01	
1,2,3,4,6,7,8-HPCDD		12000	2.46	0.01	1.20e+02	1.20e+02	
OCDD		41900	7.72	0.0001	4.19e+00	4.19e+00	
2,3,7,8-TCDF		3.73	0.107	0.1	3.73e-01	3.73e-01	
1,2,3,7,8-PECDF		3.07	0.0499	0.05	1.54e-01	1.54e-01	
2,3,4,7,8-PECDF		7.61	0.0499	0.5	3.81e+00	3.81e+00	
1,2,3,4,7,8-HXCDF		17.0	0.0806	0.1	1.70e+00	1.70e+00	
1,2,3,6,7,8-HXCDF		11.2	0.0806	0.1	1.12e+00	1.12e+00	
1,2,3,7,8,9-HXCDF		0.354	0.0806	0.1	3.54e-02	3.54e-02	
2,3,4,6,7,8-HXCDF		13.7	0.0806	0.1	1.37e+00	1.37e+00	
1,2,3,4,6,7,8-HPCDF		186	0.0711	0.01	1.86e+00	1.86e+00	
1,2,3,4,7,8,9-HPCDF		8.09	0.0711	0.01	8.09e-02	8.09e-02	
OCDF		256	0.0499	0.0001	2.56e-02	2.56e-02	
			TOTAL TEQ		237	237	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		5.34	0.0499	1	5.34e+00	5.34e+00	
1,2,3,7,8-PECDD		41.2	0.0499	1	4.12e+01	4.12e+01	
1,2,3,4,7,8-HXCDD		65.5	1.37	0.1	6.55e+00	6.55e+00	
1,2,3,6,7,8-HXCDD		254	1.37	0.1	2.54e+01	2.54e+01	
1,2,3,7,8,9-HXCDD		242	1.37	0.1	2.42e+01	2.42e+01	
1,2,3,4,6,7,8-HPCDD		12000	2.46	0.01	1.20e+02	1.20e+02	
OCDD		41900	7.72	0.0003	1.26e+01	1.26e+01	
2,3,7,8-TCDF		3.73	0.107	0.1	3.73e-01	3.73e-01	
1,2,3,7,8-PECDF		3.07	0.0499	0.03	9.21e-02	9.21e-02	
2,3,4,7,8-PECDF		7.61	0.0499	0.3	2.28e+00	2.28e+00	
1,2,3,4,7,8-HXCDF		17.0	0.0806	0.1	1.70e+00	1.70e+00	
1,2,3,6,7,8-HXCDF		11.2	0.0806	0.1	1.12e+00	1.12e+00	
1,2,3,7,8,9-HXCDF		0.354	0.0806	0.1	3.54e-02	3.54e-02	
2,3,4,6,7,8-HXCDF		13.7	0.0806	0.1	1.37e+00	1.37e+00	
1,2,3,4,6,7,8-HPCDF		186	0.0711	0.01	1.86e+00	1.86e+00	
1,2,3,4,7,8,9-HPCDF		8.09	0.0711	0.01	8.09e-02	8.09e-02	
OCDF		256	0.0499	0.0003	7.68e-02	7.68e-02	
			TOTAL TEQ		244	244	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-42_TEQ_SJ857719.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 035

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	9.70 g (dry)	**Lab Sample I.D.:**	L11075-43 i
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 12** **DX82_168 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		0.664	0.0515	1	6.64e-01	6.64e-01	
1,2,3,7,8-PECDD		1.35	0.0515	1	1.35e+00	1.35e+00	
1,2,3,4,7,8-HXCDD		1.97	0.0515	0.1	1.97e-01	1.97e-01	
1,2,3,6,7,8-HXCDD		4.71	0.0515	0.1	4.71e-01	4.71e-01	
1,2,3,7,8,9-HXCDD		4.61	0.0515	0.1	4.61e-01	4.61e-01	
1,2,3,4,6,7,8-HPCDD		117	0.0597	0.01	1.17e+00	1.17e+00	
OCDD		1250	0.798	0.0001	1.25e-01	1.25e-01	
2,3,7,8-TCDF	ND		0.0553	0.1	0.00e+00	2.77e-03	
1,2,3,7,8-PECDF		0.549	0.0515	0.05	2.75e-02	2.75e-02	
2,3,4,7,8-PECDF		1.26	0.0515	0.5	6.30e-01	6.30e-01	
1,2,3,4,7,8-HXCDF		1.64	0.0515	0.1	1.64e-01	1.64e-01	
1,2,3,6,7,8-HXCDF		0.979	0.0515	0.1	9.79e-02	9.79e-02	
1,2,3,7,8,9-HXCDF		0.139	0.0515	0.1	1.39e-02	1.39e-02	
2,3,4,6,7,8-HXCDF		1.15	0.0515	0.1	1.15e-01	1.15e-01	
1,2,3,4,6,7,8-HPCDF		13.0	0.0515	0.01	1.30e-01	1.30e-01	
1,2,3,4,7,8,9-HPCDF		0.871	0.0515	0.01	8.71e-03	8.71e-03	
OCDF		29.2	0.0515	0.0001	2.92e-03	2.92e-03	
			TOTAL TEQ		5.63	5.63	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		0.664	0.0515	1	6.64e-01	6.64e-01	
1,2,3,7,8-PECDD		1.35	0.0515	1	1.35e+00	1.35e+00	
1,2,3,4,7,8-HXCDD		1.97	0.0515	0.1	1.97e-01	1.97e-01	
1,2,3,6,7,8-HXCDD		4.71	0.0515	0.1	4.71e-01	4.71e-01	
1,2,3,7,8,9-HXCDD		4.61	0.0515	0.1	4.61e-01	4.61e-01	
1,2,3,4,6,7,8-HPCDD		117	0.0597	0.01	1.17e+00	1.17e+00	
OCDD		1250	0.798	0.0003	3.75e-01	3.75e-01	
2,3,7,8-TCDF	ND		0.0553	0.1	0.00e+00	2.77e-03	
1,2,3,7,8-PECDF		0.549	0.0515	0.03	1.65e-02	1.65e-02	
2,3,4,7,8-PECDF		1.26	0.0515	0.3	3.78e-01	3.78e-01	
1,2,3,4,7,8-HXCDF		1.64	0.0515	0.1	1.64e-01	1.64e-01	
1,2,3,6,7,8-HXCDF		0.979	0.0515	0.1	9.79e-02	9.79e-02	
1,2,3,7,8,9-HXCDF		0.139	0.0515	0.1	1.39e-02	1.39e-02	
2,3,4,6,7,8-HXCDF		1.15	0.0515	0.1	1.15e-01	1.15e-01	
1,2,3,4,6,7,8-HPCDF		13.0	0.0515	0.01	1.30e-01	1.30e-01	
1,2,3,4,7,8,9-HPCDF		0.871	0.0515	0.01	8.71e-03	8.71e-03	
OCDF		29.2	0.0515	0.0003	8.76e-03	8.76e-03	
			TOTAL TEQ		5.62	5.62	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-43_TEQ_SJ858538.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 038

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	9.68 g (dry)	**Lab Sample I.D.:**	L11075-44
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 13** **DX8C_199 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		0.927	0.0517	1	9.27e-01	9.27e-01	
1,2,3,7,8-PECDD		0.572	0.0517	1	5.72e-01	5.72e-01	
1,2,3,4,7,8-HXCDD		1.21	0.0968	0.1	1.21e-01	1.21e-01	
1,2,3,6,7,8-HXCDD		4.55	0.0968	0.1	4.55e-01	4.55e-01	
1,2,3,7,8,9-HXCDD		2.82	0.0968	0.1	2.82e-01	2.82e-01	
1,2,3,4,6,7,8-HPCDD		200	0.224	0.01	2.00e+00	2.00e+00	
OCDD		1560	0.313	0.0001	1.56e-01	1.56e-01	
2,3,7,8-TCDF		2.70	0.0547	0.1	2.70e-01	2.70e-01	
1,2,3,7,8-PECDF		1.16	0.0517	0.05	5.80e-02	5.80e-02	
2,3,4,7,8-PECDF		2.73	0.0517	0.5	1.37e+00	1.37e+00	
1,2,3,4,7,8-HXCDF		3.81	0.0517	0.1	3.81e-01	3.81e-01	
1,2,3,6,7,8-HXCDF		1.50	0.0517	0.1	1.50e-01	1.50e-01	
1,2,3,7,8,9-HXCDF		0.533	0.0517	0.1	5.33e-02	5.33e-02	
2,3,4,6,7,8-HXCDF		1.38	0.0517	0.1	1.38e-01	1.38e-01	
1,2,3,4,6,7,8-HPCDF		12.8	0.0517	0.01	1.28e-01	1.28e-01	
1,2,3,4,7,8,9-HPCDF		1.16	0.0517	0.01	1.16e-02	1.16e-02	
OCDF		16.5	0.0517	0.0001	1.65e-03	1.65e-03	
			TOTAL TEQ		7.07	7.07	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		0.927	0.0517	1	9.27e-01	9.27e-01	
1,2,3,7,8-PECDD		0.572	0.0517	1	5.72e-01	5.72e-01	
1,2,3,4,7,8-HXCDD		1.21	0.0968	0.1	1.21e-01	1.21e-01	
1,2,3,6,7,8-HXCDD		4.55	0.0968	0.1	4.55e-01	4.55e-01	
1,2,3,7,8,9-HXCDD		2.82	0.0968	0.1	2.82e-01	2.82e-01	
1,2,3,4,6,7,8-HPCDD		200	0.224	0.01	2.00e+00	2.00e+00	
OCDD		1560	0.313	0.0003	4.68e-01	4.68e-01	
2,3,7,8-TCDF		2.70	0.0547	0.1	2.70e-01	2.70e-01	
1,2,3,7,8-PECDF		1.16	0.0517	0.03	3.48e-02	3.48e-02	
2,3,4,7,8-PECDF		2.73	0.0517	0.3	8.19e-01	8.19e-01	
1,2,3,4,7,8-HXCDF		3.81	0.0517	0.1	3.81e-01	3.81e-01	
1,2,3,6,7,8-HXCDF		1.50	0.0517	0.1	1.50e-01	1.50e-01	
1,2,3,7,8,9-HXCDF		0.533	0.0517	0.1	5.33e-02	5.33e-02	
2,3,4,6,7,8-HXCDF		1.38	0.0517	0.1	1.38e-01	1.38e-01	
1,2,3,4,6,7,8-HPCDF		12.8	0.0517	0.01	1.28e-01	1.28e-01	
1,2,3,4,7,8,9-HPCDF		1.16	0.0517	0.01	1.16e-02	1.16e-02	
OCDF		16.5	0.0517	0.0003	4.95e-03	4.95e-03	
			TOTAL TEQ		6.82	6.82	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-44_TEQ_SJ857721.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 052

