

Certified Mail 5460 4413

Mark J. Brown General Manager Pend Oreille Operations

July 28, 2006

Mr. William Fees Washington State Department of Ecology Eastern Regional Office 4601 North Monroe Spokane, WA 99205-1259

Re: Solid Waste Deposit Assessment

Dear Mr. Fees:

On April 6, 2005, the U.S. Environmental Protection Agency (EPA) visited the Pend Oreille Mine (POM) to conduct a follow-up investigation to the 2001 START-2 investigation of mines and mills on the Lower Pend Oreille River. During that visit, a legacy solid waste site was discovered west of the Mine in a heavily wooded, steep area. This previously undiscovered site is located on lands owned by Teck Cominco American Incorporated (TCAI) and Seattle City Light (SCL). Mr. David Godlewski of TCAI (Spokane) contacted you regarding the solid waste site and offered you the opportunity to review it with him. You respectfully declined, but requested to be informed of any investigative work.

In conjunction with SCL, POM has conducted an assessment of the site to determine the extent of the debris field and identify possible contamination sources, if any. POM has recently completed the assessment and hereby submits the findings to Ecology.

If you have any questions, please feel free to contact either Kevin Kinsella at (509) 446-5310 or myself at (509) 446-4516.

Sincerely,

Mark J. Brown General Manager

Pend Oreille Operations

Enclosures

CC.

D. Godlewski

K. Kinsella

B. Morgan

C. Pratt (SCL)

REPORT
SOLID WASTE DEPOSIT ASSESSMENT
PEND OREILLE MINE
METALINE FALLS, WASHINGTON

JULY 26, 2006

FOR TECK COMINCO AMERICAN, INCORPORATED





July 26, 2006

Teck Cominco American, Incorporated 15918 East Euclid Avenue Spokane, Washington 99216

Attention: David Godlewski

This letter transmits draft two copies of our "Report, Solid Waste Deposit Assessment, Pend Oreille Mine, Metaline Falls, Washington".

Our services were completed in general accordance with our proposal dated April 29, 2005. Written authorization for our study was provided on May 25, 2005.

We appreciate the opportunity to provide these services. Please contact the undersigned should you have any questions or require additional information.

Sincerely,

GeoEngineers, Inc.

Bruce D. Williams

Principal

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## Report Solid Waste Deposit Assessment Pend Oreille Mine Metaline Falls, Washington File No. 6601-003-09

July 26, 2006

### Prepared for:

Teck Cominco American, Incorporated 15918 East Euclid Avenue Spokane, Washington 99216

Attention: David Godlewski

Prepared by:

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# REPORT SOLID WASTE DEPOSIT ASSESSMENT PEND OREILLE MINE METALINE FALLS, WASHINGTON FILE NO. 6601-003-09 FOR TECK COMINCO AMERICAN, INCORPORATED

### INTRODUCTION

This letter report presents methodology and findings of an assessment of the solid waste deposit (debris field) at the Teck Cominco American Incorporated (TCAI) Pend Oreille Mine (POM) site near Metaline Falls, Washington. The approximate location of the site is shown on the Vicinity Map, Figure 1.

In early 2005, TCAI became aware of a debris field located on a vegetated hillslope west of and below the POM concentrator building and above the Pend Oreille River. Drums, wood, metal debris, and other wastes were observed partially buried in the debris field, which is approximately 200 feet wide by 300 feet long. Portions of the debris field are located on property owned or managed by Seattle City Light. Seeps that are likely seasonal are present at the base of the debris field. The Washington State Department of Ecology (Ecology) and the Environmental Protection Agency (EPA) are aware of the debris field.

### PROJECT OBJECTIVES AND APPROACH

The three primary objectives for this project were to (1) assess the extent of the debris field; (2) assess for potential releases to the environment that might be associated with the debris field; and (3) assess slope stability issues if the debris is removed. Generally, the approach included conducting a site reconnaissance; collecting soil, waste, and seep water samples from below the debris; completing a geophysical survey; performing a slope stability evaluation; and providing recommendations for managing the debris, either through removal or in-place methods.

### **SCOPE OF SERVICES**

The following presents the scope of services conducted to meet project objectives:

- Modify the existing Pend Oreille Mine site-specific health and safety plan for use by GeoEngineers' employees during activities conducted at the site.
- Conduct a site reconnaissance of the debris field. The purposes of this task were to map the occurrence of visible waste, review drum labels to further refine the proposed chemical of concern (COC) list (described below), and establish a grid system for the geophysical survey.
- Collect soil samples for chemical analysis concurrent with the site reconnaissance. The initial scope included advancement of hand augers into the solid waste field at approximately 10 locations. However, soil in the area of the debris was dense and the full vertical thickness of the debris field was not assessable using hand augers. An alternative plan was implemented, which included excavating four shovel test pits in select areas of the debris.
- Screen vapor within each test pit using a photoionization detector (PID). Soil samples were field screened for the presence of contaminants using visual, headspace vapor, and water sheen

screening methods. Based on field screening results, one soil sample was collected from each of the four test pits for chemical analysis.

- Collect a sample of powdery white material observed in a shallow test pit.
- Analyze the four soil samples for volatile organic compounds (VOCs) by EPA Methods 8260; diesel- and oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx; total cyanide by EPA Method 335.2; pH by EPA 9040B; polychlorinated biphenyls (PCBs) by EPA 8082; and organochlorine pesticides by EPA Method 8081. In addition, analyze the powdery white material for total cyanide by EPA Method 335.2.
- Collect one seep water sample from the base of the debris field. The seep water sample was analyzed for VOCs by EPA Method 8260; diesel- and oil-range petroleum hydrocarbons by NWTPH-Dx; total cyanide by EPA Method 335.2; pH by EPA Method 9040B; PCBs by EPA 8082; and chlorinated pesticides by EPA Method 8081.
- Conduct a geophysical survey of the site to identify the extent of the debris field. GeoPotential from Gresham, Oregon was subcontracted to conduct the geophysical survey. GeoPotential utilized a portable magnetometer and a tracer metal detector to generally delineate the boundaries of the buried solid waste.
- Collect ground penetrating radar (GPR) data along the top of the hill slope to further delineate the extent and depth of the debris in this location.
- Conduct a geologic evaluation to identify unstable slope hazards if the debris is removed. Several data were reviewed as part of the geologic evaluation including geophysical survey results, soil exploration data, surficial geologic maps and available geotechnical reports for the mine site, including a geotechnical report for the existing concentrator building (AMEC Earth & Environmental, Draft "Geotechnical Engineering Report, Concentrator Building, Cominco American Inc, Pend Oreille Mine Site", 2001).

### SITE CONDITIONS

### SURFACE CONDITIONS

### General

The site is located near the POM, a lead-zinc mine that began operation in the mid-1950s. The debris field is located from about 20 feet east to 30 feet east of the Pend Oreille River. The ground surface elevation at the debris field and associated fill soil ranges from approximately Elevation 2,030 to Elevation 2,145 (elevations in this report are given in feet above Mean Sea Level). The Pend Oreille River near the mine is a reservoir created by Boundary Dam, which is located about eight miles downstream (north) of the mine site. Boundary Dam is a concrete-arch dam owned and operated by Seattle City Light for hydroelectric production. The normal pool elevation behind Boundary Dam is approximately Elevation 1,990.

The subject slope area is located on a northwest-facing slope above the Pend Oreille River. The POM is located at the top of the slope at approximately Elevation 2,150. The nearest POM facility building to the slope is the concentrator building, which is located approximately 60 to 80 feet from the top of the slope. TCAI owns the upper half of the slope and Seattle City Light owns the lower half of the slope.

A site reconnaissance of the slope was conducted on June 14 and 15, 2005, and August 31, 2005 to map slope and surface debris features. Significant features observed during the reconnaissance are shown on

the Site Plan, Figure 2. A field-developed profile of the slope near the debris field was developed and is shown on Figure 2 as transect A-A'. The slope profile and associated observations are shown on the Field Developed Slope Profile, Figure 3. The slope profile and mapping were completed using topographic maps provided by TCAI, by measuring distances from physical features using nylon measuring tapes, and measuring slopes using a hand clinometer. The location of features should be considered accurate to the degree implied by the methods used.

Accessible portions of the debris field were observed and recorded to describe debris characteristics. Surface debris included drums, hoses, engine parts, glass, wood timbers, sheet metal, cables, and other debris. This material is consistent with historic "bone-yard" debris expected at the POM. Generally, drum labels were not ascertainable because of weathering and rusting. One empty drum was labeled "Dow Float 250" which is a frothing chemical comprised of propylene glycol amyl ester.

For descriptive purposes the slope is separated into three areas based on topography: the upper, middle, and lower slope. Data stations were identified and recorded to assist with discussion; stations are shown on Figure 2. In general, inclinations on the upper slope range between about 30 and 35 percent (3.3H:1V (horizontal to vertical) and (2.8H:1H), the middle slope ranges between about 70 and 90 percent (1.4H:1V and 1.1H:1V) and the lower slope ranges between about 18 and 20 percent (5.5H:1V and 5H:1V). The upper slopes are steeper to the northwest and southeast of the debris field, and generally inclined on the order of 1.25H:1V. Our observations are discussed in further detail in the sections below.

### Debris Field Description

The debris field is located on the slope immediately adjacent, north of the concentrator building. Fill soil and wood debris was apparent at the top of the slope (west of transect A-A'). The debris field in June 2005 generally was defined by 1) vegetation consisting of smaller diameter trees and dense underbrush; 2) surface debris primarily consisting of metal drums, vehicle body and frame parts, various machine parts and wood debris; and 3) features indicative of historical dumping of fill soil and debris. Fill soil was piled about 3 to 4 feet high and retained behind 18- to 24-inch diameter cedar trees near data Stations 21 and 22. Topographically, the area generally is bounded by a drainage to the northeast and a smaller drainage channel (2 feet wide and about 1-foot deep) to the southwest, which trends adjacent to a zone of timber debris situated perpendicular to the slope. The small, southwest drainage channel appears to have had recent flow, apparent by erosion of and deposition in the channel. We understand that the timber debris is from demolition of the tailings launder.

The debris we observed generally was varied across the slope. In some cases, debris was observed at random locations on the ground surface and in other cases, the debris appeared more densely concentrated, partially buried and degraded (rusted drums/metal). It appears that the debris has some thickness, based on the deposits observed upslope of trees and several areas where a probe can be pushed 2 to 3 feet into the degraded debris. We were not able to use drill equipment to evaluate subsurface soil and groundwater conditions on the slope because of the difficult access and steepness of the subject slope. The geophysical assessment did not prove useful for evaluating the potential thickness of debris, although it was useful for delineating the aerial extend of debris. Therefore, we were not able to ascertain the thickness of the debris on the slope. However, based on the limited hand explorations (TC-9) and observations of the failure within the debris, we estimate that the debris is at least 5½ feet thick at these locations.

We observed an older slope failure on the lower portion of the middle slope within the debris field. During our reconnaissance, the failure was defined by a main headscarp and lateral scarps. The failure

Page 3

dimensions were estimated to be approximately 45 to 60 feet long (perpendicular to contour), 40 feet wide (on contour) and about 4 to 5 feet deep. The failure slope was inclined at about 70 percent (1.4H: 1V). The slide debris was composed of gravelly soil, which included metal and wood debris. We did not observe other apparent failures within the debris field.

Vegetation within the debris field is a mixture of deciduous and coniferous trees. Understory vegetation consists of smaller diameter trees (sapling size), brush and grasses. In general, it appears the slope area was cleared of larger diameter trees in the past.

### Geophysical Survey

GeoEngineers subcontracted a geophysical survey to delineate the aerial extent of metal debris within the debris field site. The survey was completed using a magnetometer with an integral differential global positioning system (DGPS), ground penetrating radar (GPR) and an electromagnetic tracer (tracer). Refer to Appendix A, Geophysical Summary Report, for details and limitations of the geophysical survey.

In typical use, the DGPS records information from the magnetometer continuously. However, the effectiveness of the DGPS was limited and did not cover the anticipated debris area because of the dense vegetation and steep terrain. To delineate the aerial extent of the metal debris, the tracer was utilized at locations where the DGPS was ineffective. Metal debris located using the tracer was then flagged and picked up as discrete points, where possible, using the DGPS. This method allowed approximate delineation of buried metal within the debris field, which generally coincided with metal observed at the ground surface. This area is shown on Figure 2. However, it is likely that random metal objects are present outside the area shown on Figure 2.

### **Native Slopes**

Native slopes adjacent to the subject site generally are inclined between about 45 and 80 percent (2.2H:1V and 1.25H: 1V). We did not observe obvious recent failure on the native slopes during our reconnaissance; however our reconnaissance was concentrated in the area of the debris field. Contrary to the debris area, vegetation on the native slopes generally consisted of mature coniferous trees with little to no understory vegetation. The coniferous trees observed generally had a straight growth habit.

### Surface Water Drainage and Seepage

Based on our observations, storm water from the portion of the mine facility adjacent to, and uphill of the slope appears to collect at the silt fence located at the top of the slope, then seeps through the silt fence and enters the small drainage channel, which approximately bounds the southwest side of the debris field. The small channel was dry during our August 2005 reconnaissance.

We did not observe indication of seepage from the upper or middle portions of the slope. However, a seep is present at the toe of the lower slope approximately 100 feet northeast of data Station 24. The seep appears to emanate from a gravel layer and was discharging approximately 10 gallons per minute during our June 14 and 15, 2005 site visit.

### SUBSURFACE CONDITIONS

### General Geologic Conditions

We evaluated geology at the project site by reviewing selected published geologic maps, a well log from a water production well located approximately 500 feet south of the solid waste deposit, nine hand-excavated explorations and an AMEC report describing two test pits completed near the subject slope. According to the published maps, the subject site is underlain by glaciolacustrine deposits consisting of laminated clay, silt and fine sand. Locally, the deposits include thin beds of stratified sand and gravel (Stoffel, et al, 1991). The glaciolacustrine deposits are underlain by bedrock consisting of the Ledbedder slate and the Metaline Limestone Formations. Our observations of on-site soil and soil observed in the test pits completed by AMEC generally are consistent with the published information. Our observations are described in detail below.

### Hand Auger/Test Pit Excavations

We evaluated shallow subsurface conditions on the subject slope by completing hand auger borings TC-1 through TC-5 and test pit excavations TC-6 through TC-9. These explorations were completed to depths ranging between 1 and 5½ feet. The approximate locations of the explorations are shown on Figure 2. Descriptions of the materials encountered are shown in Table 1 below. Exploration location rationale, soil sampling, and analytical results are described in the Environmental Conditions section of this report.

Table 1. Hand Auger-Subsurface Materials Description

| Hand Auger<br>Location   | Description of Subsurface Materials                                 |
|--|---|
| TC-1   | Brown silt with gravel (TD=2 feet) <sup>1</sup>                     |
| TC-2   | Brown sandy gravel (TD=1½ feet)                                     |
| TC-3   | Brown sandy gravel (TD=1-foot) 1                                    |
| TC-4   | Brown sand and gravel with rootlets (TD=2 feet) <sup>1</sup>        |
| TC-5   | Gray/black sand gravel with rootlets (TD= 1-foot) 1                 |
| TC-6   | Gray/brown sandy gravel, appears native (TD=4½ feet) 1              |
| TC-7   | 0 to 1 feet- Wood and plant material                                |
| S. Leading of the Control of the Con | 1 to 3½ feet- Dark gray gravel with cobbles (fill soil)             |
|  | 3½ to 4½ feet- Gray/brown gravel with trace silt (native)           |
| transcensor  | (TD= 4½ feet) <sup>1</sup>  |
| TC-8   | 0 to ½ feet- Wood and plant material                                |
|  | ½ to 2 feet- Brown silt with debris (glass and bottle caps)         |
|  | 2 to 2 ½ feet- White power with yellow rind (unknown chemical)      |
| Constitution of the Consti | (TD= 2½ feet) 1   |
| TC-9   | 0 to ½ feet- Wood and plant material                                |
| Morane and a second a second and a second and a second and a second and a second an | ½ to 4½ feet- Gray/Dark brown ashy silt with glass and burned wood. |
|  | 4½ to 5½ Hand auger refused in fill soil.                           |
|  | (TD= 5½ feet) <sup>1</sup>  |

Note 1: Hand auger borings were completed to practical refusal. TD= Total Depth of Hand Auger boring

### Previous Test Pits

Test pits were completed by AMEC in 2001 for the expansion of the concentrator building. Test pit TP-5 and TP-8 were located at the north and northwest end of the concentrator building, respectively, as shown on Figure 2. These test pits are within about 50 to 80 feet of the subject slope crest. In general, logs for test pits TP-5 and TP-8 describe fine to coarse sand with gravel and silt between the ground surface and approximately 6 feet deep. Fine to coarse gravel with sand, silt and cobbles and boulders are indicated on the logs between 5 and 13 feet deep, and cobbles and large boulders up to 24 inches diameter between 13 and 15 feet deep. Slight caving was observed at approximately 8 feet deep in TP-5. Slight caving was also observed in TP-8, however the depth was not noted. No ground water seepage was noted on the logs for either test pit.

### SLOPE STABILITY EVALUATION

### **GENERAL**

We completed a qualitative evaluation of the subject slope relative to potential instability issues that could arise from removal of debris. Our evaluation was based on the following: 1) review of local geologic conditions; 2) logs for TP-5 and TP-8 discussed above; 3) results of our hand auger borings and test pits completed within the debris field; 4) our observations relative to surface water runoff or seepage and past slope failure within the debris field; 5) our previous experience with local hydrogeologic conditions; 6) our observations of the performance of the native slopes near the subject slope; and 7) slope geometry based on existing topographic information and our Field Developed Slope Profile, Figure 3. Details of our evaluation are discussed in the paragraphs below.

### DISCUSSION

In general, factors that influence slope instability include removal of underlying or lateral support by erosion or human land modification and/or addition of mass to the slope such as groundwater, soil stockpiles, debris or structures. Absent groundwater seepage, glaciolacustrine deposits consisting of clay, silt and fine sand can be stable at slopes on the order of 1H to 1V, (horizontal to vertical) and, in some cases, steeper. The stable slope inclination decreases when the slope soil becomes loose or soft, or when zones of sand, gravel and/or groundwater seepage are present. In simple terms, when the stress within the slope soil mass exceeds the soil shear strength, unstable conditions ensue and deformation of the slope results.

With the exception of the seepage located approximately 100 feet northeast of the subject slope at approximate Elevation 1,995 feet (base of lower slope) we did not observe indication of seepage on the subject slope within the debris field vicinity. However, our reconnaissance occurred during the dry time of the year. Additionally, the native slopes near the subject site appear stable at inclinations on the order of 1.25H to 1V. We did not observe indication of apparent slope instability on the native slopes near the subject hillside, such as escarpments, tension cracks or debris lobes. The failure we observed on the subject slope occurred within the relatively loose soil/debris and not within the native soil (described in the Debris Field Description section of this report).

### **ENVIRONMENTAL CONDITIONS**

### **GENERAL**

The materials contained within the solid waste deposit likely were deposited during and shortly after the first operating period of the mine between 1952 and 1977. Likely, solid wastes from historic mine operations, including nearby mill operations, occasionally were disposed over the edge of the bank in the debris area. During our investigation, soil and seep water samples were collected and analyzed to preliminarily assess the potential for environmental contaminants to have been released as a result of historic waste disposal practices. Soil was assessed by conducting a near surface and shallow subsurface soil investigation that included soil sampling and analysis. Seep water was assessed by collecting and analyzing water samples from a seep located in the assumed downgradient location of the debris field. The following sections summarize soil and seep water sampling and analytical results.

### NEAR SURFACE AND SHALLOW SUBSURFACE SOIL INVESTIGATION

Near surface and shallow subsurface soils in the area of the debris field were explored on June 14 and 15, 2005. Initially, explorations were attempted using a hand-auger. Five hand-auger explorations were attempted at various locations across the debris field; these were labeled TC-1 through TC-5. Depths of only 1 to 2 feet below surface grade could be achieved with hand augering because soils were dense and contained cobbles up to three inches in diameter. Consequently, the remaining explorations, TC-6 through TC-9 were advanced using hand-excavated test pits. Figure 2 shows near surface and shallow subsurface soil exploration locations. Appendix B presents a summary of field exploration methods.

One sample was collected from hand-auger exploration TC-1. This auger location was below the base of the debris field near the location of a seep that likely drains portions of the deposit. The approximate elevation of TC-1 is 1,995 feet. The sample from TC-1 was collected from the ground surface to approximately 1-foot below grade. The purpose of this sample was to estimate potential impacts to soil caused by downgradient leaching of possible contaminants from the solid waste deposit. No samples were collected for analysis from TC-2, TC-3 and TC-4 because these explorations did not extend through the full thickness of the debris fill.

Test pit TC-6 was excavated in the middle portion of the assumed debris field at an elevation of approximately 2,020 feet. This test pit was excavated to a depth of approximately 4½ feet within an ephemeral stream/drainage within the debris field. Soil sample TC-6 was collected from the test pit at a depth of approximately 4 to 4½ feet below grade at the assumed fill soil/native soil interface.

Test pit TC-7 was excavated in the lower portion of the debris field at an elevation of approximately 2,010 feet. Test pit TC-7 was located approximately 50 feet downhill from a drum field in the middle of the debris field. Test pit TC-7 was excavated to a depth of approximately 4½ feet. Soil sample TC-7 was collected from a depth of approximately 4 to 4½ feet deep at the assumed fill soil/native soil interface.

Test pit TC-8 was excavated in the upper portion of the debris field at an elevation of approximately 2,120 feet. This test pit was excavated to a depth of approximately 2 feet where an unknown white powdery material was encountered. A sample was collected of this material and the test pit was not excavated further.

Test pit TC-9 was excavated at an elevation of approximately 2,120 feet near the upper southeast portion of the debris field immediately down slope from a drum field in the upper portions of the slope. This test

pit was excavated to approximately 4½ feet below grade to the assumed contact between fill soil and native soil. Soil sample TC-9 was collected at a depth of 4 to 4½ feet.

### NEAR SURFACE AND SHALLOW SUBSURFACE SOIL ANALYTICAL RESULTS

Soil samples TC-1, TC-6, TC-8 and TC-9 were field screened using visual, water sheen, PID headspace field screening procedures. In addition, these samples were analyzed by North Creek Analytical of Spokane, Washington for diesel- and oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx; VOCs by EPA Method 8260; total cyanide by EPA Method 335.2; pH by EPA Method 9040B; organochlorine pesticides by EPA Method 8081A; and PCBs by EPA Method 8082. Summary of Chemical Analytical Results – Soil, Table 2, summarizes laboratory analytical results. Laboratory reports are presented in Appendix C.

Diesel-range petroleum hydrocarbons were not detected in the samples. Oil-range petroleum hydrocarbons were detected in all the samples. Concentrations ranged from 29.7 milligrams per kilogram (mg/kg) in sample TC-1; 521 mg/kg in sample TC-7; 1,510 mg/kg in sample TC-6; and 1,740 mg/kg in sample TC-9. None of the samples exceeded the Washington State Model Toxics Control Act (MTCA) Method A oil-range petroleum hydrocarbon soil cleanup level of 2,000 mg/kg.

The VOC trichloroethene was detected in TC-6 at 1.76 mg/kg, TC-7 at 0.205 mg/kg, and TC-9 at 0.144 mg/kg. These concentrations exceed the MTCA Method A trichloroethene cleanup level of 0.03 mg/kg. Trichloroethene was not detected in soil sample TC-1; none of the other VOC were detected in any sample.

Cyanide was detected in samples TC-6 and sample TC-9 at concentrations of 0.0719 mg/kg and 0.393 mg/kg, respectively. These concentrations are less than the MTCA Method B direct contact cleanup level of 1,600 mg/kg. Cyanide was not detected in samples TC-1 and TC-8. pH ranged from 7.16 to 7.77 pH units. This range of pH is generally neutral.

One or more organochlorine pesticides were detected in each sample. None of the detected concentrations exceeded appropriate MTCA Method A or Method B direct contact soil cleanup levels. In addition, PCBs were detected in samples TC-6. TC-7, and TC-8 at concentrations ranging from 49.7 to 87.8 micrograms per kilogram ( $\mu g/kg$ ). This is well below the MTCA Method A PCB soil cleanup level of 1,000  $\mu g/kg$ . These detected contaminants are present at concentrations less than concentrations shown in MTCA Table 749.3, Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals.

Note that the sample of the white powdery material collected from TC-8 was analyzed for cyanide. No cyanide was detected in the sample.

### SEEP WATER SAMPLING

Water samples were collected from a seep located near the northwest base of the debris field at an elevation of approximately 1,995 feet. This seep is located downslope from the debris field and likely represents groundwater that passes under all or a portion of the debris field. Samples were collected on June 14 and 15, 2005 by excavating a small stilling well at the seep location and using both a peristaltic pump with new tubing and decanting to obtain samples. Two sampling events were performed (one on June 14 and one on June 15, 2005) to ensure enough sample matrix for analysis. For the purposes of this assessment one sample is described; samples collected on both dates were labeled TC-WS1. Appendix B presents a summary of field exploration methods.

### SEEP WATER SAMPLING ANALYTICAL RESULTS

The seep water sample was analyzed by North Creek Analytical of Spokane, Washington for diesel- and oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx; VOCs by EPA Method 8260; total cyanide by Standard Method 4500; organochlorine pesticides by EPA Method 8081A; and PCBs by EPA Method 8082. Summary of Chemical Analytical Results – Water, Table 3, summarizes seep water laboratory analytical results. Laboratory reports are presented in Appendix C.

Petroleum hydrocarbons, cyanide, and PCBs were not detected in the sample. Benzene and methyl tertbutyl ether were detected at concentrations of 2.84 and 1.80 micrograms per liter ( $\mu$ g/l) respectively. These are less than applicable MTCA Method A groundwater cleanup levels. No other VOCs were detected. Endosulfan was detected at a concentration of 0.0226  $\mu$ g/l which is less than the MTCA Method B groundwater cleanup level of 96  $\mu$ g/l. No other organochlorine pesticides were detected in the sample.

### **CONCLUSIONS AND RECOMMENDATIONS**

### **GENERAL**

There are two general factors that describe and define our conclusions and recommendations: environmental risk and the geotechnical properties of the native slope and overlying solid waste debris. Subsequently, our conclusions and recommendations are presented in two sections that apply to each of these factors.

### **ENVIRONMENTAL CONCLUSIONS AND RECOMMENDATIONS**

The environmental assessment portion of our investigation identified trichloroethene present at concentrations exceeding MTCA Method A cleanup levels in soil collected from test pits excavated within the debris field. Other contaminants, including oil-range petroleum hydrocarbons, organochlorine pesticides, and PCBs were detected at concentrations less than MTCA cleanup levels. It is possible that the trichloroethene and the other contaminants were present within used oil that was incorporated into the debris. This is supported by detections of oil-range petroleum hydrocarbon in the soil samples where trichloroethene and the other contaminants were detected. In addition, it was a common historical practice to mix wastes prior to disposal.

The presence of partially buried drums suggests that additional undiscovered buried drums might be present within the debris field. While we did not observe drums containing residual product, we did discover an unidentified powder in one of our test pits (TC-8). The debris field appears to have been placed on native soil, precipitation freely drains through the debris, and there is potential that the Pend Oreille River receives runoff and groundwater from portions of the hillside where the debris is present. Although risk to the environment exists if the debris is left in place, environmental contaminants were not observed at concentrations exceeding MTCA groundwater cleanup levels in a seep sample collected below the waste. This suggests the current threat to human health and the environment is low relative to groundwater and surface water pathways. In our opinion, the data we collected did not justify that current threats require an expedited or immediate response.

We recommend monitoring water quality at seasonal seep and surface run-off locations below the debris field. The following actions may be performed to mitigate and monitor environmental risk:

• Collect seep water samples on a quarterly basis for a period of one year to assess if contaminants are migrating to groundwater and surface water. Based on the results of the first year, evaluate

the need for a second year of sampling. Ideally, samples will be collected following precipitation events when several seep locations might be present below the debris field. This data should provide a baseline of environmental conditions.

- Submit seep water samples to a qualified laboratory for analysis of petroleum hydrocarbons, volatile organics, chlorinated pesticides, cyanide and PCBs.
- Implement institutional controls or other measures to prevent use of the delineated waste deposit

Following mine closure, we recommend debris field removal as discussed in further detail below. This course of action should reduce or eliminate the risk to the environment presented by the debris field. The interim program of seep sampling may be used to monitor the quality of groundwater and surface water until the concentrator building is removed.

### GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

Based on our slope stability evaluation we conclude that the existing slope and debris field are generally stable in the current configuration. It is our opinion that the failure observed within the debris field likely initiated during a time of heavy precipitation when the loose debris and soil became saturated. This type of shallow failure should be expected as the loose wood/metal debris degrades over time.

Based on the hand auger and test pit information, debris on the slope is at least 5½ feet thick at the location of TC-9. Assuming a continuous 5½-foot debris thickness over the area delineated by the geophysics data results in a volume of approximately 6,500 cubic yards of soil/debris. However, based on the slope geometry and considering the inclination of adjacent native slopes, it is our opinion that the debris could be on the order of 20 feet thick in the vicinity of Station 18. Therefore, the debris volume could be greater than 6,500 cubic yards.

In our opinion, there are two options that POM may consider to address conditions on that portion of the slope where debris is present. The first option involves continued, aggressive management of stormwater to reduce potential surface water run on to the debris field in combination with periodic monitoring of the slope to assess stability. Such monitoring should be conducted on a monthly basis during seasonal wet weather, for at least two months following the winter and spring wet seasons each year and following significant storm events. Options for monitoring include the following:

- Monthly monitoring during October through June should consist of visual observations to assess
  possible changes in slope geometry. The monitoring may be conducted by POM personnel after
  initial training by GeoEngineers, unless POM elects to retain our company for the monitoring.
  When snow cover exceeds roughly 6 inches, monitoring may be deferred to the following month.
- If POM wishes to implement more rigorous monitoring, a network of survey points may be established on the slope for periodic evaluation of changes in elevation and horizontal location relative to a baseline survey of the monitoring points. We suggest a quarterly program of survey, after establishing baseline conditions, should this monitoring approach be selected.
- The next level of more intensive monitoring consists of installation of slope inclinometers. Data acquired periodically from slope inclinometers can show very small, subtle changes in slope geometry that often are indicative of impending failure. Installation of inclinometers will require portable drilling equipment because of the difficult access conditions. In our opinion, slope inclinometers for this project are not warranted.

The second option consists of selective removal of shallow (within about 5 feet of the slope surface) degradable debris from within the debris field in combination with regrading of the steeper portion of the slope. In general, that portion of the slope roughly between Field Data Stations 17 and 19, as shown on Figure 2 and Figure 3, should be regraded if this option is implemented. Such regrading will be challenging and difficult. Additionally, there is a high risk that disturbance or removal of the vegetative covering on the slope and subsequent exposure to precipitation in combination with disturbance of other areas of the site by equipment will induce instability and soil erosion of the slope. Such instability could negatively impact the Seattle City Light property that occupies the lower portion of the slope and water quality in the adjacent Pend Oreille River. For these reasons, we do not recommend that selective removal of shallow debris be implemented.

Complete removal of the debris field will require removal of vegetation from the slope. The existing vegetation is a significant factor in reducing soil erosion potential and general shallow slope instability. In our opinion, the following instability issues should be expected by removing vegetation and debris from the subject slope.

- Exposure of the slope to erosion from precipitation or surface water.
- Potential shallow surface failures in loose surface soil disturbed by debris removal.
- Potential failure zones in areas where subsurface sand, gravel or seepage is encountered.

We believe that complete debris field removal at this time is not appropriate because of the high risk to the structural integrity of the buildings located above the debris field as a result of slope instability that likely could ensue from such removal

Based on results of our evaluation and the foregoing discussion, it is our opinion that monitoring the subject slope in combination with aggressive stormwater management is the most appropriate action at this time. It is our further opinion that monitoring should consist of monthly visual observations to assess short-term slope stability.

These opinions are based on our belief that the Concentrator Building should not be impacted by overall, global instability of the subject hillside area, provided debris removal is not implemented at this time.

It is our further opinion that the appropriate time for removal of the subject debris is during mine closure, when reducing the overall slope inclination is possible. Such a reduction in slope inclination should correspondingly reduce the potential for erosion and slope instability that would otherwise result from removal of all or portions of the debris at this time.

### LIMITATIONS

We have prepared this report for use by Teck Cominco American Incorporated for the Pend Oreille Mine site.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Any electronic form or hard copy of this document (email, text, table, and/or figure), if provided, and any attachments are only a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to the Appendix D titled Report Limitations and Guidelines for Use for additional information pertaining to use of this report.

### REFERENCES

Stoffel, K.L., Joseph, N.L, Surenko Waggoner, S., Gulick, C.W., Korosec, M.A., Bunning, B.B., 1991, "Geologic Map of Washington – Northeast Quadrant" Washington Division of Geology and Earth Resources, Geologic Map GM-39, Washington Department of Natural Resources.

AMEC Earth and Environmental, Inc., 2001, Draft "Geotechnical Engineering Report, Concentrator Building, Cominco American Inc. Pend Oreille Mine Site" Metaline Falls, Washington.

TABLE 2

## SUMMARY OF CHEMICAL ANALYTICAL RESULTS<sup>1</sup> - SOIL AND CHEMICAL TECK COMINCO AMERICAN INCORPORATED PEND OREILLE MINE WASHINGTON

|  | Sample #:     | TC-1     | TC-6     | TC-7     | TC-8 <sup>2</sup> | TC-9     |  |
|--|---------------|----------|----------|----------|-------------------|----------|--|
| appropries                                     | Date:         | 06/14/05 | 06/14/05 | 06/15/05 | 06/15/05          | 06/15/15 | Cleanup  |
| Analyte  | Depth (feet): | 0-1      | 0-2      | 4-4.5    | 2-2.5             | 4-4.5    | Levels <sup>3</sup>  |
| Petroleum Hydrocarbons                         | Units         |          |          |          |                   |          | THE REAL PROPERTY OF THE PERSON NAMED IN COLUMN TO PERSON NAMED IN COL |
| DRPH⁴  | mg/kg         | ND       | ND       | ND       | NA                | ND       | 2,000  |
| ORPH <sup>5</sup>                              | mg/kg         | 29.7     | 1,510    | 521      | NA                | 1,740    | 2,000  |
| VOCs <sup>6</sup>                              |               |          |          |          |                   |          |  |
| Trichloroethene                                | mg/kg         | ND       | 1.76     | 0.205    | NA                | 0.144    | 0.03   |
| Conventional Chemistry Parameters <sup>7</sup> |               |          |          |          |                   |          |  |
| Cyanide  | mg/kg         | ND       | 0.0719   | ND       | ND                | 0.393    | 1,600  |
| pH <sup>8</sup>                                | pH Units      | 7.77     | 7.21     | 7.16     | NA                | 7.75     | NA   |
| Organochlorine Pesticides <sup>9</sup>         |               |          |          |          |                   |          |  |
| beta-BHC                                       | μg/kg         | 2.24     | ND       | ND       | NA                | ND       | NA   |
| 4,4'-DDT                                       | μg/kg         | ND       | 3.05     | ND       | NA                | ND       | 3,000  |
| 4.4'-DDD                                       | μg/kg         | ND       | ND       | 7.95     | NA                | ND       | 4,170  |
| 4,4'-DDE                                       | μg/kg         | ND       | ND       | 3.77     | NA                | ND       | 2,940  |
| 4,4'-DDT                                       | μg/kg         | ND       | ND       | 13.0     | NA                | 2.76     | 3,000  |
| Endosulfan I                                   | μg/kg         | ND       | ND       | ND       | NA                | ND       | 480,000  |
| PCBs <sup>10</sup>                             |               |          |          |          |                   |          |  |
| Aroclor 1260                                   | μg/kg         | ND       | 65.5     | 87.8     | NA                | 49.7     | 1,000  |

### Notes:

- 1. Chemical analysis performed by North Creek Analytical, Inc. of Spokane, Washington.
- 2. Sample TC-8 was comprised of a white, powdery material.
- 3. Cleanup levels listed are Model Toxics Control Act Method A or B for unrestricted land use.
- 4. DRPH = Diesel-range petroleum hydrocarbons analyzed by NWTPH-Dx.
- 5 ORPH = Heavy Oil-range petroleum hydrocarbons analyzed by NWTPH-Dx.
- Volatile organic compounds analyzed by EPA Method 8260B. Only detected analytes are listed; for a full list of analytical results, see the laboratory certificates in the appendix.
- 7. Conventional chemistry parameters analyzed by APHA/EPA Methods.
- 8. pH reported in pH units.
- Organochlorine pesticides analyzed by EPA Method 8081A. Only detected analytes are listed; for a full list of analytical results, see the laboratory certificates in the appendix.
- 10. Polychlorinated biphenyls analyzed by EPA Method 8082. Only detected analytes are listed; for a full list of analytical results, see the laboratory certificates in the appendix.
  - ND = not detected; NA = not analyzed; mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram
  - Bold type indicates concentration exceeds cleanup level.

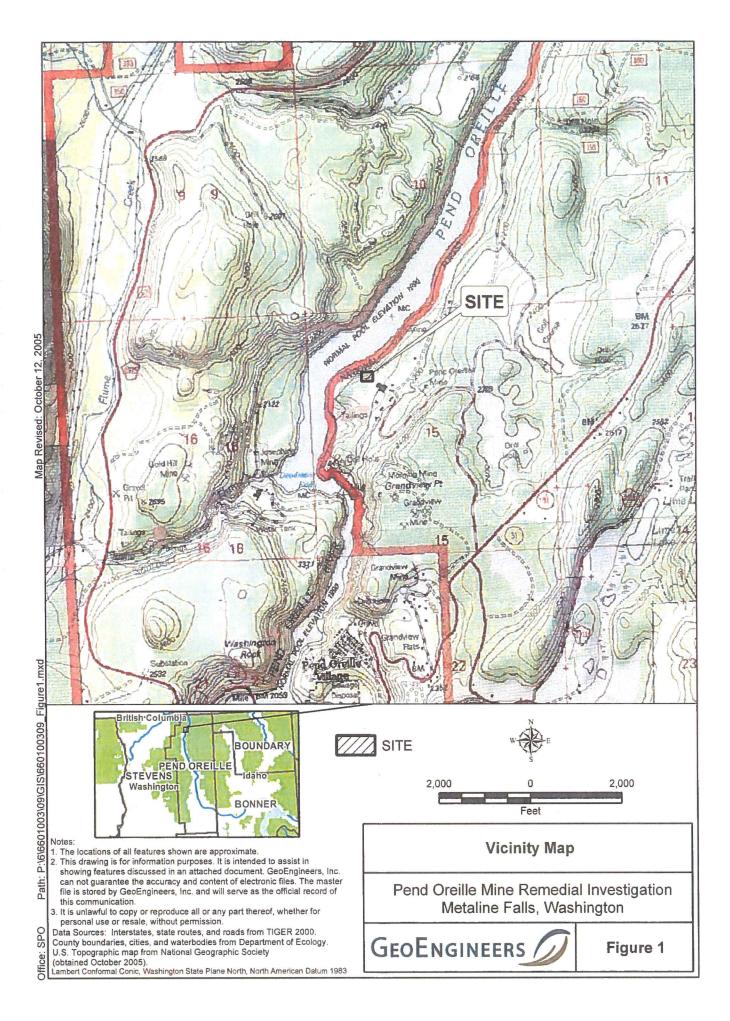
### TABLE 3

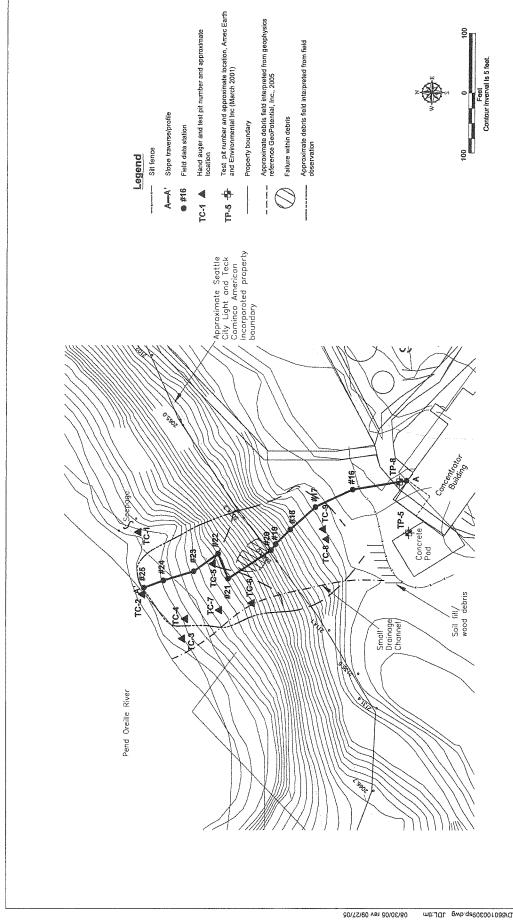
## SUMMARY OF CHEMICAL ANALYTICAL RESULTS<sup>1</sup> - WATER TECK COMINCO AMERICAN INCORPORATED PEND OREILLE MINE WASHINGTON

|  | Date          | TC-WS1<br>06/14/05  | TC-WS1<br>06/15/05  | Cleanup<br>Levels <sup>2</sup>   |
|--|---------------|---|---|--|
| Petroleum Hydrocarbons                         | Units         |   |   |  |
| DRPH <sup>3</sup>                              | mg/l          | ND  | NA  | 500  |
| ORPH⁴  | mg/l          | ND  | NA  | 500  |
| VOCs <sup>5</sup>                              |               |   |   |  |
| Benzene  | μ <b>g</b> /l | 2.84  | NA  | 5  |
| Methyl tert-butyl ether                        | μg/l          | 1.80  | NA  | 20   |
| Conventional Chemistry Parameters <sup>6</sup> |               |   |   | and the second control of the second control |
| Cyanide  | mg/l          | ND  | NA  | 0.2'   |
| Organochlorine Pesticides <sup>8</sup>         |               | and the state of the | 22 (Carlos) |  |
| Endosulfan I                                   | μg/l          | NA  | 0.0226  | 96   |
| PCBs <sup>9</sup>                              |               |   |   |  |
| Aroclor 1260                                   | μg/I          | NA  | ND  | 0.1  |

### Notes:

- 1. Chemical analysis performed by North Creek Analytical, Inc. of Spokane, Washington.
- 2. Cleanup levels listed are Model Toxics Control Act Method A or B for unrestricted land use.
- 3. DRPH = Diesel-range petroleum hydrocarbons analyzed by NWTPH-Dx.
- 4 ORPH = Heavy Oil-range petroleum hydrocarbons analyzed by NWTPH-Dx.
- Volatile organic compounds analyzed by EPA Method 8260B. Only detected analytes are listed; for a full list of analytical results, see the laboratory certificates in the appendix.
- 6. Conventional chemistry parameters analyzed by APHA/EPA Methods.
- 7. Based on MCL (Maximum Contaminant Level).
- B. Organochlorine pesticides analyzed by EPA Method 8081A. Only detected analytes are listed; for a full list of analytical results, see the laboratory certificates in the appendix.
- 9. Polychlorinated biphenyls analyzed by EPA Method 8082. Only detected analytes are listed; for a full list of analytical results, see the laboratory certificates in the appendix.
  - ND = not detected; NA = not analyzed; mg/l = milligrams per liter;  $\mu$ g/l = micrograms per liter
  - Bold type indicates concentration exceeds cleanup level.