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-45 i
Sample Size:	8.76 g (dry)	**GC Column ID(s):**	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 9** **DX82_168 S: 10**
		Sample Collection:	N/A

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		0.442	0.0571	1	4.42e-01	4.42e-01	
1,2,3,7,8-PECDD		0.063	0.0571	1	6.30e-02	6.30e-02	
1,2,3,4,7,8-HXCDD	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,6,7,8-HXCDD		0.143	0.0571	0.1	1.43e-02	1.43e-02	
1,2,3,7,8,9-HXCDD	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,4,6,7,8-HPCDD		2.12	0.0571	0.01	2.12e-02	2.12e-02	
OCDD		182	0.129	0.0001	1.82e-02	1.82e-02	
2,3,7,8-TCDF	ND		0.0701	0.1	0.00e+00	3.51e-03	
1,2,3,7,8-PECDF	ND		0.0571	0.05	0.00e+00	1.43e-03	
2,3,4,7,8-PECDF		0.186	0.0571	0.5	9.30e-02	9.30e-02	
1,2,3,4,7,8-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,6,7,8-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,7,8,9-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
2,3,4,6,7,8-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0571	0.01	0.00e+00	2.86e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0571	0.01	0.00e+00	2.86e-04	
OCDF	ND		0.0571	0.0001	0.00e+00	2.86e-06	
			TOTAL TEQ		0.652	0.674	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		0.442	0.0571	1	4.42e-01	4.42e-01	
1,2,3,7,8-PECDD		0.063	0.0571	1	6.30e-02	6.30e-02	
1,2,3,4,7,8-HXCDD	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,6,7,8-HXCDD		0.143	0.0571	0.1	1.43e-02	1.43e-02	
1,2,3,7,8,9-HXCDD	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,4,6,7,8-HPCDD		2.12	0.0571	0.01	2.12e-02	2.12e-02	
OCDD		182	0.129	0.0003	5.46e-02	5.46e-02	
2,3,7,8-TCDF	ND		0.0701	0.1	0.00e+00	3.51e-03	
1,2,3,7,8-PECDF	ND		0.0571	0.03	0.00e+00	8.57e-04	
2,3,4,7,8-PECDF		0.186	0.0571	0.3	5.58e-02	5.58e-02	
1,2,3,4,7,8-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,6,7,8-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,7,8,9-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
2,3,4,6,7,8-HXCDF	ND		0.0571	0.1	0.00e+00	2.86e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0571	0.01	0.00e+00	2.86e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0571	0.01	0.00e+00	2.86e-04	
OCDF	ND		0.0571	0.0003	0.00e+00	8.57e-06	
			TOTAL TEQ		0.651	0.673	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-45_TEQ_SJ858536.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 056

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	6.84 g (dry)	**Lab Sample I.D.:**	L11075-46
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 14** **DX8C_199 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		66.5	0.0731	1	6.65e+01	6.65e+01	
1,2,3,7,8-PECDD		1.20	0.0731	1	1.20e+00	1.20e+00	
1,2,3,4,7,8-HXCDD	ND		0.0731	0.1	0.00e+00	3.66e-03	
1,2,3,6,7,8-HXCDD		1.11	0.0731	0.1	1.11e-01	1.11e-01	
1,2,3,7,8,9-HXCDD		0.813	0.0731	0.1	8.13e-02	8.13e-02	
1,2,3,4,6,7,8-HPCDD		9.92	0.0774	0.01	9.92e-02	9.92e-02	
OCDD		134	0.0731	0.0001	1.34e-02	1.34e-02	
2,3,7,8-TCDF		6.14	0.0731	0.1	6.14e-01	6.14e-01	
1,2,3,7,8-PECDF		0.537	0.0731	0.05	2.69e-02	2.69e-02	
2,3,4,7,8-PECDF		0.762	0.0731	0.5	3.81e-01	3.81e-01	
1,2,3,4,7,8-HXCDF		0.602	0.0731	0.1	6.02e-02	6.02e-02	
1,2,3,6,7,8-HXCDF	ND		0.0731	0.1	0.00e+00	3.66e-03	
1,2,3,7,8,9-HXCDF	ND		0.0731	0.1	0.00e+00	3.66e-03	
2,3,4,6,7,8-HXCDF		0.327	0.0731	0.1	3.27e-02	3.27e-02	
1,2,3,4,6,7,8-HPCDF		2.03	0.0731	0.01	2.03e-02	2.03e-02	
1,2,3,4,7,8,9-HPCDF		0.165	0.0731	0.01	1.65e-03	1.65e-03	
OCDF		2.44	0.0731	0.0001	2.44e-04	2.44e-04	
			TOTAL TEQ		69.1	69.2	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		66.5	0.0731	1	6.65e+01	6.65e+01	
1,2,3,7,8-PECDD		1.20	0.0731	1	1.20e+00	1.20e+00	
1,2,3,4,7,8-HXCDD	ND		0.0731	0.1	0.00e+00	3.66e-03	
1,2,3,6,7,8-HXCDD		1.11	0.0731	0.1	1.11e-01	1.11e-01	
1,2,3,7,8,9-HXCDD		0.813	0.0731	0.1	8.13e-02	8.13e-02	
1,2,3,4,6,7,8-HPCDD		9.92	0.0774	0.01	9.92e-02	9.92e-02	
OCDD		134	0.0731	0.0003	4.02e-02	4.02e-02	
2,3,7,8-TCDF		6.14	0.0731	0.1	6.14e-01	6.14e-01	
1,2,3,7,8-PECDF		0.537	0.0731	0.03	1.61e-02	1.61e-02	
2,3,4,7,8-PECDF		0.762	0.0731	0.3	2.29e-01	2.29e-01	
1,2,3,4,7,8-HXCDF		0.602	0.0731	0.1	6.02e-02	6.02e-02	
1,2,3,6,7,8-HXCDF	ND		0.0731	0.1	0.00e+00	3.66e-03	
1,2,3,7,8,9-HXCDF	ND		0.0731	0.1	0.00e+00	3.66e-03	
2,3,4,6,7,8-HXCDF		0.327	0.0731	0.1	3.27e-02	3.27e-02	
1,2,3,4,6,7,8-HPCDF		2.03	0.0731	0.01	2.03e-02	2.03e-02	
1,2,3,4,7,8,9-HPCDF		0.165	0.0731	0.01	1.65e-03	1.65e-03	
OCDF		2.44	0.0731	0.0003	7.32e-04	7.32e-04	
			TOTAL TEQ		69.0	69.0	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-46_TEQ_SJ857723.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 059

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	6.72 g (dry)	**Lab Sample I.D.:**	L11075-47 i
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 10** **DX82_168 S: 9**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		3.84	0.0744	1	3.84e+00	3.84e+00	
1,2,3,7,8-PECDD	ND		0.0744	1	0.00e+00	3.72e-02	
1,2,3,4,7,8-HXCDD	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,6,7,8-HXCDD	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,7,8,9-HXCDD	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,4,6,7,8-HPCDD		1.41	0.0744	0.01	1.41e-02	1.41e-02	
OCDD		33.6	0.125	0.0001	3.36e-03	3.36e-03	
2,3,7,8-TCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,7,8-PECDF	ND		0.0744	0.05	0.00e+00	1.86e-03	
2,3,4,7,8-PECDF		0.279	0.0744	0.5	1.40e-01	1.40e-01	
1,2,3,4,7,8-HXCDF		0.088	0.0744	0.1	8.80e-03	8.80e-03	
1,2,3,6,7,8-HXCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,7,8,9-HXCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
2,3,4,6,7,8-HXCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,4,6,7,8-HPCDF		0.351	0.0744	0.01	3.51e-03	3.51e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.0744	0.01	0.00e+00	3.72e-04	
OCDF		0.411	0.0744	0.0001	4.11e-05	4.11e-05	
			TOTAL TEQ		4.01	4.07	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		3.84	0.0744	1	3.84e+00	3.84e+00	
1,2,3,7,8-PECDD	ND		0.0744	1	0.00e+00	3.72e-02	
1,2,3,4,7,8-HXCDD	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,6,7,8-HXCDD	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,7,8,9-HXCDD	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,4,6,7,8-HPCDD		1.41	0.0744	0.01	1.41e-02	1.41e-02	
OCDD		33.6	0.125	0.0003	1.01e-02	1.01e-02	
2,3,7,8-TCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,7,8-PECDF	ND		0.0744	0.03	0.00e+00	1.12e-03	
2,3,4,7,8-PECDF		0.279	0.0744	0.3	8.37e-02	8.37e-02	
1,2,3,4,7,8-HXCDF		0.088	0.0744	0.1	8.80e-03	8.80e-03	
1,2,3,6,7,8-HXCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,7,8,9-HXCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
2,3,4,6,7,8-HXCDF	ND		0.0744	0.1	0.00e+00	3.72e-03	
1,2,3,4,6,7,8-HPCDF		0.351	0.0744	0.01	3.51e-03	3.51e-03	
1,2,3,4,7,8,9-HPCDF	ND		0.0744	0.01	0.00e+00	3.72e-04	
OCDF		0.411	0.0744	0.0003	1.23e-04	1.23e-04	
			TOTAL TEQ		3.96	4.03	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-47_TEQ_SJ858535.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 063

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	7.56 g (dry)	**Lab Sample I.D.:**	L11075-48
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 15** **DX8C_199 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		7.06	0.0661	1	7.06e+00	7.06e+00	
1,2,3,7,8-PECDD		0.557	0.0661	1	5.57e-01	5.57e-01	
1,2,3,4,7,8-HXCDD	ND		0.0661	0.1	0.00e+00	3.31e-03	
1,2,3,6,7,8-HXCDD		1.22	0.0661	0.1	1.22e-01	1.22e-01	
1,2,3,7,8,9-HXCDD		1.42	0.0661	0.1	1.42e-01	1.42e-01	
1,2,3,4,6,7,8-HPCDD		29.9	0.121	0.01	2.99e-01	2.99e-01	
OCDD		298	0.0661	0.0001	2.98e-02	2.98e-02	
2,3,7,8-TCDF		2.93	0.0661	0.1	2.93e-01	2.93e-01	
1,2,3,7,8-PECDF		0.803	0.0661	0.05	4.02e-02	4.02e-02	
2,3,4,7,8-PECDF		1.82	0.0661	0.5	9.10e-01	9.10e-01	
1,2,3,4,7,8-HXCDF		1.44	0.0661	0.1	1.44e-01	1.44e-01	
1,2,3,6,7,8-HXCDF		0.749	0.0661	0.1	7.49e-02	7.49e-02	
1,2,3,7,8,9-HXCDF	ND		0.0661	0.1	0.00e+00	3.31e-03	
2,3,4,6,7,8-HXCDF		0.881	0.0661	0.1	8.81e-02	8.81e-02	
1,2,3,4,6,7,8-HPCDF		4.21	0.104	0.01	4.21e-02	4.21e-02	
1,2,3,4,7,8,9-HPCDF		0.299	0.104	0.01	2.99e-03	2.99e-03	
OCDF		5.82	0.0661	0.0001	5.82e-04	5.82e-04	
			TOTAL TEQ		9.81	9.81	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		7.06	0.0661	1	7.06e+00	7.06e+00	
1,2,3,7,8-PECDD		0.557	0.0661	1	5.57e-01	5.57e-01	
1,2,3,4,7,8-HXCDD	ND		0.0661	0.1	0.00e+00	3.31e-03	
1,2,3,6,7,8-HXCDD		1.22	0.0661	0.1	1.22e-01	1.22e-01	
1,2,3,7,8,9-HXCDD		1.42	0.0661	0.1	1.42e-01	1.42e-01	
1,2,3,4,6,7,8-HPCDD		29.9	0.121	0.01	2.99e-01	2.99e-01	
OCDD		298	0.0661	0.0003	8.94e-02	8.94e-02	
2,3,7,8-TCDF		2.93	0.0661	0.1	2.93e-01	2.93e-01	
1,2,3,7,8-PECDF		0.803	0.0661	0.03	2.41e-02	2.41e-02	
2,3,4,7,8-PECDF		1.82	0.0661	0.3	5.46e-01	5.46e-01	
1,2,3,4,7,8-HXCDF		1.44	0.0661	0.1	1.44e-01	1.44e-01	
1,2,3,6,7,8-HXCDF		0.749	0.0661	0.1	7.49e-02	7.49e-02	
1,2,3,7,8,9-HXCDF	ND		0.0661	0.1	0.00e+00	3.31e-03	
2,3,4,6,7,8-HXCDF		0.881	0.0661	0.1	8.81e-02	8.81e-02	
1,2,3,4,6,7,8-HPCDF		4.21	0.104	0.01	4.21e-02	4.21e-02	
1,2,3,4,7,8,9-HPCDF		0.299	0.104	0.01	2.99e-03	2.99e-03	
OCDF		5.82	0.0661	0.0003	1.75e-03	1.75e-03	
			TOTAL TEQ		9.49	9.49	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-48_TEQ_SJ857725.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 014-1

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	9.89 g (dry)	**Lab Sample I.D.:**	L11075-49
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 18** **DX82_169 S: 8** **DX8C_199 S: 12**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1760	0.208	1	1.76e+03	1.76e+03	
1,2,3,7,8-PECDD		36.0	0.0506	1	3.60e+01	3.60e+01	
1,2,3,4,7,8-HXCDD		2.51	0.161	0.1	2.51e-01	2.51e-01	
1,2,3,6,7,8-HXCDD		17.0	0.161	0.1	1.70e+00	1.70e+00	
1,2,3,7,8,9-HXCDD		5.69	0.161	0.1	5.69e-01	5.69e-01	
1,2,3,4,6,7,8-HPCDD		64.4	0.121	0.01	6.44e-01	6.44e-01	
OCDD		265	0.0506	0.0001	2.65e-02	2.65e-02	
2,3,7,8-TCDF		60.4	0.671	0.1	6.04e+00	6.04e+00	
1,2,3,7,8-PECDF		4.34	0.0506	0.05	2.17e-01	2.17e-01	
2,3,4,7,8-PECDF		3.35	0.0506	0.5	1.68e+00	1.68e+00	
1,2,3,4,7,8-HXCDF		2.85	0.0506	0.1	2.85e-01	2.85e-01	
1,2,3,6,7,8-HXCDF		0.983	0.0506	0.1	9.83e-02	9.83e-02	
1,2,3,7,8,9-HXCDF		0.085	0.0506	0.1	8.50e-03	8.50e-03	
2,3,4,6,7,8-HXCDF		0.990	0.0506	0.1	9.90e-02	9.90e-02	
1,2,3,4,6,7,8-HPCDF		13.4	0.0554	0.01	1.34e-01	1.34e-01	
1,2,3,4,7,8,9-HPCDF		0.481	0.0554	0.01	4.81e-03	4.81e-03	
OCDF		13.6	0.0506	0.0001	1.36e-03	1.36e-03	
			TOTAL TEQ		1810	1810	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		1760	0.208	1	1.76e+03	1.76e+03	
1,2,3,7,8-PECDD		36.0	0.0506	1	3.60e+01	3.60e+01	
1,2,3,4,7,8-HXCDD		2.51	0.161	0.1	2.51e-01	2.51e-01	
1,2,3,6,7,8-HXCDD		17.0	0.161	0.1	1.70e+00	1.70e+00	
1,2,3,7,8,9-HXCDD		5.69	0.161	0.1	5.69e-01	5.69e-01	
1,2,3,4,6,7,8-HPCDD		64.4	0.121	0.01	6.44e-01	6.44e-01	
OCDD		265	0.0506	0.0003	7.95e-02	7.95e-02	
2,3,7,8-TCDF		60.4	0.671	0.1	6.04e+00	6.04e+00	
1,2,3,7,8-PECDF		4.34	0.0506	0.03	1.30e-01	1.30e-01	
2,3,4,7,8-PECDF		3.35	0.0506	0.3	1.01e+00	1.01e+00	
1,2,3,4,7,8-HXCDF		2.85	0.0506	0.1	2.85e-01	2.85e-01	
1,2,3,6,7,8-HXCDF		0.983	0.0506	0.1	9.83e-02	9.83e-02	
1,2,3,7,8,9-HXCDF		0.085	0.0506	0.1	8.50e-03	8.50e-03	
2,3,4,6,7,8-HXCDF		0.990	0.0506	0.1	9.90e-02	9.90e-02	
1,2,3,4,6,7,8-HPCDF		13.4	0.0554	0.01	1.34e-01	1.34e-01	
1,2,3,4,7,8,9-HPCDF		0.481	0.0554	0.01	4.81e-03	4.81e-03	
OCDF		13.6	0.0506	0.0003	4.08e-03	4.08e-03	
			TOTAL TEQ		1810	1810	

(1) Where applicable, custom lab flags have been used on this report; D = dilution data.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-49_TEQ_SJ857726.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 061