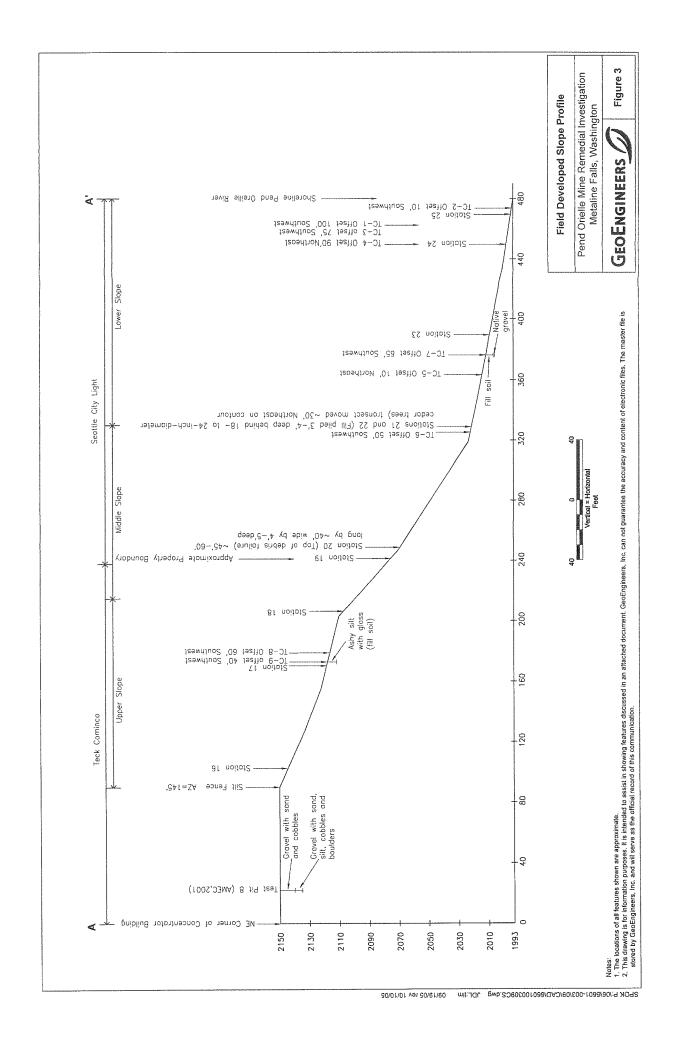
Sife Plan

Pend Orielle Mine Remedial Investigation Metaline Falls, Washington

GEOENGINEERS

Figure 2

Notes:
1. The locations of all features shown are approximate.
2. The locations of all features shown are approximate.
3. The locations of all features to information purposes, it is intended to assist in showing features discussed in an attached document. GeoEngineers, inc. and will serve as the official record of this communication.
3. Stored by GeoEngineers, inc. and will serve as the official record of this communication.





### APPENDIX A GEOPHYSICAL SUMMARY REPORT

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### SUMMARY REPORT

SUBSURFACE MAPPING SURVEY TO MAP EXTENT OF METALLIC DEBRIS

TECK COMINCO AMERICAN INC. PEND OREILLE MINE METALINE FALLS, WASHINGTON

### CLIENT:

GeoEngineers, Inc. 523 East Second Avenue Spokane, Washington 99202

September 1, 2005

GeoPotential Project Number 7304

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| SURVEY OBJECTIVES                |     |
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### **FIGURES**

FIGURE 1. SITE LOCATION MAP

FIGURE 2. MAGNETIC SURVEY STATION MAP

FIGURE 3. MAGNETIC CONTOUR MAP (CI=500NT)

FIGURE 4. RESULTS MAP

FIGURE 5. GPR RESULTS

### APPENDICES

APPENDIX A - MAGNETIC SURVEYS

APPENDIX B – GROUND PENETRATING RADAR SURVEYS

APPENDIX C - ELECTRICAL RESISTIVITY SURVEYS

### SUMMARY

A magnetometer with an integral differential global positioning system (DGPS) and a Tracer handheld metal detector were used to map the extent of a dumpsite containing metallic debris at the Teck Cominco American Inc., Pend Oreille Mine in Metaline Falls, Washington. A secondary electrical resistivity "test" survey was to be used to determine the approximate thickness of the metallic debris. Lastly, ground penetrating radar (GPR) was used to detect possible disturbed zones near the Concentrator building at the top of the dumpsite.

The effectiveness of the DGPS was limited by the steep, west facing slope and the thick brush and trees on the Site. Despite problems with the locations of some data points, the edges of the debris area appear to have been determined successfully using a combination of the magnetometer and the Tracer. The north and south edges of the dumpsite appear to correlate well with the limits of the observed surface metal. At several locations subsurface material extends beyond the visible surface metal. The edges of the dumpsite also correlate well with an area containing smaller trees and more brush. Larger trees and an older, more open forest are found to the north and south suggesting the dumpsite may have been cleared of trees when it was in use. It is possible that a few isolated metallic objects may be found outside of the survey area. The edges of the metal containing dumpsite were flagged on the surface at 19 points. These points are accurate to 1-2 feet. Random, isolated metal debris may be found outside of the dumpsite area.

The "test" electrical resistivity survey was not performed because of technical difficulties. It is not clear if the resistivity survey would have been useful given the large mass of metal (detected from the magnetometer survey and from visual observations) and the large number of "voids" observed across the Site. Resistivity surveys depend on good electrical contact between the metal electrodes and the earth. Voids and loosely compacted material decrease the effectiveness of resistivity surveys.

Ground penetrating radar traverses were made west and north of the reinforced concrete pad west of the Concentrator building in an attempt to detect disturbed zones that could represent possible trenches or dump areas. Several zones of disturbed materials were observed and marked on the ground surface. The zones did not appear to contain metallic debris.

### INTRODUCTION

Subsurface mapping surveys are geophysical surveys utilizing geophysical methods and data to detect and locate natural and manmade subsurface features. The Geometrics G-858 Cesium magnetometer used to obtain the magnetic data across the dump area is a geophysical tool specifically designed to detect buried ferrous (iron-bearing) objects, including utilities, drums and USTs.

Normally, once suspicious magnetic anomalies are detected, small hand-held metal detectors are used to locate the peaks and edges of the magnetic anomalies. If a buried object appears to be three-dimensional (as expected over a possible UST), GPR is used in an attempt to determine the size, shape and depth of burial of the object.

GPR could not have been used at this Site due to the steep slopes, thick vegetation and uneven surface. The goal of this survey was to mark the edges of the metal debris zone, and not to actually determine physical characteristics of the buried objects producing the anomalies.

### **SURVEY OBJECTIVES**

The objectives of the project included detecting and marking the limits of a dumping area west of the mine, estimating the thickness of the dumped material, and detecting possible trenches in the road west and north of the Concentrator building.

### SURVEY SITE

The survey was conducted on the steep, west-facing slope west of the Concentrator building at the Pend Oreille Mine in Metaline Falls, Washington. The slope area is the location of a former dumpsite used by the previous mine owners in the 1950's to 1970's.

The metal detecting survey was conducted between the flat roadway west of the building and the Pend Oreille River roughly 160 feet below. Drums and heavy iron debris were visible across most of the survey area. The slope was estimated to be 45 to 50 degrees in places. It was thickly vegetated with small trees and brush making it very difficult and hazardous to access the entire area. Taller trees marked the north and south edges of the survey area making it appear as if the dumpsite trees had been cleared at one time.

### TIMING

Jeff Mann and Nikos Tzetos conducted the fieldwork for GeoPotential on August 31and September 1, 2005. The survey was coordinated by Mr. Dave Enos and Mr. Jodie Lamb of GeoEngineers Spokane. Mr. Lamb was on Site the first day and greatly assisted with the magnetometer survey.

Help was also provided by Kevin Kinsella, Brock Morgan and Aston Tennefoss of the Pend Oreille Mine.

The report was written by Jeff Mann, reviewed by Nikos Tzetos and emailed in "pdf" format to Mr. Enos on September 10, 2005.

### SURVEY EQUIPMENT AND LIMITATIONS

The following geophysical instruments were used to conduct the survey:

- GEOMETRICS G-858 CESIUM MAGNETOMETER with GPS OPTION (MAGNETIC SURVEY)
- MALA RAMAC GROUND PENETRATING RADAR SYSTEM with a 250 MHz ANTENNA MHz ANTENNA (RADAR SURVEY)
- AQUA -TRONICS A6 ELECTROMAGNETIC TRACER (EMA6 SURVEY)
- SCHONSTEDT GA92XTd MAGNETIC GRADIOMETER (GA92 SURVEY)

This equipment and the procedures used to meet the survey objectives of this project have been proven effective in detecting variations in the subsurface of the earth caused by natural and manmade objects.

A magnetometer is a very sensitive electronic instrument capable of detecting minute changes in the earth's local magnetic field. "Magnetic anomalies" are caused by ferrous (iron-bearing) objects on or below the ground surface. Surface objects can make the interpretation of a magnetometer survey difficult. A buried object of interest may be missed if it is too close to a large metallic surface object. Common surface objects that can present interpretation problems include vehicles, buildings, and fences.

The success of a GPR survey is greatly controlled by site conditions. Clayey-soil, wet-soil and reinforced concrete severely attenuate signal penetration even at different locations on the same site. USTs and utilities may be missed if they are deeper than the signal penetration, or if they are located under metallic and non-metallic debris, reinforced concrete, disturbed soils or utilities. The only operator-controlled variable is the frequency of the radar antenna; however, there is a tradeoff between high and low frequency antennas. Lower frequency antennas provide better depth penetration but give poorer resolution. Small objects including small utilities maybe missed with lower frequency antennas. Strong radar reflections depend on an adequate electrical contrast between the target object and the surrounding material. Highly rusted USTs may not have an adequate electrical contrast and may be missed.

GPR does not enable the operator to actually "see" below the ground surface. Like aircraft and weather radar, signals radiated from the antenna reflect off a wide variety of objects. Changes in soil moisture

content, mineralogy, grain size, etc., and from natural and man-made objects including rocks and stones, tanks and utilities all produce radar reflections that the operators interpret based upon experience. Radar data are ambiguous, i.e. reflections caused by stones can look similar to reflections produced by utilities. Boulders can produce reflections that are commonly observed over known tanks. Not all USTs produce the classic hyperbolic-shaped reflections.

The Tracer and Schonstedt hand-held metal detectors are used to locate the peaks of the magnetic anomalies and the edges of buried metallic objects found as a result of a magnetometer survey. The Tracer is excellent at detecting underground storage tanks and **conductive** utilities. Neither instrument records data; the outlines of underground objects found using these instruments are usually marked with paint on the ground surface. GPR may be used to determine the physical characteristics of the buried objects.

Geophysical techniques are excellent at detecting changes in the subsurface caused by natural and manmade objects; however, they are poor at actually identifying subsurface features. Complementary methods may be used to assist in the interpretation; however, the only sure way of identifying a buried feature is by excavation.

### **PROCEDURE**

Normally a right-hand orthogonal survey grid is established across a Site using a measuring wheel and tapes, however this method was not feasible at this Site due to the difficult Site conditions.

At first it was decided to collect magnetic data along north-south and east-west lines wherever possible, to interpret the data as individual profiles, mark the limits of the magnetic anomalies with flagging, and finally locate the flagged edges on a Site map using measuring tapes. However, in the end a Differential GPS system made specifically for the Geometrics G-858 Cesium Magnetometer was rented. In theory this would enable the operator to acquire data at random locations on the Site. Each point would be accurately located without having to maintain a square survey grid. The Trimble DGPS has "sub-meter" accuracy under ideal conditions, however its accuracy decreases when the unit does not have a clear, unobstructed view of the sky. The magnetometer/DGPS system can indicate the accuracy of the data while it is being collected, however it was impossible to watch both the DGPS data quality and keep from slipping down the slope or falling into a void at the same time.

When it was realized how difficult obtaining reasonable coverage was going to be using the magnetometer, a secondary instrument was used. The Tracer metal detector is excellent at detecting not only ferrous metal, but also non-ferrous, conductive metals. It is smaller and easier to use in heavy brush. It was used to detect and mark the dumpsite edges in areas where the magnetometer could not be used. The Tracer does not record data. The Tracer locations were to be determined using the DGPS unit at a later time.

The electrical resistivity survey array was established between the edge of the river and the top of the dumpsite, west of the Concentrator building. Twenty-four metal electrodes were driven into the soil, however many voids were noted when inserting the electrodes. The electrodes must be well grounded, and only about ½ could be firmly inserted into the soil. Loose electrodes will not conduct an electric current into the earth.

Four GPR traverses were made along the road north of the reinforced concrete pad west of the Concentrator building, and in the gravel area between the pad and the edge of the dumpsite. A 250 MHz antenna was used to collect the data. GPR is not effective across highly conductive soils, and across metallic debris and reinforced concrete. Under these conditions the electromagnetic energy transmitted into the subsurface is severely attenuated by the conductive material.

### RESULTS

The Tracer metal detector was used to detect possible railroad tracks northwest of the Concentrator building. These may have been used to transport debris to the edge of the dumpsite. The tracks appear to end at the top of the slope.

**Dumpsite Location Survey -** The average magnetic "background" value was estimated to be about 55700 NT

The magnetometer was configured to record data every 1 second automatically. Figure 2 shows the magnetometer data points as "+"'s. The quality of the actual magnetic data is excellent.

From the figure it is apparent that coverage with the magnetometer was limited to the more open areas. Several relatively large areas were totally inaccessible with the magnetometer due to the thick brush and steep slope. Because of this the Tracer metal detector was used to detect the edges of the metallic material across the dumpsite at 10 points on the north side and 9 along the south side of the debris area.

Superimposing the station locations on the CAD map provided by GeoEngineers proved very difficult because the only points common to both the magnetometer map and the CAD map were the northwest and southwest corners of the Concentrator building. A small error placing the corners of the building on the CAD map is magnified farther down the hill. We estimate the data plotted on the CAD drawing may have errors of 5-10 feet in a generally north-south direction. The east/west distance appears good. Data for the westernmost magnetometer line was taken within 3-5 feet of the "high" water line.

Figure 3 is a colored magnetic contour map contoured at an interval of 500 nT. Magnetic "lows" are generally caused by objects located above the magnetometer sensor (normally carried about 3 feet high) and are shown in blue, and may also be hachured. At this Site magnetic "lows" are produced by metallic objects upslope from the magnetometer, or from tall pieces of rebar. Magnetic "highs", shown in red, are produced by ferrous objects below the sensor. Normally magnetic surveys are performed to locate buried objects (utilities, pipes, underground storage tanks and drums). At this Site however, the goal of the survey was to mark the edges of the dumpsite and not to detect and investigate individual buried metal objects.

Figure 4 shows the extent of the metal detected in the dumpsite based upon both the magnetic data and the Tracer data. The Tracer was used to locate the edges of the metallic debris in areas inaccessible with the magnetometer. This data is shown as diamonds in the figure. Ten points along the north edge and 9 points along the south edge were flagged using the Tracer and were marked "N edge A" to "N edge J" (North edge point A – point J) and similarly "S edge A through I". DGPS was then used to locate the new points for inclusion in the map showing the extent of the metallic material, however some of the "Tracer" points were obviously mislocated and were deleted because of uncertainties in their locations. The points shown on the map are probably accurate to 5-10 feet because of the poor satellite reception of the GPS and the difficulty overlaying the magnetic data onto the CAD map. The actual flagged points on the ground surface are accurate to 1-2 feet.

Stakes placed by GeoEngineers are shown as triangles. Stake 25 could not be used due to poor GPS data.

The edge of the dumpsite appears to correlate well with the observed surface metal along most of the perimeter of the dumpsite, however at several locations the metallic material extends beyond the limit of the observed material. The dumpsite also correlates well with the boundary between the taller, older trees to the north and south of the area. It appears that the dumpsite may have been cleared of trees when it was in operation.

Electrical Resistivity Survey –A Syscal Kid 24 electrode switching electrical resistivity meter was to be used as time permitted to collect electrical resistivity data along several traverses across the dumpsite. This was an effort to estimate the thickness of the debris. The resistivity unit malfunctioned after setting up an east-west 120-meter long traverse between the river and the top of the slope. The electrical resistivity survey was eventually canceled.

It is not clear if the data would have been useful in determining the thickness of the debris for several reasons. Geophysical surveys are excellent at detecting horizontal changes in the earth's surface; determining depths to, and thicknesses of material in the subsurface is much more difficult.

It is possible that no current could have been injected into the earth below the metallic debris because of the large mass of metal detected by the magnetometer survey and observed on the surface during the fieldwork. This metal may have produced a conductive upper layer making it difficult to inject an electrical current deeper than a few feet. Electrical resistivity works well in resistive material and poorly in conductive material. Also, while setting up the 24 metal electrodes in preparation for the first array, many large "voids" were observed within the relatively loosely compacted material. For an electrical survey to be successful the electrodes must be well "grounded". "Loose" electrodes make it difficult to inject an electric current into the earth.

Ground Penetrating Radar Survey - A 250 MHz radar antenna was used to detect possible disturbed zones west and north of the reinforced concrete area at the top of the slope (west and north of the Concentrator building). The maximum depth of penetration using the 250 MHz antenna was estimated to be about 6 feet. GPR, like electrical resistivity (and other electrical methods) works best in resistive soil. In Portland for example, it is unusual to obtain reflections off objects deeper than 3-4 feet because of the wet, clayey soils that occur in the area.

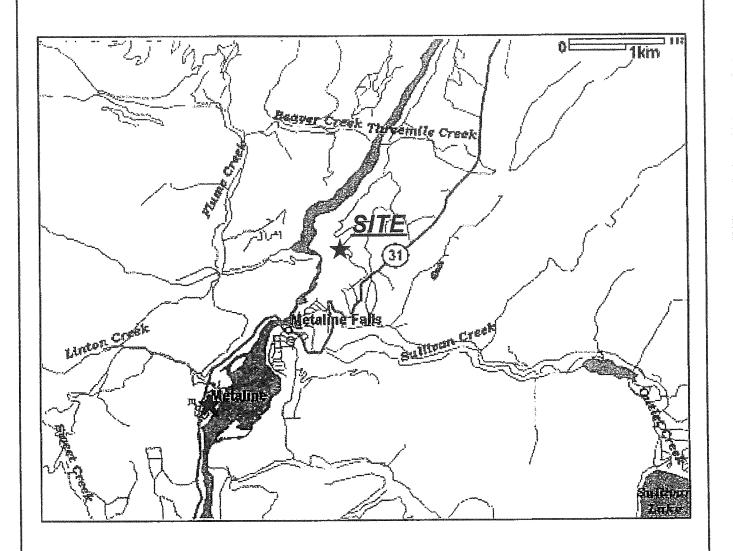
Several zones of disturbed soil were detected along the road and are shown in Figure 5. The disturbed material may indicate possible "trenches" containing buried debris, or may be related to the construction of the road. The Tracer metal detector was used across the disturbed zones and indicated the material does not appear to be metallic.

### LIMITATIONS

Geophysical surveys consist of interpreting geophysical responses from subsurface features. Since a variety of subsurface features can produce identical geophysical responses, it is necessary to confirm the geophysical interpretation with intrusive investigations such as excavating or drilling. In addition, many subsurface features may produce no geophysical response. The use of this subsurface mapping survey is the sole responsibility of the client.

Jeff Mann, MS, PG GeoPotential

September 2005





ENVIRONMENTAL & EXPLORATION GEOPHYSICS

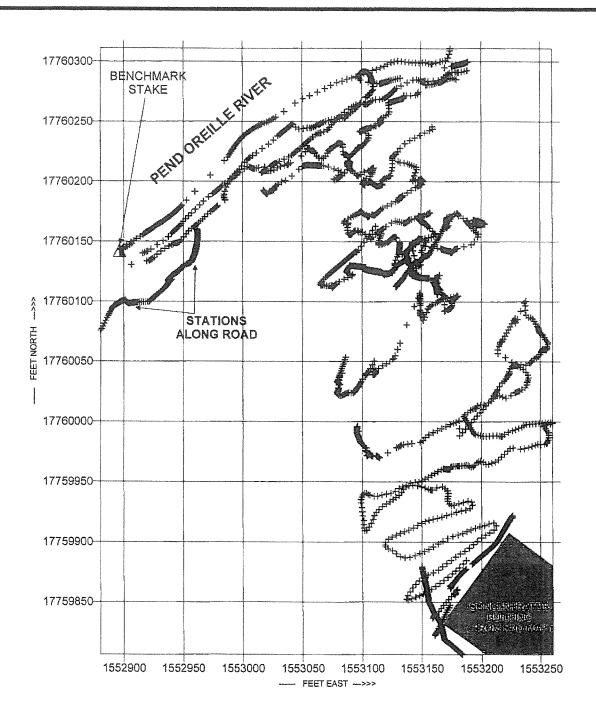
E2212 Saxt Wild Fern Lane, Brightness, Origan STR110 FM (EXT) E22-0164 FAX (EXT) (E22-0164)

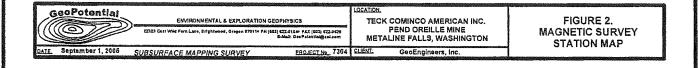
E2212 Saxt Wild Fern Lane, Brightness, Origan STR110 FM (EXT) E22-0164 FAX (EXT) (EXT)

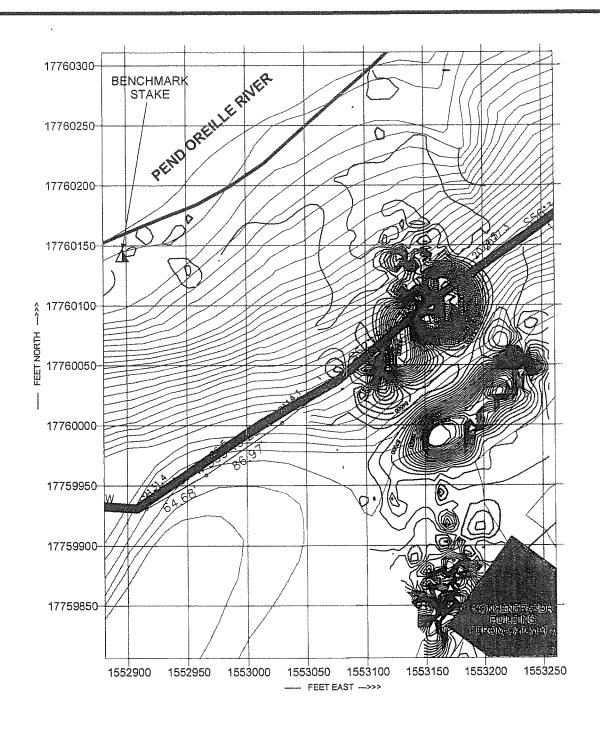
TECK COMINCO AMERICAN INC. PEND OREILLE MINE METALINE FALLS, WASHINGTON

FIGURE 1. SITE LOCATION MAP

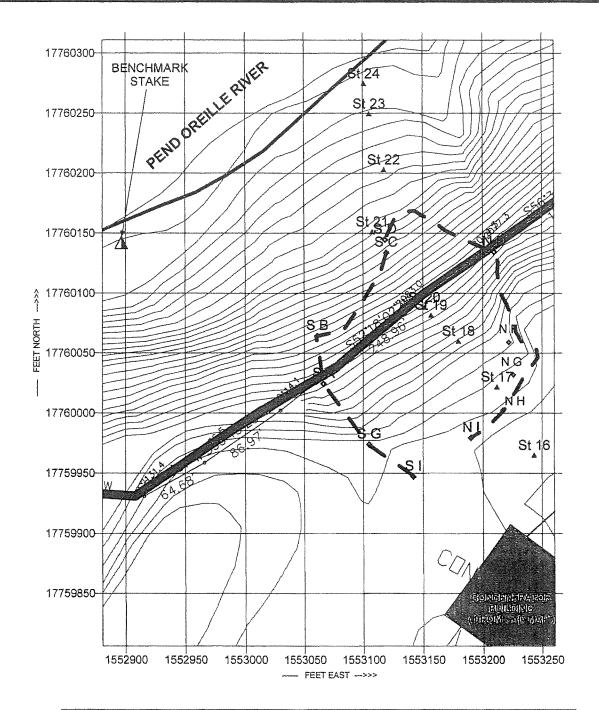
GeoEngineers, Inc.







| GeoPotential           | ENVIRONMENTAL & EXPLORATION GEOPHYSICS  2222 East Vited Fron Lake, Engthweed, Oregon 6751 in FK (603) 822-0154 FAX (603) 822-0154  E-8681 Gen Fron Lake, Engthweed, Oregon 6751 in FK (603) 822-0154 FAX (603) 822-0154 | TECK COMINCO AMERICAN INC. PEND OREILLE MINE METALINE FALLS, WASHINGTON | FIGURE 3.  MAGNETIC CONTOUR MAP  ( C. I. = 500 nT ) |
|------------------------|---|---|---|
| DATE September 1, 2005 | SUBSURFACE MAPPING SURVEY PROJECT No. 730   | 4 CHENT: GeoEngineers, Inc.   |   |



LEGEND

NG FIELD EDGE

St 16 GEOENGINEERS STAKE



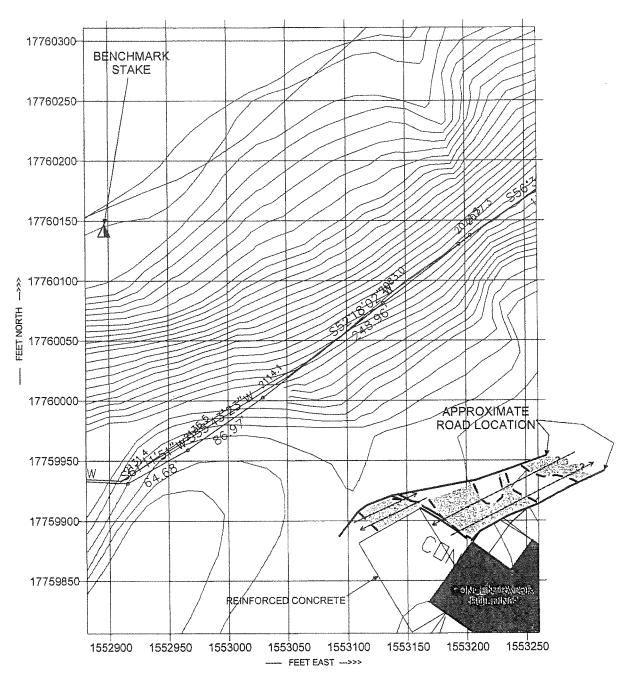
FIELD BOUNDARY



TECK COMINCO AMERICAN INC. PEND OREILLE MINE METALINE FALLS, WASHINGTON

GeoEngineers, Inc.

FIGURE 4. RESULTS MAP







# APPENDIX MAGNETOMETER SURVEYS

The earth's magnetic field, measured in "nano Teslas" (nT), behaves like a bar magnet, with the strongest magnetic field located at the poles, and the weakest field located near the equator. In the United States, the average field intensity varies widely, however, the average value is about 50,000 nT. Also, like the magnetic field around the bar magnet, the earth's magnetic field is inclined. This inclination varies between 60 and 75 degrees, generally depending upon the latitude of the measuring location. The earth's magnetic field varies constantly and, during sunspot activity, quite dramatically. A magnetometer is an electronic device that measures the intensity of the earth's magnetic field.

Naturally occurring geologic features and buried ferrous metal objects such as underground storage tanks, drums, ordnance, pipes and debris filled trenches produce both horizontal and vertical disturbances to the earth's local magnetic field. The objects causing these "anomalies" can be detected quickly and reliably using portable magnetometers.

The intensity of an anomaly is a function of the mass, size and depth of burial of the object. As a rule of thumb, single drums buried several feet below the surface produce anomalies of about 200 nT relative to the normal undisturbed background and can be detected at a horizontal distance of about 15 feet, while large caches of drums can produce anomalies of many thousands of nT and may be detectable 50 feet away.

Magnetometers generally measure horizontal variations in the local magnetic field. A magnetic gradiometer is a variant of the magnetometer that measures both the horizontal and the vertical magnetic field at each survey point. It consists of two identical sensors located vertically on a staff and having a fixed separation. The intensity of the magnetic field caused by a buried metal object varies inversely with the distance between the object and the sensor. The relative intensities measured simultaneously at each sensor are used to determine the relative depth of burial of an object.

Relative depth estimates of buried metal objects can be made using a single sensor. In general, for a given mass object, the deeper the object is buried, the lower the amplitude and the wider the anomaly. Shallowly buried objects produce higher amplitude anomalies with closely spaced contour lines.

Magnetic surveys can only detect <u>ferrous metal</u> objects and cannot be used to identify the buried object. Estimates of the total mass of a buried object are difficult due to the physical properties of the object and other factors. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars and buildings can easily mask the anomaly caused by an underground target.

Magnetic surveys are cost effective. Using the standard "step and wait" magnetometer, data from approximately 1000 points can be obtained in one field day corresponding to between 1 acre and about 5 acres depending on site conditions and survey goals. More modern cesium magnetometers collect up to 10 readings per second continuously, thus the operator can proceed without stopping. Many modern magnetometers use an audible signal to call attention to anomalous data as it is obtained. At some sites metallic objects can be detected and marked in the field at the time of the survey.

The use of a second, automatically recording "base station" magnetometer is highly recommended due to temporal variations in the earth's magnetic field. These changes must be removed from the field data before an accurate interpretation can be made, particularly when searching for small buried objects.

Magnetic data are most commonly presented in two contour maps. The TOTAL MAGNETIC FIELD CONTOUR MAP shows the horizontal magnetic field and, therefore, the areal extent of anomalies. The GRADIOMETER CONTOUR MAPS show the vertical magnetic field and indicate the relative depth of burial of the objects causing those anomalies. Color versions of these maps may be produced showing only the magnetic highs and lows.

# APPENDIX GROUND PENETRATING RADAR SURVEYS

Ground Penetrating Radar (GPR) can be a valuable tool to accurately locate both metallic and non-metallic UST's and utilities, buried drums and hazardous material at some sites. It may detect objects below reinforced concrete floors and slabs. GPR may delineate trenches and excavations and, under some conditions, it may be used to locate contaminant plumes. It has been used as an archaeological tool to look for buried artifacts. It may accurately profile fresh water lake bottoms either from a boat or from a frozen lake surface. GPR may be used to locate voids below roads and runways. GPR has numerous engineering applications. It can be used in non-destructive testing of engineering material, for example, locating rebar in concrete structures and determining the thickness of concrete and other structural material.

GPR uses short impulses of high frequency radio waves directed into the ground to acquire information about the subsurface. The energy radiated into the ground is reflected back to the antenna by features having different electrical properties to that of the surrounding material. The greater the contrast, the stronger the reflection. Typical reflectors include water table, bedrock, bedding, fractures, voids, contaminant plumes and man-made objects such as UST's and metal and plastic utilities. Materials having little electrical contrast like clay and concrete pipes may not produce strong reflections and may not be seen. Data are digitally recorded or downloaded to a laptop computer for filtering and processing.

The frequency of the radar signal used for a survey is a trade off. Low frequencies (250 Mhz – 50 Mhz) give better penetration but low resolution so that pipes and utilities may not be seen. Pipes and utilities may be seen using higher frequencies (500 Mhz) but the depth of penetration may be limited to only a few feet especially in the wet, clayey soils found in the NW USA. The GPR frequency is dependent upon the antenna. Once an antenna is selected, nothing the operator can do can increase the depth of penetration.

Radar data is ambiguous. Many buried objects produce echoes that may be similar to the echo expected from the target object. Boulders and debris produce reflections that are similar to pipes and tanks. Subtle changes in the electrical properties along a traverse caused by changes in soil type, mineralogy, grain size, and moisture content all produce "noise" that can make interpretation difficult. Interpreting radargrams is an art as much as a science.

Under some conditions, although a UST itself may not be clearly visible in a GPR record, the excavation or trench in which the UST is buried is evident. Usually GPR data is used to compliment data from other "tools". For example, a trench-like reflection but no clear UST reflection, combined with a "tank" shaped magnetic anomaly suggests the presence of a UST. Although the UST itself could not be seen using GPR, the radar showed a trench-like reflection. The magnetic data showed a large ferrous object. We would report a possible UST at that location.

GPR is often used in conjunction with magnetometer surveys. Magnetometer Surveys are very fast and large areas can be covered cost effectively. Magnetic anomalies are marked in the field, then may be further investigated using radar.

GPR, like other geophysical tools, is excellent at detecting changes across a site, but it is poor at actually identifying the cause of the change. The only sure way to identify buried objects is through excavation.

#### ADVANTAGES - General

- GPR provides continuous records along traverses which, depending on the goal of the survey, may be interpreted in the field.
- At flat, open sites, for reconnaissance purposes, the antenna can be towed behind a vehicle at several mph.
- Many GPR antennas are shielded and are unaffected by surface and overhead objects and power lines.
- GPR can be used in conjunction with magnetic or EM surveys to accurately locate buried objects.

#### ADVANTAGES - Site specific

- With a low frequency antenna, in clean, dry, sandy soil, reflections from targets as deep as 100 feet are possible. Geologic features such as bedrock and cross bedding may be seen at some sites.
- The resolution of data is very high particularly for high frequency antennas.
- Shallow, man-made objects generally can be detected.
- Fiberglass UST's and plastic pipes can be detected using GPR.

#### LIMITATIONS - General

To acquire the highest quality data, proper coupling between the antenna and the ground surface is necessary. Poor data may be obtained at sites covered with debris, an uneven surface, tall grass and brush. Objects located at curbs are difficult to see.

Acquiring GPR data is slow. The antenna must be over the target. The signal from the antenna is cone-shaped. Reflections from objects to the side of the antenna may be seen, but their actual location relative to the antenna is not obvious.

Penetration of the GPR signal is "site specific" and its depth of penetration at a particular site can not be predicted ahead of time. Near surface conductive material, such as salty or contaminated ground water and wet, clay-rich soil, may attenuate the radar signal, limiting the effective depth of the survey to several feet. Reinforced concrete also can attenuate the signal. Rebar may produce reflections that look like pipes.

GPR may not be cost-effective for some projects. For a detailed survey mapping underground storage tanks and utilities, it may be necessary to collect data in orthogonal directions at 5-foot line spacing.

#### <u>LIMITATIONS - Interpretation</u>

Interpretation can be difficult. Radar data are ambiguous. Subsurface objects can be detected but, in general, they cannot be identified. USTs and utilities have a characteristic reflection, however, large rocks and boulders have a similar reflection.

The reflection visible in a GPR record is very complex and may be caused by small changes in the electrical properties of the soil. The reflection may not be produced by the target in mind. Due to "noise", the target may be missed. USTs and deep utilities may be missed if they are under debris and/or other pipes.

Other methods may be necessary to aid in the interpretation of the data (use a magnetometer to detect a large metallic mass, then GPR to determine if the object is tank-like, or a utility locator to determine if there are feed lines and fill pipes leading to the object).

Adequate contrast between the ground and the target is required to obtain reflections. UST's may be missed if they are badly corroded. Utilities made of "earth" materials like clay and concrete may not be detected since their electrical properties are similar to the surrounding soil.

To determine the depth to an object without "ground truth", assumptions must be made regarding soil properties. Even with ground truth at several locations on the same site, changes in material across a site (therefore changes in signal velocity) can cause errors in depth measurements at other locations.

# APPENDIX ELECTRICAL RESISTIVITY SURVEYS

Electrical resistivity is a geophysical method whereby an electrical current is injected into the ground through steel electrodes. It is used to measure changes in the electrical properties of the subsurface.

Most soils and non-ore bearing rocks are electrically resistive, (i.e., insulators). Soil moisture and ground water are often electrically conductive due to contained dissolved minerals. Therefore the resistivity measured in the ground is predominantly controlled by the amount of moisture and water within the soil and rock (a function of the porosity and permeability), and the concentration of dissolved solids (salts) in that water.

The basic application requires at least 4 steel electrodes be driven into the ground. An electrical current is applied to the outer electrodes by a battery or generator. A voltage is measured between the 2 inner electrodes using a simple voltmeter. Through Ohm's Law (V=IR) and by knowing the input current, the measured voltage and the geometry of the electrode array, a value known as resistance can be calculated.

Resistivity is resistance times area divided by distance. Units are known as Ohm-meters. The value measured is known as the "apparent resistivity" because it is thought to be at the midpoint of the 2 inner electrodes, not at an actual electrode. Most modern resistivity meters calculate apparent resistivity once the geometric parameters are input.

Electrical resistivity may be used to determine changes in subsurface conditions with depth by increasing the spacing between the electrodes. A rule of thumb is that the depth of the investigation is equal to about ½ to 1/3 the "a" spacing. This is known as the "sounding" method and would be the one used to determine the depth to a clay layer, ground water, or bedrock.

Electrical resistivity may also be used to locate lateral changes by moving the array right and left or, forward and back. This method is called "profiling" and might be used to locate a conductive leachate plume, an old stream channel, or a trench.

Many different geometric electrode arrays have been used. The simplest electrode array is the Wenner Array in which the electrodes are set out in a straight line, and the spacing between each electrode (the "a" spacing) remains constant. The first measurement might have an "a" spacing of 1 meter. After the data are collected, the array might be expanded to an "a" spacing of 2 meters, then 4 meters, then 8, etc. "A" spacings can vary from less than a meter to more than 100 meters, depending on the depth of interest.

Another common electrode array is the Schlumberger Array. With this spread the outer current electrodes are driven into the ground a set distance from the mid point (measuring point). To gather deeper and deeper data the voltage electrodes are moved outward from the mid point in increments (both sides being the same). If the operator is interested in collecting lateral data, the electrodes are moved right or left. The outer electrodes remain the same, making this method easier since only 2 electrodes need to be moved after each measurement is made.

Many modern resistivity meters have a "switching" capability whereby 12, 24 or 48 electrodes may be placed in the ground at one time, all connected to the same data cable. The meter then automatically uses every possible combination of electrodes to gather information about the electrical properties of the subsurface. This method is much faster than using only 4 electrodes at

a time. With the 4 electrode method you would place the 4 electrodes in the ground, take the measurement, then move the electrodes outward, walk back to the meter, take a second measurement, walk back out to the electrodes, move them, walk back to the meter, etc. This is a very slow and tedious task, especially with spacings of many meters.

With a 24 electrode switching meter roughly 100 measurements are taken automatically producing very detailed information about the electrical properties of the subsurface.

#### Advantages

Profiling can be used to detect and locate contaminant plumes.

Soundings can be used to determine the depth and thickness of subsurface layers, depth to the water table, and bedrock.

Resistivity values can be used to estimate geological formations

#### Limitations

Electrical resistivity is slow because electrodes must be driven into the ground between measurements.

Arrays cannot be located near buried electrical power lines and utilities since the current injected into the ground can flow more easily through the utility.

Data are influenced by near surface conductive layers. The currnet will always travel most easily along highly conductive layers. If the surface is highly conductive it may not be possible to collect data below the top layer.



APPENDIX B
FIELD EXPLORATION

# APPENDIX B FIELD EXPLORATION

#### GENERAL

Hand auger, test pit, and seep water sampling was performed by GeoEngineers on June 14 and 15, 2005. Four soil samples, one chemical sample, and one seep water (collected on two different days from the same source) were collected as part of our study. Soil encountered was classified using ASTM D 2488-90. A description of soil encountered is presented in Table 1. Exploration procedures, sampling protocol and analytical results are described below.

#### FIELD EXPLORATIONS

Locations of the explorations were determined by GeoEngineers field representative. Each exploration location was photographed, with photographs being stored in our files. The location of each test pit was recorded using cloth tape and, if possible a global positioning system (GPS) receiver. The approximate locations of all explorations are shown on Figure 2.

#### **FIELD METHODS**

## FIELD RECONNAISSANCE

A representative of GeoEngineers visited the site on June 14, 2005 and completed a reconnaissance of the debris field slope. We completed our reconnaissance by traversing the slope area and documenting the location of the surface debris and other pertinent features on a topographic field map provided by TCAI and by photography. During our reconnaissance we developed a slope profile of the subject slope (Figure 3, transect A-A') using a compass, a nylon tape to measure slope distance and a slope clinometer to measure slope inclination. The location of features shown on Figures 2 and 3 should be considered accurate to the degree implied by the methods used.

#### SOIL AND CHEMICAL SAMPLING

Samples were collected from the base of each exploration using a hand auger. Each of these samples were field screened and then placed into a decontaminated borosilicate glass sample container for laboratory submittal. Sample locations were noted in field logs and are shown on Figure 2.

Soil and chemical samples were collected using new disposable nitrile gloves. Samples were placed into laboratory prepared sample containers. The samples were labeled and placed in a cooler with blue ice pending delivery to the analytical laboratory.

#### FIELD SCREENING METHODS

Our representative conducted field screening on each of the soil samples obtained from the explorations. Field screening results are used as a general guideline to delineate areas of possible petroleum-related contamination in soils. The screening methods employed included (1) visual examination, (2) water sheen testing, and (3) headspace vapor testing using a MiniREA 2000 PID.

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons such as motor oil, or when hydrocarbon concentrations are high. Water sheen screening

and headspace vapor screening are more sensitive screening methods which can be effective in detecting petroleum based products in concentrations lower than regulatory cleanup guidelines. However, field screening results are site-specific. The effectiveness of field screening results will vary with temperature, moisture content, soil lithology, organic content and type of contaminant. The presence or absence of a sheen or headspace vapors does not necessarily indicate the presence or absence of petroleum hydrocarbons.