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	7.87 g (dry)	**Lab Sample I.D.:**	L11075-50 i
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB83_121 S: 16** **DX82_168 S: 11**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		9.88	0.0635	1	9.88e+00	9.88e+00	
1,2,3,7,8-PECDD		1.84	0.0635	1	1.84e+00	1.84e+00	
1,2,3,4,7,8-HXCDD		2.45	0.0635	0.1	2.45e-01	2.45e-01	
1,2,3,6,7,8-HXCDD		4.33	0.0635	0.1	4.33e-01	4.33e-01	
1,2,3,7,8,9-HXCDD		6.94	0.0635	0.1	6.94e-01	6.94e-01	
1,2,3,4,6,7,8-HPCDD		66.3	0.0635	0.01	6.63e-01	6.63e-01	
OCDD		387	0.136	0.0001	3.87e-02	3.87e-02	
2,3,7,8-TCDF		4.79	0.0635	0.1	4.79e-01	4.79e-01	
1,2,3,7,8-PECDF		1.61	0.0635	0.05	8.05e-02	8.05e-02	
2,3,4,7,8-PECDF		2.98	0.0635	0.5	1.49e+00	1.49e+00	
1,2,3,4,7,8-HXCDF		1.91	0.0635	0.1	1.91e-01	1.91e-01	
1,2,3,6,7,8-HXCDF		1.71	0.0635	0.1	1.71e-01	1.71e-01	
1,2,3,7,8,9-HXCDF		0.173	0.0635	0.1	1.73e-02	1.73e-02	
2,3,4,6,7,8-HXCDF		1.14	0.0635	0.1	1.14e-01	1.14e-01	
1,2,3,4,6,7,8-HPCDF		3.80	0.0635	0.01	3.80e-02	3.80e-02	
1,2,3,4,7,8,9-HPCDF		0.544	0.0635	0.01	5.44e-03	5.44e-03	
OCDF		4.68	0.0635	0.0001	4.68e-04	4.68e-04	
			TOTAL TEQ		16.4	16.4	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		9.88	0.0635	1	9.88e+00	9.88e+00	
1,2,3,7,8-PECDD		1.84	0.0635	1	1.84e+00	1.84e+00	
1,2,3,4,7,8-HXCDD		2.45	0.0635	0.1	2.45e-01	2.45e-01	
1,2,3,6,7,8-HXCDD		4.33	0.0635	0.1	4.33e-01	4.33e-01	
1,2,3,7,8,9-HXCDD		6.94	0.0635	0.1	6.94e-01	6.94e-01	
1,2,3,4,6,7,8-HPCDD		66.3	0.0635	0.01	6.63e-01	6.63e-01	
OCDD		387	0.136	0.0003	1.16e-01	1.16e-01	
2,3,7,8-TCDF		4.79	0.0635	0.1	4.79e-01	4.79e-01	
1,2,3,7,8-PECDF		1.61	0.0635	0.03	4.83e-02	4.83e-02	
2,3,4,7,8-PECDF		2.98	0.0635	0.3	8.94e-01	8.94e-01	
1,2,3,4,7,8-HXCDF		1.91	0.0635	0.1	1.91e-01	1.91e-01	
1,2,3,6,7,8-HXCDF		1.71	0.0635	0.1	1.71e-01	1.71e-01	
1,2,3,7,8,9-HXCDF		0.173	0.0635	0.1	1.73e-02	1.73e-02	
2,3,4,6,7,8-HXCDF		1.14	0.0635	0.1	1.14e-01	1.14e-01	
1,2,3,4,6,7,8-HPCDF		3.80	0.0635	0.01	3.80e-02	3.80e-02	
1,2,3,4,7,8,9-HPCDF		0.544	0.0635	0.01	5.44e-03	5.44e-03	
OCDF		4.68	0.0635	0.0003	1.40e-03	1.40e-03	
			TOTAL TEQ		15.8	15.8	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-50_TEQ_SJ858537.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
Lab Blank

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	N/A
Sample Size:	10.0 g	**Lab Sample I.D.:**	WG25091-101
Concentration Units:	pg/g	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_120 S: 5** **DX8C_197 S: 5**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.0500	1	0.00e+00	2.50e-02	
1,2,3,7,8-PECDD	ND		0.0500	1	0.00e+00	2.50e-02	
1,2,3,4,7,8-HXCDD	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,6,7,8-HXCDD	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8,9-HXCDD	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,4,6,7,8-HPCDD		0.175	0.0500	0.01	1.75e-03	1.75e-03	
OCDD	ND		0.0500	0.0001	0.00e+00	2.50e-06	
2,3,7,8-TCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8-PECDF	ND		0.0500	0.05	0.00e+00	1.25e-03	
2,3,4,7,8-PECDF		0.150	0.0500	0.5	7.50e-02	7.50e-02	
1,2,3,4,7,8-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,6,7,8-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8,9-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
2,3,4,6,7,8-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0500	0.01	0.00e+00	2.50e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0500	0.01	0.00e+00	2.50e-04	
OCDF	ND		0.0500	0.0001	0.00e+00	2.50e-06	
			TOTAL TEQ		0.0768	0.149	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD	ND		0.0500	1	0.00e+00	2.50e-02	
1,2,3,7,8-PECDD	ND		0.0500	1	0.00e+00	2.50e-02	
1,2,3,4,7,8-HXCDD	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,6,7,8-HXCDD	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8,9-HXCDD	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,4,6,7,8-HPCDD		0.175	0.0500	0.01	1.75e-03	1.75e-03	
OCDD	ND		0.0500	0.0003	0.00e+00	7.50e-06	
2,3,7,8-TCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8-PECDF	ND		0.0500	0.03	0.00e+00	7.50e-04	
2,3,4,7,8-PECDF		0.150	0.0500	0.3	4.50e-02	4.50e-02	
1,2,3,4,7,8-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,6,7,8-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,7,8,9-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
2,3,4,6,7,8-HXCDF	ND		0.0500	0.1	0.00e+00	2.50e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0500	0.01	0.00e+00	2.50e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0500	0.01	0.00e+00	2.50e-04	
OCDF	ND		0.0500	0.0003	0.00e+00	7.50e-06	
			TOTAL TEQ		0.0468	0.118	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25091-101_TEQ_SJ857680.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNPC 017 (Duplicate)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	9.14 g (dry)	**Lab Sample I.D.:**	WG25091-103 i (DUP L11075-37)
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB83_120 S: 9** **DX82_168 S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		3.65	0.0547	1	3.65e+00	3.65e+00	
1,2,3,7,8-PECDD	ND		0.0547	1	0.00e+00	2.74e-02	
1,2,3,4,7,8-HXCDD	ND		0.0967	0.1	0.00e+00	4.84e-03	
1,2,3,6,7,8-HXCDD		0.471	0.0967	0.1	4.71e-02	4.71e-02	
1,2,3,7,8,9-HXCDD		0.702	0.0967	0.1	7.02e-02	7.02e-02	
1,2,3,4,6,7,8-HPCDD		4.10	0.147	0.01	4.10e-02	4.10e-02	
OCDD		545	6.76	0.0001	5.45e-02	5.45e-02	
2,3,7,8-TCDF	ND		0.0547	0.1	0.00e+00	2.74e-03	
1,2,3,7,8-PECDF	ND		0.0547	0.05	0.00e+00	1.37e-03	
2,3,4,7,8-PECDF		0.169	0.0547	0.5	8.45e-02	8.45e-02	
1,2,3,4,7,8-HXCDF	ND		0.0547	0.1	0.00e+00	2.74e-03	
1,2,3,6,7,8-HXCDF		0.058	0.0547	0.1	5.80e-03	5.80e-03	
1,2,3,7,8,9-HXCDF		0.060	0.0547	0.1	6.00e-03	6.00e-03	
2,3,4,6,7,8-HXCDF	ND		0.0547	0.1	0.00e+00	2.74e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
OCDF	ND		0.0572	0.0001	0.00e+00	2.86e-06	
			TOTAL TEQ		3.96	4.00	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		3.65	0.0547	1	3.65e+00	3.65e+00	
1,2,3,7,8-PECDD	ND		0.0547	1	0.00e+00	2.74e-02	
1,2,3,4,7,8-HXCDD	ND		0.0967	0.1	0.00e+00	4.84e-03	
1,2,3,6,7,8-HXCDD		0.471	0.0967	0.1	4.71e-02	4.71e-02	
1,2,3,7,8,9-HXCDD		0.702	0.0967	0.1	7.02e-02	7.02e-02	
1,2,3,4,6,7,8-HPCDD		4.10	0.147	0.01	4.10e-02	4.10e-02	
OCDD		545	6.76	0.0003	1.64e-01	1.64e-01	
2,3,7,8-TCDF	ND		0.0547	0.1	0.00e+00	2.74e-03	
1,2,3,7,8-PECDF	ND		0.0547	0.03	0.00e+00	8.21e-04	
2,3,4,7,8-PECDF		0.169	0.0547	0.3	5.07e-02	5.07e-02	
1,2,3,4,7,8-HXCDF	ND		0.0547	0.1	0.00e+00	2.74e-03	
1,2,3,6,7,8-HXCDF		0.058	0.0547	0.1	5.80e-03	5.80e-03	
1,2,3,7,8,9-HXCDF		0.060	0.0547	0.1	6.00e-03	6.00e-03	
2,3,4,6,7,8-HXCDF	ND		0.0547	0.1	0.00e+00	2.74e-03	
1,2,3,4,6,7,8-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
1,2,3,4,7,8,9-HPCDF	ND		0.0577	0.01	0.00e+00	2.89e-04	
OCDF	ND		0.0572	0.0003	0.00e+00	8.58e-06	
			TOTAL TEQ		4.03	4.08	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 28-May-2008 09:20:24; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25091-103_TEQ_SJ858533.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS REPORT
RELATIVE PERCENT DIFFERENCE

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No. PROJECT 00057781

Contract No.: 4496

Client ID: 08 VNPC 017

Concentration Units: pg/g (dry weight basis)

COMPOUND	L11075-37 (A)		WG25091-103		MEAN	RELATIVE PERCENT DIFFERENCE
	LAB FLAG [1]	CONC. FOUND	LAB FLAG [1]	CONC. FOUND		
2,3,7,8-TCDD		4.32		3.65	3.98	16.7
1,2,3,7,8-PECDD	NDR	0.097	NDR	0.084		
1,2,3,4,7,8-HXCDD	ND		ND			
1,2,3,6,7,8-HXCDD		0.440		0.471	0.456	6.81
1,2,3,7,8,9-HXCDD		0.690		0.702	0.696	1.72
1,2,3,4,6,7,8-HPCDD		3.87		4.10	3.99	5.87
OCDD		441		545	493	21.1
2,3,7,8-TCDF	NDR	0.284	NDR	0.300		
1,2,3,7,8-PECDF	ND		ND			
2,3,4,7,8-PECDF		0.183		0.169	0.176	7.95
1,2,3,4,7,8-HXCDF	ND		ND			
1,2,3,6,7,8-HXCDF	ND			0.058		
1,2,3,7,8,9-HXCDF	ND			0.060		
2,3,4,6,7,8-HXCDF	ND		ND			
1,2,3,4,6,7,8-HPCDF		0.128	NDR	0.194		
1,2,3,4,7,8,9-HPCDF	ND		ND			
OCDF	NDR	0.170	NDR	0.214		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: RPD.xsl; Created: 28-May-2008 09:20:51; Application: XMLTransformer-1.9.5;
Report Filename: RPD_DIOXINS_1613-RPD_WG25091-103_L11075-37_.html; Workgroup: WG25091; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 148
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-31
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.99 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	12-May-2008 **Time:** 14:41:40	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_200B S: 6**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_200B S: 4
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
		% Moisture:	1.16

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		29.5	0.940	0.71	1.001
1,2,3,7,8-PECDD [3]	NDR	1.40	0.621	0.42	1.001
1,2,3,4,7,8-HXCDD	NDR	1.66	1.13	1.55	1.000
1,2,3,6,7,8-HXCDD	NDR	3.39	1.13	2.17	1.001
1,2,3,7,8,9-HXCDD	NDR	3.86	1.13	0.92	1.011
1,2,3,4,6,7,8-HPCDD		41.8	1.11	0.93	1.000
OCDD		363	1.28	0.90	1.000
2,3,7,8-TCDF		3.29	0.845	0.85	1.001
1,2,3,7,8-PECDF	NDR	0.989	0.717	1.85	1.001
2,3,4,7,8-PECDF	NDR	3.31	0.717	1.12	1.000
1,2,3,4,7,8-HXCDF		1.69	0.805	1.09	1.001
1,2,3,6,7,8-HXCDF		1.50	0.805	1.26	1.001
1,2,3,7,8,9-HXCDF		2.14	0.805	1.42	1.000
2,3,4,6,7,8-HXCDF	ND		0.805		
1,2,3,4,6,7,8-HPCDF		9.51	1.05	1.15	1.000
1,2,3,4,7,8,9-HPCDF		1.86	1.05	1.16	1.000
OCDF		20.7	1.54	0.86	1.002
TOTAL TETRA-DIOXINS		29.5	0.940		
TOTAL PENTA-DIOXINS		1.32	0.621		
TOTAL HEXA-DIOXINS		9.42	1.13		
TOTAL HEPTA-DIOXINS		71.7	1.11		
TOTAL TETRA-FURANS		4.38	0.845		
TOTAL PENTA-FURANS		10.4	0.717		
TOTAL HEXA-FURANS		12.3	0.805		
TOTAL HEPTA-FURANS		24.6	1.05		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 30-May-2008 11:09:06; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-31_Form1A_DX8C_200BS6_SJ858487.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 148
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-31
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 14:41:40	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_200B S: 6**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_200B S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
Concentration Units:	pg absolute	**% Moisture:**	1.16

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	30600	76.5	0.80	1.013
13C-1,2,3,7,8-PECDD [4]		40000	28700	71.7	0.63	1.387
13C-1,2,3,4,7,8-HXCDD		40000	32100	80.2	1.28	0.987
13C-1,2,3,6,7,8-HXCDD		40000	34400	86.0	1.26	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	30700	76.7	1.03	1.094
13C-OCDD		80000	52600	65.7	0.89	1.178
13C-2,3,7,8-TCDF		40000	30100	75.2	0.79	0.967
13C-1,2,3,7,8-PECDF		40000	29000	72.6	1.55	1.288
13C-2,3,4,7,8-PECDF		40000	28500	71.2	1.56	1.356
13C-1,2,3,4,7,8-HXCDF		40000	34600	86.5	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	37200	93.1	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	32900	82.2	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	34200	85.4	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	32100	80.3	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	30700	76.7	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	179	89.4		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 30-May-2008 11:09:06; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-31_Form2_DX8C_200BS6_SJ858487.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 148
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-31 i
Matrix:	SOLID	**Sample Size:**	2.99 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	20-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	20-May-2008 **Time:** 19:41:24	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB8B_125B S: 9**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DB8B_125B S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB8B_125B S: 4
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	1.16

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		3.21		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 30-May-2008 11:09:33; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_L11075-31_Form1A_DB8B_125BS9_SJ860714.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 148

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.99 g (dry)	**Lab Sample I.D.:**	L11075-31
Concentration Units:	pg/g (dry weight basis)	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB8B_125B S: 9** **DX8C_200B S: 6**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		29.5	0.940	1	2.95e+01	2.95e+01	
1,2,3,7,8-PECDD	ND		0.621	1	0.00e+00	3.11e-01	
1,2,3,4,7,8-HXCDD	ND		1.13	0.1	0.00e+00	5.65e-02	
1,2,3,6,7,8-HXCDD	ND		1.13	0.1	0.00e+00	5.65e-02	
1,2,3,7,8,9-HXCDD	ND		1.13	0.1	0.00e+00	5.65e-02	
1,2,3,4,6,7,8-HPCDD		41.8	1.11	0.01	4.18e-01	4.18e-01	
OCDD		363	1.28	0.0001	3.63e-02	3.63e-02	
2,3,7,8-TCDF	ND		3.21	0.1	0.00e+00	1.61e-01	
1,2,3,7,8-PECDF	ND		0.717	0.05	0.00e+00	1.79e-02	
2,3,4,7,8-PECDF	ND		0.717	0.5	0.00e+00	1.79e-01	
1,2,3,4,7,8-HXCDF		1.69	0.805	0.1	1.69e-01	1.69e-01	
1,2,3,6,7,8-HXCDF		1.50	0.805	0.1	1.50e-01	1.50e-01	
1,2,3,7,8,9-HXCDF		2.14	0.805	0.1	2.14e-01	2.14e-01	
2,3,4,6,7,8-HXCDF	ND		0.805	0.1	0.00e+00	4.03e-02	
1,2,3,4,6,7,8-HPCDF		9.51	1.05	0.01	9.51e-02	9.51e-02	
1,2,3,4,7,8,9-HPCDF		1.86	1.05	0.01	1.86e-02	1.86e-02	
OCDF		20.7	1.54	0.0001	2.07e-03	2.07e-03	
			TOTAL TEQ		30.6	31.5	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		29.5	0.940	1	2.95e+01	2.95e+01	
1,2,3,7,8-PECDD	ND		0.621	1	0.00e+00	3.11e-01	
1,2,3,4,7,8-HXCDD	ND		1.13	0.1	0.00e+00	5.65e-02	
1,2,3,6,7,8-HXCDD	ND		1.13	0.1	0.00e+00	5.65e-02	
1,2,3,7,8,9-HXCDD	ND		1.13	0.1	0.00e+00	5.65e-02	
1,2,3,4,6,7,8-HPCDD		41.8	1.11	0.01	4.18e-01	4.18e-01	
OCDD		363	1.28	0.0003	1.09e-01	1.09e-01	
2,3,7,8-TCDF	ND		3.21	0.1	0.00e+00	1.61e-01	
1,2,3,7,8-PECDF	ND		0.717	0.03	0.00e+00	1.08e-02	
2,3,4,7,8-PECDF	ND		0.717	0.3	0.00e+00	1.08e-01	
1,2,3,4,7,8-HXCDF		1.69	0.805	0.1	1.69e-01	1.69e-01	
1,2,3,6,7,8-HXCDF		1.50	0.805	0.1	1.50e-01	1.50e-01	
1,2,3,7,8,9-HXCDF		2.14	0.805	0.1	2.14e-01	2.14e-01	
2,3,4,6,7,8-HXCDF	ND		0.805	0.1	0.00e+00	4.03e-02	
1,2,3,4,6,7,8-HPCDF		9.51	1.05	0.01	9.51e-02	9.51e-02	
1,2,3,4,7,8,9-HPCDF		1.86	1.05	0.01	1.86e-02	1.86e-02	
OCDF		20.7	1.54	0.0003	6.21e-03	6.21e-03	
			TOTAL TEQ		30.7	31.5	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 30-May-2008 11:09:54; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-31_TEQ_SJ858487.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 128
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	PROJECT 00057781
Matrix:	SOLID	**Lab Sample I.D.:**	L11075-32
Sample Receipt Date:	11-Apr-2008	**Sample Size:**	2.71 g (dry)
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	12-May-2008 **Time:** 15:36:32	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_200B S: 7**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_200B S: 4
Concentration Units:	pg/g (dry weight basis)	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
		% Moisture:	10.4

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		850	1.32	0.79	1.001
1,2,3,7,8-PECDD [3]		19.0	1.04	0.66	1.000
1,2,3,4,7,8-HXCDD		4.75	1.49	1.10	1.000
1,2,3,6,7,8-HXCDD	NDR	13.0	1.49	1.74	1.000
1,2,3,7,8,9-HXCDD	NDR	13.5	1.49	0.99	1.010
1,2,3,4,6,7,8-HPCDD		197	2.04	0.96	1.000
OCDD		1870	1.18	0.88	1.000
2,3,7,8-TCDF		43.8	1.39	0.76	1.003
1,2,3,7,8-PECDF		3.21	0.943	1.36	1.000
2,3,4,7,8-PECDF		5.21	0.943	1.36	1.000
1,2,3,4,7,8-HXCDF		5.77	1.11	1.10	1.000
1,2,3,6,7,8-HXCDF		2.67	1.11	1.13	1.000
1,2,3,7,8,9-HXCDF	ND		1.11		
2,3,4,6,7,8-HXCDF	NDR	3.00	1.11	0.69	1.001
1,2,3,4,6,7,8-HPCDF		32.9	1.11	1.03	1.000
1,2,3,4,7,8,9-HPCDF	NDR	4.06	1.11	1.71	1.000
OCDF		83.8	1.06	0.82	1.002
TOTAL TETRA-DIOXINS		903	1.32		
TOTAL PENTA-DIOXINS		60.7	1.04		
TOTAL HEXA-DIOXINS		118	1.49		
TOTAL HEPTA-DIOXINS		391	2.04		
TOTAL TETRA-FURANS		168	1.39		
TOTAL PENTA-FURANS		158	0.943		
TOTAL HEXA-FURANS		62.4	1.11		
TOTAL HEPTA-FURANS		83.1	1.11		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-32_Form1A_DX8C_200BS7_SJ858488.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 2

PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 128
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-32
Matrix:	SOLID	**Sample Size:**	2.71 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 15:36:32	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_200B S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_200B S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
Concentration Units:	pg absolute	**% Moisture:**	10.4

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	27800	69.6	0.81	1.013
13C-1,2,3,7,8-PECDD [4]		40000	26000	65.0	0.64	1.386
13C-1,2,3,4,7,8-HXCDD		40000	30300	75.9	1.29	0.987
13C-1,2,3,6,7,8-HXCDD		40000	31600	79.0	1.28	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	28900	72.3	1.04	1.094
13C-OCDD		80000	49200	61.5	0.89	1.178
13C-2,3,7,8-TCDF		40000	27300	68.4	0.79	0.966
13C-1,2,3,7,8-PECDF		40000	26800	66.9	1.58	1.288
13C-2,3,4,7,8-PECDF		40000	25900	64.8	1.56	1.356
13C-1,2,3,4,7,8-HXCDF		40000	31900	79.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	35000	87.5	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	29800	74.5	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	31100	77.9	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	29600	73.9	0.46	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	27800	69.4	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	175	87.7		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 30-May-2008 11:09:06; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-32_Form2_DX8C_200BS7_SJ858488.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 128
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-32 i
Matrix:	SOLID	**Sample Size:**	2.71 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	20-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	20-May-2008 **Time:** 20:17:34	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB8B_125B S: 10**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DB8B_125B S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB8B_125B S: 4
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	10.4

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		27.9	4.04	0.85	1.002

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-32_Form1A_DB8B_125BS10_SJ860715.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 128

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.71 g (dry)	**Lab Sample I.D.:**	L11075-32
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB8B_125B S: 10** **DX8C_200B S: 7**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		850	1.32	1	8.50e+02	8.50e+02	
1,2,3,7,8-PECDD		19.0	1.04	1	1.90e+01	1.90e+01	
1,2,3,4,7,8-HXCDD		4.75	1.49	0.1	4.75e-01	4.75e-01	
1,2,3,6,7,8-HXCDD	ND		1.49	0.1	0.00e+00	7.45e-02	
1,2,3,7,8,9-HXCDD	ND		1.49	0.1	0.00e+00	7.45e-02	
1,2,3,4,6,7,8-HPCDD		197	2.04	0.01	1.97e+00	1.97e+00	
OCDD		1870	1.18	0.0001	1.87e-01	1.87e-01	
2,3,7,8-TCDF		27.9	4.04	0.1	2.79e+00	2.79e+00	
1,2,3,7,8-PECDF		3.21	0.943	0.05	1.61e-01	1.61e-01	
2,3,4,7,8-PECDF		5.21	0.943	0.5	2.61e+00	2.61e+00	
1,2,3,4,7,8-HXCDF		5.77	1.11	0.1	5.77e-01	5.77e-01	
1,2,3,6,7,8-HXCDF		2.67	1.11	0.1	2.67e-01	2.67e-01	
1,2,3,7,8,9-HXCDF	ND		1.11	0.1	0.00e+00	5.55e-02	
2,3,4,6,7,8-HXCDF	ND		1.11	0.1	0.00e+00	5.55e-02	
1,2,3,4,6,7,8-HPCDF		32.9	1.11	0.01	3.29e-01	3.29e-01	
1,2,3,4,7,8,9-HPCDF	ND		1.11	0.01	0.00e+00	5.55e-03	
OCDF		83.8	1.06	0.0001	8.38e-03	8.38e-03	
			TOTAL TEQ		878	879	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		850	1.32	1	8.50e+02	8.50e+02	
1,2,3,7,8-PECDD		19.0	1.04	1	1.90e+01	1.90e+01	
1,2,3,4,7,8-HXCDD		4.75	1.49	0.1	4.75e-01	4.75e-01	
1,2,3,6,7,8-HXCDD	ND		1.49	0.1	0.00e+00	7.45e-02	
1,2,3,7,8,9-HXCDD	ND		1.49	0.1	0.00e+00	7.45e-02	
1,2,3,4,6,7,8-HPCDD		197	2.04	0.01	1.97e+00	1.97e+00	
OCDD		1870	1.18	0.0003	5.61e-01	5.61e-01	
2,3,7,8-TCDF		27.9	4.04	0.1	2.79e+00	2.79e+00	
1,2,3,7,8-PECDF		3.21	0.943	0.03	9.63e-02	9.63e-02	
2,3,4,7,8-PECDF		5.21	0.943	0.3	1.56e+00	1.56e+00	
1,2,3,4,7,8-HXCDF		5.77	1.11	0.1	5.77e-01	5.77e-01	
1,2,3,6,7,8-HXCDF		2.67	1.11	0.1	2.67e-01	2.67e-01	
1,2,3,7,8,9-HXCDF	ND		1.11	0.1	0.00e+00	5.55e-02	
2,3,4,6,7,8-HXCDF	ND		1.11	0.1	0.00e+00	5.55e-02	
1,2,3,4,6,7,8-HPCDF		32.9	1.11	0.01	3.29e-01	3.29e-01	
1,2,3,4,7,8,9-HPCDF	ND		1.11	0.01	0.00e+00	5.55e-03	
OCDF		83.8	1.06	0.0003	2.51e-02	2.51e-02	
			TOTAL TEQ		878	878	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613-TEQ_L11075-32_TEQ_SJ858488.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 155
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-33
Matrix:	SOLID	**Sample Size:**	2.21 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 16:31:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_200B S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_200B S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	32.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		2200	1.76	0.79	1.001
1,2,3,7,8-PECDD [3]		22.5	1.38	0.63	1.000
1,2,3,4,7,8-HXCDD	NDR	7.59	2.10	1.74	1.000
1,2,3,6,7,8-HXCDD		35.5	2.10	1.26	1.000
1,2,3,7,8,9-HXCDD		16.5	2.10	1.18	1.010
1,2,3,4,6,7,8-HPCDD		258	1.72	1.19	1.000
OCDD		1590	1.91	0.87	1.000
2,3,7,8-TCDF		66.0	4.37	0.73	1.002
1,2,3,7,8-PECDF		3.67	0.994	1.36	1.000
2,3,4,7,8-PECDF		5.29	0.994	1.46	1.000
1,2,3,4,7,8-HXCDF		7.53	1.49	1.21	1.001
1,2,3,6,7,8-HXCDF		4.34	1.49	1.07	1.001
1,2,3,7,8,9-HXCDF	NDR	1.84	1.49	0.42	1.000
2,3,4,6,7,8-HXCDF		4.18	1.49	1.19	1.000
1,2,3,4,6,7,8-HPCDF		42.9	1.72	1.18	1.000
1,2,3,4,7,8,9-HPCDF		3.30	1.72	1.13	1.000
OCDF	NDR	56.3	2.19	0.66	1.002
TOTAL TETRA-DIOXINS		2330	1.76		
TOTAL PENTA-DIOXINS		140	1.38		
TOTAL HEXA-DIOXINS		301	2.10		
TOTAL HEPTA-DIOXINS		524	1.72		
TOTAL TETRA-FURANS		398	4.37		
TOTAL PENTA-FURANS		385	0.994		
TOTAL HEXA-FURANS		95.9	1.49		
TOTAL HEPTA-FURANS		89.8	1.72		

(1) Where applicable, custom lab flags have been used on this report; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_L11075-33_Form1A_DX8C_200BS8_SJ858489.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
08 VNBH 155
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-33
Matrix:	SOLID	**Sample Size:**	2.21 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 16:31:29	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_200B S: 8**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_200B S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
Concentration Units:	pg absolute	**% Moisture:**	32.1

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	24900	62.2	0.79	1.014
13C-1,2,3,7,8-PECDD [4]		40000	24700	61.8	0.64	1.387
13C-1,2,3,4,7,8-HXCDD		40000	26100	65.1	1.28	0.986
13C-1,2,3,6,7,8-HXCDD		40000	28600	71.5	1.27	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	24900	62.2	1.05	1.094
13C-OCDD		80000	40000	50.0	0.90	1.178
13C-2,3,7,8-TCDF		40000	25800	64.6	0.79	0.967
13C-1,2,3,7,8-PECDF		40000	24400	60.9	1.56	1.288
13C-2,3,4,7,8-PECDF		40000	23700	59.3	1.59	1.356
13C-1,2,3,4,7,8-HXCDF		40000	28300	70.7	0.51	0.954
13C-1,2,3,6,7,8-HXCDF		40000	30700	76.7	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	26000	65.1	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	27200	68.1	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	26000	64.9	0.44	1.061
13C-1,2,3,4,7,8,9-HPCDF		40000	23600	59.1	0.45	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	178	88.9		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form2.xsl; Created: 30-May-2008 11:09:06; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_L11075-33_Form2_DX8C_200BS8_SJ858489.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
08 VNBH 155
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	PROJECT 00057781		
Contract No.:	4496	**Lab Sample I.D.:**	L11075-33 i
Matrix:	SOLID	**Sample Size:**	2.21 g (dry)
Sample Receipt Date:	11-Apr-2008	**Initial Calibration Date:**	20-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	20-May-2008 **Time:** 20:53:43	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB8B_125B S: 11**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DB8B_125B S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB8B_125B S: 4
Concentration Units:	pg/g (dry weight basis)	**% Moisture:**	32.1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF		38.1	5.36	0.83	1.001