Water sheen testing involves placing soil in water and observing the water surface for signs of sheen. The results of water sheen testing on soil samples from the borings are presented on the boring logs. Sheens are classified as follows:

| No Sheen (NS)       | No visible sheen on water surface.  |
|---------------------|---|
| Slight Sheen (SS)   | Light colorless film, spotty to globular, spread is irregular, not rapid; areas of no sheen remain; film dissipates rapidly.                                    |
| Moderate Sheen (MS) | Light to heavy film, may have some color or iridescence, globular to stringy, spread is irregular to flowing; few remaining areas of no sheen on water surface. |
| Heavy Sheen (HS)    | Heavy colorful film with iridescence; stringy, spread is rapid; sheen flows off the sample; most of water surface may be covered with sheen.                    |

Headspace vapor screening involves placing a soil sample in a plastic bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of the MiniREA is inserted into the bag and the MiniREA 2000 measures the concentration of organic vapors in the sample bag headspace. The MiniREA 2000 is calibrated to isobutylene and is designed to quantify organic vapor concentrations up to 2,500 ppm (parts per million). The lower threshold of significance of the PID in this application is 10 ppm; however, lower values were recorded by the instrument, as shown on the test pit logs.

#### SEEP WATER SAMPLING

Seep water samples were collected on June 14, 2005 by excavating a small stilling well at the location of the seep. A peristaltic pump with new tubing was used to transfer water from the stilling well to laboratory prepared sample containers. The seep water sample collected on June 15, 2005 was collected by decanting water from the seep to laboratory prepared sample containers using a clean, unused sample jar. Samples were transferred under chain-of-custody to the laboratory.



APPENDIX C
CHEMICAL ANALYTICAL DATA

# APPENDIX C CHEMICAL ANALYTICAL DATA

#### SAMPLES

Chain-of-custody procedures were followed during the transport of the field samples to the accredited analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this attachment.

#### ANALYTICAL DATA REVIEW

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Any data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the data quality exception section of this attachment.

#### DATA QUALITY EXCEPTION SUMMARY

No significant data quality exceptions were noted in the laboratory report or during our review. Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use.



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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager; Dave Enos

Reported: 07/11/05 12:00

#### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| TC-1 (0-1) | S5F0090-01    | Soil   | 06/14/05 10:30 | 06/15/05 11:05 |
| TC-6 (0-2) | S5F0090-06    | Soil   | 06/14/05 15:00 | 06/15/05 11:05 |
| TC-WS1     | S5F0090-08    | Water  | 06/14/05 14:00 | 06/15/05 11:05 |

North Creek Analytical - Spokane

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dennis D Wells, Laboratory Director

North Creek Analytical, Inc. Environmental Laboratory Network

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Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Semivolatile Petroleum Products by NWTPH-Dx

### North Creek Analytical - Spokane

| Analyte  | Result                  | Reporting<br>Limit | Units         | Dilution  | Batch                                    | Prepared  | Analyzed   | Method   | Notes   |
|--|-------------------------|--------------------|---------------|---|--|---|--|--|---|
| The second secon | ampled: 06/14/05 10:30  | Received: 06/14    | 5/05 11:05    | is in all the state and another major than the  | н <del>А-үндөн хаш о</del> рош осон араа | entranska e | Description Company of the Company o | aukenetsku einerkkinketstälääde Communistrateriorinen mannen muunen ja | Charles Survey was assured to the survey of |
| Diesel Range Hydrocarbons  | ND                      | 10.0               | mg/kg dry     | <u> </u>  | 5060156                                  | 06/20/05  | 06/23/05   | NWTPH-Dx   |   |
| Heavy Oil Range Hydrocarbons   | 29.7                    | 25.0               | " G " G " " ) | ĸ   | žt.                                      | п   | 16   | n  |   |
| Surrogate: 2-FBP   | 94.8                    | 50-150             |               | #4  | u  | и   | σ  | 11   |   |
| Surrogate: p-Terphenyl-d14   | 101                     | 50-150             |               |   | u  | н   | п  | н  |   |
| TC-6 (0-2) (S5F0090-06) Soil S   | ampled: 06/14/05 15:00  | Received: 06/1:    | 5/05 11:05    | MATERIAL STATE OF THE STATE OF |  |   |  |  | APARIO WARRANTO MARIA   |
| Diesel Range Hydrocarbons  | ND                      | 100                | mg/kg dry     | 10  | 5060156                                  | 06/20/05  | 06/23/05   | NWTPH-Dx   |   |
| Heavy Oil Range Hydrocarbons   | 1510                    | 250                | ч             | н   | н  | н   | и  | н  |   |
| Surrogate: 2-FBP   | 93.5                    | 50-150             |               |   | 11                                       | **  | řř.  | n  |   |
| Surrogate: p-Terphenyl-d14   | 152                     | 50-150             |               |   | a  | u   | "  | u  | S-02  |
| TC-WS1 (S5F0090-08) Water  | Sampled: 06/14/05 14:00 | Received: 06/1     | 15/05 11:05   |   |  | arti-Vitabilitainst-piriturparonamen-varianci   |  |  |   |
| Diesel Range Hydrocarbons  | ND                      | 0.250              | mg/l          | 1   | 5060144                                  | 06/17/05  | 06/24/05   | NWTPH-Dx   |   |
| Heavy Oil Range Hydrocarbons   | ND                      | 0.500              | к             | n   | н  | tr  | 7  | 44   |   |
| Surrogate: 2-FBP   | 77.2                    | 50-150             |               |   | ,,                                       | u   | ıt   | "  |   |
| Surrogate: p-Terphenyl-d14   | 81.0                    | 50-150             |               |   | •  | "   | r#   | u  |   |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director

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541.383.9310 fax 541.382.7588 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Volatile Organic Compounds by EPA Method 8260B

## North Creek Analytical - Spokane

| Analyte   | Result   | Reporting<br>Limit  | Units  | Dilution   | Batch  | Prepared | Analyzed   | Method    | Notes  |
|---|--|---|--|--|--|----------|--|-----------|--|
| жылы М.О.А.4.00 М.О.Д.С.С.00 дерхительный этом политического статем составления объектор объектор объектор объектор | THE THE PROPERTY OF THE PROPER |   | **************************************   | OHOMOS I CONSTITUTION STATES AND ASSESSMENT OF THE STATES AND ASSESSMENT O | +TOUTE-ANGE ENGINEERING AND ANGEL ANGE |          | and the state of t |           | NATIONAL PROPERTY AND PROPERTY OF THE PROPERTY |
|   |  | THE RESIDENCE AND ADDRESS OF THE PERSON AND | THE RESIDENCE OF THE PARTY OF T | ORDER TO SHIP OF THE PROPERTY  |  |          |  |           | есрезунарі і пітовині за реположения продолення пос  |
| Acetone   | ND   | 1.00  | mg/kg dry  | 1  | 5060180  | 06/21/05 | 06/23/05   | EPA 8260B |  |
| Benzene   | ND   | 0.0300  | "<br>"   | и.   | "  | _        | , , , , , , , , , , , , , , , , , , ,  | "         |  |
| Bromobenzene  | ND   | 0.100   |  | ,,   |  |          |  |           |  |
| Bromochloromethane  | ND   | 0.100   | *  | м.   |  |          | и  |           |  |
| Bromodichloromethane<br>Bromoform   | ND   | 0.100   |  | и  | it.  |          |  |           |  |
| Bromomethane  | ND<br>ND   | 0.100<br>0.500  | 45   | )t   | 14   | **       |  |           |  |
| 2-Butanone  | ND<br>ND   | 1.00  | n  | **   | н  | 64       | p  | 0         |  |
| n-Butylbenzene  | ND   | 0.100   | *  | м  | н  | 12       | 44   | ×         |  |
| sec-Butylbenzene  | ND<br>ND   | 0.100   | я  | 40   | d  | 7        | и  | મ         |  |
| tert-Butylbenzene   | ND<br>ND   | 0.100   |  | p  | м  | н        | ж  | м         |  |
| Carbon disulfide  | ND<br>ND   | 0.100   | н  | q  | *  | **       | 15   | tı        |  |
| Carbon tetrachloride  | ND<br>ND   | 0.100   | *  | ų.   | *  | *        | к  | n         |  |
| Chlorobenzene   | ND   | 0.100   | н  | а  | н  | k        | *  | п         |  |
| Chloroethane  | ND<br>ND   | 0.100   | н  | *  | •  | н        | н  | н         |  |
| Chloroform  | ND   | 0.100   | ¥  | es   | н  | ь        | и  | н         |  |
| Chloromethane   | ND<br>ND   | 0.500   | *  | *  | н  | к        | *  | н         |  |
| 2-Chlorotoluene   | ND<br>ND   | 0,100   | N  |  | *  | *        | м  | к         |  |
| 4-Chlorotoluene   | ND   | 0.100   | R  | *  | 9,   | *        | н  |           |  |
| Dibromochloromethane  | ND   | 0.100   | н  | ж  | н  | tv       | *  | n         |  |
| 1,2-Dibromo-3-chloropropane   | ND   | 0.500   | в  | u  | 'n   | **       | н  | a         |  |
| 1,2-Dibromoethane   | ND   | 0.100   | *  | н  | in   | ь        | н  | н         |  |
| Dibromomethane  | ND   | 0.100   | Pe .   |  |  | M        | #  | #         |  |
| 1,2-Dichlorobenzene   | ND   | 0.100   | ж  | "  | ti .   | ж        | *  | и         |  |
| 1,3-Dichlorobenzene   | ND   | 0.100   | п  | st   | н  | и        | н  | ķ         |  |
| 1,4-Dichlorobenzene   | ND   | 0.100   | *  | н  | н  | н        | и  |           |  |
| Dichlorodifluoromethane   | ND   | 0.100   | н  | н  | ű.   | **       | я  | n         |  |
| 1,1-Dichloroethane  | ND   | 0.100   | n  | 11   | ы  | *        | н  | н         |  |
| 1,2-Dichloroethane (EDC)  | ND   | 0,100   | ч  | п  | *  | *        | *  | н         |  |
| 1,1-Dichloroethene  | ND   | 0.100   | н  | n  | м  | *        | **   | и         |  |
| cis-1,2-Dichloroethene  | ND   | 0.100   | •  | n  | и  | 11       | *  | H.        |  |
| trans-1,2-Dichloroethene  | ND   | 0.100   | n  | *  | 15   | 12       | н  | *         |  |
| 1,2-Dichloropropane   | ND   | 0,100   | *  | *  |  | и        | ĸ  | н         |  |
| 1,3-Dichloropropane   | ND   | 0.100   | п  | 11   |  | н        | н  | 18        |  |
| 2,2-Dichloropropane   | ND   | 0.100   |  | Ef.  | ы  | N        | к  | н         |  |
| 1,1-Dichloropropene   | ND   | 0.100   | n  | *  | u  | н        | м  | ж         |  |
| cis-1,3-Dichloropropene   | ND   | 0.100   | и  | **   | "  | ы        | *  | ч         |  |
| trans-1,3-Dichloropropene   | ND   | 0.100   | *  | H  | *  | ęs .     | а  | *         |  |
| ,   |  |   |  |  |  |          |  |           |  |

North Creek Analytical - Spokane

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907,563,9200 fax 907,563,9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Spokane

| Analyte                          | Resuli                 | Reporting<br>Limit | Units      | Dilution                             | Batch                            | Prepared  | Analyzed | Method    | Notes |
|----------------------------------|------------------------|--------------------|------------|--------------------------------------|----------------------------------|---|----------|-----------|-------|
| TC-1 (0-1) (S5F0090-01) Soil Sam | pled: 06/14/05 10:30 F | eceived: 06/15     | 5/05 11:05 | autottationaan marijaatii Aust (SA)M | цу о полити святи можен по техня | <u>nga pagga</u> an ipinanangga kat alga kanan katalon kanan ka |          |           |       |
| Ethylbenzene                     | ND                     | 0.100              | mg/kg dry  | }                                    | 5060180                          | 06/21/05  | 06/23/05 | EPA 8260B |       |
| Hexachlorobutadiene              | ND                     | 0.100              | и          | ĸ                                    | Ħ                                | et .  | 66       | 35        |       |
| 2-Hexanone                       | ND                     | 1.00               | #          | h                                    | н                                | *   | к        | н         |       |
| Isopropylbenzene                 | ND                     | 0.100              | 58         |                                      | n                                | if  | н        | н         |       |
| p-Isopropyltoluene               | ND                     | 0.100              | 16         | н                                    | *                                | et  | *        | н         |       |
| Methylene chloride               | ND                     | 1.00               | 8          | R                                    | ж                                | и   | N        | и         |       |
| 4-Methyl-2-pentanone             | ND                     | 1.00               | *          | **                                   | st                               | н   | n        | 5         |       |
| Methyl tert-butyl ether          | ND                     | 0.100              | н          | *                                    | н                                | 19  | u        | N         |       |
| Naphthalene                      | ND                     | 0.100              | U          | к                                    | 11                               | н   | и        | M         |       |
| n-Propylbenzene                  | ND                     | 0.100              | tt         | н                                    | rs.                              | *   | N        | n         |       |
| Styrene                          | ND                     | 0.100              | *          | tt                                   | н                                | н   | н        | к         |       |
| 1,1,1,2-Tetrachloroethane        | ND                     | 0.100              | 11         | *                                    | ít                               | u   | rt.      | 14        |       |
| 1,1,2,2-Tetrachloroethane        | ND                     | 0.100              | tı         | н                                    | *                                | *   | *        | t#        |       |
| Tetrachloroethene                | ND                     | 0.0300             | В          | и                                    | н                                | к   | н        | а         |       |
| Toluene                          | ND                     | 0.100              | n          | к                                    | u                                | *   | н        | et        |       |
| 1,2,3-Trichlorobenzene           | ND                     | 0.100              | ч          | **                                   | u                                | н   | *        | ж         |       |
| 1,2,4-Trichlorobenzene           | DN                     | 0.100              | и          | *                                    | **                               | n   | **       | н         |       |
| 1.1.1-Trichloroethane            | ND                     | 0.100              | и          | **                                   | 44                               | n   | ĸ        | н         |       |
| 1.1.2-Trichloroethane            | ND                     | 0.100              | U          | ĸ                                    | ŧr                               | n   | 85       | к         |       |
| Trichloroethene                  | ND                     | 0.0300             | ıı         | н                                    | н                                | u   | n        | к         |       |
| Trichlorofluoromethane           | ND                     | 0.100              | 4          | я                                    |                                  | н   | *        | н         |       |
| 1,2,3-Trichloropropane           | ND                     | 0.100              | **         | -                                    |                                  | н   | *        | *         |       |
| 1,2,4-Trimethylbenzene           | ND                     | 0,100              | n          | H                                    | *                                | n   | н        | н         |       |
| 1,3,5-Trimethylbenzene           | ND                     | 0.100              | *          | к                                    | u                                | *   | н        | *         |       |
| Vinyl chloride                   | ND                     | 0,100              | ч          | 19                                   | ĸ                                | м   | 44       | н         |       |
| o-Xylene                         | ND                     | 0.200              | N          | N                                    | **                               | *   | Nr.      | w         |       |
| m,p-Xylene                       | ND                     | 0.400              | н          | N                                    | .,                               | н   | н        | ti.       |       |
| Surrogate: Dibromofluoromethane  | 80.4                   | 44.8-146           |            |                                      | п                                | н   | u        | n         |       |
| Surrogate: Toluene-d8            | 85.7                   | 62.3-143           |            |                                      | "                                | в   | u        | H.        |       |
| Surrogate: 4-bromofluorobenzene  | 109                    | 52.5-138           |            |                                      | "                                | н   | te       | и         |       |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09

Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Spokane

|                              |                           | Reporting       |            |          |         |          |          |           |       |
|------------------------------|---------------------------|-----------------|------------|----------|---------|----------|----------|-----------|-------|
| Analyte                      | Result                    | Limit           | Units      | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
| TC-6 (0-2) (S5F0090-06) Soil | Sampled: 06/14/05 15:00 R | Received: 06/15 | 5/05 11:05 |          |         |          |          |           |       |
| Aceione                      | ND                        | 1.00            | mg/kg dry  | l        | 5060180 | 06/21/05 | 06/23/05 | EPA 8260B |       |
| Benzene                      | ND                        | 0.0300          | R          | п        |         | 15       | n        | к         |       |
| Bromobenzene                 | ND                        | 0.100           | я          | н        | 14      | 16       | PA .     |           |       |
| Bromochloromethane           | ND                        | 0.100           | н          | и        | a       | n        | *        | 16        |       |
| Bromodichloromethane         | ND                        | 0.100           | н          | н        | N       | н        | w        | к         |       |
| Bromoform                    | ND                        | 0.100           | и          | н        | *       | H        | *        | N         |       |
| Bromomethane                 | ND                        | 0.500           | н          | н        | н       | В        | н        | 44        |       |
| 2-Butanone                   | ND                        | 1.00            | 4          | ts       | н       | к        | *        | н         |       |
| n-Butylbenzene               | ND                        | 0.100           | и          | 41       |         | ĸ        | n        | к         |       |
| sec-Butylbenzene             | ND                        | 0,100           | А          | #1       | n       | *        | Ħ        | ie.       |       |
| tert-Butylbenzene            | ND                        | 0.100           | *          | n        | +       | и        | ĸ        | я         |       |
| Carbon disulfide             | ND                        | 0.100           | #          | *        | «       | n        | н        | н         |       |
| Carbon tetrachloride         | ND                        | 0.100           | **         | и        | #       | *        | it       | и         |       |
| Chlorobenzene                | ND                        | 0.100           | *          | н        | н       | *        | Ħ        | н         |       |
| Chloroethane                 | ND                        | 0.100           | м          | 14       | ti      |          | и        | и         |       |
| Chloroform                   | ND                        | 0.100           | н          | 4        | я       | 11       | н        | м         |       |
| Chloromethane                | ND                        | 0.500           | *          | н        | н       | H        | в        |           |       |
| 2-Chlorotoluene              | ND                        | 0.100           | и          | b        | н       | ti       | Ħ        | 14        |       |
| 4-Chlorotoluene              | ND                        | 0.100           | ĸ          | 9        | н       | н        | *        | *         |       |
| Dibromochloromethane         | ND                        | 0.100           | 19         | н        | **      | н        | ut.      | ×         |       |
| 1,2-Dibromo-3-chloropropane  | ND                        | 0.500           | u          | н        | **      |          | rs       | tr .      |       |
| 1,2-Dibromoethane            | ND                        | 0.100           | n          | и        | #       | и        | и        | ts.       |       |
| Dibromomethane               | ND                        | 0,100           | •          | W        | н       | н        |          | R         |       |
| 1,2-Dichlorobenzene          | ND                        | 0.100           | *          | n        | H       | ti       | *        | н         |       |
| 1,3-Dichlorobenzene          | ND                        | 0.100           | 11         | n        | и       | ч        | и        | a         |       |
| 1,4-Dichlorobenzene          | ND                        | 0.100           | и          | Ħ        | ы       | и        | H        | 45        |       |
| Dichlorodifluoromethane      | ND                        | 0.100           | ж          | н        | н       | 10       | *        | к         |       |
| 1,1-Dichloroethane           | ND                        | 0.100           | н          | *        |         | н        | *        | 6         |       |
| 1,2-Dichloroethane (EDC)     | ND                        | 0.100           | ĸ          | п        | N       | н        | *        | R         |       |
| 1,1-Dichloroethene           | ND                        | 0.100           | k          | и        | n       | 28       | *        | н         |       |
| cis-1,2-Dichloroethene       | ND                        | 0.100           | R          | 4        | н       | n        | н        | it        |       |
| trans-1,2-Dichloroethene     | ND                        | 0.100           | *          | в        | н       | н        | n        | ei        |       |
| 1,2-Dichloropropane          | ND                        | 0,100           | 'n         | n        | et .    | to.      | ж        | н         |       |
| 1,3-Dichloropropane          | ND                        | 0.100           | •          | at       | H       | st       | н        | и         |       |
| 2,2-Dichloropropane          | ND                        | 0.100           | N          | н        | ty      | er .     | ti       | n         |       |
| 1,1-Dichloropropene          | ND                        | 0.100           | *          | п        | *       | W        | *        | N         |       |
| cis-1,3-Dichloropropene      | ND                        | 0.100           | ж          |          | *       | 55       | *        |           |       |
| trans-1,3-Dichloropropene    | ND                        | 0,100           | +          | н        | a       | H        | *        | 29        |       |
| • •                          |                           |                 |            |          |         |          |          |           |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave.

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12.00

Spokane, WA 99202

# Volatile Organic Compounds by EPA Method 8260B

## North Creek Analytical - Spokane

| Analyte                      | Result                    | Reporting<br>Limit | Units      | Dilution | Batch   | Prepared                                | Analyzed | Method    | Notes                  |
|------------------------------|---------------------------|--------------------|------------|----------|---------|---|----------|-----------|------------------------|
| TC-6 (0-2) (S5F0090-06) Soil | Sampled: 06/14/05 15:00 F | Received: 06/15    | 5/05 11:05 |          |         | *************************************** |          |           | arb-w-40,Magantonoumer |
| Ethylbenzene                 | ND                        | 0.100              | mg/kg dry  | ¥        | 5060180 | 06/21/05                                | 06/23/05 | EPA 8260B |                        |
| Hexachlorobutadiene          | ND                        | 0.100              | n          | и        | et      | 16                                      | 16       | к         |                        |
| 2-Hexanone                   | ND                        | 1.00               | R          | te.      | *       | n                                       | 46       | 15        |                        |
| Isopropylbenzene             | ND                        | 0.100              | *          | *        | PK .    | к                                       | **       | к         |                        |
| p-Isopropyltoluene           | ND                        | 0.100              | 16         | н        | *       | tr                                      | *        | ĸ         |                        |
| Methylene chloride           | ND                        | 1.00               | ч          | н        | В       | н                                       | Ħ        | w         |                        |
| 4-Methyl-2-pentanone         | ND                        | 1.00               | k          | н        | н       | к                                       | tt       | и         |                        |
| Methyl tert-butyl ether      | ND                        | 0.100              | н          | и        | 81      | 16                                      | Ħ        | в         |                        |
| Naphthalene                  | ИD                        | 0.100              | it         | M        | u       | H                                       | я        | 16        |                        |
| n-Propylbenzene              | ND                        | 0.100              | N          | н        | n       | M                                       | **       | 71        |                        |
| Styrene                      | ND                        | 0,100              | п          | ĸ        | 4       | n                                       | lt .     | 軒         |                        |
| 1,1,1,2-Tetrachloroethane    | ND                        | 0,100              | N          | н        | N       | *                                       | 46       | н         |                        |
| 1,1,2,2-Tetrachloroethane    | ND                        | 0.100              | н          | e        | н       | н                                       | k        | ĸ         |                        |
| Tetrachloroethene            | ND                        | 0.0300             | Ħ          | N        | н       | к                                       | *        | п         |                        |
| Toluene                      | ND                        | 0.100              | 6          | к        | 16      | *                                       | н        | н         |                        |
| 1,2,3-Trichlorobenzene       | ND                        | 0.100              | n          | м        | н       | я                                       | 14       | н         |                        |
| 1,2,4-Trichlorobenzene       | ND                        | 0.100              |            | я        | Ħ       | n                                       | н        | н         |                        |
| 1,1,1-Trichloroethane        | ND                        | 0.100              | н          | н        | 9       | 41                                      | н        | ь         |                        |
| 1,1,2-Trichloroethane        | ND                        | 0.100              | н          | ŧı       | ŧı      | H                                       | n        | *         |                        |
| Trichloroethene              | 1.76                      | 0.0300             | *          | *        | ы       | н                                       | W        | ц         |                        |
| Trichlorofluoromethane       | ND                        | 0.100              | н          | *        | *       | *                                       | N        | м         |                        |
| 1,2,3-Trichloropropane       | ДИ                        | 0.100              | ж          | 4        | и       |   | н        | 'n        |                        |
| 1,2,4-Trimethylbenzene       | ND                        | 0.100              | *          | н        | *       | ĸ                                       | *        | *         |                        |
| 1,3,5-Trimethylbenzene       | ND                        | 0.100              | ĸ          | **       | и       | н                                       | н        | *         |                        |
| Vinyl chloride               | ND                        | 0.100              | ø          | к        | *       | u                                       | н        | ti        |                        |
| o-Xylene                     | ND                        | 0.200              | P          | н        | ×       | tt.                                     | н        | n         |                        |
| m,p-Xylene                   | ND                        | 0.400              | В          | *        | 14      | н                                       | *        | н         |                        |
| Surrogate: Dibromofluorometh | hane 81.9                 | 44.8-146           |            |          | rt      | 8                                       | ıı       | п         |                        |
| Surrogate: Toluene-d8        | 81.9                      | 62.3-143           |            |          | n       | n                                       | #        | п         |                        |
| Surrogate: 4-bromofluoroben: | ene 98.4                  | 52.5-138           |            |          | 12      | 18                                      | н        | #         |                        |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Spokane

| Analyte                     | Result                  | Reporting<br>Limit | Units      | Dilution   | Batch  | Prepared                                  | Analyzed | Method   | Notes |
|-----------------------------|-------------------------|--------------------|------------|--|--|---|----------|--|-------|
| TC-WS1 (S5F0090-08) Water   | Sampled: 06/14/05 14:00 | Received: 06/15    | 5/05 11:05 | 501×5×01×50+10×10×10×10×10×10×10×10×10×10×10×10×10×1 | ntille katalani da sama da | ×-500-00-00-00-00-00-00-00-00-00-00-00-00 |          | Section Company of the Company of th |       |
| Acetone                     | ND                      | 25.0               | ug/l       | 1  | 5060118  | 06/16/05                                  | 06/17/05 | EPA 8260B  |       |
| Benzene                     | 2.84                    | 1.00               | W          | "  | 44   | n   | *        | ie   |       |
| Bromobenzene                | ND                      | 1.00               | sı         | н  | н  | N   | *        | 24   |       |
| Bromochloromethane          | ND                      | 1.00               | *          | *  | н  | ıt  | **       | e  |       |
| Bromodichloromethane        | ND                      | 1.00               | н          | я  | *  | н   | **       | n  |       |
| Bromoform                   | ND                      | 1.00               | *          | 15   | 19   | M   | н        | н  |       |
| Bromomethane                | ND                      | 5.00               | *          | "  | q  | n   | н        | п  |       |
| 2-Butanone                  | ОМ                      | 10.0               | ıı         | ж  | н  | н   | u        | te   |       |
| n-Butylbenzene              | ND                      | 1.00               | n          | н  | **   | n   | н        | N  |       |
| sec-Butylbenzene            | ND                      | 1.00               | ri         | н  | н  | н   | к        | 84   |       |
| tert-Butylbenzene           | ND                      | 00.1               | *          | и  | N  | ж   | **       | н  |       |
| Carbon disulfide            | ND                      | 1.00               | н          | я  | h  | t <del>u</del>                            | 6        | ts   |       |
| Carbon tetrachloride        | ND                      | 1.00               | н          | *  | ,  | ×   | и        | **   |       |
| Chlorobenzene               | ND                      | 1.00               | q          | м  | *  | IF  | н        | 4  |       |
| Chloroethane                | ND                      | 1.00               | н          | n  | н  |   | n        | n  |       |
| Chloroform                  | ND                      | 1.00               | n          | 4  | к  | Ħ   | н        | n  |       |
| Chloromethane               | ND                      | 5.00               | ıı         | *  | N  | и   | н        | н  |       |
| 2-Chlorotoluene             | ND                      | 1.00               | н          | a a  | n  | u   | н        | **   |       |
| 4-Chlorotoluene             | ND                      | 1.00               | н          |  | к  | **  | 11       | tf   |       |
| Dibromochloromethane        | ND                      | 1.00               | p          | a  | и  | o   | •        | a  |       |
| 1,2-Dibromo-3-chloropropane | ND                      | 5.00               | *          | **   | 'n   | *   | n        | я  |       |
| 1,2-Dibromoethane           | ND                      | 1.00               | в          | N  | ш  | n   | и        | *  |       |
| Dibromomethane              | ND                      | 1.00               | н          | ĸ  | *  | tr.                                       | in       | н  |       |
| 1,2-Dichlorobenzene         | ND                      | 1,00               | *          |  | *  | įε  | н        | u  |       |
| 1,3-Dichlorobenzene         | ND                      | 1.00               | *          |  | 8  | к   | h        | ц  |       |
| 1,4-Dichlorobenzene         | ND                      | 1.00               | in         | n  | ц  | #   | *        |  |       |
| Dichlorodifluoromethane     | ND                      | 1.00               | ta.        | и  | *  |   | *        | ж  |       |
| 1,1-Dichloroethane          | ND                      | 1.00               | н          | *  |  | ×   | **       | ×  |       |
| 1,2-Dichloroethane (EDC)    | ND                      | 1.00               | w          | н  |  | "   | #V       | pt.  |       |
| 1,1-Dichloroethene          | ND                      | 1.00               | н          | ×  | *  | **  | #        | н  |       |
| cis-1,2-Dichloroethene      | ND                      | 1.00               | 16         |  | **   | ,   | *        | н  |       |
| trans-1,2-Dichloroethene    | ND ND                   | 1.00               | n          | **   | н  | н   | **       | н  |       |
| 1,2-Dichloropropane         | ND                      | 1.00               | n          | н  | и  | n   | н        | н  |       |
| 1,3-Dichloropropane         | ND                      | 1.00               | q          | •  | *  | n   | н        | н  |       |
| 2,2-Dichloropropane         | ND                      | 1.00               | н          | я  | н  | **  | н        | a  |       |
| 1,1-Dichloropropene         | ND ND                   | 1,00               | н          | к  | 6  |   | n        | q  |       |
| cis-1,3-Dichloropropene     | ND                      | 1.00               | и          | н  | м  |   | п        | *  |       |
| trans-1,3-Dichloropropene   | ND                      | 1.00               | ы          | н  | **   | н   | N        | n  |       |
| mana-1,3-Diemoroproperie    | 140                     | 1.00               |            |  |  |   |          |  |       |

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Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Volatile Organic Compounds by EPA Method 8260B

## North Creek Analytical - Spokane

|                               |                         | Reporting       |            |  |  |                         |          |  |   |
|-------------------------------|-------------------------|-----------------|------------|--|--|-------------------------|----------|--|---|
| Analyte                       | Result                  | Limit           | Units      | Dilution   | Batch  | Prepared                | Analyzed | Method   | Notes                                     |
| TC-WS1 (S5F0090-08) Water     | Sampled: 06/14/05 14:00 | Received: 06/1: | 5/05 11:05 | and the second s | orania de la constancia d | lakhawawakeemmen/manoen |          | alaboraturi (paragonia: lapogopo en arte al transference ancontres contres con | tocketteres various sides on degree sides |
| Ethylbenzene                  | ND                      | 1.00            | ug/l       | 1  | 5060118  | 06/16/05                | 06/17/05 | EPA 8260B  |   |
| Hexachlorobutadiene           | ND                      | 1.00            | n          | **   | к  | н                       | t#       | H  |   |
| 2-Hexanone                    | ND                      | 10.0            | н          | ×  | м  | Ħ                       | н        | н  |   |
| Isopropylbenzene              | ND                      | 1.00            | 14         | н  | *  | н                       | н        | *  |   |
| p-Isopropyltoluene            | ND                      | 1.00            | **         | **   | н  | 14                      | #        | н  |   |
| Methylene chloride            | ND                      | 5.00            | м          | н  | *  | 66                      | 84       | н  |   |
| 4-Methyl-2-pentanone          | ND                      | 10.0            | ės         | м  | Ħ  | 16                      | **       | ţi.  |   |
| Methyl tert-butyl ether       | 1.80                    | 1.00            | 8          | n  | ь  | 4                       | *        | я  |   |
| Naphthalene                   | ND                      | 1.00            | **         | 14   | H  | m                       | #        | 16   |   |
| n-Propylbenzene               | ND                      | 1.00            | Ri.        | н  | к  | ¥                       | **       | N  |   |
| Styrene                       | ND                      | 1.00            | 10         | н  | ×  | *                       | ts.      | 14   |   |
| 1,1,1,2-Tetrachloroethane     | ND                      | 1.00            | в          | н  | ts   | 19                      | 14       | **   |   |
| 1,1,2,2-Tetrachloroethane     | ND                      | 1.00            | н          | N  | π  | w                       | я        | и  |   |
| Tetrachloroethene             | ND                      | 1.00            | и          | н  | н  | *                       | **       | н  |   |
| Toluene                       | ND                      | 1.00            | п          | *  | и  | *                       | ıt       | **   |   |
| 1,2,3-Trichlorobenzene        | ND                      | 1.00            | u          |  |  |                         | н        | п  |   |
| 1,2,4-Trichlorobenzene        | ND                      | 1.00            | et         | #  | **   | я                       | н        | М  |   |
| 1,1,1-Trichloroethane         | ND                      | 1.00            | *          | k  | *  | u                       | 8        | 84   |   |
| 1,1,2-Trichloroethane         | ND                      | 1.00            | *          | ю  | н  | и                       | п        | ĸ  |   |
| Trichloroethene               | ND                      | 1.00            | er         | н  | n  | **                      | n        | rt   |   |
| Trichlorofluoromethane        | ND                      | 1.00            | к          | п  | н  | **                      | и        | н  |   |
| 1,2,3-Trichloropropane        | ND                      | 1.00            | н          | н  | *  | )1                      | *        | 16   |   |
| 1,2,4-Trimethylbenzene        | ND                      | 1.00            | ĸ          | *  | н  | Ħ                       | н        | ж  |   |
| 1,3,5-Trimethylbenzene        | ND                      | 1.00            | w          | н  | ĸ  | н                       | H        | 19   |   |
| Vinyl chloride                | ND                      | 0.200           | н          | Ħ  | ie   | 11                      | н        | Ü  |   |
| o-Xylene                      | ND                      | 1.00            | n          | 25   | ĸ  | н                       | n        | н  |   |
| m,p-Xylene                    | ND                      | 2.00            | ď          | h  |  | н                       | *        | п  |   |
| Surrogate: Dibromofluorometh  | ane 112                 | 62.9-131        |            |  | н  | er .                    | u        | и  |   |
| Surrogate: Toluene-d8         | 102                     | 58.7-133        |            |  | 14   | H                       | в        | v  |   |
| Surrogate: 4-bromofluorobenze | ne 94.0                 | 60.8-140        |            |  | "  | н                       | 27       | 91   |   |
| ÷ *                           |                         |                 |            |  |  |                         |          |  |   |

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Conventional Chemistry Parameters by APHA/EPA Methods North Creek Analytical - Spokane

| Analyte                      | Result                  | Reporting<br>Limit | Units       | Dilution                               | Batch   | Prepared | Analyzed | Method   | Notes |
|------------------------------|-------------------------|--------------------|-------------|--|---------|----------|----------|--|-------|
| TC-1 (0-1) (S5F0090-01) Soil | Sampled: 06/14/05 10:30 | Received: 06/1     | 5/05 11:05  |  |         |          |          | TO COMPANY AND |       |
| Cyanide (total)              | ND                      | 0.0500             | mg/kg       | 10                                     | 5060229 | 06/28/05 | 06/28/05 | EPA 335.2  |       |
| pH                           | 7,77                    |                    | pH Units    | 1                                      | 5060182 | 06/22/05 | 06/22/05 | EPA 9045B  |       |
| % Solids                     | 86.8                    | 0.0100             | % by Weight | н                                      | 5060169 | 06/21/05 | 06/21/05 | Gravimetry   |       |
| TC-6 (0-2) (S5F0090-06) Soil | Sampled: 06/14/05 15:00 | Received: 06/1     | 5/05 11:05  | O************************************* |         |          |          |  |       |
| Cyanide (total)              | 0.0719                  | 0.0500             | mg/kg       | 10                                     | 5060229 | 06/28/05 | 06/28/05 | EPA 335,2  |       |
| pН                           | 7.21                    |                    | pH Units    | 1                                      | 5060182 | 06/22/05 | 06/22/05 | EPA 9045B  |       |
| % Solids                     | 78.5                    | 0.0100             | % by Weight | и                                      | 5060169 | 06/21/05 | 06/21/05 | Gravimetry   |       |
| TC-WS1 (S5F0090-08) Water    | Sampled: 06/14/05 14:00 | Received: 06/      | 15/05 11:05 |  |         |          |          |  |       |
| Cyanide (total)              | ND                      | 0.00500            | mg/l        | 1                                      | 5060139 | 06/16/05 | 06/16/05 | EPA 335.2  |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Organochlorine Pesticides by EPA Method 8081A

## North Creek Analytical - Bothell

|                              |                             | Reporting       |            |          |         |          |          |           |       |
|------------------------------|-----------------------------|-----------------|------------|----------|---------|----------|----------|-----------|-------|
| Analyte                      | Result                      | Limit           | Units      | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
| TC-1 (0-1) (S5F0090-01) Soil | Sampled: 06/14/05 10:30   F | Received: 06/15 | 5/05 11:05 |          |         |          |          |           | X     |
| Aldrin                       | ND                          | 1.00            | ug/kg dry  | ı        | 5F24051 | 06/24/05 | 07/07/05 | EPA 8081A |       |
| alpha-BHC                    | ND                          | 1.00            | tr         | n        | 46      | м        | 13       | n         |       |
| beta-BHC                     | 2.24                        | 2.00            | 15         | ņ        | н       | *        | н        | 64        | P-03  |
| delta-BHC                    | ND                          | 1.00            | ĸ          | ĸ        | ĸ       | *        | и        | н         |       |
| gamma-BHC (Lindane)          | ND                          | 1.00            | h          | **       | н       | ie       | к        | H         |       |
| Chlordane (tech)             | ND                          | 10.0            | п          | 44       | **      | tt       | U        | r         |       |
| alpha-Chlordane              | ND                          | 1.00            | 11         | 46       | +4      | *        | *        | Ħ         |       |
| gamma-Chlordane              | ND                          | 00.1            | N          | 14       | **      | н        | н        | *         |       |
| 4,4'-DDD                     | ND                          | 2.00            | н          | п        | н       | н        | 16       | ы         |       |
| 4,4'-DDE                     | ND                          | 2.00            | *          | н        | ĸ       | *        | и        | н         |       |
| 4,4'-DDT                     | ND                          | 2.00            | н          |          | к       | n        | *        | n         |       |
| Dieldrin                     | ND                          | 2.00            | b          | **       | н       | в        | *        | к         |       |
| Endosulfan i                 | ND                          | 1.00            | n          | *        | Ħ       |          | и        | м         |       |
| Endosulfan II                | ND                          | 2.00            | u          | и        | н       | *        | н        | μ         |       |
| Endosulfan sulfate           | ND                          | 2.00            | it         | ĸ        | tt      | н        | п        | **        |       |
| Endrin                       | ND                          | 2.00            | *          | •        | **      | н        | а        | er        |       |
| Endrin aldehyde              | ND                          | 2.00            | a          | •        | *       | u        | я        | <b>H</b>  |       |
| Endrin ketone                | ND                          | 2.00            | e          | rt       | tt      | н        | *        | n         |       |
| Heptachlor                   | ND                          | 1.00            | *          | н        | ч       | я        | **       | o         |       |
| Heptachlor epoxide           | ND                          | 1.00            | м.         | н        | *       | n        | ĸ        | н         |       |
| Methoxychlor                 | ND                          | 2.00            | n          | н        | *       | п        | и        | ler       |       |
| Toxaphene                    | ND                          | 50.0            | R          | 15       | ıı      |          | в        | et .      |       |
| Surrogate: TCX               | 79.8                        | 47-134          |            |          | 0       | #        | u        | В         |       |
| Surrogate: Decachlorobiphem  | ) 89.4                      | 35-151          |            |          | P       | "        | ŧŧ       | 22        |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane

Spokane, WA 99202

523 East Second Ave.

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Organochlorine Pesticides by EPA Method 8081A

### North Creek Analytical - Bothell

| Analyte                         | Result                  | Reporting<br>Limit | Units                                   | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|---------------------------------|-------------------------|--------------------|---|----------|---------|----------|----------|-----------|-------|
| TC-1 (0-1) (S5F0090-01RE1) Soil | Sampled: 06/14/05 10:30 | Received:          | 06/15/05 11:05                          |          |         |          |          |           |       |
| Aldrin                          | ND                      | 0.01               | ug/kg dry                               | 10       | 5F24051 | 06/24/05 | 07/08/05 | EPA 8081A |       |
| alpha-BHC                       | ND                      | 10.0               | н                                       | **       | и       | м        | n        | *         |       |
| beta-BHC                        | ИD                      | 20.0               | н                                       | tt       | *       | 8        | n        | ¥         |       |
| delta-BHC                       | ND                      | 10.0               | *                                       | н        | М       | n        | н        | Ib.       |       |
| gamma-BHC (Lindane)             | סא                      | 10.0               | n                                       | n        | н       | 0        | H        | н         |       |
| Chlordane (tech)                | ИД                      | 100                | н                                       | 82       | н       | n        | ıs       | ĸ         |       |
| alpha-Chlordane                 | ИD                      | 10.0               | н                                       | н        | н       | н        | ti       | 41        |       |
| gamma-Chlordane                 | ND                      | 10.0               | н                                       | *        | ĸ       | N        | н        | 4         |       |
| 4,4'-DDD                        | ND                      | 20.0               | es                                      | 78       | н       | в        | M        | к         |       |
| 4,4'-DDE                        | ND                      | 20.0               | ч                                       | *        | n       | 16       | и        | 75        |       |
| 4,4'-DDT                        | ND                      | 20.0               | n                                       | *        | 41      | n        | и        | 4         |       |
| Dieldrin                        | ND                      | 20.0               | N                                       | ы        | *       | и        | к        | и         |       |
| Endosulfan I                    | ND                      | 10.0               | н                                       | п        | Ħ       | н        | *        | н         |       |
| Endosulfan II                   | ND                      | 20.0               | н                                       | n        |         | к        | н        | н         |       |
| Endosulfan sulfate              | ND                      | 20.0               | N                                       | n        | *       | н        | ir       | Ħ         |       |
| Endrin                          | ND                      | 20.0               | #                                       | *        | в       | H        | ж        | 9         |       |
| Endrin aldehyde                 | ND                      | 20.0               | н                                       | *        | N       | к        | *        | π         |       |
| Endrin ketone                   | ND                      | 20.0               | *                                       | 19       | и       | h        | R        | IP.       |       |
| Heptachlor                      | ND                      | 10.0               | н                                       | ti       | н       | ts       | н        | н         |       |
| Heptachlor epoxide              | ND                      | 10.0               | ĸ                                       | а        | н       | "        | ır       | п         |       |
| Methoxychlor                    | ND                      | 20.0               | *                                       | *        | ď       | н        | м        | 15        |       |
| Toxaphene                       | ND                      | 500                | u                                       | Ħ        | *       | *        | н        | к         |       |
| Surrogate: TCX                  | 98.3                    | 47-134             | , |          | 11      | н        | (f       | H         |       |
| Surrogate: Decachlorobiphenyl   | 112                     | 35-151             |   |          | "       | u        | n        | Ħ         |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