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB225_L11075-33_Form1A_DB8B_125BS11_SJ860716.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
08 VNBH 155

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	PROJECT 00057781
Sample Size:	2.21 g (dry)	**Lab Sample I.D.:**	L11075-33
		GC Column ID(s):	DB225 DB5
Concentration Units:	pg/g (dry weight basis)	**Sample Data Filenames:**	**DB8B_125B S: 11** **DX8C_200B S: 8**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2200	1.76	1	2.20e+03	2.20e+03	
1,2,3,7,8-PECDD		22.5	1.38	1	2.25e+01	2.25e+01	
1,2,3,4,7,8-HXCDD	ND		2.10	0.1	0.00e+00	1.05e-01	
1,2,3,6,7,8-HXCDD		35.5	2.10	0.1	3.55e+00	3.55e+00	
1,2,3,7,8,9-HXCDD		16.5	2.10	0.1	1.65e+00	1.65e+00	
1,2,3,4,6,7,8-HPCDD		258	1.72	0.01	2.58e+00	2.58e+00	
OCDD		1590	1.91	0.0001	1.59e-01	1.59e-01	
2,3,7,8-TCDF		38.1	5.36	0.1	3.81e+00	3.81e+00	
1,2,3,7,8-PECDF		3.67	0.994	0.05	1.84e-01	1.84e-01	
2,3,4,7,8-PECDF		5.29	0.994	0.5	2.65e+00	2.65e+00	
1,2,3,4,7,8-HXCDF		7.53	1.49	0.1	7.53e-01	7.53e-01	
1,2,3,6,7,8-HXCDF		4.34	1.49	0.1	4.34e-01	4.34e-01	
1,2,3,7,8,9-HXCDF	ND		1.49	0.1	0.00e+00	7.45e-02	
2,3,4,6,7,8-HXCDF		4.18	1.49	0.1	4.18e-01	4.18e-01	
1,2,3,4,6,7,8-HPCDF		42.9	1.72	0.01	4.29e-01	4.29e-01	
1,2,3,4,7,8,9-HPCDF		3.30	1.72	0.01	3.30e-02	3.30e-02	
OCDF	ND		2.19	0.0001	0.00e+00	1.10e-04	
			TOTAL TEQ		2240	2240	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		2200	1.76	1	2.20e+03	2.20e+03	
1,2,3,7,8-PECDD		22.5	1.38	1	2.25e+01	2.25e+01	
1,2,3,4,7,8-HXCDD	ND		2.10	0.1	0.00e+00	1.05e-01	
1,2,3,6,7,8-HXCDD		35.5	2.10	0.1	3.55e+00	3.55e+00	
1,2,3,7,8,9-HXCDD		16.5	2.10	0.1	1.65e+00	1.65e+00	
1,2,3,4,6,7,8-HPCDD		258	1.72	0.01	2.58e+00	2.58e+00	
OCDD		1590	1.91	0.0003	4.77e-01	4.77e-01	
2,3,7,8-TCDF		38.1	5.36	0.1	3.81e+00	3.81e+00	
1,2,3,7,8-PECDF		3.67	0.994	0.03	1.10e-01	1.10e-01	
2,3,4,7,8-PECDF		5.29	0.994	0.3	1.59e+00	1.59e+00	
1,2,3,4,7,8-HXCDF		7.53	1.49	0.1	7.53e-01	7.53e-01	
1,2,3,6,7,8-HXCDF		4.34	1.49	0.1	4.34e-01	4.34e-01	
1,2,3,7,8,9-HXCDF	ND		1.49	0.1	0.00e+00	7.45e-02	
2,3,4,6,7,8-HXCDF		4.18	1.49	0.1	4.18e-01	4.18e-01	
1,2,3,4,6,7,8-HPCDF		42.9	1.72	0.01	4.29e-01	4.29e-01	
1,2,3,4,7,8,9-HPCDF		3.30	1.72	0.01	3.30e-02	3.30e-02	
OCDF	ND		2.19	0.0003	0.00e+00	3.29e-04	
			TOTAL TEQ		2240	2240	

(1) Where applicable, custom lab flags have been used on this report.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 30-May-2008 11:09:54; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_L11075-33_TEQ_SJ858489.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Matrix:	SOLID	**Lab Sample I.D.:**	WG25190-101
Sample Receipt Date:	N/A	**Sample Size:**	3.00 g
Extraction Date:	29-Apr-2008	**Initial Calibration Date:**	06-May-2008
Analysis Date:	12-May-2008 **Time:** 12:51:49	**Instrument ID:**	HR GC/MS
Extract Volume (uL):	20	**GC Column ID:**	DB5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**DX8C_200B S: 4**
Dilution Factor:	N/A	**Blank Data Filename:**	DX8C_200B S: 4
Concentration Units:	pg/g	**Cal. Ver. Data Filename:**	DX8C_200 S: 1

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDD		8.42	0.969	0.68	1.001
1,2,3,7,8-PECDD [3]	NDR	1.03	0.658	1.33	1.000
1,2,3,4,7,8-HXCDD	ND		0.923		
1,2,3,6,7,8-HXCDD	ND		0.923		
1,2,3,7,8,9-HXCDD	ND		0.923		
1,2,3,4,6,7,8-HPCDD	NDR	5.21	1.26	1.52	1.000
OCDD		6.97	1.20	0.79	1.000
2,3,7,8-TCDF	NDR	1.56	0.616	1.00	1.002
1,2,3,7,8-PECDF		1.12	0.573	1.41	1.000
2,3,4,7,8-PECDF	NDR	2.71	0.573	2.11	1.000
1,2,3,4,7,8-HXCDF		0.966	0.654	1.10	1.001
1,2,3,6,7,8-HXCDF	NDR	1.36	0.654	2.03	1.000
1,2,3,7,8,9-HXCDF	NDR	1.53	0.654	1.86	1.000
2,3,4,6,7,8-HXCDF	NDR	1.47	0.654	0.58	1.000
1,2,3,4,6,7,8-HPCDF	NDR	1.94	1.06	0.50	1.000
1,2,3,4,7,8,9-HPCDF		1.55	1.06	0.95	1.000
OCDF		2.55	1.40	0.98	1.001
TOTAL TETRA-DIOXINS		8.42	0.969		
TOTAL PENTA-DIOXINS	ND		0.658		
TOTAL HEXA-DIOXINS	ND		0.923		
TOTAL HEPTA-DIOXINS	ND		1.26		
TOTAL TETRA-FURANS	ND		0.616		
TOTAL PENTA-FURANS		1.12	0.573		
TOTAL HEXA-FURANS		0.966	0.654		
TOTAL HEPTA-FURANS		1.55	1.06		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.
(3) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25190-101_Form1A_DX8C_200BS4_SJ858483.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 2
PCDD/PCDF ANALYSIS REPORT

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4496	**Lab Sample I.D.:**	WG25190-101
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	06-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	12-May-2008 **Time:** 12:51:49	**GC Column ID:**	DB5
Extract Volume (uL):	20	**Sample Data Filename:**	**DX8C_200B S: 4**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DX8C_200B S: 4
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DX8C_200 S: 1
Concentration Units:	pg absolute		

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO [3]	RRT [3]
13C-2,3,7,8-TCDD		40000	29900	74.9	0.79	1.014
13C-1,2,3,7,8-PECDD [4]		40000	30000	75.0	0.64	1.388
13C-1,2,3,4,7,8-HXCDD		40000	35200	88.0	1.26	0.987
13C-1,2,3,6,7,8-HXCDD		40000	36400	91.1	1.28	0.990
13C-1,2,3,4,6,7,8-HPCDD		40000	33900	84.8	1.04	1.094
13C-OCDD		80000	57500	71.9	0.88	1.178
13C-2,3,7,8-TCDF		40000	29100	72.8	0.79	0.967
13C-1,2,3,7,8-PECDF		40000	30000	75.1	1.56	1.289
13C-2,3,4,7,8-PECDF		40000	29400	73.6	1.56	1.357
13C-1,2,3,4,7,8-HXCDF		40000	35500	88.7	0.52	0.954
13C-1,2,3,6,7,8-HXCDF		40000	40100	100	0.52	0.958
13C-1,2,3,7,8,9-HXCDF		40000	33600	83.9	0.52	1.005
13C-2,3,4,6,7,8-HXCDF		40000	35900	89.7	0.52	0.980
13C-1,2,3,4,6,7,8-HPCDF		40000	33800	84.4	0.45	1.062
13C-1,2,3,4,7,8,9-HPCDF		40000	31700	79.4	0.44	1.103
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD		200	177	88.3		1.015

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required limits for percent recovery (R) are specified in Section 9.3.3, Method 1613.
(3) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613. NOTE: There is no ion abundance ratio for 37Cl4-2,3,7,8-TCDD
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

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Report Filename: 1613_DIOXINS_1613DB5_WG25190-101_Form2_DX8C_200BS4_SJ858483.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 1A
PCDD/PCDF ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Project No.**	N/A
Lab Sample I.D.:	WG25190-101 i		
Matrix:	SOLID	**Sample Size:**	3.00 g
Sample Receipt Date:	N/A	**Initial Calibration Date:**	20-May-2008
Extraction Date:	29-Apr-2008	**Instrument ID:**	HR GC/MS
Analysis Date:	20-May-2008 **Time:** 18:28:56	**GC Column ID:**	DB225
Extract Volume (uL):	20	**Sample Data Filename:**	**DB8B_125B S: 7**
Injection Volume (uL):	1.0	**Blank Data Filename:**	DB8B_125B S: 7
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	DB8B_125B S: 4
Concentration Units:	pg/g		

COMPOUND	LAB FLAG [1]	CONCENTRATION FOUND	DETECTION LIMIT	ION ABUND. RATIO [2]	RRT [2]
2,3,7,8-TCDF	ND		2.16		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Contract-required limits for RRTs and ion abundance ratios are specified in Tables 2 and 9, respectively, Method 1613.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form1A.xsl; Created: 30-May-2008 11:09:33; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB225_WG25190-101_Form1A_DB8B_125BS7_SJ860710.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

PCDD/PCDF ANALYSIS TEQ DATA REPORT

CLIENT SAMPLE NO.
Lab Blank

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**Sample Collection:**	N/A
Matrix:	SOLID	**Project No.**	N/A
Sample Size:	3.00 g	**Lab Sample I.D.:**	WG25190-101
Concentration Units:	pg/g	**GC Column ID(s):**	DB225 DB5
		Sample Data Filenames:	**DB8B_125B S: 7** **DX8C_200B S: 4**

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 1998 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		8.42	0.969	1	8.42e+00	8.42e+00	
1,2,3,7,8-PECDD	ND		0.658	1	0.00e+00	3.29e-01	
1,2,3,4,7,8-HXCDD	ND		0.923	0.1	0.00e+00	4.62e-02	
1,2,3,6,7,8-HXCDD	ND		0.923	0.1	0.00e+00	4.62e-02	
1,2,3,7,8,9-HXCDD	ND		0.923	0.1	0.00e+00	4.62e-02	
1,2,3,4,6,7,8-HPCDD	ND		1.26	0.01	0.00e+00	6.30e-03	
OCDD		6.97	1.20	0.0001	6.97e-04	6.97e-04	
2,3,7,8-TCDF	ND		2.16	0.1	0.00e+00	1.08e-01	
1,2,3,7,8-PECDF		1.12	0.573	0.05	5.60e-02	5.60e-02	
2,3,4,7,8-PECDF	ND		0.573	0.5	0.00e+00	1.43e-01	
1,2,3,4,7,8-HXCDF		0.966	0.654	0.1	9.66e-02	9.66e-02	
1,2,3,6,7,8-HXCDF	ND		0.654	0.1	0.00e+00	3.27e-02	
1,2,3,7,8,9-HXCDF	ND		0.654	0.1	0.00e+00	3.27e-02	
2,3,4,6,7,8-HXCDF	ND		0.654	0.1	0.00e+00	3.27e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.06	0.01	0.00e+00	5.30e-03	
1,2,3,4,7,8,9-HPCDF		1.55	1.06	0.01	1.55e-02	1.55e-02	
OCDF		2.55	1.40	0.0001	2.55e-04	2.55e-04	
			TOTAL TEQ		8.59	9.42	

COMPOUND	LAB FLAG [1]	CONC. FOUND	DETECTION LIMIT	WHO 2005 TEF	TEQ ND=0	TEQ ND=1/2 DL	TEQ ND=DL
2,3,7,8-TCDD		8.42	0.969	1	8.42e+00	8.42e+00	
1,2,3,7,8-PECDD	ND		0.658	1	0.00e+00	3.29e-01	
1,2,3,4,7,8-HXCDD	ND		0.923	0.1	0.00e+00	4.62e-02	
1,2,3,6,7,8-HXCDD	ND		0.923	0.1	0.00e+00	4.62e-02	
1,2,3,7,8,9-HXCDD	ND		0.923	0.1	0.00e+00	4.62e-02	
1,2,3,4,6,7,8-HPCDD	ND		1.26	0.01	0.00e+00	6.30e-03	
OCDD		6.97	1.20	0.0003	2.09e-03	2.09e-03	
2,3,7,8-TCDF	ND		2.16	0.1	0.00e+00	1.08e-01	
1,2,3,7,8-PECDF		1.12	0.573	0.03	3.36e-02	3.36e-02	
2,3,4,7,8-PECDF	ND		0.573	0.3	0.00e+00	8.60e-02	
1,2,3,4,7,8-HXCDF		0.966	0.654	0.1	9.66e-02	9.66e-02	
1,2,3,6,7,8-HXCDF	ND		0.654	0.1	0.00e+00	3.27e-02	
1,2,3,7,8,9-HXCDF	ND		0.654	0.1	0.00e+00	3.27e-02	
2,3,4,6,7,8-HXCDF	ND		0.654	0.1	0.00e+00	3.27e-02	
1,2,3,4,6,7,8-HPCDF	ND		1.06	0.01	0.00e+00	5.30e-03	
1,2,3,4,7,8,9-HPCDF		1.55	1.06	0.01	1.55e-02	1.55e-02	
OCDF		2.55	1.40	0.0003	7.65e-04	7.65e-04	
			TOTAL TEQ		8.57	9.34	

(1) Where applicable, custom lab flags have been used on this report; ND = not detected.
(2) Concentrations that do not meet quantification criteria are not included in the TEQ calculations.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: TEQ.xsl; Created: 30-May-2008 11:09:54; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613-TEQ_WG25190-101_TEQ_SJ858483.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8A
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4496	**OPR Data Filename:**	**DX8C_200A S: 1**
Matrix:	SOLID	**Lab Sample I.D.:**	WG25190-102 i
Extraction Date:	29-Apr-2008	**Analysis Date:**	12-May-2008 **Time:** 09:10:07

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
2,3,7,8-TCDD		0.77	10.6	10.2	7.10 - 16.7	96.3
1,2,3,7,8-PECDD [4]		0.62	56.6	58.2	39.6 - 80.4	103
1,2,3,4,7,8-HXCDD		1.24	59.2	58.4	41.4 - 97.1	98.7
1,2,3,6,7,8-HXCDD		1.26	51.8	52.7	39.4 - 69.4	102
1,2,3,7,8,9-HXCDD		1.24	56.7	54.0	36.3 - 91.9	95.3
1,2,3,4,6,7,8-HPCDD		1.03	50.0	47.2	35.0 - 70.0	94.5
OCDD		0.88	108	96.5	84.2 - 155	89.4
2,3,7,8-TCDF		0.77	10.9	11.0	8.18 - 17.2	101
1,2,3,7,8-PECDF		1.51	50.0	49.3	40.0 - 67.0	98.7
2,3,4,7,8-PECDF		1.50	50.0	49.6	34.0 - 80.0	99.2
1,2,3,4,7,8-HXCDF		1.23	54.4	52.0	39.2 - 72.9	95.7
1,2,3,6,7,8-HXCDF		1.22	50.0	48.9	42.0 - 65.0	97.8
1,2,3,7,8,9-HXCDF		1.22	50.0	49.3	39.0 - 65.0	98.6
2,3,4,6,7,8-HXCDF		1.20	53.1	51.2	37.2 - 82.8	96.3
1,2,3,4,6,7,8-HPCDF		1.01	50.0	51.5	41.0 - 61.0	103
1,2,3,4,7,8,9-HPCDF		1.01	50.0	47.1	39.0 - 69.0	94.1
OCDF		0.88	109	98.1	68.4 - 185	90.4

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration range as determined from the percent of the test concentration in Table 6, Method 1613, under OPR.
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist

For Axys Internal Use Only [XSL Template: Form8A.xsl; Created: 30-May-2008 11:09:06; Application: XMLTransformer-1.9.5;
Report Filename: 1613_DIOXINS_1613DB5_WG25190-102_Form8A_SJ858495.html; Workgroup: WG25190; Design ID: 862]

AXYS METHOD MLA-017 Rev 14

Form 8B
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4496 **OPR Data Filename:** DX8C_200A S: 1

Matrix: SOLID **Lab Sample I.D.:** WG25190-102 i

Extraction Date: 29-Apr-2008 **Analysis Date:** 12-May-2008 **Time:** 09:10:07

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG [1]	ION ABUND. RATIO [2]	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS [3] (ng/mL)	% RECOVERY
13C-2,3,7,8-TCDD		0.78	100	70.8	20.0-175	70.8
13C-1,2,3,7,8-PECDD [4]		0.63	100	71.0	21.0-227	71.0
13C-1,2,3,4,7,8-HXCDD		1.27	100	77.5	21.0-193	77.5
13C-1,2,3,6,7,8-HXCDD		1.24	100	80.6	25.0-163	80.6
13C-1,2,3,4,6,7,8-HPCDD		1.05	100	76.8	26.0-166	76.8
13C-OCDD		0.88	200	139	26.0-397	69.7
13C-2,3,7,8-TCDF		0.78	100	69.8	22.0-152	69.8
13C-1,2,3,7,8-PECDF		1.56	100	72.1	21.0-192	72.1
13C-2,3,4,7,8-PECDF		1.56	100	71.0	13.0-328	71.0
13C-1,2,3,4,7,8-HXCDF		0.51	100	81.6	19.0-202	81.6
13C-1,2,3,6,7,8-HXCDF		0.52	100	85.2	21.0-159	85.2
13C-1,2,3,7,8,9-HXCDF		0.51	100	76.6	17.0-205	76.6
13C-2,3,4,6,7,8-HXCDF		0.52	100	78.3	22.0-176	78.3
13C-1,2,3,4,6,7,8-HPCDF		0.44	100	78.7	21.0-158	78.7
13C-1,2,3,4,7,8,9-HPCDF		0.45	100	76.3	20.0-186	76.3
CLEANUP STANDARD						
37CL-2,3,7,8-TCDD			10.0	9.37	3.10-19.1	93.7

(1) Where applicable, custom lab flags have been used on this report.
(2) Contract-required Ion Abundance Ratios are specified in Table 9, Method 1613.
(3) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. Labeled compound concentrations limits are based on required percent recovery (Section 15.5, Method 1613).
(4) Alternate confirmation and quantitation ions used for native and labeled PECDD.

Approved by: _____Jason MacKenzie_____ QA/QC Chemist