Organochlorine Pesticides by EPA Method 8081A

North Creek Analytical - Bothell

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|------------------------------|--|-----------------|-------------------------------------|--|--|--|--|-----------|-------|
| Analyte                      | Result   | Limit           | Units                               | Dilution   | Batch  | Prepared   | Analyzed   | Method    | Notes |
| TC-6 (0-2) (S5F0090-06) Soil | Sampled: 06/14/05 15:00  | Received: 06/15 | 5/05 11:05                          | TO CONTRACT OF THE PROPERTY OF | ON THE PROPERTY OF THE PROPERT | esecnece essentia de la constanta de la consta | talahin tariasan istoloka katawan (ili katawan katawan (ili katawan katawan katawan katawan katawan katawan ka   |           | X     |
| Aldrin                       | ИD   | 1.00            | ug/kg đry                           | 1  | 5F24051  | 06/24/05   | 07/06/05   | EPA 8081A |       |
| alpha-BHC                    | ND   | 1.00            | n                                   | Ħ  | ri .   | rt   | н  | 54        |       |
| beta-BHC                     | ND   | 2.00            | **                                  | м  | 81   | н  | н  | ĸ         |       |
| delta-BHC                    | ND   | 1.00            | к                                   | 16   | я  | 12   | at   | н         |       |
| gamma-BHC (Lindane)          | ND   | 1.00            | н                                   | **   | *  | **   | **   | н         |       |
| Chlordane (tech)             | ND   | 10.0            | u                                   | *  | u  | н  | **   | 54        |       |
| alpha-Chlordane              | ND   | 1.00            | м                                   | W  | n  | н  | ч  | н         |       |
| gamma-Chlordane              | ND   | 1.00            | н                                   | ĸ  | *  | 4  | и  | 15        |       |
| 4,4'-DDD                     | ND   | 2.00            | re .                                | 11   | н  | et   | ít   | н         |       |
| 4,4'-DDE                     | ИD   | 2.00            | Ħ                                   | n  | н  | R  | н  | п         |       |
| 4,4'-DDT                     | 3.05   | 2.00            | p.                                  | n  | Ħ  | n  | н  | н         |       |
| Dieldrin                     | ND   | 2.00            | *                                   | સ  | Ħ  | a  | н  | н         |       |
| Endosulfan I                 | ND   | 1.00            | н                                   | *  | н  | к  | tt   | м         |       |
| Endosulfan II                | ND   | 2.00            | ĸ                                   | *  | it   | ×  | ж  | +         |       |
| Endosulfan sulfate           | ND   | 2.00            | et                                  | н  | *  | н  | 19   | IJ        |       |
| Endrin                       | ND   | 2.00            | н                                   | 41   | "  | *  | п  | 18        |       |
| Endrin aldehyde              | ND   | 2.00            | ¢i.                                 | к  | *  | ĸ  | ıs   | H         |       |
| Endrin ketone                | ND   | 2.00            | *                                   | *  | м  | n  | *  | įs.       |       |
| Heptachlor                   | ND   | 1.00            | 84                                  | п  | и  | ×  | 14   | и         |       |
| Heptachlor epoxide           | ND   | 1.00            | ¥                                   | ď  | *  | ×  |  | 66        |       |
| Methoxychlor                 | ND   | 2.00            | ¥t .                                | w  | •  | *  | н  | В         |       |
| Toxaphene                    | ND   | 50.0            | к                                   | н  | R  | *  | NP .   | к         |       |
| Surrogate: TCX               | 67.3   | 47-134          |                                     |  | п  | "  | "  | *         |       |
| Surrogate: Decachlorobipheny | 92.6   | 35-151          |                                     |  | "  | я  | н  | ų         |       |

North Creek Analytical - Spokane

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09 Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Organochlorine Pesticides by EPA Method 8081A

### North Creek Analytical - Bothell

|                                 | naturaturaturan mendebi terdebi birlik di di dan pagapan ayan terdebi meneraturan berindi berin | Reporting | MODELLO DENGELLO MANAGESTA DE LA COMPTANTA DEL COMPTANTA DE LA COMPTANTA DE LA COMPTANTA DE LA | THE PARTY OF THE P |         | CONCENSATE CONTRACTOR OF THE STATE OF THE ST | Proceedings of the Commission | CONTRACTOR  |       |
|---------------------------------|---|-----------|--|--|---------|--|---|--|-------|
| Analyte                         | Result  | Limit     | Units  | Dilution   | Batch   | Prepared   | Analyzed  | Method   | Notes |
| TC-6 (0-2) (S5F0090-06RE1) Soil | Sampled: 06/14/05 15:00   | Received; | 06/15/05 11:05   |  | WWW.    |  |   | NAME OF THE PROPERTY OF THE PR |       |
| Aldrin                          | ND  | 100       | ug/kg dry  | 100  | 5F24051 | 06/24/05   | 07/08/05  | EPA 8081A  |       |
| alpha-BHC                       | ND  | 100       | "  | W  | "       | н  | N   | и  |       |
| beta-BHC                        | ND  | 200       | *  | н  | *       | •  | N   | Ħ  |       |
| delta-BHC                       | ND  | 100       | к  | u  | 16      |  | n   | н  |       |
| gamma-BHC (Lindane)             | ND  | 100       | к  | **   | и       | н  | N   | н  |       |
| Chlordane (tech)                | ND  | 1000      | ix   | **   | п       | pt   | н   | ti.  |       |
| alpha-Chlordane                 | ND  | 100       | н  | н  | н       | м  | er  | н  |       |
| gamma-Chlordane                 | ND  | 100       | 19   | н  | *       | 11   | ĸ   | а  |       |
| 4,4'-DDD                        | ND  | 200       | n  | н  | *       | *  | м   | H  |       |
| 4,4'-DDE                        | ND  | 200       | н  | м  | к       | 4  | м   | н  |       |
| 4,4'-DDT                        | ND  | 200       | н  | et   | ¥       | 19   | 44  | 45   |       |
| Dieldrin                        | ND  | 200       | w  | c:   | ×       |  | н   | н  |       |
| Endosulfan I                    | ND  | 100       | н  | м  |         | н  | a   | if   |       |
| Endosulfan II                   | ND  | 200       | к  | *  | ij      | н  | и   | *  |       |
| Endosulfan sulfate              | ИD  | 200       | er<br>Ai   | ħ  | н       | *  | н   | e  |       |
| Endrin                          | ND  | 200       | 4  | в  | n       | я  | ĸ   | e  |       |
| Endrin aldehyde                 | ND  | 200       | 0  | #  | *       | н  | D.  | *  |       |
| Endrin ketone                   | ND  | 200       | н  | *  | и       | n  | н   | ж  |       |
| Heptachlor                      | ND  | 100       | n  | 14   | 8       | н  | ĸ   | н  |       |
| Heptachlor epoxide              | ND  | 100       | H  | 11   | u       | н  |   | rí   |       |
| Methoxychlor                    | ND  | 200       | н  |  | н       | н  | я   | Ħ  |       |
| Toxaphene                       | ND  | 5000      | Ħ  | ĸ  | N       | 10   | я   | и  |       |
| Surrogate: TCX                  | 98.2  | 47-134    |  |  | 11      | "  | и   | u  | P-03  |
| Surrogate: Decachlorobiphenyl   | 99.0  | 35-151    |  |  | "       | #  | и   | tr .   | P-03  |

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Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Polychlorinated Biphenyls by EPA Method 8082 North Creek Analytical - Bothell

|                              | <del>walka kana kana kana kana kana kana kana </del> | Reporting       | ALLEGE CONTRACTOR CONT | ************************************** | <u>uror anno es en reconstructor de constructor de constructor de constructor de constructor de constructor de cons</u> | <u>Sandani ya digolari oʻrban abban ida oʻrban</u>   | eterorolusia-kassolojujujulii liimetsii kii kunistii eterorolu   | and the second s |                                 |
|------------------------------|--|-----------------|--|--|---|--|--|--|---------------------------------|
| Analyte                      | Result   | Limit           | Units  | Dilution                               | Batch   | Prepared   | Analyzed   | Method   | Notes                           |
| TC-1 (0-1) (S5F0090-01) Soil | Sampled: 06/14/05 10:30                              | Received: 06/15 | 5/05 11:05   | *************************************  | Description (Company)   | nyyttäänistista olivaista taitaasta ministön   | arminaniae con arminana aid Did Pilliania  |  | ментольно топительную упильства |
| Aroclor 1016                 | ND   | 25.0            | ug/kg dry  | 1                                      | 5F24051   | 06/24/05   | 06/29/05   | EPA 8082   |                                 |
| Aroclor 1221                 | ND   | 50.0            | *  | н                                      | н   | и  | и  | **   |                                 |
| Aroclor 1232                 | ND   | 25.0            | *  | N.                                     | м   | ĸ  | ĸ  | **   |                                 |
| Aroclor 1242                 | ND   | 25.0            | n  | *                                      | н   | н  | и  | #  |                                 |
| Aroclor 1248                 | ND   | 25.0            | ×  | *                                      | 4   | **   | н  | R  |                                 |
| Aroclor 1254                 | ND   | 25.0            | н  | и                                      | ĸ   | и  | *  | H  |                                 |
| Aroclor 1260                 | ND   | 25.0            | и  | к                                      | н   | м  | *  | н  |                                 |
| Aroclor 1262                 | ND   | 25.0            | k  | 19                                     | 11  | Ħ  | н  | R  |                                 |
| Aroclor 1268                 | ND   | 25.0            | к  | "                                      | н   | a  | н  | H  |                                 |
| Surrogate: TCX               | 90.7   | 19-149          |  |  | 19  | "  | н  | H  |                                 |
| Surrogate: Decachlorobipheny | 1 104  | 37-151          |  |  | и   | ĸ  | н  | н  |                                 |
| TC-6 (0-2) (S5F0090-06) Soil | Sampled: 06/14/05 15:00                              | Received: 06/1  | 5/05 11:05   |  |   | and the same of th | ORDER DE LA CONTRACTION DEL CONTRACTION DE LA CO |  |                                 |
| Aroclor 1016                 | ND   | 25.0            | ug∕kg dry  | ı                                      | 5F24051   | 06/24/05   | 06/29/05   | EPA 8082   |                                 |
| Aroclor 1221                 | ND   | 50.0            | 21   | e                                      | 64  | *  | HP   | м  |                                 |
| Aroclor 1232                 | ND   | 25.0            | d  | **                                     | *   | ж  | st.  | ч  |                                 |
| Aroclor 1242                 | ND   | 25.0            | 14   | **                                     | н   | н  | *  | it.  |                                 |
| Aroclor 1248                 | ND   | 25.0            | 8  | н                                      | н   | jr   | *  | *  |                                 |
| Aroclor 1254                 | ND   | 25.0            | к  | **                                     | *   | н  | н  | e  |                                 |
| Aroclor 1260                 | 65.5   | 25.0            | ж  | н                                      | В   | *  | n  | et.  |                                 |
| Aroclor 1262                 | ND   | 25.0            | 15   | ĸ                                      | 11  | *  | *  | 34   |                                 |
| Aroclor 1268                 | ND   | 25.0            | 5  | н                                      | 41  | н  | в  | н  |                                 |
| Surrogate: TCX               | 81.0   | 19-149          |  |  | и   | tt   | н  | и  |                                 |

37-151

North Creek Analytical - Spokane

Surrogate: Decachlorobiphenyl

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Physical Parameters by APHA/ASTM/EPA Methods

## North Creek Analytical - Bothell

| The state of the s | THE CONTRACTOR OF THE CONTRACT | Reporting       |            | *************************************** | **************************************                                       | A CONTRACTOR OF THE PROPERTY O |          | THE RESIDENCE OF THE PARTY OF T |       |
|--|--|-----------------|------------|---|--|--|----------|--|-------|
| Analyte  | Result   | Limit           | Units      | Dilution                                | Batch  | Prepared   | Analyzed | Method   | Notes |
| TC-1 (0-1) (S5F0090-01) Soil   | Sampled: 06/14/05 10:30  | Received: 06/15 | 5/05 11:05 |   | eliocusso escocionisticamento comerciale e e e e e e e e e e e e e e e e e e |  |          | reconstruit de la construit de<br>La construit de la construit d   |       |
| Dry Weight   | 79.9   | 1.00            | %          | 1                                       | 5F27064  | 06/27/05   | 06/28/05 | BSOPSPL003R08  |       |
| TC-6 (0-2) (S5F0090-06) Soil   | Sampled: 06/14/05 15:00  | Received: 06/1: | 5/05 11:05 |   |  | C-10-1   |          |  |       |
| Dry Weight   | 78.9   | 1.00            | %          | 1                                       | 5F27064  | 06/27/05   | 06/28/05 | BSOPSPL003R08  |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Semivolatile Petroleum Products by NWTPH-Dx - Quality Control

# North Creek Analytical - Spokane

|                                  | R                 | eporting  | in the second | Spike                          | Source   | Marine Marine Marine Salah Marine | %REC                                 | THE PARTY OF THE P | RPD  |                           |
|----------------------------------|-------------------|-----------|---|--------------------------------|--|---|--------------------------------------|--|--|---------------------------|
| Analyte                          | Result            | Limit     | Units   | Level                          | Result   | %REC  | Limits                               | RPD  | Limit  | Notes                     |
| Batch 5060144: Prepared 06/17/05 | Using EPA 3510/60 | 00 Series |   | ****************************** | MAKANESIAN MAKANESIAN (MAKANESIAN MAKANESIAN MAKANESIAN MAKANESIAN MAKANESIAN MAKANESIAN MAKANESIAN MAKANESIAN | nanananananananananananananananananana  | ggovern 1910 to Assense the Roll Ass | notaretts war over the words   | POST TO STATE OF THE STATE OF T |                           |
| Blank (5060144-BLK1)             |                   |           |   |                                |  |   |                                      |  |  | ···                       |
| Diesel Range Hydrocarbons        | ND                | 0.250     | mg/l  |                                |  |   |                                      |  |  |                           |
| Heavy Oil Range Hydrocarbons     | ND                | 0.500     | n   |                                |  |   |                                      |  |  |                           |
| Surrogate: 2-FBP                 | 0.167             |           | t!  | 0,200                          |  | 83.5  | 50-150                               |  |  |                           |
| Surrogate: p-Terphenyl-d14       | 0.174             |           | **  | 0.200                          |  | 87.0  | 50-150                               |  |  |                           |
| LCS (5060144-BS1)                |                   |           |   |                                |  |   |                                      |  |  |                           |
| Diesel Range Hydrocarbons        | 2.39              | 0.250     | mg/l  | 2.50                           |  | 95.6  | 50-150                               |  |  |                           |
| Surrogale: 2-FBP                 | 0.200             |           | u   | 0.200                          |  | 100   | 50-150                               | ***************************************  |  |                           |
| Surrogate: p-Terphenyl-d14       | 0.192             |           | н   | 0.200                          |  | 96.0  | 50-150                               |  |  |                           |
| LCS Dup (5060144-BSD1)           |                   |           |   |                                |  |   |                                      |  |  | -                         |
| Diesel Range Hydrocarbons        | 2,48              | 0.250     | mg/l  | 2.50                           |  | 99.2  | 50-150                               | 3.70   | 11.8   |                           |
| Surrogate: 2-FBP                 | 0.206             |           | н   | 0.200                          |  | 103   | 50-150                               |  |  |                           |
| Surrogate: p-Terphenyl-d14       | 0.197             |           | и   | 0.200                          |  | 98.5  | 50-150                               |  |  |                           |
| Batch 5060156: Prepared 06/20/05 | Using EPA 3550B   |           |   |                                |  |   |                                      | ua janjinjaninjin i jajanjin ja malajanjin 1965 vo   | ONCHRESCON PRINCIPAL CORRESCONDO CONTRA  | wydgiethektrówetektóckane |
| Blank (5060156-BLK1)             |                   |           |   |                                |  |   |                                      |  |  |                           |
| Diesel Range Hydrocarbons        | ND                | 10.0      | mg/kg wet   |                                |  |   |                                      |  |  |                           |
| Heavy Oil Range Hydrocarbons     | ND                | 25.0      | н   |                                |  |   |                                      |  |  |                           |
| Surrogate: 2-FBP                 | 6.14              |           | U   | 6.67                           |  | 92.1  | 50-150                               |  |  |                           |
| Surrogate: p-Terphenyl-d14       | 6.28              |           | u   | 6.67                           |  | 94.2  | 50-150                               |  |  |                           |
| LCS (5060156-BS1)                |                   |           |   |                                |  |   |                                      |  |  |                           |
| Diesel Range Hydrocarbons        | 86,6              | 10.0      | mg/kg wet   | 83.3                           |  | 104   | 50-150                               |  |  |                           |
| Surrogate: 2-FBP                 | 7.51              |           | q   | 6.67                           | <del></del>  | 113   | 50-150                               |  |  |                           |
| Surrogate: p-Terphenyl-d14       | 6.64              |           | n   | 6.67                           |  | 99.6  | 50-150                               |  |  |                           |

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

## Semivolatile Petroleum Products by NWTPH-Dx - Quality Control North Creek Analytical - Spokane

Project Manager: Dave Enos

|                                  | I I             | Reporting   | de fantantian e management année confection de la confect | Spike  | Source                                   |  | %REC                       | o-trigonolos de establica de la compansión de la compansi | RPD  |       |
|----------------------------------|-----------------|---|--|--|--|--|----------------------------|--|--|-------|
| Analyte                          | Result          | Limit   | Units  | Level  | Result                                   | %REC   | Limits                     | RPD  | Limit  | Notes |
| Batch 5060156: Prepared 06/20/05 | Using EPA 3550B | magagy (Sillahhi) dhibinn an a |  | MICELANIA SERVICINO POPER PROPRIO PROP | mananingan na mananingan di ngahikida ka | and the second s | www.commencencommences.com | Station was a supplementary man  | an y distribution de la communicación de la co |       |
| Duplicate (5060156-DUP1)         |                 |   |  |  | Source: S5                               | F0079-01   |                            |  |  |       |
| Diesel Range Hydrocarbons        | ND              | 100   | mg/kg dry  |  | ND                                       |  |                            |  | 25   |       |
| Heavy Oil Range Hydrocarbons     | 361             | 250   | к  |  | 261                                      |  |                            | 32.2   | 25   | Q-05  |
| Surrogate: 2-FBP                 | 10.2            |   | н  | 10.9   |  | 93.6   | 50-150                     |  |  |       |
| Surrogate: p-Terphenyl-d14       | 11.2            |   | и  | 10.9   |  | 103  | 50-150                     |  |  |       |
| Matrix Spike (5060156-MS1)       |                 |   |  |  | Source: S5                               | F0079-01   |                            |  |  |       |
| Diesel Range Hydrocarbons        | 157             | 100   | mg/kg dry  | 136  | ND                                       | 115  | 50-150                     |  |  |       |
| Surrogate: 2-FBP                 | 12.5            |   | н  | 10.9   |  | 115  | 50-150                     |  |  |       |
| Surrogate: p-Terphenyl-d14       | 11.8            |   | rt   | 10.9   |  | 108  | 50-150                     |  |  |       |

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Spokane, WA 99202

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Spokene

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503.906.9200 fax 503.906.9210 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 Bend

%REC

541.383.9310 fax 541.382.7588 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119

%REC

Limits

RPD

Anchorage 907,563.9200 fax 907.563.9210

> Source Result

Project: Teck Cominco Geo Engineers - Spokane

> Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

Limit

Notes

# Volatile Organic Compounds by EPA Method 8260B - Quality Control

### North Creek Analytical - Spokane

Units

Spike

Level

Reporting

Limit

Result

| Batch 5060118: Prepared 06/16/05 | Using GC/MS Vo | latiles | dannanja da Mala shiya 2000 olar |
|----------------------------------|----------------|---------|----------------------------------|
| Blank (5060118-BLK1)             |                |         |                                  |
| Acetone                          | ND             | 25.0    | ug/l                             |
| Benzene                          | ND             | 1.00    | 44                               |
| Bromobenzene                     | ND             | 1.00    | **                               |
| Bromochloromethane               | ND             | 1.00    | н                                |
| Bromodichloromethane             | ND             | 1.00    | н                                |
| Bromoform                        | ND             | 1.00    | к                                |
| Bromomethane                     | ND             | 5.00    | **                               |
| 2-Butanone                       | ND             | 10,0    | к                                |
| n-Butylbenzene                   | ND             | 1.00    | ч                                |
| sec-Butylbenzene                 | ND             | 1.00    | *                                |
| tert-Butylbenzene                | ИD             | 1.00    | *                                |
| Carbon disulfide                 | ND             | 1.00    | н                                |
| Carbon tetrachloride             | ND             | 1.00    | **                               |
| Chlorobenzene                    | ND             | 1.00    | w                                |
| Chloroethane                     | ND             | 1.00    | n                                |
| Chloroform                       | ND             | 1.00    | *                                |
| Chloromethane                    | ND             | 5.00    | н                                |
| 2-Chlorotoluene                  | ND             | 1.00    | *                                |
| 4-Chlorotoluene                  | ND             | 1.00    | **                               |
| Dibromochloromethane             | ND             | 1.00    | "                                |
| 1,2-Dibromo-3-chloropropane      | ND             | 5.00    | M                                |
| 1,2-Dibromoethane                | ND             | 1.00    | u                                |
| Dibromomethane                   | ND             | 1.00    | **                               |
| 1,2-Dichlorobenzene              | ND             | 1.00    | *                                |
| 1,3-Dichlarobenzene              | ND             | 1.00    | ĸ                                |
| 1,4-Dichlorobenzene              | ND             | 1.00    | *                                |
| Dichlorodifluoromethane          | ND             | 1.00    | 10                               |
| 1,1-Dichloroethane               | ND             | 1.00    | н                                |
| 1,2-Dichloroethane (EDC)         | DИ             | 1.00    | ×                                |
| 1,1-Dichloroethene               | ND             | 1.00    | *                                |
| cis-1,2-Dichloroethene           | ND             | 1.00    | •                                |
| trans-1,2-Dichloroethene         | ND             | 1.00    | н                                |
| 1,2-Dichloropropane              | ND             | 1.00    | н                                |

1.00

1.00

ND

ND

North Creek Analytical - Spokane

1,3-Dichloropropane

2,2-Dichloropropane

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North Creek Analytical, Inc. Environmental Laboratory Network Page 18 of 52



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 Seattle

Spokane

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9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 Portland 503,906,9200 fax 503,906,9210

Source

Send

Anchorage

20332 Empire Avenue, Sulte F-1, Bend, OR 97701-5711 541.381,9310 fax 541.382,7588 2000 W International Airport Road, Sulte A-10, Anchorage, AK 99502-1119

%REC

907.563.9200 Fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

# Volatile Organic Compounds by EPA Method 8260B - Quality Control

## North Creek Analytical - Spokane

Spike

Reporting

|                                 |                   | Keboung   |       | apire | 2011100 |      | MINEC    |                                 | NJ U  |  |
|---------------------------------|-------------------|-----------|-------|-------|---------|------|----------|---------------------------------|-------|--|
| Analyte                         | Result            | Limit     | Units | Level | Result  | %REC | Limits   | RPD                             | Limit | Notes  |
| Batch 5060118: Prepared 06/16   | /05 Using GC/MS \ | /olatiles |       |       |         |      |          | enterenting depend differential |       | outour the street of the stree |
| Blank (5060118-BLK1)            | <del></del>       |           |       |       |         |      |          |                                 |       |  |
| I, I-Dichloropropene            | ND                | 1.00      | ug/l  |       |         |      |          |                                 |       |  |
| cis-1,3-Dichloropropene         | ND                | 1.00      | и     |       |         |      |          |                                 |       |  |
| trans-1,3-Dichloropropene       | ND                | 1.00      |       |       |         |      |          |                                 |       |  |
| Ethylbenzene                    | ND                | 1.00      | #     |       |         |      |          |                                 |       |  |
| Hexachlorobutadiene             | ND                | 1.00      | ж     |       |         |      |          |                                 |       |  |
| 2-Hexanone                      | ND                | 10.0      | *     |       |         |      |          |                                 |       |  |
| Isopropylbenzene                | ND                | 1.00      | *     |       |         |      |          |                                 |       |  |
| p-Isopropyltoluene              | ND                | 1.00      | н     |       |         |      |          |                                 |       |  |
| Methylene chloride              | 10.4              | 5.00      | n     |       |         |      |          |                                 |       |  |
| 4-Methyl-2-pentanone            | ND                | 10.0      | **    |       |         |      |          |                                 |       |  |
| Methyl tert-butyl ether         | ND                | 1.00      | н     |       |         |      |          |                                 |       |  |
| Naphthalene                     | ND                | 1.00      | **    |       |         |      |          |                                 |       |  |
| n-Propylbenzene                 | ND                | 1.00      | n     |       |         |      |          |                                 |       |  |
| Styrene                         | ND                | 1.00      | н     |       |         |      |          |                                 |       |  |
| 1,1,1,2-Tetrachloroethane       | ND                | 1.00      | 16    |       |         |      |          |                                 |       |  |
| 1,1,2,2-Tetrachloroethane       | ND                | 1.00      | н     |       |         |      |          |                                 |       |  |
| Tetrachloroethene               | ND                | 1.00      | ×     |       |         |      |          |                                 |       |  |
| Toluene                         | ND                | 1.00      | (1    |       |         |      |          |                                 |       |  |
| 1,2,3-Trichlorobenzene          | ND                | 1.00      | н     |       |         |      |          |                                 |       |  |
| 1,2,4-Trichlorobenzene          | ND                | 1.00      | 14    |       |         |      |          |                                 |       |  |
| 1,1,1-Trichloroethane           | ND                | 1.00      | 45    |       |         |      |          |                                 |       |  |
| 1,1,2-Trichloroethane           | ND                | 1.00      | в     |       |         |      |          |                                 |       |  |
| Trichloroethene                 | ND                | 1.00      | **    |       |         |      |          |                                 |       |  |
| Trichlorofluoromethane          | ND                | 1.00      |       |       |         |      |          |                                 |       |  |
| 1,2,3-Trichloropropane          | ND                | 1.00      | ęt.   |       |         |      |          |                                 |       |  |
| 1,2,4-Trimethylbenzene          | ND                | 1.00      | **    |       |         |      |          |                                 |       |  |
| 1,3,5-Trimethylbenzene          | ND                | 1.00      | н     |       |         |      |          |                                 |       |  |
| Vinyl chloride                  | ND                | 0.200     | ж     |       |         |      |          |                                 |       |  |
| o-Xylene                        | ND                | 1.00      | 4     |       |         |      |          |                                 |       |  |
| m,p-Xylene                      | DИ                | 2.00      | я     |       |         |      |          |                                 |       |  |
| Surrogate: Dibromofluoromethane | 10.1              |           | п     | 10.0  |         | 101  | 62.9-131 |                                 |       |  |
| Surrogate: Toluene-d8           | 10,2              |           | n     | 10.0  |         | 102  | 58.7-133 |                                 |       |  |
| Surrogate: 4-bromofluorobenzene | 8.98              |           | н     | 10.0  |         | 89.8 | 60.8-140 |                                 |       |  |

North Creek Analytical - Spokane

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2003/ Empire Avenue, Julie 1-2, Jenu, OK 3775 541.383.9310 fax 541.382.7588 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 Anchorage

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

# Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

Reporting

Spike

| Analyte                      |               | Result        | Limit              | Units              | Level | Result                                 | %REC                          | Limits                                 | RPD                                    | Limit | Notes   |  |  |  |
|------------------------------|---------------|---------------|--------------------|--------------------|-------|--|-------------------------------|--|--|-------|---|--|--|--|
| Batch 5060118: Prep          | ared 06/16/05 | Using GC/MS V | olatiles           | стинемустрания ста | D     | 40000000000000000000000000000000000000 | subassossasierosisiero∜€0°€0° | ************************************** | ······································ |       | <u> 1950-lander manner för stande skalare</u> |  |  |  |
| LCS (5060118-BS1)            |               |               |                    |                    |       |  |                               |  |  |       |   |  |  |  |
| Benzene                      |               | 9.96          | 1.00               | ug/l               | 10.0  |  | 99.6                          | 67.4-116                               |  |       |   |  |  |  |
| Chlorobenzene                |               | 10.1          | 1.00               | *                  | 10.0  |  | 101                           | 68.3-123                               |  |       |   |  |  |  |
| 1,1-Dichloroethene           |               | 10.8          | 1.00               | n                  | 10.0  |  | 108                           | 67-137                                 |  |       |   |  |  |  |
| Toluene                      |               | 10.0          | 1.00               | и                  | 10.0  |  | 100                           | 68.8-139                               |  |       |   |  |  |  |
| Trichloroethene              |               | 9.64          | 1.00               | ь                  | 10.0  |  | 96.4                          | 68.1-128                               |  |       |   |  |  |  |
| Surrogate: Dibromofluorometh | nane          | 10.1          |                    | н                  | 10.0  |  | 101                           | 62.9-131                               |  |       |   |  |  |  |
| Surrogate: Toluene-d8        |               | 9.88          |                    | 11                 | 10.0  |  | 98.8                          | 58.7-133                               |  |       |   |  |  |  |
| Surrogaie: 4-bromofluorobenz | ene           | 9.04          |                    | te                 | 10.0  |  | 90.4                          | 60.8-140                               |  |       |   |  |  |  |
| Matrix Spike (5060118-M      | S1)           |               | Source: S5F0071-01 |                    |       |  |                               |  |  |       |   |  |  |  |
| Benzene                      |               | 10.6          | 1.00               | ug/l               | 10.0  | סא                                     | 106                           | 59.7-129                               |  |       |   |  |  |  |
| Chlorobenzene                |               | 10.3          | 1.00               | н                  | 10.0  | ND                                     | 103                           | 75.8-121                               |  |       |   |  |  |  |
| 1,1-Dichloroethene           |               | 8.01          | 1.00               | н                  | 10.0  | ND                                     | 108                           | 63.8-137                               |  |       |   |  |  |  |
| Toluene                      |               | 10.7          | 1.00               | nt                 | 10.0  | ND                                     | 107                           | 84.5-127                               |  |       |   |  |  |  |
| Trichloroethene              |               | 10.0          | 1.00               | R                  | 10.0  | ND                                     | 100                           | 75.5-129                               |  |       |   |  |  |  |
| Surrogate: Dibromofluorometi | hane          | 10.9          |                    | ri .               | 10.0  |  | 109                           | 62.9-131                               |  |       |   |  |  |  |
| Surrogate: Toluene-d8        |               | 10.3          |                    | "                  | 10.0  |  | 103                           | 58.7-133                               |  |       |   |  |  |  |
| Surrogate: 4-bromofluarobenz | ene           | 9.86          |                    | n                  | 10.0  |  | 98.6                          | 60.8-140                               |  |       |   |  |  |  |
| Matrix Spike Dup (50601      | 18-MSD1)      |               |                    |                    |       | Source: S                              | 5F0071-01                     |  |  |       |   |  |  |  |
| Benzene                      |               | 10.7          | 1.00               | ug/l               | 10.0  | ND                                     | 107                           | 59.7-129                               | 0.939                                  | 10    |   |  |  |  |
| Chlorobenzene                |               | 10.4          | 1.00               | ø                  | 10.0  | ND                                     | 104                           | 75.8-121                               | 0.966                                  | 1 \$  |   |  |  |  |
| 1,1-Dichloroethene           |               | 9.99          | 1.00               | n                  | 10.0  | ND                                     | 99,9                          | 63.8-137                               | 7.79                                   | 14    |   |  |  |  |
| Toluene                      |               | 10.6          | 1,00               | *                  | 10.0  | ND                                     | 106                           | 84.5-127                               | 0.939                                  | 12    |   |  |  |  |
| Trichloroethene              |               | 10.1          | 1.00               | tu                 | 10.0  | ND                                     | 101                           | 75.5-129                               | 0.995                                  | 10    |   |  |  |  |
| Surrogate: Dibromofluoromet  | hane          | 10.8          |                    | ,,                 | 10.0  |  | 108                           | 62.9-131                               |  |       |   |  |  |  |
| Surrogate: Toluene-d8        |               | 10.1          |                    | п                  | 10.0  |  | 101                           | 58.7-133                               |  |       |   |  |  |  |
| Surrogate: 4-bromofluorobena | tene          | 9.48          |                    | n                  | 10.0  |  | 94.8                          | 60.8-140                               |  |       |   |  |  |  |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director

North Creek Analytical, Inc. Environmental Laboratory Network Page 20 of 52



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%REC

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

# Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

Reporting

| Analyte                 |                   | Result        | Limit    | Units     | Level                               | Result   | %REC | Limits | RPD                                     | Limit                                  | Notes                                    |
|-------------------------|-------------------|---------------|----------|-----------|-------------------------------------|--|------|--------|---|--|--|
| Batch 5060180:          | Prepared 06/21/05 | Using GC/MS V | olatiles |           | namen and the second and the second | COMMON TO SERVICE OF THE PROPERTY OF THE PROPE |      |        |   | ************************************** | 2000-00-00-00-00-00-00-00-00-00-00-00-00 |
| Blank (5060180-BL       | K1)               |               |          |           |                                     |  |      |        |   |  |  |
| Acetone                 |                   | МD            | 1.00     | mg/kg wet |                                     |  |      |        | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |  |  |
| Benzene                 |                   | ND            | 0.0300   | N         |                                     |  |      |        |   |  |  |
| Bromobenzene            |                   | ИD            | 0.100    | le        |                                     |  |      |        |   |  |  |
| Bromochloromethane      |                   | ND            | 0.100    | м         |                                     |  |      |        |   |  |  |
| Bromodichloromethane    | :                 | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| Bromoform               |                   | ND            | 0.100    |           |                                     |  |      |        |   |  |  |
| Bromomethane            |                   | ND            | 0.500    | н         |                                     |  |      |        |   |  |  |
| 2-Butanone              |                   | ND            | 1.00     | *         |                                     |  |      |        |   |  |  |
| n-Butylbenzene          |                   | ND            | 0,100    | 44        |                                     |  |      |        |   |  |  |
| sec-Butylbenzene        |                   | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| tert-Butylbenzene       |                   | ND            | 0.100    | н         |                                     |  |      |        |   |  |  |
| Carbon disulfide        |                   | ND            | 0.100    |           |                                     |  |      |        |   |  |  |
| Carbon tetrachloride    |                   | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| Chlorobenzene           |                   | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| Chloroethane            |                   | ND            | 0,100    | *         |                                     |  |      |        |   |  |  |
| Chloroform              |                   | ND            | 0.100    | ef .      |                                     |  |      |        |   |  |  |
| Chloromethane           |                   | ND            | 0.500    | **        |                                     |  |      |        |   |  |  |
| 2-Chlorotoluene         |                   | ND            | 0.100    | и         |                                     |  |      |        |   |  |  |
| 4-Chlorotoluene         |                   | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| Dibromochloromethane    | •                 | ND            | 0.100    | •         |                                     |  |      |        |   |  |  |
| 1,2-Dibromo-3-chlorop   | ropane            | ND            | 0.500    | ĸ         |                                     |  |      |        |   |  |  |
| 1,2-Dibromoethane       |                   | ND            | 0.100    | Ħ         |                                     |  |      |        |   |  |  |
| Dibromomethane          |                   | ND            | 0.100    | r r       |                                     |  |      |        |   |  |  |
| 1,2-Dichlorobenzene     |                   | ND            | 0.100    | н         |                                     |  |      |        |   |  |  |
| 1,3-Dichlorobenzene     |                   | ND            | 0.100    | R         |                                     |  |      |        |   |  |  |
| 1,4-Dichlorobenzene     |                   | ND            | 0.100    | R.        |                                     |  |      |        |   |  |  |
| Dichlorodifluoromethan  | ne                | ND            | 0.100    | "         |                                     |  |      |        |   |  |  |
| 1,1-Dichloroethane      |                   | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| 1,2-Dichloroethane (ED  | DC)               | ND            | 0.100    | и         |                                     |  |      |        |   |  |  |
| 1,1-Dichloroethene      |                   | ND            | 0.100    | и         |                                     |  |      |        |   |  |  |
| cis-1,2-Dichloroethene  |                   | ND            | 0.100    | n         |                                     |  |      |        |   |  |  |
| trans-1,2-Dichloroether | ne                | ND            | 0.100    | н         |                                     |  |      |        |   |  |  |
| 1,2-Dichloropropane     |                   | ND            | 0.100    | R         |                                     |  |      |        |   |  |  |
| 1,3-Dichloropropane     |                   | ND            | 0.100    | *         |                                     |  |      |        |   |  |  |
| 2,2-Dichloropropane     |                   | ND            | 0.100    | и         |                                     |  |      |        |   |  |  |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director



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Portland

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%REC

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Limits

RPD

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Analyte

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

Limit

# Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

Units

Reporting

Limit

Result

1.04

0.676

Spike

Level

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|----------------------------------|--|--|---|--|--|----------|--|
| 3atch 5060180: Prepared 06/21/05 | Using GC/MS V  | olatiles   | irrodusvaisuudeen karjalooja jojakadaman kaikanaan aan ay | in the second  | i <del>nanan dadid 40 dippolijikanan bolosio nibilistatu o</del> |          | assi kannanga-ng-popularan kannan kannan kannas kannan kannan kannan kannan kannan kannan kannan kannan kannan |
| Blank (5060180-BLKI)             |  |  |   |  |  |          |  |
| ,1-Dichloropropene               | ND   | 0.100  | mg/kg wet   |  |  |          |  |
| ris-1,3-Dichloropropene          | ND   | 0.100  | и   |  |  |          |  |
| rans-1,3-Dichloropropene         | ND   | 0.100  | et  |  |  |          |  |
| Ethylbenzene                     | ND   | 0,100  | g   |  |  |          |  |
| dexachlorobutadiene              | ND   | 0.100  | 06  |  |  |          |  |
| 2-Hexanone                       | ND   | 1.00   | н.  |  |  |          |  |
| sopropylbenzene                  | ND   | 0.100  | ж   |  |  |          |  |
| p-Isopropyltoluene               | ND   | 0.100  | 'n  |  |  |          |  |
| Methylene chloride               | ND   | 1.00   | N   |  |  |          |  |
| 4-Methyl-2-pentanone             | ND   | 1.00   | N   |  |  |          |  |
| Methyl tert-butyl ether          | ND   | 0.100  | н   |  |  |          |  |
| Naphthalene                      | ND   | 0.100  | te.   |  |  |          |  |
| n-Propylbenzene                  | ND   | 0.100  | **  |  |  |          |  |
| Styrene                          | ND   | 0.100  | *   |  |  |          |  |
| I, I, I, 2-Tetrachloroethane     | ND   | 0.100  | *   |  |  |          |  |
| 1,1,2,2-Tetrachloroethane        | ND   | 0.100  | tí  |  |  |          |  |
| Tetrachloroethene                | ND   | 0.0300   | R   |  |  |          |  |
| Toluene                          | ND   | 0.100  | *   |  |  |          |  |
| 1,2,3-Trichlorobenzene           | ND   | 0.100  |   |  |  |          |  |
| 1,2,4-Trichlorobenzene           | ND   | 0.100  | *   |  |  |          |  |
| 1,1,1-Trichloroethane            | ND   | 0.100  |   |  |  |          |  |
| 1,1,2-Trichloroethane            | ND   | 0.100  | 44  |  |  |          |  |
| Trichloroethene                  | ND   | 0.0300   | și  |  |  |          |  |
| Trichlorofluoromethane           | ND   | 0.100  | n   |  |  |          |  |
| 1,2,3-Trichloropropane           | ND   | 0.100  | *   |  |  |          |  |
| 1,2,4-Trimethylbenzene           | ND   | 0.100  | н   |  |  |          |  |
| 1,3,5-Trimethylbenzene           | ND   | 0.100  | ń   |  |  |          |  |
| Vinyl chloride                   | ND   | 0.100  | 10  |  |  |          |  |
| o-Xylene                         | ND   | 0.200  | H   |  |  |          |  |
| m,p-Xylene                       | ND   | 0.400  | п   |  |  |          |  |
| Surrogate: Dibromofluoromethane  | 1.05   |  | p   | 1.00   | 105  | 44,8-146 |  |

1.00

1.00

North Creek Analytical - Spokane

Surrogate: 4-bromofluorobenzene

Surrogate: Toluene-d8

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104

67.6

North Creek Analytical, Inc. Environmental Laboratory Network

62.3-143

52.5-138

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Anchorage

Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

# Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

|                                  | <del>мененде спососствосков выпосну у 1400 година, соб</del> ен <del>ия посос</del> твення в | Reporting | O CONTRACTOR OF THE PARTY OF TH | Spike | Source     | <del>WWW.memaammeaaay</del> | %REC     | <u>Laboratoria de la constitución </u> | RPD   |       |
|----------------------------------|--|-----------|--|-------|------------|-----------------------------|----------|--|-------|-------|
| Analyte                          | Result   | Limit     | Units  | Level | Result     | %REC                        | Limits   | RPD  | Limit | Notes |
| Batch 5060180: Prepared 06/21/05 | Using GC/MS  | Volatiles |  |       |            |                             |          |  |       |       |
| LCS (5060180-BSI)                |  |           |  |       |            |                             |          |  |       |       |
| Benzene                          | 0.522  | 0.0300    | mg/kg wet  | 0.500 |            | 104                         | 72.5-130 | *****************  |       |       |
| Chlorobenzene                    | 0.510  | 0.100     | н  | 0,500 |            | 102                         | 78.4-120 |  |       |       |
| 1,1-Dichloroethene               | 0.602  | 0.100     | u  | 0.500 |            | 120                         | 50-150   |  |       |       |
| Toluene                          | 0,526  | 0.100     | л  | 0.500 |            | 105                         | 75.3-120 |  |       |       |
| Trichloroethene                  | 0.495  | 0.0300    | 7  | 0.500 |            | 99.0                        | 64.5-131 |  |       |       |
| Surrogate: Dibromafluoromethane  | 1.06   | *         | "  | 1.00  |            | 106                         | 44.8-146 |  |       |       |
| Surrogate: Toluene-d8            | 0.996  |           | u  | 1.00  |            | 99.6                        | 62.3-143 |  |       |       |
| Surrogate: 4-bromofluorobenzene  | 0.976  |           | H  | 1.00  |            | 97.6                        | 52.5-138 |  |       |       |
| LCS Dup (5060180-BSD1)           |  |           |  |       |            |                             |          |  |       |       |
| Benzene                          | 0.513  | 0.0300    | mg/kg wet  | 0.500 |            | 103                         | 72.5-130 | 1.74   | 25    |       |
| Chlorobenzene                    | 0.509  | 0.100     | **   | 0.500 |            | 102                         | 78.4-120 | 0.196  | 25    |       |
| 1,1-Dichloroethene               | 0.602  | 0.100     | и  | 0.500 |            | 120                         | 50-150   | 0.00   | 25    |       |
| Toluene                          | 0.514  | 0.100     | ĸ  | 0.500 |            | 103                         | 75.3-120 | 2.31   | 25    |       |
| Trichloroethene                  | 0.483  | 0.0300    | н  | 0.500 |            | 96.6                        | 64.5-131 | 2.45   | 25    |       |
| Surrogate: Dibromofluoromethane  | 1.02   |           | п  | 1.00  |            | 102                         | 14.8-146 |  |       |       |
| Surrogate: Toluene-d8            | 0.964  |           | n  | 1.00  |            | 96.4                        | 62.3-143 |  |       |       |
| Surrogate: 4-bromofluorobenzene  | 0.892  |           | u  | 1.00  |            | 89.2                        | 52.5-138 |  |       |       |
| Matrix Spike (5060180-MS1)       |  |           |  |       | Source: S5 | F0135-02                    |          |  |       |       |
| Benzene                          | 0.658  | 0.0300    | mg/kg dry  | 0.769 | ND         | 85.6                        | 62-130   |  |       |       |
| Chlorobenzene                    | 0.652  | 0.100     | н  | 0.769 | ND         | 84.8                        | 70,3-119 |  |       |       |
| I, I-Dichloroethene              | 0.758  | 0.100     | ri   | 0.769 | ND         | 98.6                        | 50-150   |  |       |       |
| Toluene                          | 0.675  | 0.100     | ж  | 0.769 | 0.0514     | 81.1                        | 63.8-120 |  |       |       |
| Trichloroethene                  | 0.621  | 0.0300    | 46   | 0,769 | ND         | 80.8                        | 73.9-122 |  |       |       |
| Surrogate: Dibromofluoromethane  | 1.51   |           | "  | 1.54  |            | 98.1                        | 14.8-146 |  |       |       |
| Surrogate: Toluene-d8            | 1.26   |           | *  | 1.54  |            | 81.8                        | 62.3-143 |  |       |       |
| Surrogate: 4-bromofluorobenzene  | 1.40   |           | **   | 1.54  |            | 90.9                        | 52.5-138 |  |       |       |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### North Creek Analytical - Spokane

Spike

Reporting

| Analyte                          | Result        | Limit     | Units     | Level | Result     | %REC     | Limits   | RPD   | Limit   | Notes |
|----------------------------------|---------------|-----------|-----------|-------|------------|----------|----------|-------|---|-------|
| Batch 5060180: Prepared 06/21/05 | Using GC/MS V | /olatiles |           |       |            |          |          |       | solution de la constitución de la c |       |
| Matrix Spike Dup (5060180-MSD1)  |               |           |           |       | Source: SS | F0135-02 |          |       |   |       |
| Benzene                          | 0.666         | 0.0300    | mg/kg dry | 0.769 | ND         | 86.6     | 62-130   | 1.21  | 25  |       |
| Chlorobenzene                    | 0.673         | 0.100     | и         | 0.769 | ND         | 87.5     | 70.3-119 | 3.17  | 25  |       |
| 1,1-Dichloroethene               | 0.665         | 0,100     | P         | 0.769 | ND         | 86.5     | 50-150   | 13.1  | 25  |       |
| Toluene                          | 0.681         | 0.100     | IR.       | 0.769 | 0.0514     | 81.9     | 63.8-120 | 0.885 | 25  |       |
| Trichlorgethene                  | 0.613         | 0.0300    | R         | 0.769 | ND         | 79.7     | 73.9-122 | 1,30  | 25  |       |
| Surrogate: Dibromofluoromethane  | 1.42          |           | и         | 1.54  |            | 92.2     | 44.8-146 |       |   |       |
| Surrogate: Toluene-d8            | 1.22          |           | u         | 1.54  |            | 79.2     | 62.3-143 |       |   |       |
| Surrogate: 4-bromofluorobenzene  | 1.27          |           | n         | 1.54  |            | 82.5     | 52.5-138 |       |   |       |

North Creek Analytical - Spokane

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North Creek Analytical, Inc. Environmental Laboratory Network Page 24 of 52



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Spokane

Portland

11322 E. ISI AVERIUE, Spidkale Valley, WA 37200-3312 509.924.9200 (ax 509.924.9290) 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210 20332 Empire Avenue, Sulte F-1, Bend, OR 97701-5711

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control North Creek Analytical - Spokane

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|--------------------|--|--|-----------|---|---|-----------------------------------|--|--------|--|-------|---------|
| Analyte            |  | Result                                 | Limit     | Units   | Level   | Result                            | %REC   | Limits | RPD  | Limit | Notes   |
| Batch 5060139:     | Prepared 06/16/05                      | Using Wet Chem                         |           |   | historia  | e ja gjelder i de jergenske somme |  |        | - William Programme Company  |       |         |
| Blank (5060139-BL  | K1)                                    |  |           |   |   |                                   |  |        |  |       |         |
| Cyanide (total)    |  | ND                                     | 0.00500   | mg/l  |   |                                   |  |        |  |       |         |
| LCS (5060139-BS1)  | )                                      |  |           |   |   |                                   |  |        |  |       |         |
| Cyanide (total)    |  | 0.0523                                 | 0.00500   | mg/l  | 0.0500  |                                   | 105  | 56-120 |  |       |         |
| Duplicate (5060139 | -DUPI)                                 |  |           |   |   | Source: S5                        | F0090-08   |        |  |       |         |
| Cyanide (total)    |  | ND                                     | 0.00500   | mg/l  |   | ND                                |  |        |  | 18    | ******* |
| Batch 5060182:     | Prepared 06/22/05                      | Using Wet Chem                         |           | eirektistaansierun terenaarun manneiikkis jär | N/O DA MARIO DE MONTO DE LA CONTRACTOR DE |                                   | a promonent and the California in the California |        |  |       |         |
| LCS (5060182-BS1)  | )                                      |  |           |   |   |                                   |  |        |  |       |         |
| рН                 |  | 6.94                                   |           | pH Units                                      | 7.00  |                                   | 99.1   | 80-120 |  |       |         |
| Duplicate (5060182 | -DUPI)                                 |  |           |   |   | Source: S5                        | F0121-01   |        |  |       |         |
| рН                 |  | 8.17                                   |           | pH Units                                      |   | 8.21                              | ***************************************  |        | 0.488  | 20    |         |
| Batch 5060229:     | Prepared 06/28/05                      | Using Wet Chem                         | 1         |   |   |                                   |  |        |  |       |         |
| Blank (5060229-BL  | KI)                                    |  |           |   |   |                                   |  |        |  |       |         |
| Cyanide (total)    |  | ND                                     | 0.0500    | mg/kg   |   |                                   |  |        |  |       |         |
| LCS (5060229-BS1)  | )                                      |  |           |   |   |                                   |  |        |  |       |         |
| Cyanide (total)    |  | 0.0543                                 | 0.00500   | mg/kg   | 0,0500  |                                   | 109  | 56-120 |  |       |         |
| Duplicate (5060229 | -DUP1)                                 |  |           |   |   | Source: S5                        | F0090-01   |        |  |       |         |
| Cyanide (total)    |  | ND                                     | 0.0500    | mg/kg   |   | ND                                |  |        |  | 20    |         |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

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|----------------|-----------|------------------------|--|--------|--|--------|---------------------------|-------|--|---|
|                | Reporting |                        | Spike  | Source |  | %REC   |                           | RPD   |  |   |
| Analyte Result | Limit     | Units                  | Level  | Result | %REC   | Limits | RPD                       | Limit | Notes  |   |

| Batch 5F24051:       | Prepared 06/24/05 | Using EPA 3550B | miconanovonéozov | 22200211111112222222222222222222222222 | neumanneum Section (1980) |      |        | *************************************** |
|----------------------|-------------------|-----------------|------------------|--|---------------------------|------|--------|---|
| Blank (5F24051-B     | LKI)              |                 |                  |  |                           |      |        |   |
| Aldrin               |                   | ND              | 1.00             | ug/kg wet                              |                           |      |        |   |
| alpha-BHC            |                   | ND              | 1.00             | *                                      |                           |      |        |   |
| beta-BHC             |                   | ND              | 2.00             | н                                      |                           |      |        |   |
| delta-BHC            |                   | ND              | 1.00             | н                                      |                           |      |        |   |
| gamma-BHC (Lindan    | <b>c</b> )        | ND              | 1.00             | N                                      |                           |      |        |   |
| Chlordane (tech)     |                   | ND              | 10.0             | ж                                      |                           |      |        |   |
| alpha-Chlordane      |                   | ND              | 1.00             | er                                     |                           |      |        |   |
| gamma-Chlordane      |                   | ND              | 1.00             | #                                      |                           |      |        |   |
| 4,4'-DDD             |                   | dИ              | 2.00             | H                                      |                           |      |        |   |
| 4,4'-DDE             |                   | ИД              | 2.00             | H                                      |                           |      |        |   |
| 4,4'-DDT             |                   | ND              | 2.00             | in                                     |                           |      |        |   |
| Dieldrin             |                   | ND              | 2.00             | Ħ                                      |                           |      |        |   |
| Endosulfan I         |                   | ND              | 1.00             | к                                      |                           |      |        |   |
| Endosulfan II        |                   | ND              | 2.00             | ń                                      |                           |      |        |   |
| Endosulfan sulfate   |                   | ND              | 2.00             | и                                      |                           |      |        |   |
| Endrin               |                   | ND              | 2.00             | *                                      |                           |      |        |   |
| Endrin aldehyde      |                   | מא              | 2.00             | H                                      |                           |      |        |   |
| Endrin ketone        |                   | ND              | 2.00             | н                                      |                           |      |        |   |
| Heptachlor           |                   | ИИ              | 1.00             | н                                      |                           |      |        |   |
| Heptachlor epoxide   |                   | ОИ              | 1.00             | н                                      |                           |      |        |   |
| Methoxychlor         |                   | ND              | 2.00             | к                                      |                           |      |        |   |
| Toxaphene            |                   | ND              | 50.0             | M                                      |                           |      |        |   |
| Surrogate: TCX       | <u></u>           | 6.63            |                  | u                                      | 6.67                      | 99.4 | 47-134 |   |
| Surrogate: Decachlos | robiphenyl        | 6.46            |                  | n                                      | 6.67                      | 96.9 | 35-151 |   |
| LCS (5F24051-BS      | ii)               |                 |                  |  |                           |      |        |   |
| Aldrin               |                   | 9.25            | 1.00             | ug/kg wet                              | 8.33                      | 111  | 60-125 |   |
| alpha-BHC            |                   | 8.22            | 1.00             | н                                      | 8.33                      | 98.7 | 61-125 |   |
| beta-BHC [2C]        |                   | 8,49            | 2.00             | и                                      | 8.33                      | 102  | 37-147 | P-03                                    |
| delta-BHC            |                   | 8.07            | 1.00             | м                                      | 8.33                      | 96.9 | 57-110 |   |
| gamma-BHC (Lindar    | ie)               | 8.58            | 1.00             | <b>H</b>                               | 8.33                      | 103  | 61-125 |   |
| alpha-Chlordane      |                   | 8.39            | 1.00             | н                                      | 8.33                      | 101  | 35-151 |   |
| gamma-Chlordane      |                   | 8.51            | 1.00             | a                                      | 8.33                      | 102  | 65-125 |   |
| 4,4"-DDD             |                   | 16.6            | 2.00             | и                                      | 16.7                      | 99.4 | 70-125 |   |
| 4,4"-DDE             |                   | 16.3            | 2.00             | e                                      | 16.7                      | 97.6 | 69-125 |   |
|                      |                   |                 |                  |  |                           |      |        |   |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Reporting

| Analyte                          | Result          | Limit | Units     | Level | Result   | %REC                         | Límits                                  | RPD  | Limit       | Notes                                   |
|----------------------------------|-----------------|-------|-----------|-------|----------|------------------------------|---|------|-------------|---|
| Batch 5F24051: Prepared 06/24/05 | Using EPA 3550B |       |           |       |          | west transport to the second | *************************************** |      |             |   |
| LCS (5F24051-BS1)                |                 |       |           |       |          |                              |   |      |             |   |
| 4,4'-DDT                         | 16.0            | 2.00  | ug/kg wet | 16.7  |          | 95.8                         | 60-127                                  |      | ~~~~~~~~~~  |   |
| Dieldrin                         | 16.5            | 2.00  | м         | 16.7  |          | 98.8                         | 59-128                                  |      |             |   |
| Endosulfan I                     | 7.73            | 1.00  | ×         | 8.33  |          | 92.8                         | 32-153                                  |      |             |   |
| Endosulfan II                    | 17.9            | 2.00  | *         | 16.7  |          | 107                          | 61-125                                  |      |             |   |
| Endosulfan sulfate               | 17.3            | 2.00  | *         | 16.7  |          | 104                          | 56-125                                  |      |             |   |
| Endrin                           | 15.9            | 2.00  |           | 16.7  |          | 95.2                         | 58-132                                  |      |             |   |
| Endrin aldehyde [2C]             | 18.3            | 2.00  | **        | 16.7  |          | 110                          | 22-144                                  |      |             | P-0:                                    |
| Endrin ketone                    | 17.4            | 2.00  | н         | 16.7  |          | 104                          | 50-140                                  |      |             |   |
| Heptachlor                       | 7.42            | 1.00  | н         | 8.33  |          | 89.1                         | 59-125                                  |      |             | P-03                                    |
| Heptachlor epoxide               | 8.12            | 1.00  | ĸ         | 8.33  |          | 97.5                         | 55-125                                  |      |             |   |
| Methoxychlor                     | 75.7            | 2.00  | *         | 83.3  |          | 90.9                         | 50-135                                  |      |             |   |
| Surrogate: TCX                   | 6.31            |       | и         | 6,67  | <u> </u> | 94.6                         | 47-134                                  |      | <del></del> | 4************************************** |
| Surrogate: Decachlorobiphenyl    | 6.85            |       | μ         | 6.67  |          | 103                          | 35-151                                  |      |             |   |
| LCS Dup (5F24051-BSD1)           |                 |       |           |       |          |                              |   |      |             |   |
| Aldrin                           | 7.32            | 1.00  | ug/kg wet | 8.33  |          | 87.9                         | 60-125                                  | 23.3 | 30          |   |
| alpha-BHC                        | 7.25            | 1.00  | н         | 8.33  |          | 87.0                         | 61-125                                  | 12.5 | 35          |   |
| beta-BHC [2C]                    | 7.96            | 2.00  | Pr .      | 8,33  |          | 95.6                         | 37-147                                  | 6.44 | 35          |   |
| delta-BHC                        | 7.02            | 1.00  | 19        | 8.33  |          | 84.3                         | 57-110                                  | 13.9 | 35          |   |
| gamma-BHC (Lindane)              | 7.05            | 1.00  | 10        | 8.33  |          | 84.6                         | 61-125                                  | 19.6 | 30          |   |
| alpha-Chlordane                  | 7.18            | 1.00  | **        | 8.33  |          | 86.2                         | 35-151                                  | 15.5 | 35          |   |
| gamma-Chlordane                  | 7.34            | 1.00  | u         | 8.33  |          | 88.1                         | 65-125                                  | 14.8 | 35          |   |
| 4,4'-DDD                         | 14.5            | 2.00  | *         | 16.7  |          | 86.8                         | 70-125                                  | 13.5 | 35          |   |
| 4,4'-DDE                         | 14.6            | 2.00  | к         | 16.7  |          | 87.4                         | 69-125                                  | 11.0 | 35          |   |
| 4,4'-DDT                         | 13.5            | 2.00  | s         | 16.7  |          | 8.08                         | 60-127                                  | 16.9 | 35          |   |
| Dieldrin                         | 14.7            | 2.00  | N         | 16.7  |          | 88.0                         | 59-128                                  | 11.5 | 35          |   |
| Endosulfan I                     | 6.80            | 1.00  | *         | 8.33  |          | 81.6                         | 32-153                                  | 12.8 | 35          |   |
| Endosulfan II                    | 15.6            | 2.00  | •         | 16.7  |          | 93.4                         | 61-125                                  | 13.7 | 35          |   |
| Endosulfan sulfate               | 16.2            | 2.00  | n         | 16.7  |          | 97.0                         | 56-125                                  | 6.57 | 35          |   |
| Endrin                           | 14.5            | 2.00  | ч         | 16.7  |          | 86.8                         | 58-132                                  | 9.21 | 35          |   |
|                                  |                 |       |           |       |          |                              |   |      |             |   |

16.7

16.7

8.33

8.33

83.3

North Creek Analytical - Spokane

Endrin aldehyde [2C]

Heptachlor epoxide

Endrin ketone

Methoxychlor

Heptachlor

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85.6

98.8

75.4

88.6

86.6

22-144

50-140

59-125

55-125

50-135

24.5

5.31

16.6

9.55

4.87

35

35

30

35

35

Dennis D Wells, Laboratory Director

14.3

16.5

6.28

7.38

72.1

2.00

2.00

1.00

1.00

2.00



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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

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|---------|--|-----------|------------------------------|--------|--|------|--------|-----|-------|--|----|
|         |  | Reporting |                              | Spike  | Source   |      | %REC   |     | RPD   |  | i  |
|         |  | rechount  |                              | Spinis |  |      |        |     |       |  | Ĺ  |
| Analyte | Result   | Limit     | Units                        | Level  | Result   | %REC | Limits | RPD | Limit | Notes  | Ė  |
| rusayte |  |           |                              |        |  |      |        |     |       |  | ŝ. |

| Analyte                          | Acsun           | Pittit | Once   | 2000                                   |           | , v1 CD C                               |                        |  | and the same of th |  |
|----------------------------------|-----------------|--------|--|--|-----------|---|------------------------|--|--|--|
| Batch 5F24051: Prepared 06/24/05 | Using EPA 3550B |        | and the second s | 90000000000000000000000000000000000000 |           | *************************************** | essential descriptions | OLONOUS ACCUSANCE AND A STATE OF THE STATE O |  | TO COLUMN TO SERVE T |
| LCS Dup (5F24051-BSD1)           |                 |        | ***  |  |           |   |                        |  |  |  |
| Surragate: TCX                   | 5.89            |        | ug/kg wet  | 6.67                                   |           | 88.3                                    | 47-134                 |  |  |  |
| Surrogate: Decachlorobiphenyl    | 6,48            |        | и  | 6.67                                   |           | 97.2                                    | 35-151                 |  |  |  |
| Matrix Spike (5F24051-MS1)       |                 |        |  |  | Source: B | 5F0427-12                               |                        |  |  | Χ  |
| Aldrin                           | 4.24            | 0,499  | ug/kg dry  | 4.76                                   | ND        | 89.1                                    | 51-125                 |  |  |  |
| alpha-BHC                        | 3,95            | 0.499  | 16   | 4.76                                   | ND        | 83.0                                    | 39-125                 |  |  |  |
| beta-BHC                         | 3.96            | 0.998  | н  | 4.76                                   | ND        | 83.2                                    | 13-152                 |  |  |  |
| delta-BHC                        | 3.82            | 0.499  | н  | 4.76                                   | DИ        | 80.3                                    | 21-133                 |  |  |  |
| gamma-BHC (Lindane)              | 3.87            | 0.499  | н  | 4.76                                   | ИD        | 81.3                                    | 36-125                 |  |  |  |
| alpha-Chlordane                  | 3,92            | 0.499  | ч  | 4.76                                   | ND        | 82.4                                    | 24-156                 |  |  |  |
| gamma-Chlordane                  | 4.25            | 0.499  | н  | 4.76                                   | ND        | 89.3                                    | 34-143                 |  |  |  |
| 4,4'-DDD                         | 6.94            | 0.998  | н  | 9.52                                   | ND        | 72.9                                    | 29-153                 |  |  |  |
| 4,4'-DDE                         | 7.94            | 0.998  | к  | 9.52                                   | ND        | 83.4                                    | 30-160                 |  |  |  |
| 4,4°-DDT                         | 7.59            | 0.998  | ×  | 9.52                                   | ND        | 79.7                                    | 31-149                 |  |  |  |
| Dieldrin                         | 7.97            | 0.998  | ш  | 9.52                                   | ND        | 83,7                                    | 41-134                 |  |  |  |
| Endosulfan I                     | 3.65            | 0.499  | н  | 4.76                                   | ND        | 76.7                                    | 20-155                 |  |  |  |
| Endosulfan II                    | 7.94            | 0.998  | н  | 9.52                                   | ND        | 83.4                                    | 30-140                 |  |  |  |
| Endosulfan sulfate               | 8.80            | 0.998  | п  | 9.52                                   | ND        | 92.4                                    | 14-143                 |  |  |  |
| Endrin                           | 7.26            | 0.998  | *  | 9.52                                   | ND        | 76.3                                    | 42-137                 |  |  |  |
| Endrin aldehyde                  | 7.26            | 0.998  | н  | 9.52                                   | ND        | 76.3                                    | 10-144                 |  |  |  |
| Endrin ketone                    | 7.18            | 0.998  | н  | 9.52                                   | ND        | 75.4                                    | 14-149                 |  |  |  |
| Heptachlor                       | 3.43            | 0.499  | м  | 4.76                                   | ND        | 72.1                                    | 43-125                 |  |  |  |
| Heptachlor epoxide               | 3.86            | 0.499  | **   | 4.76                                   | ND        | 81.1                                    | 51-125                 |  |  |  |
| Methoxychlor                     | 36.0            | 0.998  | н  | 47.6                                   | ND        | 75.6                                    | 24-138                 |  |  |  |
| Surrogate: TCX                   | 3.19            |        | "  | 3.81                                   |           | 83.7                                    | 47-134                 |  |  |  |
| Surrogate: Decachlorobiphenyl    | 3.34            |        | и  | 3.81                                   |           | 87.7                                    | 35-151                 |  |  |  |
| Matrix Spike (5F24051-MS3)       |                 |        |  |  | Source: B | 5F0427-12                               |                        |  |  |  |
| Aldrin                           | 3.98            | 4,99   | ug/kg dry  | 4.76                                   | ND        | 83.6                                    | 51-125                 |  |  |  |
| alpha-BHC                        | 4.06            | 4.99   | 44   | 4.76                                   | ND        | 85,3                                    | 39-125                 |  |  |  |
| beta-BHC                         | 3.87            | 9.98   | 44   | 4.76                                   | ND        | 81.3                                    | 13-152                 |  |  |  |
| delta-BHC                        | 3.93            | 4.99   | ri   | 4.76                                   | ND        | 82.6                                    | 21-133                 |  |  |  |
| gamma-BHC (Lindane)              | 3,68            | 4,99   | н  | 4,76                                   | ND        | 77.3                                    | 36-125                 |  |  |  |
| aipha-Chiordane                  | 4.08            | 4.99   | 4  | 4.76                                   | ND        | 85.7                                    | 24-156                 |  |  |  |
| gamma-Chlordane                  | 4,30            | 4,99   | и  | 4.76                                   | ND        | 90.3                                    | 34-143                 |  |  |  |
| 4,4'-DDD                         | 7.66            | 9.98   | *  | 9.52                                   | ND        | 80.5                                    | 29-153                 |  |  |  |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Reporting

|                                  | •                 | cehorning      |           | apire        | 30000      |          | MINEC  |       | K.F.D     |              |
|----------------------------------|-------------------|----------------|-----------|--------------|------------|----------|--------|-------|-----------|--------------|
| Analyte                          | Result            | Limit          | Units     | Level        | Result     | %REC     | Limits | RPD   | Limit     | Notes        |
| Batch 5F24051: Prepared 06/24/05 | 5 Using EPA 3550B |                |           |              |            |          |        |       |           | 400404040404 |
| Matrix Spike (5F24051-MS3)       |                   |                |           |              | Source: B5 | F0427-12 |        |       |           |              |
| 4,4'-DDE                         | 8.56              | 9.98           | ug∕kg dry | 9.52         | ND         | 89,9     | 30-160 |       | P47-144-1 |              |
| 4,4'-DDT                         | 8.40              | 9.98           | ĸ         | 9.52         | ND         | 88.2     | 31-149 |       |           |              |
| Dieldrin                         | 8.67              | 9,98           | 0         | 9.52         | ND         | 91.1     | 41-134 |       |           |              |
| Endosulfan i                     | 3.82              | 4.99           | м         | 4.76         | ND         | 80.3     | 20-155 |       |           |              |
| Endosulfan II                    | 8.78              | 9.98           | н         | 9.52         | ND         | 92.2     | 30-140 |       |           |              |
| Endosulfan sulfate               | 10.0              | 9.98           | N         | 9.52         | ND         | 105      | 14-143 |       |           |              |
| Endrin                           | 7.72              | 9.98           | я         | 9.52         | ND         | 81.1     | 42-137 |       |           |              |
| Endrin aldehyde                  | 8.64              | 9,98           | **        | 9.52         | ND         | 90.8     | 10-144 |       |           |              |
| Endrin ketone                    | 8.68              | 9.98           | н         | 9.52         | ND         | 91.2     | 14-149 |       |           |              |
| Heptachlor                       | 3.54              | 4.99           | ж         | 4.76         | מא         | 74.4     | 43-125 |       |           |              |
| Heptachlor epoxide               | 4.76              | 4.99           | н         | 4.76         | ND         | 100      | 51-125 |       |           |              |
| Methoxychior                     | 42.7              | 9.98           | н         | 47.6         | ND         | 89.7     | 24-138 |       |           |              |
| Surrogate: TCX                   | 3.41              |                | н         | 3.81         |            | 89.5     | 47-134 |       |           |              |
| Surrogate: Decachlorobiphenyl    | 3.71              |                | n         | 3.81         |            | 97.4     | 35-151 |       |           |              |
| Matrix Spike Dup (5F24051-MSD1)  |                   |                |           |              | Source: BS | F0427-12 |        |       |           | х            |
| Aldrin                           | 3,99              | 0.498          | ug∕kg dry | 4.75         | ND         | 84.0     | 51-125 | 6.08  | 35        |              |
| alpha-BHC                        | 3.89              | 0.498          | я         | 4.75         | ND         | 81.9     | 39-125 | 1,53  | 35        |              |
| beta-BHC                         | 3.64              | 0.997          | *         | 4.75         | ND         | 76.6     | 13-152 | 8.42  | 35        |              |
| delta-BHC                        | 3.53              | 0.498          | *         | 4.75         | ND         | 74.3     | 21-133 | 7,89  | 35        |              |
| gamma-BHC (Lindane)              | 3.84              | 0.498          | *         | 4.75         | ND         | 80.8     | 36-125 | 0.778 | 35        |              |
| alpha-Chlordane                  | 3.67              | 0.498          | H         | 4.75         | ND         | 77.3     | 24-156 | 6.59  | 35        |              |
| gamma-Chlordane                  | 3.88              | 0.498          | n         | 4.75         | ND         | 81.7     | 34-143 | 9.10  | 35        |              |
| 4,4'-DDD                         | 6.95              | 0.997          | n         | 9.50         | ND         | 73.2     | 29-153 | 0.144 | 35        |              |
| 4,4'-DDE                         | 7.61              | 0.997          | N         | 9.50         | ND         | 80.1     | 30-160 | 4.24  | 35        |              |
| 4,4'-DDT                         | 7.82              | 0.997          | 4         | 9.50         | ND         | 82.3     | 31-149 | 2.99  | 35        |              |
| Dieldrin                         | 7.71              | 0.997          | N N       | 9.50         | ND         | 81.2     | 41-134 | 3,32  | 35        |              |
| Endosulfan 1                     | 3.41              | 0.498          | п         | 4.75         | ND         | 71.8     | 20-155 | 6.80  | 35        |              |
| Endosulfan II                    | 7.69              | 0.997          | 11        | 9.50         | ND         | 80.9     | 30-140 | 3.20  | 35        |              |
| Endosulfan sulfate               | 8.48              | 0.997          | *         | 9.50         | ND         | 89.3     | 14-143 | 3.70  | 35        |              |
| Endrin                           | 7.35              | 0.997          | 14        | 9.50         | ND         | 77.4     | 42-137 | 1.23  | 35        |              |
| Endrin aldehyde                  | 7.08              | 0.997          | H         | 9,50         | ND         | 74.5     | 10-144 | 2.51  | 35        |              |
| Endrin ketone                    |                   |                |           |              |            | 70.7     | 14 140 | 4.09  | 35        |              |
| Enarin ketone                    | 7.48              | 0.997          | **        | 9.50         | ND         | 78.7     | 14-149 | 4.09  | 33        |              |
| Heptachlor                       | 7.48<br>3.42      | 0,997<br>0,498 | **        | 9.50<br>4.75 | ND<br>ND   | 78.7     | 43-125 | 0.292 | 35        |              |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

|                                  | Re              | porting |           | Spike | Source                      | endelik de de en | %REC   | *************************************** | RPD                  |       |
|----------------------------------|-----------------|---------|-----------|-------|-----------------------------|--|--|---|----------------------|-------|
| Analyte                          | Result          | Limit   | Units     | Level | Result                      | %REC   | Limits   | RPD                                     | Limit                | Notes |
| Batch 5F24051: Prepared 06/24/05 | Using EPA 3550B |         |           |       | прифессионализация в подати | ggassamoocaasooo                                     | and the second s | MG-45-totalismannes-emisso-e            | - Syndon water water |       |
| Matrix Spike Dup (5F24051-MSD1)  |                 |         |           |       | Source: B                   | 5F0427-12  |  |   |                      | X     |
| Methoxychlor                     | 37.2            | 0.997   | ug/kg dry | 47.5  | ND                          | 78,3   | 24-138   | 3.28                                    | 35                   |       |
| Surrogaie: TCX                   | 3.12            |         | a         | 3.80  |                             | 82.1   | 47-134   |   |                      |       |
| Surrogate: Decachlorobiphenyl    | 3.67            |         | n         | 3.80  |                             | 96.6   | 35-151   |   |                      |       |
| Matrix Spike Dup (5F24051-MSD3)  |                 |         |           |       | Source: B                   | 5F0427-12  |  |   |                      |       |
| Aldrin                           | 3,97            | 4.98    | ug/kg dry | 4.75  | ND                          | 83.6   | 51-125   | 0.252                                   | 35                   |       |
| alpha-BHC                        | 3.92            | 4.98    | ĸ         | 4.75  | ND                          | 82.5   | 39-125   | 3.51                                    | 35                   |       |
| beta-BHC                         | 3.69            | 9.97    | н         | 4.75  | ND                          | 77.7   | 13-152   | 4.76                                    | 35                   |       |
| delta-BHC                        | 3.64            | 4.98    | w         | 4.75  | ND                          | 76.6   | 21-133   | 7.66                                    | 35                   |       |
| gamma-BHC (Lindane)              | 3.60            | 4.98    | н         | 4.75  | ND                          | 75.8   | 36-125   | 2.20                                    | 35                   |       |
| alpha-Chlordane                  | 4.03            | 4.98    | и         | 4.75  | ND                          | 84.8   | 24-156   | 1.23                                    | 35                   |       |
| gamma-Chlordane                  | 4.16            | 4.98    | *         | 4.75  | ND                          | 87.6   | 34-143   | 3.31                                    | 35                   |       |
| 4,4'-DDD                         | 7.49            | 9.97    | 4         | 9.50  | ND                          | 78.8   | 29-153   | 2.24                                    | 35                   |       |
| 4,4'-DDE                         | 8.56            | 9.97    | к         | 9.50  | ND                          | 90.1   | 30-160   | 0.00                                    | 35                   |       |
| 4,4'-DDT                         | 8.11            | 9.97    | н         | 9.50  | ND                          | 85.4   | 31-149   | 3.51                                    | 35                   |       |
| Dieldrin                         | 8.55            | 9.97    | șt.       | 9,50  | ND                          | 90.0   | 41-134   | 1.39                                    | 35                   |       |
| Endosulfan I                     | 3.78            | 4.98    | н         | 4.75  | ND                          | 79.6   | 20-155   | 1.05                                    | 35                   |       |
| Endosulfan II                    | 8.53            | 9,97    | *         | 9.50  | ND                          | 89.8   | 30-140   | 2.89                                    | 35                   |       |
| Endosulfan sulfate               | 9.43            | 9.97    | ĸ         | 9.50  | מא                          | 99.3   | 14-143   | 5.87                                    | 35                   |       |
| Endrin                           | 7.75            | 9.97    | *         | 9.50  | ND                          | 81.6   | 42-137   | 0.388                                   | 35                   |       |
| Endrin aldehyde                  | 7.82            | 9.97    | н         | 9.50  | ND                          | 82.3   | 10-144   | 9.96                                    | 35                   |       |
| Endrin ketone                    | 8.11            | 9.97    | *         | 9.50  | αи                          | 85.4   | 14-149   | 6.79                                    | 35                   |       |
| Heptachlor                       | 3.61            | 4.98    | *         | 4.75  | ND                          | 76.0   | 43-125   | 1.96                                    | 35                   |       |
| Heptachlor epoxide               | 4.39            | 4.98    | a         | 4.75  | ND                          | 92.4   | 51-125   | 8.09                                    | 35                   |       |
| Methoxychlor                     | 41.6            | 9,97    | н         | 47.5  | ND                          | 87.6   | 24-138   | 2.61                                    | 35                   |       |
| Surrogale: TCX                   | 3.44            |         | **        | 3.80  |                             | 90.5   | 47-134   |   |                      |       |
| Surrogate: Decachlorobiphenyl    | 3.66            |         | u         | 3,80  |                             | 96.3   | 35-151   |   |                      |       |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Reporting

| Analyte                          | Result   | Keporung<br>Limit  | Units              | Level | Result                                   | %REC                     | VoREC<br>Limits                         | RPD                                    | KPD<br>Limit | Notes   |
|----------------------------------|--|--|--------------------|-------|--|--------------------------|---|--|--------------|---|
| Batch 5G05054: Prepared 07/05/05 | Market and a substitute of the |  | THE TAXABLE STREET |       | and was the first of the second          |                          |   | ###################################### |              |   |
| Cal Standard (5G05054-CAL1)      | Came ar sour   | CONTRACTOR OF THE SECRETARIA CONTRACTOR OF TH |                    |       | na ann an ann an ann an an an an an an a | richitessamenessessestät | *************************************** | namen dependent virte en en en en      |              | TOTAL PROPERTY OF THE PARTY OF |
| Aldrin                           | 1.12   |  | ug/l               | 1.00  |  | 112                      |   |  | A-175-       |   |
| Aldrin [2C]                      | 1.14   |  | ug);               | 1.00  |  | 114                      |   |  |              |   |
| alpha-BHC                        | 1.03   |  | н                  | 1.00  |  | 103                      |   |  |              |   |
| alpha-BHC [2C]                   | 1.03   |  | N                  | 1.00  |  | 103                      |   |  |              |   |
| beta-BHC                         | 1.67   |  |                    | 1.00  |  | 167                      |   |  |              |   |
| bets-BHC [2C]                    | 1.37   |  | ч                  | 1.00  |  | 137                      |   |  |              |   |
| delta-BHC                        | 1.08   |  | h                  | 1.00  |  | 108                      |   |  |              |   |
| delta-BHC (2C)                   | 1.10   |  | N                  | 1.00  |  | 110                      |   |  |              |   |
| gamma-BHC (Lindane)              | 1.06   |  | *                  | 1.00  |  | 106                      |   |  |              |   |
| gamma-BHC (Lindane) [2C]         | 1.00   |  | н                  | 1.00  |  | 100                      |   |  |              |   |
| alpha-Chlordane                  | 1.17   |  | н                  | 1.00  |  | 117                      |   |  |              |   |
| alpha-Chlordane [2C]             | 1.23   |  | M                  | 1.00  |  | 123                      |   |  |              |   |
| gamma-Chlordane                  | 1.21   |  | Ħ                  | 1.00  |  | 121                      |   |  |              |   |
| gamma-Chłordane [2C]             | 1.29   |  | ж                  | 1,00  |  | 129                      |   |  |              |   |
| 4,4'-DDD                         | 2.46   |  | н                  | 2.00  |  | 123                      |   |  |              |   |
| 4,4'-DDD [2C]                    | 2.35   |  | *                  | 2.00  |  | 118                      |   |  |              |   |
| 4,4'-DDE                         | 2.44   |  | 11                 | 2.00  |  | 122                      |   |  |              |   |
| 4,4'-DDE [2C]                    | 2.41   |  | н                  | 2.00  |  | 120                      |   |  |              |   |
| 4,4'-DDT                         | 2.93   |  | м                  | 2.00  |  | 146                      |   |  |              |   |
| 4,4'-DDT [2C]                    | 2.76   |  | н                  | 2.00  |  | 138                      |   |  |              |   |
| Dieldrin                         | 2.32   |  | н                  | 2,00  |  | 116                      |   |  |              |   |
| Dieldrin [2C]                    | 2.40   |  | в                  | 2.00  |  | 120                      |   |  |              |   |
| Endosulfan I                     | 1.30   |  | н                  | 1.00  |  | 130                      |   |  |              |   |
| Endosulfan I (2C)                | 1.24   |  | н                  | 1.00  |  | 124                      |   |  |              |   |
| Endosulfan II                    | 2.38   |  | •                  | 2.00  |  | 119                      |   |  |              |   |
| Endosulfan II [2C]               | 2.46   |  | н                  | 2.00  |  | 123                      |   |  |              |   |
| Endosulfan sulfate               | 2.31   |  | ч                  | 2.00  |  | 116                      |   |  |              |   |
| Endosulfan sulfate [2C]          | 2.26   |  | *                  | 2.00  |  | 113                      |   |  |              |   |
| Endrin                           | 2.53   |  | н                  | 2.00  |  | 126                      |   |  |              |   |
| Endrin [2C]                      | 2.61   |  |                    | 2.00  |  | 130                      |   |  |              |   |
| Endrin aldehyde                  | 2.46   |  | W                  | 2.00  |  | 123                      |   |  |              |   |
| Endrin aldehyde (2C)             | 2.37   |  | p                  | 2.00  |  | 118                      |   |  |              |   |
| Endrin ketone                    | 2.62   |  | ov.                | 2.00  |  | 131                      |   |  |              |   |
| Endrin ketone [2C]               | 2.29   |  | *                  | 2.00  |  | 114                      |   |  |              |   |
| Heptachlor                       | 1.39   |  | н                  | 1.00  |  | 139                      |   |  |              |   |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director



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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control

Project Manager: Dave Enos

#### North Creek Analytical - Bothell

|                                    |               | Reporting                                       | * * *.                               | Spike  | Source  | 6/250                             | %REC   | nnn                       | RPD   | Notes  |
|------------------------------------|---------------|---|--------------------------------------|--|---|-----------------------------------|--------|---------------------------|---|--|
| Analyte                            | Result        | Limit   | Units                                | Level  | Result  | %REC                              | Limits | RPD                       | Limit   | 140162   |
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 | recircos sientinaie dibetas Patrillo contel PND | gghainsAntarionnennosochochranente/b | SANCE OF THE PROPERTY OF THE P | ober hannen en | EL PARTICIPATIVA DIVINA DI MANORE |        | MACAL HOUSE DE LA CONTROL | CAT DOMESTIC CONTRACTOR OF THE PARTY OF THE | necessaries de la constitue de |
| Cal Standard (5G05054-CALI)        |               |   |                                      |  |   |                                   |        |                           |   |  |
| Heptachlor (2C)                    | 1.45          |   | ug/l                                 | 1,00   |   | 145                               |        |                           |   |  |
| Heptachlor epoxide                 | 1.32          |   | N                                    | 1.00   |   | 132                               |        |                           |   |  |
| Heptachlor epoxide [2C]            | 1,23          |   | स                                    | 1.00   |   | 123                               |        |                           |   |  |
| Methoxychlor                       | 15.9          |   | н                                    | 10.0   |   | 159                               |        |                           |   |  |
| Methoxychlor [2C]                  | 15.7          |   | Ħ                                    | 10.0   |   | 157                               |        |                           |   |  |
| Surrogate: TCX                     | 2.54          |   | #                                    | 2.00   |   | 127                               | 20-129 |                           |   |  |
| Surrogate: TCX [2C]                | 2.48          |   | н                                    | 2.00   |   | 124                               | 20-129 |                           |   |  |
| Surrogate: Decachlorobiphenyl      | 5.20          |   | 4                                    | 4,00   |   | 130                               | 10-131 |                           |   |  |
| Surrogate: Decachlorobiphenyl [2C] | 5.26          |   | n                                    | 4.00   |   | 132                               | 10-131 |                           |   |  |
| Cal Standard (5G05054-CAL2)        |               |   |                                      |  |   |                                   |        |                           |   |  |
| Aldrin                             | 5.01          |   | ug/l                                 | 5,00   |   | 100                               |        |                           |   |  |
| Aldrin (2C)                        | 5.16          |   | **                                   | 5.00   |   | 103                               |        |                           |   |  |
| alpha-BHC                          | 4.96          |   | ж                                    | 5.00   |   | 99.2                              |        |                           |   |  |
| alpha-BHC [2C]                     | 5.17          |   | *                                    | 5.00   |   | 103                               |        |                           |   |  |
| beta-BHC                           | 5.20          |   | *                                    | 5,00   |   | 104                               |        |                           |   |  |
| beta-BHC (2C)                      | 5.32          |   | *                                    | 5.00   |   | 106                               |        |                           |   |  |
| delta-BHC                          | 5.88          |   | в                                    | 5.00   |   | 118                               |        |                           |   |  |
| delta-BHC [2C]                     | 5.15          |   | u                                    | 5.00   |   | 103                               |        |                           |   |  |
| gamma-BHC (Lindane)                | 5.19          |   | n                                    | 5.00   |   | 104                               |        |                           |   |  |
| gamma-BHC (Lindane) [2C]           | 5.13          |   | *                                    | 5.00   |   | 103                               |        |                           |   |  |
| alpha-Chlordane                    | 5.07          |   | 6                                    | 5.00   |   | 101                               |        |                           |   |  |
| alpha-Chlordane [2C]               | 5.59          |   | ti                                   | 5.00   |   | 112                               |        |                           |   |  |
| gamma-Chlordane                    | 4.82          |   | er                                   | 5.00   |   | 96.4                              |        |                           |   |  |
| gamma-Chlordane [2C]               | 5.16          |   | ¥                                    | 5.00   |   | 103                               |        |                           |   |  |
| 4,4'-DDD                           | 10.6          |   | *                                    | 10.0   |   | 106                               |        |                           |   |  |
| 4,4'-DDD [2C]                      | 11.0          |   | *                                    | 10.0   |   | 110                               |        |                           |   |  |
| 4,4'-DDE                           | 10.5          |   | ×                                    | 10.0   |   | 105                               |        |                           |   |  |
| 4,4'-DDE [2C]                      | 10.7          |   | et                                   | 10.0   |   | 107                               |        |                           |   |  |
| 4,4'-DDT                           | 12.3          |   | n                                    | 10.0   |   | 123                               |        |                           |   |  |
| 4,4'-DDT [2C]                      | 12.2          |   | н                                    | 10.0   |   | 122                               |        |                           |   |  |
| Dieldrin                           | 10.7          |   | н                                    | 10.0   |   | 107                               |        |                           |   |  |
| Dieldrin [2C]                      | 10.9          |   | н                                    | 10.0   |   | 109                               |        |                           |   |  |
| Endosulfan I                       | 5.41          |   | r                                    | 5.00   |   | 108                               |        |                           |   |  |
| Endosulfan I [2C]                  | 5.40          |   | я                                    | 5.00   |   | 108                               |        |                           |   |  |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

| Analyte                            | Result          | Reporting<br>Limit  | Units  | Spike<br>Level   | Source<br>Result                         | %REC                                    | %REC<br>Limíts  | RPD                                     | RPD<br>Limit       | Notes                      |
|------------------------------------|-----------------|---|--|--|--|---|---|---|--------------------|----------------------------|
| Batch 5G05054: Prepared 07/05/05   |                 | CONTRACTOR | **************************************   |  | viento rincito CPP (10) pi spolini kerom |   | #*************************************  | *************************************** |                    | 110103                     |
| Cal Standard (5G05054-CAL2)        | 031112 51 20021 | NHASSASETO PERHAMMANA AND AND AND AND AND AND AND AND AND   | THE RESERVE OF THE PERSON OF T | introversion and the second se | **************************************   | *************************************** | CONTRACTOR OF THE PROPERTY OF | *************************************** | umprownsomersopaes | dentities opposite open co |
| Endosulfan II                      | 10.5            |   | ng/l   | 10.0   |  | 105                                     |   |   |                    |                            |
| Endosulfan II [2C]                 | 10.7            |   | *<br>#   | 10.0   |  | 107                                     |   |   |                    |                            |
| Endosulfan sulfate                 | 10.4            |   | is   | 10.0   |  | 104                                     |   |   |                    |                            |
| Endosulfan sulfate [2C]            | 10.4            |   | н  | 10.0   |  | 104                                     |   |   |                    |                            |
| Endrin                             | 11.4            |   | н  | 10.0   |  | 114                                     |   |   |                    |                            |
| Endrin [2C]                        | 11.5            |   | н  | 10.0   |  | 115                                     |   |   |                    |                            |
| Endrin aldehyde                    | 10.3            |   | w  | 10.0   |  | 103                                     |   |   |                    |                            |
| Endrin aldehyde [2C]               | 10.2            |   | н  | 10.0   |  | 102                                     |   |   |                    |                            |
| Endrin ketone                      | 11.3            |   | *  | 10.0   |  | 113                                     |   |   |                    |                            |
| Endrin ketone [2C]                 | 10,1            |   | я  | 10.0   |  | 101                                     |   |   |                    |                            |
| Heptachlor                         | 5.92            |   | н  | 5.00   |  | 118                                     |   |   |                    |                            |
| Heptachlor [2C]                    | 5.89            |   | 16   | 5.00   |  | 118                                     |   |   |                    |                            |
| Heptachlor epoxide                 | 5.29            |   | n  | 5.00   |  | 106                                     |   |   |                    |                            |
| Heptachlor epoxide [2C]            | 5.26            |   | 15   | 5.00   |  | 105                                     |   |   |                    |                            |
| Methoxychlor                       | 69.8            |   | **   | 50.0   |  | 140                                     |   |   |                    |                            |
| Vethoxychlor [2C]                  | 69.7            |   | н  | 50.0   |  | 139                                     |   |   |                    |                            |
| Surrogate: TCX                     | 11.5            |   | 1/   | 10.0   |  | 115                                     | 20-129  | •                                       |                    |                            |
| Surrogate: TCX [2C]                | 11.6            |   | н  | 10.0   |  | 116                                     | 20-129  |   |                    |                            |
| Surrogate: Decachlorobiphenyl      | 21.8            |   | 10   | 20.0   |  | 109                                     | 10-131  |   |                    |                            |
| Surrogate: Decachlorobiphenyl [2C] | 23.0            |   | ri .   | 20.0   |  | 115                                     | 10-131  |   |                    |                            |
| Cal Standard (5G05054-CAL3)        |                 |   |  |  |  |   |   |   |                    |                            |
| Aldrin                             | 10.4            |   | ug/l   | 10.0   |  | 104                                     |   |   |                    |                            |
| Aldrin [2C]                        | 11.1            |   | к  | 10.0   |  | 111                                     |   |   |                    |                            |
| ilpha-BHC                          | 10.5            |   | н  | 10.0   |  | 105                                     |   |   |                    |                            |
| slpha-BHC [2C]                     | 11.0            |   | *  | 10.0   |  | 110                                     |   |   |                    |                            |
| peta-BHC                           | 10.5            |   | N  | 10.0   |  | 105                                     |   |   |                    |                            |
| peta-BHC [2C]                      | 11.0            |   | p  | 10.0   |  | 110                                     |   |   |                    |                            |
| leita-BHC                          | 10.9            |   | *  | 10.0   |  | 109                                     |   |   |                    |                            |
| felta-BHC [2C]                     | 11.0            |   | H  | 10.0   |  | 110                                     |   |   |                    |                            |
| amma-BHC (Lindane)                 | 10.8            |   | 47   | 10.0   |  | 108                                     |   |   |                    |                            |
| amma-BHC (Lindane) [2C]            | 11.2            |   | н  | 10.0   |  | 112                                     |   |   |                    |                            |
| lpha-Chlordane                     | 10.5            |   | tt   | 10.0   |  | 105                                     |   |   |                    |                            |
| lpha-Chlordane [2C]                | 11.3            |   | 19   | 10.0   |  | 113                                     |   |   |                    |                            |
| amma-Chlordane                     | 10.4            |   |  | 10.0   |  | 104                                     |   |   |                    |                            |

North Creek Analytical - Spokane

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2000 W International Airport Road, Suite A-10, Anchorage, AX 99502-1119 907.563.9200 fax 907.563.9210

%REC

Source

Geo Engineers - Spokane 523 East Second Ave.

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

RPD

Spokane, WA 99202

Project Manager: Dave Enos

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control

#### North Creek Analytical - Bothell

Reporting

Spike

|                         |                   |               | Reporting |       | Spike | 2 once |      | 70KEC                    |                               | KPD   |                       |
|-------------------------|-------------------|---------------|-----------|-------|-------|--------|------|--------------------------|-------------------------------|-------|-----------------------|
| Analyte                 |                   | Result        | Limit     | Units | Level | Result | %REC | Limits                   | RPD                           | Limit | Notes                 |
| Batch 5G05054:          | Prepared 07/05/05 | Using 5F28027 |           |       |       |        |      | mananananananan Anderson | garanouno shinacana nastirico |       | and the second second |
| Cal Standard (5G05      | 054-CAL3)         |               |           |       |       |        |      |                          |                               |       |                       |
| gamma-Chlordane (2C)    | <del></del>       | 10,5          |           | ид/1  | 10,0  |        | 105  |                          |                               |       |                       |
| 1,4'-DDD                |                   | 21.4          |           | *     | 20.0  |        | 107  |                          |                               |       |                       |
| 1,4'-DDD [2C]           |                   | 22.5          |           | н     | 20.0  |        | 112  |                          |                               |       |                       |
| ,4'-DDE                 |                   | 21.6          |           | "     | 20.0  |        | 108  |                          |                               |       |                       |
| ,4'-DDE [2C]            |                   | 22.7          |           | Ħ     | 20.0  |        | 114  |                          |                               |       |                       |
| ,4'-DDT                 |                   | 25.7          |           | н     | 20.0  |        | 128  |                          |                               |       |                       |
| ,4'-DDT [2C]            |                   | 25,8          |           | н     | 20,0  |        | 129  |                          |                               |       |                       |
| Dieldrin                |                   | 22.3          |           | u     | 20.0  |        | 112  |                          |                               |       |                       |
| Dieldrin [2C]           |                   | 23.3          |           | ir    | 20.0  |        | 116  |                          |                               |       |                       |
| Endosulfan I            |                   | 11.0          |           | ır    | 10.0  |        | 110  |                          |                               |       |                       |
| Endosulfan I [2C]       |                   | 11.2          |           | W     | 10.0  |        | 112  |                          |                               |       |                       |
| Endosulfan II           |                   | 21.5          |           | 10    | 20.0  |        | 108  |                          |                               |       |                       |
| Endosulfan II [2C]      |                   | 22.3          |           | 14    | 20,0  |        | 112  |                          |                               |       |                       |
| Endosulfan sulfate      |                   | 21.5          |           | n     | 20.0  |        | 108  |                          |                               |       |                       |
| Endosulfan sulfate [2C] |                   | 21.5          |           | Ħ     | 20.0  |        | 108  |                          |                               |       |                       |
| Endrin                  |                   | 23.7          |           | u     | 20.0  |        | 118  |                          |                               |       |                       |
| Endrin (2C)             |                   | 24.5          |           |       | 20.0  |        | 122  |                          |                               |       |                       |
| Endrin aldehyde         |                   | 20,9          |           | ĸ     | 20.0  |        | 104  |                          |                               |       |                       |
| Endrin aldehyde [2C]    |                   | 21.6          |           | *     | 20.0  |        | 108  |                          |                               |       |                       |
| Endrin ketone           |                   | 21.7          |           | n     | 20.0  |        | 108  |                          |                               |       |                       |
| Endrin ketone [2C]      |                   | 21.2          |           | h     | 20.0  |        | 106  |                          |                               |       |                       |
| Heptachlor              |                   | 11.4          |           | W     | 10.0  |        | 114  |                          |                               |       |                       |
| Heptachlor [2C]         |                   | 11.8          |           | и     | 10.0  |        | 118  |                          |                               |       |                       |
| Heptachlor epoxide      |                   | 10.0          |           | н     | 10.0  |        | 100  |                          |                               |       |                       |
| Heptachlor epoxide [20  |                   | 11.0          |           | \$t   | 10.0  |        | 110  |                          |                               |       |                       |
| Methoxychlor            |                   | 141           |           | и     | 100   |        | 141  |                          |                               |       |                       |
| Methoxychlor [2C]       |                   | 141           |           | N     | 100   |        | 141  |                          |                               |       |                       |
| Surrogale: TCX          |                   | 23.5          |           | u     | 20.0  |        | 118  | 20-129                   |                               |       |                       |
| Surrogate: TCX [2C]     |                   | 23.1          |           | n     | 20.0  |        | 116  | 20-129                   |                               |       |                       |
| Surrogate: Decachloro   | biphenyl          | 43.4          |           | u     | 40.0  |        | 108  | 10-131                   |                               |       |                       |
| Surrogate: Decachlore   | biphenyl [2C]     | 44.7          |           | "     | 40.0  |        | 112  | 10-131                   |                               |       |                       |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Project Manager: Dave Enos

| Analyte                          | Result        | Reporting<br>Limit   | Units  | Spike<br>Level   | Source<br>Result      | %REC                                    | %REC<br>Limits                         | RPD                           | RPD<br>Limit                         | Notes   |
|----------------------------------|---------------|--|--|--|-----------------------|---|--|-------------------------------|--------------------------------------|---|
| Batch 5G05054: Prepared 07/05/05 | Using 5F28027 | отківні (портодня () ўзготоличного польшы  | CONTROL OF THE PROPERTY OF THE | SPopic (Arrohimment resources and security a | PMMediamerania agequa | *************************************** | ************************************** | <del>Компения по водине</del> | <del>(Дуу- даднеан солиниция).</del> | онностичностью до ТПОД БОД А.                         |
| Cal Standard (5G05054-CAL4)      |               | The state of the s |  |  |                       |   |  |                               |                                      | <b>МОМОТИТЕ В В В В В В В В В В В В В В В В В В В</b> |
| Aldrin                           | 27.9          |  | ug/l   | 25.0   |                       | 112                                     |  | *                             |                                      |   |
| Aldrin [2C]                      | 30.2          |  | u  | 25.0   |                       | 121                                     |  |                               |                                      |   |
| alpha-BHC                        | 28.9          |  | at   | 25.0   |                       | 116                                     |  |                               |                                      |   |
| alpha-BHC [2C]                   | 30.7          |  | ř  | 25.0   |                       | 123                                     |  |                               |                                      |   |
| beta-BHC                         | 27.9          |  | н  | 25.0   |                       | 112                                     |  |                               |                                      |   |
| beta-BHC [2C]                    | 29.6          |  | n  | 25.0   |                       | 118                                     |  |                               |                                      |   |
| delta-BHC                        | 28.4          |  | a  | 25.0   |                       | 114                                     |  |                               |                                      |   |
| delta-BHC [2C]                   | 30.7          |  | u  | 25.0   |                       | 123                                     |  |                               |                                      |   |
| gamma-BHC (Lindane)              | 29.1          |  | н  | 25.0   |                       | 116                                     |  |                               |                                      |   |
| gamma-BHC (Lindane) [2C]         | 30.9          |  | н  | 25.0   |                       | 124                                     |  |                               |                                      |   |
| alpha-Chlordane                  | 27.9          |  | 44   | 25.0   |                       | 112                                     |  |                               |                                      |   |
| alpha-Chlordane [2C]             | 30.6          |  | *  | 25.0   |                       | 122                                     |  |                               |                                      |   |
| gamma-Chlordane                  | 28.1          |  | 4  | 25.0   |                       | 112                                     |  |                               |                                      |   |
| gamma-Chlordane [2C]             | 28.1          |  | н  | 25.0   |                       | 112                                     |  |                               |                                      |   |
| 4,4'-DDD                         | 55.7          |  | 47   | 50.0   |                       | 111                                     |  |                               |                                      |   |
| 4,4'-DDD [2C]                    | 59.7          |  | н  | 50.0   |                       | 119                                     |  |                               |                                      |   |
| 4,4'-DDE                         | 56.8          |  | н  | 50.0   |                       | 114                                     |  |                               |                                      |   |
| 4,4'-DDE [2C]                    | 61.9          |  | **   | 50.0   |                       | 124                                     |  |                               |                                      |   |
| 4,4'-DDT                         | 69.9          |  | **   | 50.0   |                       | 140                                     |  |                               |                                      |   |
| 4,4'-DDT [2C]                    | 70.5          |  | ń  | 50.0   |                       | 141                                     |  |                               |                                      |   |
| Dieldrin                         | 59.4          |  | н  | 50.0   |                       | 119                                     |  |                               |                                      |   |
| Dieldrin [2C]                    | 63.0          |  | *  | 50.0   |                       | 126                                     |  |                               |                                      |   |
| Endosulfan I                     | 28.7          |  | if   | 25.0   |                       | 115                                     |  |                               |                                      |   |
| Endosulfan I (2C)                | 30.3          |  | u  | 25.0   |                       | 121                                     |  |                               |                                      |   |
| Endosulfan II                    | 55.5          |  | n  | 50.0   |                       | 111                                     |  |                               |                                      |   |
| Endosulfan II [2C]               | 59.3          |  |  | 50.0   |                       | 119                                     |  |                               |                                      |   |
| Endosulfan sulfate               | 55.8          |  | #  | 50,0   |                       | 112                                     |  |                               |                                      |   |
| Endosulfan sulfate [2C]          | 56.5          |  |  | 50.0   |                       | 113                                     |  |                               |                                      |   |
| Endrin                           | 63.0          |  | н  | 50.0   |                       | 126                                     |  |                               |                                      |   |
| Endrin [2C]                      | 65.8          |  | **   | 50.0   |                       | 132                                     |  |                               |                                      |   |
| Endrin aldehyde                  | 54.7          |  | v  | 50.0   |                       | 109                                     |  |                               |                                      |   |
| Endrin aldehyde (2C)             | 58.0          |  | н  | 50.0   |                       | 116                                     |  |                               |                                      |   |
| Endrin ketone                    | 54.7          |  |  | 50.0   |                       | 109                                     |  |                               |                                      |   |
| Endrin ketone [2C]               | 56.0          |  | u  | 50.0   |                       | 112                                     |  |                               |                                      |   |
| Heptachlor                       | 29.8          |  | a  | 25.0   |                       | 119                                     |  |                               |                                      |   |

North Creek Analytical - Spokane

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%REC

Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

RPD

Project Manager: Dave Enos

Reporting

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

| Analyte                            | Result        | Limit                                     | Units | Level | Result | %REC                  | Limits | RPD | Limit | Notes   |
|------------------------------------|---------------|---|-------|-------|--------|-----------------------|--------|-----|-------|---|
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 | \$181190000000000000000000000000000000000 |       |       |        | productive boundaries |        |     |       | enamente anno de la composición de la c |
| Cal Standard (5G05054-CAL4)        |               |   |       |       |        |                       |        |     |       |   |
| Heptachlor [2C]                    | 31.8          |   | ug/l  | 25.0  |        | 127                   |        |     |       |   |
| Heptschlor epoxide                 | 27.2          |   | н     | 25.0  |        | 109                   |        |     |       |   |
| Heptschlor epoxide [2C]            | 29.7          |   | и     | 25.0  |        | 119                   |        |     |       |   |
| Methoxychlor                       | 351           |   | *     | 250   |        | 140                   |        |     |       |   |
| Methoxychlor [2C]                  | 353           |   | H     | 250   |        | 141                   |        |     |       |   |
| Surrogate: TCX                     | 61.1          |   | н     | 50.0  |        | 122                   | 20-129 |     |       |   |
| Surrogale: TCX [2C]                | 60.7          |   | н     | 50.0  |        | 121                   | 20-129 |     |       |   |
| Surrogate: Decachlarobiphenyl      | 110           |   | ti    | 100   |        | 110                   | 10-131 |     |       |   |
| Surrogate: Decachlorobiphenyl [2C] | 113           |   | н     | 100   |        | 113                   | 10-131 |     |       |   |
| Cal Standard (5G05054-CAL5)        |               |   |       |       |        |                       |        |     |       |   |
| Aldrin                             | 57.7          |   | ug/l  | 50,0  |        | 115                   |        |     |       |   |
| Aldrin (2C)                        | 62.8          |   | H     | 50.0  |        | 126                   |        |     |       |   |
| alpha-BHC                          | 59.1          |   | •     | 50.0  |        | 118                   |        |     |       |   |
| alpha-BHC [2C]                     | 63.6          |   | к     | 50.0  |        | 127                   |        |     |       |   |
| beta-BHC                           | 57.0          |   | *     | 50.0  |        | 114                   |        |     |       |   |
| bets-BHC [2C]                      | 60.9          |   | в     | 50.0  |        | 122                   |        |     |       |   |
| delta-BHC                          | 58.5          |   | н     | 50.0  |        | 117                   |        |     |       |   |
| delta-BHC [2C]                     | 63.9          |   | н     | 50.0  |        | 128                   |        |     |       |   |
| gamma-BHC (Lindane)                | 59.7          |   | я     | 50.0  |        | 119                   |        |     |       |   |
| gamma-BHC (Lindane) [2C]           | 64.3          |   | р     | 50.0  |        | 129                   |        |     |       |   |
| alpha-Chlordane                    | 57.3          |   | Ħ     | 50.0  |        | 115                   |        |     |       |   |
| alpha-Chlordane [2C]               | 63.3          |   | *     | 50.0  |        | 127                   |        |     |       |   |
| gamma-Chlordane                    | 58.1          |   | *     | 50.0  |        | 116                   |        |     |       |   |
| gamma-Chlordane [2C]               | 58.3          |   | d     | 50.0  |        | 117                   |        |     |       |   |
| 4,4'-DDD                           | 113           |   | ×     | 100   |        | 113                   |        |     |       |   |
| 4,4'-DDD [2C]                      | 123           |   | н     | 100   |        | 123                   |        |     |       |   |
| 4,4'-DDE                           | 115           |   | 36    | 100   |        | 115                   |        |     |       |   |
| 4,4'-DDE [2C]                      | 126           |   | к     | 100   |        | 126                   |        |     |       |   |
| 4,4'-DDT                           | 144           |   | ĸ     | 100   |        | 144                   |        |     |       |   |
| 4,4'-DDT [2C]                      | 146           |   | ж     | 100   |        | 146                   |        |     |       |   |
| Dieldrin                           | 120           |   | N     | 100   |        | 120                   |        |     |       |   |
| Dieldrin [2C]                      | 128           |   | a     | 100   |        | 128                   |        |     |       |   |
| Endosulfan I                       | 58.9          |   | ×     | 50.0  |        | 118                   |        |     |       |   |
| Endosulfan I [2C]                  | 62.9          |   | 14    | 50.0  |        | 126                   |        |     |       |   |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director

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Geo Engineers - Spokane

523 East Second Ave.

Spokane, WA 99202

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541.383.9310 fax 541.382.7588 2000 W International Airport Road, Sulte A-10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Spike

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Reporting

| Analyte                            | Result        | Keporting<br>Limit                      | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD                                     | RPD<br>Limit                           | Notes                                   |
|------------------------------------|---------------|---|-------|----------------|------------------|------|----------------|---|--|---|
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 |   |       |                |                  |      |                |   |  | *************************************** |
| Cal Standard (5G05054-CAL5)        |               |   |       |                |                  |      |                |   | 94994000000000000000000000000000000000 |   |
| Endosulfan II                      | 112           |   | ug/l  | 100            |                  | 112  |                | *************************************** |  |   |
| Endosulfan II [2C]                 | 121           |   | н     | 100            |                  | 121  |                |   |  |   |
| Endosulfan sulfate                 | 114           |   | *     | 100            |                  | 114  |                |   |  |   |
| Endosulfan sulfate [2C]            | 116           |   | н     | 100            |                  | 116  |                |   |  |   |
| Endrin                             | 127           |   | ú     | 100            |                  | 127  |                |   |  |   |
| Endrin [2C]                        | 133           |   | M     | 100            |                  | 133  |                |   |  |   |
| Endrin aldehyde                    | 113           |   | ж     | 100            |                  | 113  |                |   |  |   |
| Endrin aldehyde [2C]               | 121           |   | *     | 100            |                  | 121  |                |   |  |   |
| Endrin ketone                      | 181           |   | 0     | 100            |                  | 111  |                |   |  |   |
| Endrin ketone [2C]                 | 114           |   | м     | 100            |                  | 114  |                |   |  |   |
| Heptachlor                         | 60,7          |   | н     | 50,0           |                  | 121  |                |   |  |   |
| Heptachlor [2C]                    | 65.3          |   | *     | 50.0           |                  | 131  |                |   |  |   |
| Heptachlor epoxide                 | 56.4          |   | К     | 50,0           |                  | 113  |                |   |  |   |
| Heptachlor epoxide [2C]            | 61.3          |   | *     | 50.0           |                  | 123  |                |   |  |   |
| Methoxychlor                       | 669           |   | *     | 500            |                  | 134  |                |   |  |   |
| Methoxychlor [2C]                  | 674           |   | н     | 500            |                  | 135  |                |   |  |   |
| Surrogate: TCX                     | 124           | 711701111111111111111111111111111111111 | 44    | 100            |                  | 124  | 20-129         |   |  |   |
| Surrogate: TCX [2C]                | 120           |   | н     | 100            |                  | 120  | 20-129         |   |  |   |
| Surrogate: Decachlorobiphenyl      | 219           |   | 71    | 200            |                  | 110  | 10-131         |   |  |   |
| Surrogaie: Decachlorobiphenyl [2C] | 225           |   | st    | 200            |                  | 112  | 10-131         |   |  |   |
| Cal Standard (5G05054-CAL6)        |               |   |       |                |                  |      |                |   |  |   |
| Aldrin                             | 85.9          |   | ug/l  | 75.0           |                  | 115  |                |   |  |   |
| Aldrin [2C]                        | 93.6          |   |       | 75.0           |                  | 125  |                |   |  |   |
| alpha-BHC                          | 87.0          |   | in    | 75.0           |                  | 116  |                |   |  |   |
| alpha-BHC [2C]                     | 93.5          |   | ×     | 75.0           |                  | 125  |                |   |  |   |
| beta-BHC                           | 85.1          |   | n     | 75.0           |                  | 113  |                |   |  |   |
| beta-BHC [2C]                      | 91.3          |   | ¢r    | 75.0           |                  | 122  |                |   |  |   |
| delta-BHC                          | 87.3          |   | 19    | 75.0           |                  | 116  |                |   |  |   |
| delta-BHC [2C]                     | 95.9          |   | łr    | 75.0           |                  | 128  |                |   |  |   |
| gamma-BHC (Lindane)                | 88.4          |   | *     | 75.0           |                  | 118  |                |   |  |   |
| gamma-BHC (Lindane) [2C]           | 95.4          |   | н     | 75.0           |                  | 127  |                |   |  |   |
| alpha-Chlordane                    | 85.5          |   | н     | 75.0           |                  | 114  |                |   |  |   |
| alpha-Chlordane [2C]               | 94.5          |   | и     | 75.0           |                  | 126  |                |   |  |   |
| gamma-Chlordane                    | 86.1          |   | tr    | 75.0           |                  | 115  |                |   |  |   |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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%REC

RPD

Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Anchorage

Spike

Reported: 07/11/05 12:00 Project Manager: Dave Enos

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control

#### North Creek Analytical - Bothell

Reporting

| Analyte                            | Result        | Limit                   | Units       | Level  | Result  | %REC | Limits   | RPD                  | Limit  | Notes |
|------------------------------------|---------------|-------------------------|-------------|--|---|------|--|----------------------|--|-------|
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 | mannaoennine en 114,400 | <del></del> | 0-12473-4748-4260-11147-4000-11127-4000-11127-4000-11127-4000-11127-4000-11127-4000-11127-4000-11127-4000-1112 | 993-Q-1-4800000000000000000000000000000000000 |      | an ann ann an de | CARGONOMO DE SESTION | parkid vida kalanda ka |       |
| Cal Standard (5G05054-CAL6)        |               |                         |             |  |   |      |  |                      |  |       |
| gamma-Chlordane [2C]               | 87.0          |                         | ug/I        | 75.0   |   | 116  |  |                      |  |       |
| 4,4'-DDD                           | 167           |                         | н           | 150  |   | 111  |  |                      |  |       |
| 4,4'-DDD [2C]                      | 180           |                         | 64          | 150  |   | 120  |  |                      |  |       |
| 1,4'-DDE                           | 168           |                         | н           | 150  |   | 112  |  |                      |  |       |
| 1,4'-DDE [2C]                      | 184           |                         | н           | 150  |   | 123  |  |                      |  |       |
| 4,4'-DDT                           | 215           |                         | м           | 150  |   | 143  |  |                      |  |       |
| 4,4'-DDT [2C]                      | 216           |                         | и           | 150  |   | 144  |  |                      |  |       |
| Dieldrin                           | 176           |                         | q           | 150  |   | 117  |  |                      |  |       |
| Dieldrin (2C)                      | 187           |                         | 4           | 150  |   | 125  |  |                      |  |       |
| Endosulfan l                       | 87.8          |                         | N           | 75.0   |   | 117  |  |                      |  |       |
| Endosulfan I (2C)                  | 93.4          |                         | н           | 75.0   |   | 125  |  |                      |  |       |
| Endosulfan II                      | 166           |                         | *           | 150  |   | 111  |  |                      |  |       |
| Endosulfan II [2C]                 | 179           |                         | 0           | 150  |   | 119  |  |                      |  |       |
| Endosulfan sulfate                 | 170           |                         | *           | 150  |   | 113  |  |                      |  |       |
| Endosulfan sulfate [2C]            | 174           |                         | 45          | 150  |   | 116  |  |                      |  |       |
| Endrin                             | 188           |                         | r           | 150  |   | 125  |  |                      |  |       |
| Endrin [2C]                        | 195           |                         | н           | 150  |   | 130  |  |                      |  |       |
| Endrin aldehyde                    | 169           |                         | *           | 150  |   | 113  |  |                      |  |       |
| Endrin aldehyde [2C]               | 181           |                         | R           | 150  |   | 121  |  |                      |  |       |
| Endrin ketone                      | 164           |                         | н           | 150  |   | 109  |  |                      |  |       |
| Endrin ketone [2C]                 | 170           |                         | Ħ           | 150  |   | 113  |  |                      |  |       |
| Heptachlor                         | 89.6          |                         | w           | 75.0   |   | 119  |  |                      |  |       |
| Heptachlor [2C]                    | 96.1          |                         | *           | 75.0   |   | 128  |  |                      |  |       |
| Heptachlor epoxide                 | 81.6          |                         | *           | 75.0   |   | 109  |  |                      |  |       |
| Heptachlor epoxide [2C]            | 90.7          |                         | ą           | 75.0   |   | 121  |  |                      |  |       |
| Methoxychlor                       | 955           |                         | N           | 750  |   | 127  |  |                      |  |       |
| Methoxychlor [2C]                  | 968           |                         | H           | 750  |   | 129  |  |                      |  |       |
| Surrogate: TCX                     | 177           |                         | п           | 150  |   | 118  | 20-129   |                      |  |       |
| Surrogate: TCX [2C]                | 174           |                         | и           | 150  |   | 116  | 20-129   |                      |  |       |
| Surrogate: Decachlorobiphenyl      | 321           |                         | u           | 300  |   | 107  | 10-131   |                      |  |       |
| Surrogate: Decachlorobiphenyl [2C] | 330           |                         | u           | 300  |   | 110  | 10-131   |                      |  |       |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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%REC

Anchorage

Spike

Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09

Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Reporting

| Analyte                          | Result        | Limit                                   | Units                                 | Level | Result                    | %REC | Limits                      | RPD | Limit | Notes |
|----------------------------------|---------------|---|---------------------------------------|-------|---------------------------|------|-----------------------------|-----|-------|-------|
| Batch 5G05054: Prepared 07/05/05 | Using 5F28027 | ~~~                                     | echicle who are an area of the second |       | menawamwingnopolitikanism |      | unconstruction and a second |     |       |       |
| Cal Standard (5G05054-CAL7)      |               |   |                                       |       |                           |      |                             |     |       |       |
| Aldrin                           | 115           | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | ug/l                                  | 100   |                           | 115  |                             |     |       |       |
| Aldrin [2C]                      | 126           |   | н                                     | 100   |                           | 126  |                             |     |       |       |
| alpha-BHC                        | 118           |   | н                                     | 100   |                           | 118  |                             |     |       |       |
| alpha-BHC [2C]                   | 125           |   | și                                    | 100   |                           | 125  |                             |     |       |       |
| beta-BHC                         | 116           |   | if                                    | 100   |                           | 116  |                             |     |       |       |
| beta-BHC [2C]                    | 125           |   | н                                     | 100   |                           | 125  |                             |     |       |       |
| delta-BHC                        | 118           |   | н                                     | 100   |                           | 118  |                             |     |       |       |
| delta-BHC [2C]                   | 130           |   | Ħ                                     | 100   |                           | 130  |                             |     |       |       |
| gamma-BHC (Lindane)              | 119           |   | м                                     | 100   |                           | 119  |                             |     |       |       |
| gamma-BHC (Lindane) [2C]         | 129           |   | н                                     | 100   |                           | 129  |                             |     |       |       |
| alpha-Chlordane                  | 115           |   | n                                     | 100   |                           | 115  |                             |     |       |       |
| alpha-Chlordane [2C]             | 128           |   | ĸ                                     | 100   |                           | 128  |                             |     |       |       |
| gamma-Chlordane                  | 117           |   | я                                     | 100   |                           | 117  |                             |     |       |       |
| gamma-Chlordane [2C]             | 118           |   | 41                                    | 100   |                           | 118  |                             |     |       |       |
| 4,4'-DDD                         | 224           |   | 41                                    | 200   |                           | 112  |                             |     |       |       |
| 4,4'-DDD [2C]                    | 242           |   | н                                     | 200   |                           | 121  |                             |     |       |       |
| 4.4 -DDE                         | 225           |   | н                                     | 200   |                           | 112  |                             |     |       |       |
| 4,4'-DDE [2C]                    | 245           |   | **                                    | 200   |                           | 122  |                             |     |       |       |
| 4,4'-DDT                         | 287           |   | н                                     | 200   |                           | 144  |                             |     |       |       |
| 4,4'-DDT [2C]                    | 288           |   | и                                     | 200   |                           | 144  |                             |     |       |       |
| Dieldrin                         | 233           |   |                                       | 200   |                           | 116  |                             |     |       |       |
| Dieldrin [2C]                    | 247           |   | N                                     | 200   |                           | 124  |                             |     |       |       |
| Endosulfan I                     | 118           |   | а                                     | 100   |                           | 118  |                             |     |       |       |
| Endosulfan I [2C]                | 126           |   | e                                     | 100   |                           | 126  |                             |     |       |       |
| Endosulfan II                    | 222           |   | **                                    | 200   |                           | 111  |                             |     |       |       |
| Endosulfan II [2C]               | 238           |   | *                                     | 200   |                           | 119  |                             |     |       |       |
| Endosulfan sulfate               | 228           |   | *                                     | 200   |                           | 114  |                             |     |       |       |
| Endosulfan sulfate [2C]          | 233           |   | *                                     | 200   |                           | 116  |                             |     |       |       |
| Endrin                           | 248           |   |                                       | 200   |                           | 124  |                             |     |       |       |
| Endrin [2C]                      | 258           |   | ts.                                   | 200   |                           | 129  |                             |     |       |       |
| Endrin aldehyde                  | 231           |   | 44                                    | 200   |                           | 116  |                             |     |       |       |
| Endrin aldehyde [2C]             | 246           |   | н                                     | 200   |                           | 123  |                             |     |       |       |
| Endrin ketone                    | 219           |   | н                                     | 200   |                           | 110  |                             |     |       |       |
| Endrin ketone [2C]               | 228           |   |                                       | 200   |                           | 114  |                             |     |       |       |
| Heptachlor                       | 121           |   | ď                                     | 100   |                           | 121  |                             |     |       |       |
| N. d. Co. I. d. C.               |               |   |                                       |       |                           |      |                             |     |       |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

Project Manager: Dave Enos

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control

#### North Creek Analytical - Bothell

| Analyte                            | Result  | Reporting<br>Limit                      | Units  | Spike<br>Level                             | Source<br>Result                             | %REC      | %REC<br>Limits           | RPD | RPD<br>Limit | Notes  |
|------------------------------------|---|---|--|--|--|-----------|--------------------------|-----|--------------|--|
|                                    | ucusanu dirik iran iran iran iran iran iran iran iran | **************************************  | Oins   | P. 6. 6. 1                                 | NC3III                                       | / VI CL-C |                          |     |              |  |
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027   | an ann an | nderstanderstanderstanderstanderstanderstanderstanderstanderstanderstanderstanderstanderstanderstanderstanders | enoiseanischenduschen recent + 540 to 2000 | yearne anno anno anno anno anno anno anno an |           | TT-EEGES-EAUTHUREAUNCING |     |              | on the second se |
| Cal Standard (5G05054-CAL7)        |   |   |  | ************                               |  |           |                          |     |              |  |
| Heptachlor [2C]                    | 130   |   | ug/l   | 100  |  | 130       |                          |     |              |  |
| Heptachlor epoxide                 | 113   |   | н  | 001  |  | 113       |                          |     |              |  |
| Heptachlor epoxide [2C]            | 123   |   | ei .   | 100  |  | 123       |                          |     |              |  |
| Methoxychior                       | 1230  |   | 44   | 1000                                       |  | 123       |                          |     |              |  |
| Methoxychlor [2C]                  | 1240  |   | 11   | 1000                                       |  | 124       |                          |     |              |  |
| Surrogate: TCX                     | 238   |   | 11   | 200  |  | 119       | 20-129                   |     |              |  |
| Surrogate: TCX [2C]                | 231   |   | n  | 200  |  | 116       | 20-129                   |     |              |  |
| Surrogate: Decachlorobiphenyl      | 125   |   | u  | 400  |  | 106       | 10-131                   |     |              |  |
| Surrogate: Decachlorobiphenyl [2C] | 435   |   | st   | 400  |  | 109       | 10-131                   |     |              |  |
| Cal Standard (5G05054-CAL8)        |   |   |  |  |  |           |                          |     |              |  |
| Toxaphene                          | 500   |   | ug/l   | 500  |  | 100       |                          |     |              |  |
| Toxaphene [2C]                     | 500   |   | *  | 500  |  | 100       |                          |     |              |  |
| Surrogate: TCX                     | 50.0  |   | "  | 50.0                                       |  | 100       | 20-129                   |     |              |  |
| Surrogate: TCX [2C]                | 50.0  |   | и  | 50.0                                       |  | 100       | 20-129                   |     |              |  |
| Surrogate: Decachlorobiphenyl      | 50.0  |   | H  | 50.0                                       |  | 100       | 10-131                   |     |              |  |
| Surrogate: Decachlorobiphenyl [2C] | 50.0  |   | *  | 50.0                                       |  | 100       | 10-131                   |     |              |  |
| Cal Standard (5G05054-CAL9)        |   |   |  |  |  |           |                          |     | urm.         |  |
| Chlordane (tech)                   | 500   |   | ug/l   | 500  |  | 100       |                          |     |              |  |
| Chlordane (tech) [2C]              | 500   |   | n  | 500  |  | 100       |                          |     |              |  |
| Surrogate: TCX                     | 50.0  |   | ū  | 50.0                                       |  | 100       | 20-129                   |     |              |  |
| Surrogate: TCX [2C]                | 50.0  |   | u  | 50.0                                       |  | 100       | 20-129                   |     |              |  |
| Surrogate: Decachlorobiphenyl      | 50.0  |   | и  | 50.0                                       |  | 100       | 10-131                   |     |              |  |
| Surragate: Decachlorobiphenyl [2C] | 50.0  |   | и  | 50.0                                       |  | 100       | 10-131                   |     |              |  |
| Calibration Check (5G05054-CCV2)   |   |   |  |  |  |           |                          |     |              |  |
| Aldrin                             | 52.1  |   | ug/i   | 50.0                                       |  | 104       | 85-115                   |     |              |  |
| Aldrin [2C]                        | 52.6  |   | н  | 50.0                                       |  | 105       | 85-115                   |     |              |  |
| alpha-BHC                          | 52.5  |   | н  | 50.0                                       |  | 105       | 85-115                   |     |              |  |
| alpha-BHC (2C)                     | 53.5  |   | n  | 50.0                                       |  | 107       | 85-115                   |     |              |  |
| beta-BHC                           | 46.6  |   |  | 50.0                                       |  | 93.2      | 85-115                   |     |              |  |
| beta-BHC [2C]                      | 49.4  |   | и  | 50.0                                       |  | 98.8      | 85-115                   |     |              |  |
| delta-BHC                          | 49.6  |   | R  | 50.0                                       |  | 99.2      | 85-115                   |     |              |  |
| delta-BHC [2C]                     | 52,1  |   | а  | 50.0                                       |  | 104       | 85-115                   |     |              |  |
| gamma-BHC (Lindane)                | 52.0  |   | **   | 50.0                                       |  | 104       | 85-115                   |     |              |  |
| gamma-BHC (Lindane) [2C]           | 53.9  |   | к  | 50.0                                       |  | 108       | 85-115                   |     |              |  |
| D                                  |   |   |  |  |  |           |                          |     |              |  |

North Creek Analytical - Spokane

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%REC

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Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Spike

Project Manager: Dave Enos

Reporting

| Analyte                            | Result        | Limit | Units | Level | Result | %REC                      | Limits                                 | RPD | Limit | Notes |
|------------------------------------|---------------|-------|-------|-------|--------|---------------------------|--|-----|-------|-------|
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 |       |       |       |        | ************************* | o-Nit Qui d'Environne construe granto, |     |       |       |
| Calibration Check (5G05054-CCV2)   |               |       |       |       |        |                           |  |     |       |       |
| alpha-Chlordane                    | 51,9          |       | ug/l  | 50.0  |        | 104                       | 85-115                                 |     | .,    |       |
| alpha-Chlordane [2C]               | 50.2          |       | н     | 50,0  |        | 100                       | 85-115                                 |     |       |       |
| gamma-Chlordane                    | 51.9          |       | n     | 50.0  |        | 104                       | 85-115                                 |     |       |       |
| gamma-Chlordane [2C]               | 49.7          |       | n     | 50.0  |        | 99,4                      | 85-115                                 |     |       |       |
| 4,4'-DDD                           | 100           |       | **    | 100   |        | 100                       | 85-115                                 |     |       |       |
| 4,4'-DDD [2C]                      | 102           |       | H     | 100   |        | 102                       | 85-115                                 |     |       |       |
| 4,4'-DDE                           | 101           |       | 11    | 100   |        | 101                       | 85-115                                 |     |       |       |
| 4,4'-DDE [2C]                      | 103           |       | H     | 100   |        | 103                       | 85-115                                 |     |       |       |
| 4,4'-DDT                           | 103           |       | 54    | 100   |        | 103                       | 85-115                                 |     |       |       |
| 4,4'-DDT [2C]                      | 105           |       | 11    | 100   |        | 105                       | 85-115                                 |     |       |       |
| Dieldrin                           | 103           |       | н     | 100   |        | 103                       | 85-115                                 |     |       |       |
| Dieldrin [2C]                      | 104           |       | *     | 100   |        | 104                       | 85-115                                 |     |       |       |
| Endosulfan I                       | 50.2          |       | н     | 50.0  |        | 100                       | 85-115                                 |     |       |       |
| Endosulfan 1 [2C]                  | 51.6          |       | н     | 50.0  |        | 103                       | 85-115                                 |     |       |       |
| Endosulfan II                      | 101           |       | н     | 100   |        | 101                       | 85-115                                 |     |       |       |
| Endosulfan II [2C]                 | 90.8          |       |       | 100   |        | 90.8                      | 85-115                                 |     |       |       |
| Endosulfan sulfate                 | 100           |       | b     | 100   |        | 100                       | 85-115                                 |     |       |       |
| Endosulfan sulfate [2C]            | 101           |       | н     | 100   |        | 101                       | 85-115                                 |     |       |       |
| Endrin                             | 99.8          |       | *     | 100   |        | 99.8                      | 85-115                                 |     |       |       |
| Endrin [2C]                        | 103           |       | 10    | 100   |        | 103                       | 85-115                                 |     |       |       |
| Endrin aldehyde                    | 99.1          |       | •     | 100   |        | 99.1                      | 85-115                                 |     |       |       |
| Endrin aldehyde [2C]               | 101           |       | н     | 100   |        | 101                       | 85-115                                 |     |       |       |
| Endrin ketone                      | 98.2          |       | n     | 100   |        | 98.2                      | 85-115                                 |     |       |       |
| Endrin ketone [2C]                 | 101           |       | #     | 100   |        | 101                       | 85-115                                 |     |       |       |
| Heptachlor                         | 49.0          |       | H     | 50.0  |        | 98.0                      | 85-115                                 |     |       |       |
| Heptschlor [2C]                    | 50.0          |       | н     | 50.0  |        | 100                       | 85-115                                 |     |       |       |
| Heptachlor epoxide                 | 48.1          |       |       | 50.0  |        | 96.2                      | 85-115                                 |     |       |       |
| Heptachlor epoxide [2C]            | 51.2          |       | R     | 50.0  |        | 102                       | 85-115                                 |     |       |       |
| Methoxychlor                       | 486           |       | •     | 500   |        | 97.2                      | 85-115                                 |     |       |       |
| Methoxychlor [2C]                  | 488           |       | tı    | 500   |        | 97.6                      | 85-115                                 |     |       |       |
| Surrogate: TCX                     | 101           |       | 15    | 100   |        | 101                       | 20-129                                 |     |       |       |
| Surrogate: TCX [2C]                | 101           |       | a     | 100   |        | 101                       | 20-129                                 |     |       |       |
| Surrogate: Decachlorobiphenyl      | 198           |       | n     | 200   |        | 99.0                      | 10-131                                 |     |       |       |
| Surrogate: Decachlorohiphenyl [2C] | 198           |       | **    | 200   |        | 99.0                      | 10-131                                 |     |       |       |

North Creek Analytical - Spokane

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%REC

Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

RPD

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control

#### North Creek Analytical - Bothell

Spike

Reporting

| Analyte                          | Result        | Limit (   | Jnits                                   | Level                                  | Result | %REC                                     | Limits | RPD  | Limit | Notes                            |
|----------------------------------|---------------|---|---|--|--------|--|--------|--|-------|----------------------------------|
| Batch 5G05054: Prepared 07/05/05 | Using 5F28027 | varantus as a sur a s | *************************************** | ······································ |        | Bilistofratespelanesselektronisenselektr |        | ergenina (graphy ar an |       | edillariam anno describo de 1944 |
| Calibration Check (5G05054-CCV4) |               |   |   |  |        |  |        |  |       |                                  |
| Aldrin                           | 50.8          |   | ug/l                                    | 50,0                                   |        | 102                                      | 85-115 |  |       |                                  |
| Aldrin [2C]                      | 51.1          |   | н                                       | 50.0                                   |        | 102                                      | 85-115 |  |       |                                  |
| alpha-BHC                        | 49.6          |   | *                                       | 50.0                                   |        | 99.2                                     | 85-115 |  |       |                                  |
| alpha-BHC [2C]                   | 50.4          |   | ы                                       | 50,0                                   |        | 101                                      | 85-115 |  |       |                                  |
| beta-BHC                         | 42.9          |   | н                                       | 50.0                                   |        | 85.8                                     | 85-115 |  |       |                                  |
| beta-BHC [2C]                    | 46.9          |   | *                                       | 50.0                                   |        | 93.8                                     | 85-115 |  |       |                                  |
| delta-BHC                        | 48.5          |   | n                                       | 50.0                                   |        | 97.0                                     | 85-115 |  |       |                                  |
| delta-BHC [2C]                   | 50.6          |   | n                                       | 50.0                                   |        | 101                                      | 85-115 |  |       |                                  |
| gamma-BHC (Lindane)              | 47.8          |   | tt                                      | 50.0                                   |        | 95.6                                     | 85-115 |  |       |                                  |
| gamma-BHC (Lindane) [2C]         | 50.3          |   | и                                       | 50.0                                   |        | 101                                      | 85-115 |  |       |                                  |
| alpha-Chiordane                  | 49.9          |   | ir                                      | 50.0                                   |        | 99.8                                     | 85-115 |  |       |                                  |
| alpha-Chlordane [2C]             | 49.5          |   | n                                       | 50.0                                   |        | 99.0                                     | 85-115 |  |       |                                  |
| gamma-Chlordane                  | 50.5          |   | *                                       | 50.0                                   |        | 101                                      | 85-115 |  |       |                                  |
| gamma-Chlordane (2C)             | 48.8          |   | *                                       | 50.0                                   |        | 97.6                                     | 85-115 |  |       |                                  |
| 4,4'-DDD                         | 96.9          |   | π                                       | 100                                    |        | 96.9                                     | 85-115 |  |       |                                  |
| 4,4'-DDD [2C]                    | 96.7          |   | н                                       | 100                                    |        | 96.7                                     | 85-115 |  |       |                                  |
| 4,4'-DDE                         | 100           |   | #f                                      | 100                                    |        | 100                                      | 85-115 |  |       |                                  |
| 4,4'-DDE [2C]                    | 100           |   | #                                       | 100                                    |        | 100                                      | 85-115 |  |       |                                  |
| 4,4'-DDT                         | 89.9          |   | ×                                       | 100                                    |        | 89.9                                     | 85-115 |  |       |                                  |
| 4,4'-DDT [2C]                    | 93,5          |   |   | 100                                    |        | 93.5                                     | 85-115 |  |       |                                  |
| Dieldrin                         | 101           |   | h                                       | 100                                    |        | 101                                      | 85-115 |  |       |                                  |
| Dieldrin [2C]                    | 100           |   | к                                       | 100                                    |        | 100                                      | 85-115 |  |       |                                  |
| Endosulfan l                     | 49.5          |   | н                                       | 50.0                                   |        | 99.0                                     | 85-115 |  |       |                                  |
| Endosulfan I [2C]                | 49.9          |   | ĸ                                       | 50,0                                   |        | 99.8                                     | 85-115 |  |       |                                  |
| Endosulfan II                    | 102           |   | ie                                      | 100                                    |        | 102                                      | 85-115 |  |       |                                  |
| Endosulfan II [2C]               | 94.9          |   | м                                       | 100                                    |        | 94.9                                     | 85-115 |  |       |                                  |
| Endosulfan sulfate               | 99.4          |   | Ħ                                       | 100                                    |        | 99.4                                     | 85-115 |  |       |                                  |
| Endosulfan sulfate (2C)          | 98.9          |   | *                                       | 100                                    |        | 98.9                                     | 85-115 |  |       |                                  |
| Endrin                           | 94.9          |   | н                                       | 100                                    |        | 94.9                                     | 85-115 |  |       |                                  |
| Endrin [2C]                      | 94.0          |   | *                                       | 100                                    |        | 94.0                                     | 85-115 |  |       |                                  |
| Endrin aldehyde                  | 101           |   | ×                                       | 100                                    |        | 101                                      | 85-115 |  |       |                                  |
| Endrin aldehyde [2C]             | 100           |   | я                                       | 100                                    |        | 100                                      | 85-115 |  |       |                                  |
| Endrin ketone                    | 90.1          |   | n                                       | 100                                    |        | 90.1                                     | 85-115 |  |       |                                  |
| Endrin ketone [2C]               | 93.1          |   | n                                       | 100                                    |        | 93.1                                     | 85-115 |  |       |                                  |
| Heptachlor                       | 44.4          |   | u .                                     | 50.0                                   |        | 88.8                                     | 85-115 |  |       |                                  |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director

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907.563,9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

|                                    |               | Reporting                                 | ** *. | Spike | Source                   |      | %REC   |  | RPD   |  |
|------------------------------------|---------------|---|-------|-------|--------------------------|------|--------|--|-------|--|
| Analyte                            | Result        | Limit                                     | Units | Level | Result                   | %REC | Limits | RPD  | Limit | Notes  |
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 | 310°904°9911000°0000000000000000000000000 |       |       | PMINISTER VINIONIA COMPA |      |        | mananan manan da man |       | API ESSA SANSANI MANAGANI MAN |
| Calibration Check (5G05054-CCV4)   |               |   |       |       |                          |      |        |  |       |  |
| Heptachlor [2C]                    | 45.3          |   | ug/l  | 50.0  |                          | 90.6 | 85-115 |  |       |  |
| Heptachlor epoxide                 | 47.4          |   | н     | 50.0  |                          | 94.8 | 85-115 |  |       |  |
| Heptachlor epoxide [2C]            | 49.6          |   | 91    | 50.0  |                          | 99.2 | 85-115 |  |       |  |
| Methoxychior                       | 433           |   | R     | 500   |                          | 86.6 | 85-115 |  |       |  |
| Methoxychlor [2C]                  | 431           |   | N     | 500   |                          | 86.2 | 85-115 |  |       |  |
| Surrogate: TCX                     | 97.6          |   | 11    | 100   |                          | 97.6 | 20-129 |  |       |  |
| Surrogate: TCX [2C]                | 97.5          |   | pe .  | 100   |                          | 97.5 | 20-129 |  |       |  |
| Surrogate: Decachlorobiphenyl      | 200           |   | n     | 200   |                          | 100  | 10-131 |  |       |  |
| Surrogate: Decachlorobiphenyl [2C] | 195           |   | if    | 200   |                          | 97.5 | 10-131 |  |       |  |
| Calibration Check (5G05054-CCV6)   |               |   |       |       |                          |      |        |  |       |  |
| Aldrin                             | 51.2          |   | ug/l  | 50.0  |                          | 102  | 85-115 |  |       |  |
| Aldrin [2C]                        | 53.0          |   |       | 50.0  |                          | 106  | 85-115 |  |       |  |
| alpha-BHC                          | 52.7          |   | к     | 50.0  |                          | 105  | 85-115 |  |       |  |
| alpha-BHC [2C]                     | 54.7          |   | 11    | 50.0  |                          | 109  | 85-115 |  |       |  |
| beta-BHC                           | 46.9          |   | pi    | 50.0  |                          | 93.8 | 85-115 |  |       |  |
| beta-BHC [2C]                      | 50.8          |   | ti .  | 50.0  |                          | 102  | 85-115 |  |       |  |
| delta-BHC                          | 50.2          |   | н     | 50.0  |                          | 100  | 85-115 |  |       |  |
| delta-BHC [2C]                     | 54.1          |   | к     | 50.0  |                          | 108  | 85-115 |  |       |  |
| gamma-BHC (Lindane)                | 52.0          |   | н     | 50.0  |                          | 104  | 85-115 |  |       |  |
| gamma-BHC (Lindane) [2C]           | 54.9          |   | r#    | 50.0  |                          | 110  | 85-115 |  |       |  |
| alpha-Chiordane                    | 49.0          |   | ie    | 50.0  |                          | 98.0 | 85-115 |  |       |  |
| alpha-Chlordane [2C]               | 49.1          |   | p     | 50.0  |                          | 98.2 | 85-115 |  |       |  |
| gamma-Chlordane                    | 49.9          |   | 6     | 50.0  |                          | 99.8 | 85-115 |  |       |  |
| gamma-Chlordane [2C]               | 48,6          |   | W     | 50.0  |                          | 97.2 | 85-115 |  |       |  |
| 4,4'-DDD                           | 104           |   | •     | 100   |                          | 104  | 85-115 |  |       |  |
| 4,4'-DDD [2C]                      | 108           |   | ч     | 100   |                          | 108  | 85-115 |  |       |  |
| 4,4'-DDE                           | 97.2          |   | к     | 100   |                          | 97.2 | 85-115 |  |       |  |
| 4,4'-DDE [2C]                      | 99.8          |   | H¢ .  | 100   |                          | 99.8 | 85-115 |  |       |  |
| 4,4'-DDT                           | 74.1          |   | 14    | 100   |                          | 74.1 | 85-115 |  |       |  |
| 4,4'-DDT [2C]                      | 76.6          |   | н     | 100   |                          | 76.6 | 85-115 |  |       |  |
| Dieldrin                           | 98.6          |   | *     | 100   |                          | 98.6 | 85-115 |  |       |  |
| Dieldrin [2C]                      | 99.5          |   | ч     | 100   |                          | 99.5 | 85-115 |  |       |  |
| Endosulfan i                       | 48.4          |   | и     | 50.0  |                          | 96.8 | 85-115 |  |       |  |
| Endosulfan I [2C]                  | 49,5          |   |       | 50.0  |                          | 99.0 | 85-115 |  |       |  |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Anchorage

Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

|                                    | 2% + .        | Reporting | Units   | Spike<br>Level             | Source<br>Result                      | %REC                     | %REC<br>Limits  | RPD  | RPD<br>Limit                           | Notes  |
|------------------------------------|---------------|-----------|---|----------------------------|---------------------------------------|--------------------------|---|--|--|--|
| Analyte                            | Rosult        | Limit     | Ums   | TCA51                      | Kesun                                 | 76NGC                    | #111173   |  | ************************************** | 1.0163   |
| Batch 5G05054: Prepared 07/05/05   | Using 5F28027 |           | DOOR STATE OF THE | урды учисыны манасы катапа | over the second section of the second | nanananananan (hilipina) | · COUNTER DE SECONDES SE CONTRACTOR DE SE | THE PROPERTY AND ADDRESS OF THE PROPERTY OF TH |  | THE TAX OF THE PARTY OF THE PAR |
| Calibration Check (5G05054-CCV6)   |               |           |   |                            |                                       |                          |   |  |  |  |
| Endosulfan II                      | 95.4          |           | ug/l  | 100                        |                                       | 95.4                     | 85-115  |  |  |  |
| Endosulfan II [2C]                 | 93.8          |           | πi  | 100                        |                                       | 93.8                     | 85-115  |  |  |  |
| Endosulfan sulfate                 | 96.1          |           | N   | 100                        |                                       | 96.1                     | 85-115  |  |  |  |
| Endosulfan sulfate [2C]            | 95.4          |           | к   | 100                        |                                       | 95,4                     | 85-115  |  |  |  |
| Endrin                             | 95.5          |           | н   | 100                        |                                       | 95.5                     | 85-115  |  |  |  |
| Endrin [2C]                        | 97.4          |           | к   | 100                        |                                       | 97.4                     | 85-115  |  |  |  |
| Endrin aldehyde                    | 96.3          |           | ıı  | 100                        |                                       | 96.3                     | 85-115  |  |  |  |
| Endrin aldehyde [2C]               | 96.0          |           | **  | 100                        |                                       | 96.0                     | 85-115  |  |  |  |
| Endrin ketone                      | 91.0          |           | ĸ   | 100                        |                                       | 91.0                     | 85-115  |  |  |  |
| Endrin ketone [2C]                 | 94.7          |           | π   | 100                        |                                       | 94.7                     | 85-115  |  |  |  |
| Heptachlor                         | 47.0          |           | *   | 50.0                       |                                       | 94.0                     | 85-115  |  |  |  |
| Heptachlor (2C)                    | 48.6          |           | n   | 50.0                       |                                       | 97.2                     | 85-115  |  |  |  |
| Heptachlor epoxide                 | 48,4          |           | "   | 50.0                       |                                       | 96.8                     | 85-115  |  |  |  |
| Heptachlor epoxide [2C]            | 50.3          |           | *   | 50.0                       |                                       | 101                      | 85-115  |  |  |  |
| Methoxychlor                       | 403           |           | н   | 500                        |                                       | 80.6                     | 85-115  |  |  |  |
| Methoxychlor [2C]                  | 406           |           | a   | 500                        |                                       | 81.2                     | 85-115  |  |  |  |
| Surrogate: TCX                     | 103           | ~         | а   | 100                        |                                       | 103                      | 20-129  |  |  |  |
| Surrogate: TCX [2C]                | 103           |           | ŧŧ  | 100                        |                                       | 103                      | 20-129  |  |  |  |
| Surrogate: Decachlarobiphenyl      | 180           |           | "   | 200                        |                                       | 90.0                     | 10-131  |  |  |  |
| Surrogate: Decachlorobiphenyl [2C] | 177           |           | "   | 200                        |                                       | 88.5                     | 10-131  |  |  |  |
| Secondary Cal Check (5G05054-SCV2) |               |           |   |                            |                                       |                          |   |  |  |  |
| Aldrin                             | 52.3          |           | ug/l  | 50.0                       |                                       | 105                      | 80-120  |  |  |  |
| Aldrin [2C]                        | 53,5          |           | *   | 50.0                       |                                       | 107                      | 80-120  |  |  |  |
| alpha-BHC                          | 50.3          |           | н   | 50.0                       |                                       | 101                      | 80-120  |  |  |  |
| alpha-BHC [2C]                     | 51.5          |           | žŧ  | 50.0                       |                                       | 103                      | 80-120  |  |  |  |
| beta-BHC                           | 47.8          |           | N   | 50,0                       |                                       | 95.6                     | 80-120  |  |  |  |
| beta-BHC [2C]                      | 51.0          |           | 1/  | 50.0                       |                                       | 102                      | 80-120  |  |  |  |
| delta-BHC                          | 47.2          |           | tt.   | 50.0                       |                                       | 94.4                     | 80-120  |  |  |  |
| delta-BHC [2C]                     | 50.0          |           | **  | 50.0                       |                                       | 100                      | 80-120  |  |  |  |
| gamma-BHC (Lindane)                | 48.4          |           | к   | 50.0                       |                                       | 96.8                     | 80-120  |  |  |  |
| gamma-BHC (Lindane) [2C]           | 50.3          |           | и   | 50.0                       |                                       | 101                      | 80-120  |  |  |  |
| alpha-Chiordane                    | 50.1          |           |   | 50.0                       |                                       | 100                      | 80-120  |  |  |  |
| alpha-Chlordane [2C]               | 50.2          |           | 44  | 50.0                       |                                       | 100                      | 80-120  |  |  |  |
| t                                  | 50.9          |           |   | 50.0                       |                                       | 102                      | 80-120  |  |  |  |

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

| 1  |                    |        | Reporting                   |  | Spike  | Source |                                   | %REC   |  | RPD                      | ļ  |
|--|--------------------|--------|-----------------------------|--|--|--------|-----------------------------------|--------|--|--------------------------|--|
| Analyte                                    |                    | Result | Limit                       | Units  | Level  | Result | %REC                              | Limits | RPD  | Limit                    | Notes  |
| pronumental and the second supplies of the |                    |        | Ясниковичения выпольную ста | NAME OF THE OWNER O | PANALON CONTRACTOR CON |        | Million beneficial and the second |        | ***************************************  | p-r-opencounteres        |  |
|  | Prepared 07/05/05  |        |                             |  |  |        |                                   |        |  |                          |  |
| 0  |                    |        |                             |  |  |        |                                   |        | Water Street Str | management of the second | ACCOUNT OF THE PROPERTY OF THE |
| Secondary Cal Che                          | eck (5G05054-SCV2) |        |                             |  |  |        |                                   |        |  |                          |  |

| Batch 5G05054:          | Prepared 07/05/05 | Using 5F28027 |      | ************************************** |      |        |  |
|-------------------------|-------------------|---------------|------|--|------|--------|--|
| Secondary Cal Chec      | k (5G05054-SCV2)  |               |      |  |      |        | The state of the s |
| gamma-Chlordane [2C]    |                   | 49.9          | ug/l | 50.0                                   | 99.8 | 80-120 | <br>   |
| 4,4'-DDD                |                   | 91.6          | в    | 100                                    | 91.6 | 80-120 |  |
| 4,4"-DDD [2C]           |                   | 93.4          | ×    | 100                                    | 93.4 | 80-120 |  |
| 4,4'-DDE                |                   | 97.7          | и    | 100                                    | 97.7 | 80-120 |  |
| 4,4'-DDE [2C]           |                   | 101           | k    | 100                                    | 101  | 80-120 |  |
| 4,4°-DDT                |                   | 92.0          | N    | 100                                    | 92.0 | 80-120 |  |
| 4,4'-DDT [2C]           |                   | 95.2          | н    | 100                                    | 95.2 | 80-120 |  |
| Dieldrin                |                   | 98.4          | я    | 100                                    | 98.4 | 80-120 |  |
| Dieldrin [2C]           |                   | 99.6          | e    | 100                                    | 99.6 | 80-120 |  |
| Endosulfan I            |                   | 46,6          | H    | 50.0                                   | 93.2 | 80-120 |  |
| Endosulfan I [2C]       |                   | 47.9          | н    | 50.0                                   | 95.8 | 80-120 |  |
| Endosulfan II           |                   | 100           | *    | 100                                    | 100  | 80-120 |  |
| Endosulfan II [2C]      |                   | 96.6          | и    | 100                                    | 96.6 | 80-120 |  |
| Endosulfan sulfate      |                   | 102           | ĸ    | 100                                    | 102  | 80-120 |  |
| Endosulfan sulfate [2C] |                   | 103           | N-   | 100                                    | 103  | 80-120 |  |
| Endrin                  |                   | 91.8          | ж    | 100                                    | 91.8 | 80-120 |  |
| Endrin (2C)             |                   | 93.9          | n    | 100                                    | 93.9 | 80-120 |  |
| Endrin aldehyde         |                   | 109           | N    | 100                                    | 109  | 80-120 |  |
| Endrin aldehyde [2C]    |                   | 112           | a    | 100                                    | 112  | 80-120 |  |
| Endrin ketone           |                   | 99.5          | 46   | 100                                    | 99.5 | 80-120 |  |
| Endrin ketone [2C]      |                   | 104           | ж    | 100                                    | 104  | 80-120 |  |
| Heptachlor              |                   | 42.7          | 94   | 50.0                                   | 85.4 | 80-120 |  |
| Heptachlor [2C]         |                   | 43.0          | я    | 50.0                                   | 86,0 | 80-120 |  |
| Heptachlor epoxide      |                   | 48.6          | gri  | 50.0                                   | 97.2 | 80-120 |  |
| Heptachlor epoxide [2C] |                   | 51.0          | н    | 50.0                                   | 102  | 80-120 |  |
| Methoxychlor            |                   | 438           | n    | 500                                    | 87.6 | 80-120 |  |
| Methoxychlor [2C]       |                   | 443           | "    | 500                                    | 88.6 | 80-120 |  |
| Surrogate: TCX          |                   | 95.2          | п    | 100                                    | 95.2 | 20-129 | <br>   |
| Surrogaie: TCX [2C]     |                   | 96.3          | **   | 100                                    | 96.3 | 20-129 |  |
| Surrogate: Decachlorobi | • •               | 176           | **   | 200                                    | 88.0 | 10-131 |  |
| Surrogate: Decachlorobi | iphenyl [2C]      | 177           | н    | 200                                    | 88.5 | 10-131 |  |
|                         |                   |               |      |  |      |        |  |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 12:00

Project Manager: Dave Enos

#### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

|                          |                  |                 | porting                  | gynfresidentationninteenatationen <del>de</del> nneb   | Spike                                    | Source   | ORNE DE LO COMPANSA DE LA COMPANSA D | %REC  | *************************************** | RPD                       |       |
|--------------------------|------------------|-----------------|--------------------------|--|--|--|--|---|---|---------------------------|-------|
| Analyte                  |                  | Result          | Limit                    | Units  | Level                                    | Result   | %REC   | Limits  | RPD                                     | Limit                     | Notes |
| Batch 5F24051: P         | repared 06/24/05 | Using EPA 3550B | 154(m.moraulov) - 74 472 | WANTER STREET, | annama ann ann ann ann ann ann ann ann a | MANAGEMENT AND MANAGE | ***************************************  | NO COMPANY CONTRACTOR | aan pikalaa kalalaa na maramaa de       | -egypa-apanasanasanasanas |       |
| Blank (5F24051-BLK       | 2)               |                 |                          |  |  |  |  |   | *************************************** |                           |       |
| Aroclor 1016             |                  | ND              | 25.0                     | ug∕kg wet  |  |  |  |   |   |                           |       |
| Aroclor 1221             |                  | ND              | 50.0                     | 16   |  |  |  |   |   |                           |       |
| Aroclor 1232             |                  | ND              | 25.0                     | #  |  |  |  |   |   |                           |       |
| Aroclor 1242             |                  | ND              | 25.0                     | н  |  |  |  |   |   |                           |       |
| Arocior 1248             |                  | ND              | 25.0                     | н  |  |  |  |   |   |                           |       |
| Aroclor 1254             |                  | ND              | 25.0                     | R  |  |  |  |   |   |                           |       |
| Aroclor 1260             |                  | ND              | 25.0                     | W  |  |  |  |   |   |                           |       |
| Aroclor 1262             |                  | ND              | 25.0                     | er .   |  |  |  |   |   |                           |       |
| Aroclar 1268             |                  | ND              | 25.0                     | 16   |  |  |  |   |   |                           |       |
| Surrogate: TCX           |                  | 6.10            |                          | "  | 6.67                                     |  | 91.5   | 19-149  |   |                           |       |
| Surrogale: Decachlorobij | ohenyl           | 7.01            |                          | н  | 6.67                                     |  | 105  | 37-151  |   |                           |       |
| LCS (5F24051-BS2)        |                  |                 |                          |  |  |  |  |   | p                                       |                           |       |
| Aroclor 1016             |                  | 72.8            | 25.0                     | ug/kg wet  | 83.3                                     |  | 87.4   | 63-125  |   |                           |       |
| Areclor 1260             |                  | 83.5            | 25.0                     | **   | 83.3                                     |  | 100  | 64-125  |   |                           |       |
| Surrogate: TCX           |                  | 6.41            |                          | Ħ  | 6.67                                     |  | 96.1   | 19-149  |   |                           |       |
| Surrogate: Decachlorobij | phenyl           | 6.92            |                          | **   | 6.67                                     |  | 104  | 37-151  |   |                           |       |
| LCS Dup (5F24051-B       | SD2)             |                 |                          |  |  |  |  |   |   |                           |       |
| Aroclor 1016             |                  | 74.4            | 25.0                     | ug/kg wet  | 83.3                                     |  | 89.3   | 63-125  | 2.17                                    | 30                        |       |
| Aroclor 1260             |                  | 86.2            | 25.0                     | н  | 83.3                                     |  | 103  | 64-125  | 3.18                                    | 30                        |       |
| Surrogate: TCX           |                  | 6.51            |                          | н  | 6.67                                     |  | 97.6   | 19-149  |   |                           |       |
| Surragate: Decachlorobi  | phenyl           | 7.09            |                          | 19   | 6.67                                     |  | 106  | 37-151  |   |                           |       |
| Matrix Spike (5F240:     | 51-MS2)          |                 |                          |  |  | Source: B  | 5F0427-12  |   |   |                           |       |
| Aroclor 1016             |                  | 3.44            | 12.4                     | ug/kg dry  | 47.4                                     | ND   | 7.26   | 28-136  |   |                           |       |
| Aroclor 1260             |                  | 16.7            | 12.4                     | n  | 47.4                                     | 24.7   | -16.9  | 35-152  |   |                           |       |
| Surrogate: TCX           |                  | 0.762           |                          | "  | 3.79                                     |  | 20.1   | 19-149  |   |                           |       |
| Surrogate: Decachlorobi  | phenyl           | 0.999           |                          | n  | 3.79                                     |  | 26.4   | 37-151  |   |                           |       |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

| novid+++++/n/in-generalization interaction of the control of the c | ACCUPATION AND THE STREET OF T | R               | eparting   |           | Spike   | Source                                  |           | %REC   |   | RPD                                     | Marie and Communication of the |
|--|--|-----------------|--|-----------|---|---|-----------|--|---|---|--|
| Analyte  |  | Result          | Limit  | Units     | Level   | Result                                  | %REC      | Limits   | RPD                                     | Limit                                   | Notes  |
| Batch 5F24051:   | Prepared 06/24/05  | Using EPA 3550B | ACCONING AND |           | romon Doos discussion and a second  |   |           | DESCRIPTION OF THE PROPERTY OF |   |   |  |
| Matrix Spike Dup (5  | F24051-MSD2)   |                 |  |           |   | Source: B                               | 5F0427-12 |  |   |   | 3  |
| Aroclor 1016   |  | 42.5            | 12.5   | ug/kg dry | 47.5  | ND                                      | 89.5      | 28-136   | 170                                     | 35                                      | Marie Control of the  |
| Aroclor 1260   |  | 60.0            | 12.5   | Ħ         | 47.5  | 24.7                                    | 74.3      | 35-152   | 113                                     | 35                                      |  |
| Surrogate: TCX   |  | 3.50            |  | v         | 3.80  | ran and train to                        | 92.1      | 19-149   | *************************************** | · · · · · · · · · · · · · · · · · · ·   |  |
| Surrogate: Decachlorobi  | phenyl   | 3.88            |  | 16        | 3.80  |   | 102       | 37-151   |   |   |  |
| Batch 5F30001:   | Prepared 06/30/05  | Using 5F24051   |  |           | Anna de la composição de |   |           |  |   |   |  |
| Calibration Check (5   | F30001-CCV1)   |                 |  |           |   |   |           |  |   |   |  |
| Aroclor 1016   | ,  | 948             |  | ug/l      | 1000  |   | 94.8      | 85-115   |   |   |  |
| Aroclor 1016 [2C]  |  | 1000            |  | В         | 1000  |   | 100       | 85-115   |   |   |  |
| Aroclor 1260   |  | 1030            |  | и         | 1000  |   | 103       | 85-115   |   |   |  |
| Aroclor 1260 [2C]  |  | 970             |  | н         | 1000  |   | 97.0      | 85-115   |   |   |  |
| Surrogate: TCX   |  | 95.4            |  | н         | 100   |   | 95.4      | 25-129   |   | *************************************** |  |
| Surrogate: TCX [2C]  |  | 99.1            |  | tt.       | 100   |   | 99. I     | 25-129   |   |   |  |
| Surrogate: Decachlorobi  | iphenyl  | 99.4            |  | \$¢       | 100   |   | 99,4      | 22-125   |   |   |  |
| Surrogate: Decachlorobi  | iphenyl [2C]   | 90.7            |  | *         | 100   |   | 90.7      | 22-125   |   |   |  |
| Calibration Check (5   | F30001-CCV2)   |                 |  |           |   |   |           |  |   |   |  |
| Aroclor 1016   |  | 943             |  | սք/1      | 1000  |   | 94.3      | 85-115   |   |   | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  |
| Aroclor 1016 [2C]  |  | 862             |  | п         | 1000  |   | 86.2      | 85-115   |   |   |  |
| Aroclor 1260   |  | 1040            |  | n         | 1000  |   | 104       | 85-115   |   |   |  |
| Aroctor 1260 [2C]  |  | 958             |  | 14        | 1000  |   | 95.8      | 85-115   |   |   |  |
| Surrogate: TCX   |  | 94.3            |  | и         | 100   | *************************************** | 94.3      | 25-129   |   |   |  |
| Surrogate: TCX [2C]  |  | 94.2            |  | H         | 100   |   | 94.2      | 25-129   |   |   |  |
| Surrogate: Decachlorob   | iphenyl  | 99.1            |  | н         | 100   |   | 99.1      | 22-125   |   |   |  |
| Surrogate: Decachlorob   | iphenyl [2C]   | 94.3            |  | *         | 100   |   | 94.3      | 22-125   |   |   |  |

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Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Bend

Reported: 07/11/05 12:00

#### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

#### North Creek Analytical - Bothell

| enne för enne enne en |                    | Reporting                          |       | Spike                                     | Source   |  | %REC                          |   | RPD                                    |                                      |
|--|--------------------|------------------------------------|-------|---|--|--|-------------------------------|---|--|--------------------------------------|
| Analyte  | Result             | Limit                              | Units | Level                                     | Result   | %REC   | Limits                        | RPD   | Limit                                  | Notes                                |
| Batch 5F30001: Prepared 06/3                     | 0/05 Using 5F24051 | ggarannarahandiktorijiPlilikto4094 |       | on the second support and support support | encentral popological de la constante de la co | CALLES AND | Makeriskelykitykitakanaanaana | CALLED AND AND AND AND AND AND AND AND AND AN | ************************************** | nameros mais dels Dels ministrations |
| Calibration Check (5F30001-CCV4)                 | }                  |                                    |       |   |  |  |                               |   |  | ,,                                   |
| Aroctor 1016                                     | 1020               |                                    | ug/l  | 1000                                      |  | 102  | 85-115                        |   |  |                                      |
| Aroclor 1016 [2C]                                | 1050               |                                    | 14    | 1000                                      |  | 105  | 85-115                        |   |  |                                      |
| Aroclor 1260                                     | 1070               |                                    | в     | 1000                                      |  | 107  | 85-115                        |   |  |                                      |
| Aroclor 1260 [2C]                                | 1100               |                                    | **    | 1000                                      |  | 110  | 85-115                        |   |  |                                      |
| Surrogate: TCX                                   | 96.0               |                                    | п     | 100                                       |  | 96.0   | 25-129                        |   |  |                                      |
| Surrogale: TCX [2C]                              | 98.2               |                                    | "     | 100                                       |  | 98.2   | 25-129                        |   |  |                                      |
| Surrogate: Decachlorobiphenyl                    | 104                |                                    | n     | 100                                       |  | 104  | 22-125                        |   |  |                                      |
| Surrogate: Decachlorobiphenyl [2C]               | 104                |                                    | и     | 100                                       |  | 104  | 22-125                        |   |  |                                      |
| Calibration Check (5F30001-CCV6                  | )                  |                                    |       |   |  |  |                               | w   |  |                                      |
| Aroclor 1016                                     | 964                |                                    | ug/l  | 1000                                      |  | 96.4   | 85-115                        |   |  |                                      |
| Aroclor 1016 [2C]                                | 963                |                                    | н     | 1000                                      |  | 96.3   | 85-115                        |   |  |                                      |
| Aroclar 1260                                     | 1060               |                                    | *     | 1000                                      |  | 106  | 85-115                        |   |  |                                      |
| Aroclor 1260 [2C]                                | 1040               |                                    | e¢.   | 1000                                      |  | 104  | 85-115                        |   | _                                      |                                      |
| Surrogate: TCX                                   | 95.5               |                                    | v     | 100                                       |  | 95.5   | 25-129                        |   |  |                                      |
| Surrogale: TCX [2C]                              | 97.7               |                                    | 11    | 100                                       |  | 97.7   | 25-129                        |   |  |                                      |
| Surrogate: Decachlorobiphenyl                    | 102                |                                    | n     | 100                                       |  | 102  | 22-125                        |   |  |                                      |
| Surrogate: Decachlorobiphenyl [2C]               | 104                |                                    | Ħ     | 100                                       |  | 104  | 22-125                        |   |  |                                      |
| Calibration Check (5F30001-CCV8                  | )                  |                                    |       |   |  |  |                               |   |  |                                      |
| Aroclor 1016                                     | 977                |                                    | ug/l  | 1000                                      |  | 97.7   | 85-115                        |   |  |                                      |
| Aroclor 1016 [2C]                                | 960                |                                    | ik    | 1000                                      |  | 96.0   | 85-115                        |   |  |                                      |
| Araclar 1260                                     | 1060               |                                    | и     | 1000                                      |  | 106  | 85-115                        |   |  |                                      |
| Aroclor 1260 [2C]                                | 1010               |                                    | u     | 1000                                      |  | 101  | 85-115                        |   |  |                                      |
| Surrogate: TCX                                   | 95.6               |                                    | н     | 100                                       |  | 95.6   | 25-129                        |   |  |                                      |
| Surrogate: TCX [2C]                              | 97.6               |                                    | tt    | 100                                       |  | 97.6   | 25-129                        |   |  |                                      |
| Surrogate: Decachlorobiphenyl                    | 102                |                                    | #     | 100                                       |  | 102  | 22-125                        |   |  |                                      |
| Surrogate: Decachlorobiphenyl [2C]               | 96.7               |                                    | ь     | 100                                       |  | 96.7   | 22-125                        |   |  |                                      |

North Creek Analytical - Spokane

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North Creek Analytical, Inc. Environmental Laboratory Network

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20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7568

2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Anchorage

Geo Engineers - Spokane 523 East Second Ave.

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

|                                    |               | Reporting |       | Spike | Source |      | %REC   |     | RPD   |                                     |
|------------------------------------|---------------|-----------|-------|-------|--------|------|--------|-----|-------|-------------------------------------|
| Analyte                            | Result        | Limit     | Units | Level | Result | %REC | Limits | RPD | Limit | Notes                               |
| Batch 5F30001: Prepared 06/30/05   | Using 5F24051 |           | ****  |       |        |      |        |     |       |                                     |
| Calibration Check (5F30001-CCVA)   |               |           |       |       |        |      |        |     |       |                                     |
| Aroclar 1016                       | 1010          |           | ug/l  | 1000  |        | 101  | 85-115 |     |       |                                     |
| Aroclar 1016 [2C]                  | 968           |           | н     | 1000  |        | 96.8 | 85-115 |     |       |                                     |
| Araclor 1260                       | 1040          |           | н     | 1000  |        | 104  | 85-115 |     |       |                                     |
| Aroclor 1260 [2C]                  | 963           |           | ж     | 1000  |        | 96.3 | 85-115 |     |       |                                     |
| Surrogate: TCX                     | 95.4          |           | u     | 100   |        | 95.4 | 25-129 |     |       |                                     |
| Surrogate: TCX [2C]                | 91.4          |           | "     | 100   |        | 91.4 | 25-129 |     |       |                                     |
| Surrogate: Decachlorobiphenyl      | 103           |           | п     | 100   |        | 103  | 22-125 |     |       |                                     |
| Surrogate: Decachlorobiphenyl [2C] | 95.1          |           | н     | 100   |        | 95.1 | 22-125 |     |       |                                     |
| Calibration Check (5F30001-CCVC)   |               |           |       |       |        |      |        |     |       |                                     |
| Aroclor 1016                       | 974           |           | ug/l  | 1000  |        | 97.4 | 85-115 |     |       | * · · · · · · · · · · · · · · · · · |
| Aroclor 1016 [2C]                  | 934           |           | н     | 1000  |        | 93.4 | 85-115 |     |       |                                     |
| Aroclor 1260                       | 1070          |           | н     | 1000  |        | 107  | 85-115 |     |       |                                     |
| Aroclor 1260 [2C]                  | 989           |           | н     | 1000  |        | 98.9 | 85-115 |     |       |                                     |
| Surrogate: TCX                     | 96.0          |           | п     | 100   |        | 96.0 | 25-129 |     |       |                                     |
| Surrogaie: TCX [2C]                | 95.5          |           | н     | 100   |        | 95.5 | 25-129 |     |       |                                     |
| Surrogate: Decachlorobiphenyl      | 104           |           | *     | 100   |        | 104  | 22-125 |     |       |                                     |
| Surrogate: Decachlorobiphenyl [2C] | 99.3          |           | н     | 100   |        | 99.3 | 22-125 |     |       |                                     |
| Calibration Check (5F30001-CCVE)   |               |           |       |       |        |      |        |     |       |                                     |
| Aroclor 1016                       | 1020          |           | ug/l  | 1000  |        | 102  | 85-115 |     |       |                                     |
| Aroclor 1016 [2C]                  | 999           |           | 14    | 1000  |        | 99.9 | 85-115 |     |       |                                     |
| Aroclor 1260                       | 1070          |           | н     | 1000  |        | 107  | 85-115 |     |       |                                     |
| Aroclor 1260 [2C]                  | 988           |           | н     | 1000  |        | 98.8 | 85-115 |     |       |                                     |
| Surrogate: TCX                     | 96.7          |           | "     | 100   |        | 96.7 | 25-129 |     |       |                                     |
| Surrogate: TCX [2C]                | 98.6          |           | 0     | 100   |        | 98.6 | 25-129 |     |       |                                     |
| Surrogate: Decachlorobiphenyl      | 104           |           | н     | 100   |        | 104  | 22-125 |     |       |                                     |
| Surrogate: Decachlorobiphenyl [2C] | 95.1          |           | п     | 100   |        | 95.1 | 22-125 |     |       |                                     |

North Creek Analytical - Spokane

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Geo Engineers - Spokane

523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

#### North Creek Analytical - Bothell

| Analyte  Batch 5F30001: Prepared 06/30/05  Calibration Check (5F30001-CCVG)  Aroclor 1016  Aroclor 1016 [2C]  Aroclor 1260  Aroclor 1260 [2C] | Result  Using 5F24051  1010 903 1020 797 97.6 | Limit | Units  ug/l | Level | Result | %REC | Limits | RPD  | Limit                                   | Notes   |
|---|---|-------|-------------|-------|--------|------|--------|--|---|---|
| Calibration Check (5F30001-CCVG)  Aroclor 1016  Aroclor 1016 [2C]  Aroclor 1260   | 1010<br>903<br>1020<br>797                    |       | 52          |       |        | IOI  |        | and necessary and the second s | nin-questioner residence (not excessed  | P\$ No. As the second se |
| Aroclor 1016<br>Aroclor 1016 [2C]<br>Aroclor 1260   | 903<br>1020<br>797                            |       | 52          |       |        | 101  |        |  |   |   |
| Aroclor 1016 [2C]<br>Aroclor 1260   | 903<br>1020<br>797                            |       | 52          |       |        | 101  |        |  | ~~~~~~~~~~~                             |   |
| Aroclor 1260  | 1020<br>797                                   |       |             | 1000  |        |      | 85-115 |  |   |   |
|   | 797   |       |             | 1000  |        | 90,3 | 85-115 |  |   |   |
| Aroclor 1260 [2C]   |   |       |             | 1000  |        | 102  | 85-115 |  |   |   |
|   | 07.6  |       | ь           | 1000  |        | 79.7 | 85-115 |  |   |   |
| Surrogate: TCX  | 37,0  |       | н           | 100   |        | 97.6 | 25-129 |  |   |   |
| Surrogate: TCX [2C]   | 97.7  |       | н           | 100   |        | 97.7 | 25-129 |  |   |   |
| Surrogate: Decachlorobiphenyl   | 96.8  |       | n           | 100   |        | 96.8 | 22-125 |  |   |   |
| Surrogate: Decachlorobiphenyl [2C]  | 78.7  |       | et          | 100   |        | 78.7 | 22-125 |  |   |   |
| Calibration Check (5F30001-CCVI)  |   |       |             |       |        |      |        |  |   |   |
| Aroclor 1016  | 972   |       | ug/1        | 1000  |        | 97.2 | 85-115 |  |   |   |
| Aroclor 1016 [2C]   | 938   |       | u.          | 1000  |        | 93.8 | 85-115 |  |   |   |
| Aroclor 1260  | 1040  |       | к           | 1000  |        | 104  | 85-115 |  |   |   |
| Arocfor 1260 [2C]   | 927   |       | u           | 1000  |        | 92.7 | 85-115 |  |   |   |
| Surrogate: TCX  | 96.4  |       | "           | 100   |        | 96.4 | 25-129 |  |   |   |
| Surrogate: TCX [2C]   | 92.6  |       | **          | 100   |        | 92.6 | 25-129 |  |   |   |
| Surrogale: Decachlorobiphenyl   | 98.6  |       | **          | 100   |        | 98.6 | 22-125 |  |   |   |
| Surrogate: Decachlorobiphenyl [2C]  | 87.2  |       | "           | 100   |        | 87.2 | 22-125 |  |   |   |
| Calibration Check (5F30001-CCVK)  |   |       |             |       |        |      |        |  |   |   |
| Aroclor 1016  | 1030  |       | ug/l        | 1000  |        | 103  | 85-115 |  |   |   |
| Aroclor 1016 [2C]   | 1000  |       | я           | 1000  |        | 100  | 85-115 |  |   |   |
| Arocior 1260  | 1110  |       | *           | 1000  |        | 111  | 85-115 |  |   |   |
| Aroctor 1260 [2C]   | 1010  |       | ú           | 1000  |        | 101  | 85-115 |  |   |   |
| Surrogale: TCX  | 98.4  |       | n           | 100   |        | 98.4 | 25-129 |  | *************************************** |   |
| Surrogate: TCX [2C]   | 97.0  |       | rr'         | 100   |        | 97.0 | 25-129 |  |   |   |
| Surrogate: Decachlorobiphenyl   | 107   |       | и           | 100   |        | 107  | 22-125 |  |   |   |
| Surrogate: Decachlorobiphenyl [2C]  | 95.9  |       | H           | 100   |        | 95.9 | 22-125 |  |   |   |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director

North Creek Analytical, Inc. Environmental Laboratory Network Page 50 of 52



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Spokane

Portland

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Physical Parameters by APHA/ASTM/EPA Methods - Quality Control North Creek Analytical - Bothell

|                                       | *************************************** | Reporting |  | Spike  | Source   |  | %REC                              | 2274,2744,274  | RPD   |       |
|---------------------------------------|---|-----------|--|--|--|--|-----------------------------------|--|---|-------|
| Analyte                               | Result                                  | Limit     | Units  | Level  | Result   | %REC   | Limits                            | RPD  | Limit   | Notes |
| TD 4 5 PERSON A 10 D 2 C 6 20 10 H 21 |   |           | ATTERNATION AND AND AND AND AND AND AND AND AND AN | THE RESERVE OF THE PROPERTY OF | COLUMN COLUMN AND AND AND AND AND AND AND AND AND AN | Printeres de la communicación de la communicac | djanetro-to attriction in account | THE THE PERSON ASSESSMENT OF THE PERSON ASSESS | dition to contract the second contract the second |       |

Batch 5F27064: Prepared 06/27/05 Using Dry Weight

Blank (5F27064-BLK1)

Dry Weight

99.8

1.00

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 12:00

#### Notes and Definitions

P-03 Greater than 40% difference between two dissimilar columns. After evaluation, the lower result has been reported. RPD values are not controlled at sample concentrations less than 10 times the reporting limit. Q-05 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds S-02

present in the sample.

Х See case narrative.

DET Analyte DETECTED

Analyte NOT DETECTED at or above the reporting limit ND

NR

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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North Creek Analytical, Inc. Environmental Laboratory Network

Page 52 of 52

# CHAIN OF CUSTODY RECORD

## GeoEngineers 523 EAST SECOND AVE. SPOKANE, WASHINGTON 99202 (509) 363-3125



DATE 6/14/05
PAGE 1 OF 1
LAB NO.SSFOORD

| PROJECT NAME/LOCATION TECK (UMING  | 0)   | ANALYSIS REQUIRED  | ZEQUIRED   | NOTES/COMMENTS   |
|--|--|--|--|--|
| PROJECT NUMBER 6601-003-09   | 3-09   | X(   |  | (Praserved, filtered, etc.)  |
| PROJECT MANAGER DAUG ENOS  | 105  | J  |  | CTM 10ARD  |
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| SAMPLE IDENTIFICATION SAMPLE COLLECTION  | CTION # OF   | ŢΝ   |  | +  |
| LAB GEOENGINEERS DATE TIME   | MATRIX JARS  | M  | •  |  |
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| SIGNATURE  | SIGNATURE  | The state of the s | SIGNATURE  |  |
| PRINTED NAME   | PRINTED NAME   |  | ED NAME  |  |
| DATE   | DATE   | TIME   | DATE   | TIME   |
| ADDITIONAL COMMENTS:   |  |  |  |  |
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| ASSESSED ASS | 6.50   | 2007 July 10:38  | BICALLE A AND AND AND AND AND AND AND AND AND A  | ーして  |

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907,563,9200 Fax 907,563,9210

Anchorage

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

#### ANALYTICAL REPORT FOR SAMPLES

|              |               | THE RESERVE OF THE PROPERTY OF THE PERSON NAMED OF THE PERSON NAME |                |                |
|--------------|---------------|--|----------------|----------------|
| Sample ID    | Laboratory ID | Matrix   | Date Sampled   | Date Received  |
| TC-7 (4-4.5) | S5F0098-01    | Soil   | 06/15/05 11:00 | 06/16/05 12:53 |
| TC-8 (2-2.5) | S5F0098-02    | Soil   | 06/15/05 13:00 | 06/16/05 12:53 |
| TC-9 (4-4.5) | S5F0098-03    | Soil   | 06/15/05 14:00 | 06/16/05 12:53 |
| TC-WS1       | S5F0098-04    | Water  | 06/15/05 09:00 | 06/16/05 12:53 |

North Creek Analytical - Spokane

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Spokane

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

#### Semivolatile Petroleum Products by NWTPH-Dx North Creek Analytical - Spokane

| Analyte                        | Result                  | Reporting<br>Limit | Units       | Dilution                                | Batch   | Prepared | Analyzed | Method   | Notes                                   |
|--------------------------------|-------------------------|--------------------|-------------|---|---------|----------|----------|----------|---|
| TC-7 (4-4.5) (S5F0098-01) Soil | Sampled: 06/15/05 11:00 | Received: 06/      | 16/05 12:53 | 74504994040404044440404447              |         |          |          |          |   |
| Diesel Range Hydrocarbons      | ND                      | 100                | mg/kg dry   | 10                                      | 5060156 | 06/20/05 | 06/23/05 | NWTPH-Dx |   |
| Heavy Oil Range Hydrocarbons   | 521                     | 250                | ×           | н                                       | rt.     | tt       | 4        | et       |   |
| Surrogate: 2-FBP               | 101                     | 50-150             |             |   | а       | "        | a        | п        |   |
| Surrogate: p-Terphenyl-d14     | 130                     | 50-150             |             |   | Ħ       | u        | u        | и        |   |
| TC-9 (4-4.5) (S5F0098-03) Soil | Sampled: 06/15/05 14:00 | Received: 06/      | 16/05 12:53 |   |         |          |          |          |   |
| Diesel Range Hydrocarbons      | ND                      | 1000               | mg/kg dry   | 100                                     | 5060156 | 06/20/05 | 06/23/05 | NWTPH-Dx |   |
| Heavy Oil Range Hydrocarbons   | 1740                    | 700                | 47          | н                                       | *       | u        | W        | 15       |   |
| Surrogate: 2-FBP               | 69.7                    | 50-150             |             | *************************************** | н       | "        | н        | rt       | *************************************** |
| Surrogate: p-Terphenyl-d14     | 130                     | 50-150             |             |   | н       | н        | и        | "        |   |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

#### Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Spokane

| Analyte                        | Result                  | Reporting<br>Limit | Units       | Dilution   | Batch  | Prepared   | Analyzed | Method    | Notes |
|--------------------------------|-------------------------|--------------------|-------------|--|--|--|----------|-----------|-------|
| TC-7 (4-4.5) (S5F0098-01) Soil | Sampled: 06/15/05 I1:00 | Received: 06/      | 16/05 12:53 | MANAGEMENT AND PROPERTY OF THE PERSON AND PROPERTY OF THE PERSON AND PERSON A | AND THE PROPERTY OF THE PARTY O | THE RESERVE OF THE PROPERTY OF |          |           |       |
| Acetone                        | ND                      | 1.00               | mg/kg dry   | 1  | 5060180  | 06/21/05   | 06/23/05 | EPA 8260B |       |
| Benzene                        | ND                      | 0.0300             | н           | ĸ  | n  | н  | **       | 11        |       |
| Bromobenzene                   | ND                      | 0.100              | R           | k  | Ħ  | н  | н        | n         |       |
| Bromochloromethane             | ND                      | 0.100              | *           | 15   | *  | R  | *        | R         |       |
| Bromodichloromethane           | ND                      | 0.100              | к           | Ħ  | и  | in   | ts       | н         |       |
| Bromoform                      | ND                      | 0.100              | н           | м  | μ  | **   | 0        | ш         |       |
| Bromomethane                   | ND                      | 0.500              | W           | м  | ы  | н  | я        | ic .      |       |
| 2-Butanone                     | ИD                      | 1.00               | R           | 10   | ч  | ĸ  | IF.      | NC .      |       |
| n-Butylbenzene                 | ND                      | 0.100              | w           | l <del>e</del>   | В  | n  | it       | н         |       |
| sec-Butylbenzene               | ND                      | 0.100              | ĸ           | **   | 84   | *  | в        | #         |       |
| tert-Butylbenzene              | סא                      | 0.100              | ж           | #  | 53   | is   | 46       | let:      |       |
| Carbon disulfide               | ND                      | 0.100              | ×           | 94   | ж  |  | ĸ        | Pf        |       |
| Carbon tetrachloride           | ND                      | 0.100              | н           | 4  | u  | н  | rr.      | 16        |       |
| Chlorobenzene                  | ND                      | 0.100              | ff          | п  | *  | ч  | н        | н         |       |
| Chloroethane                   | ND                      | 0.100              | п           | ņ  | ĸ  | ×  | et       | et        |       |
| Chloroform                     | ND                      | 0.100              | *           | **   | н  | а  | ж        | 94        |       |
| Chloromethane                  | DИ                      | 0.500              | н           | ĸ  | N  | R  | *        | æ         |       |
| 2-Chlorotoluene                | סא                      | 0.100              | *           | 4  | H.   | н  | и        | н         |       |
| 4-Chlorotoluene                | ND                      | 0.100              | в           | 65   | *  | к  | N        | •         |       |
| Dibromochloromethane           | ND                      | 0.100              | и           | te   | н  | **   | н        | Ħ         |       |
| 1,2-Dibromo-3-chloropropane    | ND                      | 0.500              | •           | •  | *  | к  | •        | 15        |       |
| 1.2-Dibromoethane              | ND                      | 0.100              | *           | · ·  | n  | к  | к        | к         |       |
| Dibromomethane                 | ND                      | 0.100              | 8           | н  | *  | N'   | н        | *         |       |
| 1,2-Dichlorobenzene            | ND                      | 0.100              | н           | к  |  | и  | ы        | P         |       |
| 1,3-Dichlorobenzene            | ND                      | 0.100              | er .        | *  | н  | n  | M        | к         |       |
| 1,4-Dichlorobenzene            | ND                      | 0.100              | *           | *  | Ħ  | *  | *        | PE        |       |
| Dichlorodifluoromethane        | ND                      | 0.100              | ×           | *  | 41   | *  | 2        |           |       |
| 1.1-Dichloroethane             | ND                      | 0.100              | н           | *  | ж  | ut   | ×        | -14       |       |
| 1,2-Dichloroethane (EDC)       | ND                      | 0.100              | N           | e  | n  | п  | н        | N         |       |
| 1,1-Dichloroethene             | ND                      | 0.100              | н           | rs   | *  | я  | **       | ti.       |       |
| cis-1,2-Dichloroethene         | ND                      | 0.100              | N           | *  | *  | *  | ы        | 10        |       |
| trans-1,2-Dichloroethene       | ND                      | 0.100              | п           | t.   | и  | P  | *        | и         |       |
| 1,2-Dichloropropane            | ND                      | 0.100              | 6           | н  | н  | и  | *        | tr .      |       |
| 1,3-Dichloropropane            | ND                      | 0.100              | р           | и  | H  | и  | *        | н         |       |
| 2,2-Dichloropropane            | ND                      | 0.100              | a           | *  | 17   | ti   | e        | N         |       |
| 1,1-Dichloropropene            | ND                      | 0.100              | N           | N  | +1   | я  | W        | n         |       |
| cis-1,3-Dichloropropene        | ND                      | 0.100              | ie          | tr   | n  | 11   | b#       | *         |       |
| trans-1,3-Dichloropropene      | ND                      | 0.100              | н           | **   | *  |  | н        | ir .      |       |

North Creek Analytical - Spokane

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North Creek Analytical, Inc. Environmental Laboratory Network Page 3 of 31



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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09

Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 11:59

#### Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Spokane

| Analyte                         | Result                  |               |             | B.11     | m . 1   |          |          |           |       |
|---------------------------------|-------------------------|---------------|-------------|----------|---------|----------|----------|-----------|-------|
|                                 |                         | Limit         | Units       | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
| TC-7 (4-4.5) (\$5F0098-01) Soil | Sampled: 06/15/05 11:00 | Received: 06/ | 16/05 12:53 |          |         |          |          |           |       |
| Ethylbenzene                    | ND                      | 0.100         | mg∕kg dry   | 1        | 5060180 | 06/21/05 | 06/23/05 | EPA 8260B |       |
| Hexachlorobutadiene             | ND                      | 0.100         | 8t          | и        | *       | H        | н        | 45        |       |
| 2-Hexanone                      | ND                      | 1.00          | M           | **       | st      | н        | н        | н         |       |
| Isopropylbenzene                | ND                      | 0.100         | **          |          | н       | *        | *        | R         |       |
| p-Isopropyltoluene              | ND                      | 0.100         | м           | *        | u       | *        | ы        | н         |       |
| Methylene chloride              | ND                      | 1.00          | н           | н        | 'n      | н        | *        | н         |       |
| 4-Methyl-2-pentanone            | ND                      | 1.00          | м           | 15       | ĸ       |          | н        | w         |       |
| Methyl tert-butyl ether         | ND                      | 0.100         | н           | ×        | *       | н        | Ħ        | ×         |       |
| Naphthalene                     | ND                      | 0.100         | PR.         | н        | *       | *        | н        | Ħ         |       |
| n-Propylbenzene                 | ND                      | 0.100         | Pr .        | κ        | ×       | 4        | 66       | *         |       |
| Styrene                         | ND                      | 0.100         | 16          | #        | h       | **       | *        | ж         |       |
| 1,1,1,2-Tetrachloroethane       | ND                      | 0.100         | tt          | *        | ¥       | н        | W        | *         |       |
| 1,1,2,2-Tetrachloroethane       | ND                      | 0.100         | н           | ×        | н       | n        | 4        | H         |       |
| Tetrachloroethene               | ND                      | 0,0300        | н           | я        | н       | *        | *        | H         |       |
| Toluene                         | ND                      | 0.100         | *           | ĸ        | н       | ×        | н        | н         |       |
| 1,2,3-Trichlorobenzene          | ND                      | 0.100         | н           | 8        | ×       | ы        | к        | н         |       |
| 1,2,4-Trichlorobenzene          | ND                      | 0.100         | н           | *        | п       | н        | и        | *         |       |
| 1,1,1-Trichloroethane           | ND                      | 0.100         | *           | н        | N       | rt       | и        | -         |       |
| 1,1,2-Trichloroethane           | ND                      | 0.100         | м           | в        | н       | α.       | *        | *         |       |
| Trichloroethene                 | 0.205                   | 0.0300        | 15          | *        | Ħ       | *        | н        | ĸ         |       |
| Trichlorofluoromethane          | ND                      | 0.100         | *           | -        | n       | et       | r r      | к         |       |
| 1,2,3-Trichloropropane          | ND                      | 0.100         | H           | и        | n       | *        | ×        | 16        |       |
| 1,2,4-Trimethylbenzene          | ИD                      | 0.100         | н           | *        |         | *        | *        | н         |       |
| 1,3,5-Trimethylbenzene          | ND                      | 0.100         | u           | 45       | *       | *        | K        | **        |       |
| Vinyl chloride                  | ND                      | 0.100         | н           | *        | *       | *        | к        | es        |       |
| o-Xylene                        | ND                      | 0.200         |             | n        | *       |          | ø        | 46        |       |
| m,p-Xylene                      | ND                      | 0.400         | *           | я        | N       | +        | ø        | π         |       |
| Surrogate: Dibromossuoromethan  | ie 83.7                 | 44.8-146      |             |          | e       | "        | ti       | п         | ·     |
| Surrogate: Toluene-d8           | 82.2                    | 62.3-143      |             |          | a       | ,,       | п        | u         |       |
| Surrogate: 4-bromofluorobenzene | 83.9                    | 52.5-138      |             |          | n       | "        | *        | R         |       |

North Creek Analytical - Spokane

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Project: Teck Cominco Geo Engineers - Spokane

Project Number: 6601-003-09 523 East Second Ave. Project Manager: Dave Enos Spokane, WA 99202

Reported: 07/11/05 11:59

#### Volatile Organic Compounds by EPA Method 8260B

#### North Creek Analytical - Spokane

| Analyte                               | Result                  | Reporting<br>Limit | Units       | Dilution                                  | Batch                                | Prepared | Analyzed                                  | Method   | Notes |
|---------------------------------------|-------------------------|--------------------|-------------|---|--------------------------------------|----------|---|--|-------|
| TC-9 (4-4.5) (S5F0098-03) Soil        | Sampled: 06/15/05 14:00 | Received: 06/      | 16/05 12:53 | ooneen maan maan maan maan maan maan maan | zilzaffürleges-rizitiv-run-retrismin |          | es en | i Addy (Arthrophysica) – nghy – mag er yan talank makik ninatasio inakada tanahasio asa kanasa sa sa sa sa sa<br>Sa sa |       |
| Acetone                               | ND                      | 1.00               | mg/kg dry   |   | 5060180                              | 06/21/05 | 06/23/05                                  | EPA 8260B  |       |
| Benzene                               | ND                      | 0,0300             | ingreg cary | н   | H                                    | н        | н   | *  |       |
| Bromobenzene                          | ND                      | 0.100              | ec .        | и   | *                                    | н        | н   | 15   |       |
| Bromochloromethane                    | ND                      | 0.100              | N           | н   | н                                    | ø        | ıı  | *  |       |
| Bromodichloromethane                  | ND                      | 0.100              | ×           |   | 8                                    | ės       | н   | я  |       |
| Bromoform                             | ND                      | 0.100              | M           | 14  | п                                    | *        | *   |  |       |
| Bromomethane                          | ND                      | 0.100              |             | н   | 6                                    | ĸ        | 94  | 8  |       |
| 2-Butanone                            | ND                      | 1.00               | ×           | в   | 41                                   | ie       | Pt.                                       | н  |       |
|                                       | ND ND                   | 0,100              | is          | **  | Ħ                                    | ı.       | я   | н  |       |
| n-Butylbenzene                        | ND<br>ND                | 0.100              | n           | *   | *                                    | п        | Pt.                                       | 46   |       |
| sec-Butylbenzene<br>tert-Butylbenzene | UN<br>DN                | 0.100              | ĸ           | **  | н                                    | ď        | *   | н  |       |
| Carbon disulfide                      | ND<br>ND                | 0.100              | *           |   | *                                    | "        | н   | 8  |       |
|                                       |                         |                    |             |   |                                      | *        | н   |  |       |
| Carbon tetrachloride                  | ND                      | 0.100              |             |   | rı                                   |          | <br>N                                     |  |       |
| Chlorobenzene                         | ND                      | 0.100              | k.          |   |                                      |          |   |  |       |
| Chloroethane                          | ND                      | 0.100              | в.          | "   | *                                    | к        | *   |  |       |
| Chloroform                            | ND                      | 0.100              |             |   | -                                    |          |   | "<br>"   |       |
| Chloromethane                         | ND                      | 0.500              | *           |   |                                      | ·,       | н   | ,  |       |
| 2-Chlorotoluene                       | ND                      | 0.100              | *           |   |                                      | •        |   |  |       |
| 4-Chlorotoluene                       | ND                      | 0.100              |             | *   |                                      | **       |   | *  |       |
| Dibromochloromethane                  | ND                      | 0.100              | *           | ×   | в                                    | H        | н   | H  |       |
| 1,2-Dibromo-3-chloropropane           | ND                      | 0.500              | *           | и   | н                                    | •        | н   | •  |       |
| 1,2-Dibromoethane                     | ND                      | 0.100              | *           | н   | 16                                   | *        | N   | N  |       |
| Dibromomethane                        | ND                      | 0.100              | *           | 14  | "                                    | н        | 44  | 64   |       |
| 1,2-Dichlorobenzene                   | ND                      | 0.100              | *           | н   | Ħ                                    | Ħ        | 46  | n  |       |
| 1,3-Dichlorobenzene                   | ND                      | 0.100              | *           | н   |                                      | Ħ        | *   | н  |       |
| 1,4-Dichlorobenzene                   | ND                      | 0.100              | ď           | ж   | *                                    | ĸ        |   | #  |       |
| Dichlorodifluoromethane               | ND                      | 0.100              | H           | *   | H                                    | н        | n   | н  |       |
| 1,1-Dichloroethane                    | ND                      | 0.100              |             | ж   | к                                    | и        | ж   | м  |       |
| 1,2-Dichloroethane (EDC)              | ND                      | 0.100              | n           | n   | н                                    | n        | н   | ж  |       |
| 1,1-Dichloroethene                    | ND                      | 0.100              | *           | ų   | se                                   | и        | *   | #  |       |
| cis-1,2-Dichloroethene                | ND                      | 0.100              | 'n          | н   | H                                    | *        | n   | *  |       |
| trans-1,2-Dichloroethene              | ND                      | 0.100              | к           | 4   | ti                                   | *        | н   | н  |       |
| 1,2-Dichloropropane                   | ND                      | 0.100              | н           | н   | *                                    | 8        | к   | я  |       |
| 1,3-Dichloropropane                   | ND                      | 0.100              | н           | -   | tt                                   | ¥        | *   | #  |       |
| 2,2-Dichloropropane                   | ND                      | 0.100              | *           | 14  | *                                    | H        | н   | н  |       |
| 1,1-Dichloropropene                   | ND                      | 0.100              | к           | *   | 10                                   | 45       |   | •  |       |
| cis-1,3-Dichloropropene               | ND                      | 0.100              | "           | ir  | H                                    | *        | **  | 19   |       |
| trans-1,3-Dichloropropene             | ND                      | 0.100              | *           | н   | н                                    | 8        | 12  | 4  |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

#### Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Spokane

|                                |                         | Reporting     |             |          |         |          |          |  |       |
|--------------------------------|-------------------------|---------------|-------------|----------|---------|----------|----------|--|-------|
| Analyte                        | Result                  | Limit         | Units       | Dilution | Batch   | Prepared | Analyzed | Method                                   | Notes |
| TC-9 (4-4.5) (S5F0098-03) Soil | Sampled: 06/15/05 14:00 | Received: 06/ | 16/05 12:53 |          |         |          |          | - Anna Anna Anna Anna Anna Anna Anna Ann |       |
| Ethylbenzene                   | ND                      | 0.100         | mg/kg dry   | 1        | 5060180 | 06/21/05 | 06/23/05 | EPA 8260B                                |       |
| Hexachlorobutadiene            | ND                      | 0,100         | n           | n        | ĸ       | н        | ĸ        | н  |       |
| 2-Hexanone                     | ND                      | 1.00          | p           | н        | Ħ       | н        | н        | ĸ  |       |
| Isopropylbenzene               | ND                      | 0.100         |             | ж        | R       | R        | m        | *  |       |
| p-Isopropyltoluene             | ND                      | 0.100         | н           | *        | ĸ       | и        | n        | n  |       |
| Methylene chloride             | ND                      | 1.00          | ĸ           | U        | *       | n        | *        | *  |       |
| 4-Methyl-2-pentanone           | ND                      | 1.00          | 11          | 44       | H       | H        | 11       | n  |       |
| Methyl tert-butyl ether        | ND                      | 0.100         | н           | **       | н       | н        | н        | ×  |       |
| Naphthalene                    | ND                      | 0,100         | н           | n        | ж       | *        | *        | *  |       |
| n-Propylbenzene                | ND                      | 0.100         | n           | n        | *       | n        | и        | *  |       |
| Styrene                        | ND                      | 0.100         | 14          | *        | 'n      | n        | н        | H  |       |
| 1,1,1,2-Tetrachloroethane      | ND                      | 0.100         | e           | н        | ь       | R        | *        | n  |       |
| 1,1,2,2-Tetrachloroethane      | ND                      | 0.100         | 46          | 41       | •       | n        | н        | W  |       |
| Tetrachloroethene              | ND                      | 0.0300        | н           | *        | *       | ti       | *        |  |       |
| Toluene                        | ND                      | 0.100         | м           | к        | н       | *        | н        | *  |       |
| 1,2,3-Trichlorobenzene         | ND                      | 0,100         | **          | *        | н       | ter .    | п        | ĸ  |       |
| 1,2,4-Trichlorobenzene         | ND                      | 0.100         | w           | ж        | ×       | и        | *        | m  |       |
| 1,1,1-Trichloroethane          | ND                      | 0.100         | и           | 66       | 16      | n        | *        | *  |       |
| 1,1,2-Trichloroethane          | ND                      | 0.100         | *           | *        |         | н        | u        | н  |       |
| Trichloroethene                | 0.144                   | 0.0300        | а           |          | н       |          | и        |  |       |
| Trichlorofluoromethane         | ND                      | 0.100         | *           | *        |         | н        | ĸ        | #  |       |
| 1,2,3-Trichloropropane         | ND                      | 0.100         | ts.         | 46       | ¥       | к        | M        | ч  |       |
| 1,2,4-Trimethylbenzene         | ND                      | 0.100         | *           | k        | н       | н        | н        | *  |       |
| 1,3,5-Trimethylbenzene         | ND                      | 0.100         | н           | n        | *       | n        | N        | R  |       |
| Vinyl chloride                 | ND                      | 0.100         | н           | и        | n       | *        | н        |  |       |
| o-Xylene                       | ND                      | 0.200         | м           | ×        | H       | *        | *        | *  |       |
| m,p-Xylene                     | ND                      | 0.400         | н           | *        | N       | ď        | н        | *  |       |
| Surrogate: Dibromosluoromethan | te 89.3                 | 44.8-146      |             |          | u       | 11       | "        | n  |       |
| Surrogate: Toluene-d8          | 86.4                    | 62.3-143      |             |          | "       | "        | н        | и  |       |
| Surrogate: 4-bromofluorobenzen | e 116                   | 52.5-138      |             |          | и       | **       | #        | н  |       |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 11:59

## Conventional Chemistry Parameters by APHA/EPA Methods

Project Manager: Dave Enos

#### North Creek Analytical - Spokane

| Analyte                        | Result                  | Reporting<br>Limit | Units       | Dilution   | Batch   | Prepared  | Analyzed   | Method     | Notes  |
|--------------------------------|-------------------------|--------------------|-------------|--|---------|---|--|------------|--|
| TC-7 (4-4.5) (S5F0098-01) Soil | Sampled: 06/15/05 11:00 | Received: 06/      | 16/05 12:53 | TO THE REAL PROPERTY AND ADDRESS OF THE PERSON NAMED IN THE PERSON |         | rangen manacon en esta esta esta esta esta esta esta esta   |  |            | фудраминентициямили  |
| Cyanide (total)                | ND                      | 0.0500             | mg/kg       | 10   | 5060229 | 06/28/05  | 06/28/05   | EPA 335.2  |  |
| pH                             | 7.16                    |                    | pH Units    | ŀ  | 5060182 | 06/22/05  | 06/22/05   | EPA 9045B  |  |
| % Solids                       | 84.3                    | 0.0100             | % by Weight | н  | 5060169 | 06/21/05  | 06/21/05   | Gravimetry |  |
| TC-8 (2-2.5) (S5F0098-02) Soil | Sampled: 06/15/05 13:00 | Received: 06/      | 16/05 12:53 |  |         | nga pamananan nga pamanan nga Palipinan (1880)  | OCH PER PROPERTY OF THE PROPER |            | Lectural description of the second  |
| Cyanide (total)                | ND                      | 0.0500             | mg/kg       | 10   | 5060229 | 06/28/05  | 06/28/05   | EPA 335.2  |  |
| % Solids                       | 87.0                    | 0.0100             | % by Weight | 1  | 5060169 | 06/21/05  | 06/21/05   | Gravimetry |  |
| TC-9 (4-4.5) (S5F0098-03) Soil | Sampled: 06/15/05 14:00 | Received: 06       | 16/05 12:53 |  |         | annama de la companya | enanamicum energia de la composició de la c  |            | manufacture (Carles Carles Car |
| Cyanide (total)                | 0.393                   | 0.0500             | mg/kg       | 10   | 5060229 | 06/28/05  | 06/28/05   | EPA 335.2  |  |
| рН                             | 7.75                    |                    | pH Units    | 1  | 5060182 | 06/22/05  | 06/22/05   | EPA 9045B  |  |
| % Solids                       | 71.4                    | 0.0100             | % by Weight | н  | 5060169 | 06/21/05  | 06/21/05   | Gravimetry |  |

North Creek Analytical - Spokane

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907.563.9200 fax 907.563.9210

Anchorage

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A North Creek Analytical - Bothell

| A t                            | w. r.                   | Reporting     | *1.5        | BH 2  | D. I    |          |          |           | ,,    |
|--------------------------------|-------------------------|---------------|-------------|---|---------|----------|----------|-----------|-------|
| Analyte                        | Result                  | Limit         | Units       | Dilution  | Batch   | Prepared | Analyzed | Method    | Notes |
| TC-7 (4-4.5) (S5F0098-01) Soil | Sampled: 06/15/05 11:00 | Received: 06/ | 16/05 12:53 | - Washington and the Control of the | ~~~~    |          |          |           | X     |
| Aldrin [2C]                    | ND                      | 1.00          | ug/kg dry   | 1   | 5F28056 | 06/28/05 | 07/06/05 | EPA 8081A |       |
| alpha-BHC [2C]                 | ND                      | 1.00          | M           | н   | 16      | 16       | я        | Ħ         |       |
| beta-BHC [2C]                  | ND                      | 2.00          | R           | и   | u       | н        | 84       | н         |       |
| delta-BHC [2C]                 | ND                      | 1.00          | м           | ¥   | *       | *        | H        | "         |       |
| gamma-BHC (Lindane) [2C]       | ND                      | 1.00          | N           | n   | 14      | *        | и        | R         |       |
| Chlordane (tech) [2C]          | ND                      | 10.0          | 0           | *   |         | *        | #        | H         |       |
| alpha-Chlordane [2C]           | ND                      | 1.00          | *           | er  | ж       | **       | Ħ        | ·         |       |
| gamma-Chlordane [2C]           | ND                      | 1.00          | *           | *   | *       | Ħ        | *        | N         |       |
| 4,4'-DDD [2C]                  | 7.95                    | 2.00          | н           | TÍ  | *       | 11       | ĸ        | н         | P-03  |
| 4,4'-DDE [2C]                  | 3.77                    | 2.00          | n           | n   | **      | ĸ        | ж        | в         |       |
| 4,4'-DDT [2C]                  | 13.0                    | 2.00          | n           | H   | к       | tr.      | n        | м         |       |
| Dieldrin [2C]                  | ND                      | 2.00          | n           | ×   | *       | н        | r        | ss        |       |
| Endosulfan I [2C]              | ND                      | 1.00          | *           | er  | N       | H        | н        | м         |       |
| Endosulfan II [2C]             | ND                      | 2.00          | a           | *   | *       | R        | н        | 4         |       |
| Endosulfan sulfate [2C]        | ND                      | 2.00          | H           | В   | n       | н        | *        | В         |       |
| Endrin [2C]                    | ND                      | 2.00          | **          | *   | к       | н        | н        | ×         |       |
| Endrin aldehyde [2C]           | ND                      | 2.00          | ĸ           | н   | *       | ×        | ū        | н         |       |
| Endrin ketone [2C]             | ND                      | 2.00          | 19          | *   | *       | 15       | +        | К         |       |
| Heptachior [2C]                | ND                      | 1.00          | п           | R   | н       | *        | *        | ęź        |       |
| Heptachlor epoxide [2C]        | ND                      | 1.00          | R           | rr  | Ħ       | *        | н        | 15        |       |
| Methoxychlor [2C]              | ND                      | 2.00          | н           | **  |         |          | и        | 74        |       |
| Toxaphene [2C]                 | ND                      | 50.0          | н           |   | н       | n        | #        | 14        |       |
| Surrogate: TCX [2C]            | 57.8                    | 47-134        |             |   | "       | rr       | *        | α         |       |
| Surrogate: Decachlorobiphenyl  | [2C] 60.1               | 35-151        |             |   | #       | *        | **       | и         |       |

North Creek Analytical - Spokane

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Anchorage

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

## Organochlorine Pesticides by EPA Method 8081A

#### North Creek Analytical - Bothell

|                                    | COMMISSION COMPANY COM | Reporting | MARKATAN PARAMETERS AND STREET | *************************************** | THE PARTY OF THE P | - The State of the | es in management and the second  |  |                                |
|------------------------------------|--|-----------|--------------------------------|---|--|--|--|--|--------------------------------|
| Analyte                            | Result   | Limit     | Units                          | Dilution                                | Batch  | Prepared   | Analyzed   | Method   | Notes                          |
| TC-7 (4-4.5) (S5F0098-01RE1) Soil  | Sampled: 06/15/05 11:00  | Received  | : 06/16/05 12:                 | 53                                      |  | s This statement of the freeze one of  | Alphanon committee and a second secon | and the second s | oranno-nuovinin-billippininaan |
| Aldrin [2C]                        | ND   | 200       | ug/kg dry                      | 200                                     | 5F28056  | 06/28/05   | 07/06/05   | EPA 8081A  |                                |
| alpha-BHC [2C]                     | ND   | 200       | В                              | н                                       | #5   | 15   | t#   | ¥  |                                |
| beta-BHC [2C]                      | ND   | 400       | н                              | Ħ                                       | "  | u  | ĸ  | ist.   |                                |
| delta-BHC [2C]                     | ND   | 200       | 9                              | 18                                      | и  | **   | H  | м  |                                |
| gamma-BHC (Lindane) [2C]           | ND   | 200       | *                              | ×                                       | n  | к  | w  | α  |                                |
| Chlordane (tech) [2C]              | ND   | 2000      | N                              | *                                       |  | и  | H  | *  |                                |
| alpha-Chlordane [2C]               | ND   | 200       | *                              | ri,                                     | н  | к  | к  | ч  |                                |
| gamma-Chlordane [2C]               | ND   | 200       | a                              | м                                       | н  | þ  | H  | n  |                                |
| 4,4'-DDD [2C]                      | ND   | 400       | ls,                            | *                                       | té   | H  |  | ik.  |                                |
| 4,4'-DDE [2C]                      | ND   | 400       | *                              | *                                       | 15   | u  | м  |  |                                |
| 4,4'-DDT [2C]                      | ND   | 400       | *                              | n                                       | *  | p  | 4  | и  |                                |
| Dieldrin [2C]                      | ND   | 400       | н                              | 11                                      | *  | R  | *  | ₩  |                                |
| Endosulfan I [2C]                  | ND   | 200       | ñ                              | ×                                       | н  | *  | u  | N  |                                |
| Endosulfan II [2C]                 | ND   | 400       | æ                              | 14                                      | ч  | *  | **   | *  |                                |
| Endosulfan sulfate [2C]            | ND   | 400       | n                              | "                                       | *  | н  | 16   | ¥  |                                |
| Endrin [2C]                        | ND   | 400       | Ħ                              | К                                       | *1   | ы  | *  | D.   |                                |
| Endrin aldehyde [2C]               | ND   | 400       | at .                           | n                                       | n  | #  | tr   | n  |                                |
| Endrin ketone [2C]                 | ND   | 400       | 4                              | *                                       | н  | *  | **   | н  |                                |
| Heptachlor (2C)                    | ND   | 200       | ж                              | n                                       | я  | *  | Ħ  | я  |                                |
| Heptachlor epoxide [2C]            | ND   | 200       | a                              | *                                       | *  | м  | н  | *  |                                |
| Methoxychlor [2C]                  | ND   | 400       | н                              | wc wc                                   | *  | #  | U.   | **   |                                |
| Toxaphene [2C]                     | ND   | 10000     | u                              | 8                                       | K  |  | *  | **   |                                |
| Surrogate: TCX [2C]                | 116  | 47-134    |                                |   | n  | н  | tr   | н  |                                |
| Surrogate: Decachlorobiphenyl [2C] | NR .   | 35-151    |                                |   | ır   | u  | Ħ  | и  | 5-0-                           |

North Creek Analytical - Spokane

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Anchorage 907.563.9200 fax 907.563.9210

Geo Engineers - Spokane Project: Teck Cominco

523 East Second Ave. Project Number: 6601-003-09 Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A North Creek Analytical - Bothell

|                                |                         | Reporting     |             |          |         |          |          |           |       |
|--------------------------------|-------------------------|---------------|-------------|----------|---------|----------|----------|-----------|-------|
| Analyte                        | Result                  | Limit         | Units       | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
| TC-9 (4-4.5) (S5F0098-03) Soil | Sampled: 06/15/05 14:00 | Received: 06/ | 16/05 12:53 |          |         |          |          |           | X     |
| Aldrin [2C]                    | ИD                      | 1.00          | ug/kg dry   | 1        | 5F28056 | 06/28/05 | 07/06/05 | EPA 8081A |       |
| alpha-BHC [2C]                 | ND                      | 1.00          | ×           | a        | 66      | 44       | ti       | at .      |       |
| beta-BHC [2C]                  | П                       | 2.00          | н           | H        | ĸ       | Ħ        | к        | **        |       |
| delta-BHC [2C]                 | ND                      | 1.00          | *           | м        | w       | 41       | n        | N         |       |
| gamma-BHC (Lindane) [2C]       | ND                      | 1.00          | *           | н        | *       | *        | H        | R         |       |
| Chlordane (tech) [2C]          | ND                      | 10,0          | я           | 14       | н       | #        | ж        | u         |       |
| alpha-Chlordane [2C]           | ND                      | 1.00          | к           | ч        | в       | "        | к        | s         |       |
| gamma-Chlordane [2C]           | ND                      | 1.00          | *           | W        | н       | н        | Ħ        | R*        |       |
| 4,4'-DDD [2C]                  | ND                      | 2.00          | Ħ           | *        | н       | *        | n        | 14        |       |
| 4,4'-DDE [2C]                  | ND                      | 2.00          | к           | и        | n       | к        | н        | ie        |       |
| 4,4'-DDT [2C]                  | 2.76                    | 2.00          | н           | ĸ        | ti .    | н        | к        | N         |       |
| Dieldrin [2C]                  | ND                      | 2.00          | н           | H        | r       |          | n        | н         |       |
| Endosulfan I [2C]              | ND                      | 1.00          | н           | п        | п       | ĸ        | R        | н         |       |
| Endosulfan II [2C]             | ND                      | 2.00          | н           | н        | n       | н        | *        | н         |       |
| Endosulfan sulfate [2C]        | ND                      | 2.00          | #           | 9        | rt      | и        | н        | n         |       |
| Endrin [2C]                    | ND                      | 2.00          | н           | n        | Ħ       | н        | ĸ        | и         |       |
| Endrin aldehyde [2C]           | ND                      | 2.00          | P           | *        | н       | н        | W        | в         |       |
| Endrin ketone [2C]             | ND                      | 2.00          | ei          | н        | к       | и        | h        | ĸ         |       |
| Heptachlor [2C]                | ND                      | 1.00          | н           | M        | м       | 81       | н        | 8         |       |
| Heptachlor epoxide [2C]        | ND                      | 1.00          | *           | ti       | 99      | n        | n        | н         |       |
| Methoxychlor [2C]              | ND                      | 2.00          | •           | *        | 4       | 0        | н        |           |       |
| Toxaphene [2C]                 | ND                      | 50.0          | n           | n        | tt .    | н        | Ħ        | ue.       |       |
| Surrogate: TCX [2C]            | 85.8                    | 47-134        |             |          | "       | *        | 'n       | н         |       |
| Surrogate: Decachlorobiphenyl  | [2C] 75.9               | 35-151        |             |          | *       | **       | м        | *         |       |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A North Creek Analytical - Bothell

Project Manager: Dave Enos

#### Reporting Result Limit Units Dilution Batch Prepared Analyzed Method Notes Analyte TC-9 (4-4.5) (S5F0098-03RE1) Soil Sampled: 06/15/05 14:00 Received: 06/16/05 12:53 Aldrin [2C] ug/kg dry 5F28056 06/28/05 07/06/05 EPA 8081A

| alpha-BHC [2C]       ND       100       " | 4<br>10<br>10<br>10 |
|---|---------------------|
| delta-BHC [2C] ND 100 " " " " " "   | n<br>ti             |
| delta-BHC [2C] ND 100   | n<br>ti             |
| gamma-BHC (Lindane) [2C] ND 100 " " " " "   | a                   |
| Ø   |                     |
| Chlordane (tech) [2C] ND 1000 " " " " " "   | 46                  |
| alpha-Chlordane [2C] ND 100 " " " " "   |                     |
| gamma-Chlordane [2C] ND 100 " " " "   | к                   |
| 4,4'-DDD [2C] ND 200 " " " " "  | rf                  |
| 4,4'-DDE [2C] ND 200 " " " " " "  | ц                   |
| 4,4'-DDT [2C] ND 200 " " " " "  | 41                  |
| Dieldrin [2C] ND 200 " " " " "  | 44                  |
| Endosulfan I [2C] ND 100 * " " " " "  | n                   |
| Endosulfan II [2C] ND 200 " " " " " " "   | #                   |
| Endosulfan sulfate [2C] ND 200 " " " " "  | e e                 |
| Endrin [2C] ND 200 " " " " "  | н                   |
| Endrin aldehyde [2C] ND 200 " " " " "   | н .                 |
| Endrin ketone [2C] ND 200 " " " " "   | id.                 |
| Heptachlor [2C] ND 100 " " " "  | и                   |
| Heptachlor epoxide [2C] ND 100 " " " " " "  | 8                   |
| Methoxychlor [2C] ND 200 " " " " "  | ti .                |
| Toxaphene [2C] ND 5000 " " " " "  | к                   |
| Surrogate: TCX [2C] 98.0 47-134 " " "   | d                   |
| Surrogate: Decachlorobiphenyl [2C] 166 35-151 " " "   | " S-04              |

North Creek Analytical - Spokane

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Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09 Project Manager: Dave Enos Spokane, WA 99202

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A North Creek Analytical - Bothell

| Analyte                       | Result                  | Reporting<br>Limit | Units      | Dilution                               | Batch   | Prepared | Analyzed | Method    | Notes                                     |
|-------------------------------|-------------------------|--------------------|------------|--|---------|----------|----------|-----------|---|
| TC-WS1 (S5F0098-04) Water     | Sampled: 06/15/05 09:00 | Received: 06/1     | 6/05 12:53 |  |         |          |          |           | omerapoi (por Natividen en construccione) |
| Aldrin [2C]                   | ND                      | 0.0800             | ug/l       | 1                                      | 5F22064 | 06/22/05 | 06/27/05 | EPA 8081A |   |
| alpha-BHC [2C]                | מא                      | 0.0400             | н          | н                                      | H       | n        | и        | н         |   |
| beta-BHC [2C]                 | ND                      | 0.0400             | н          | н                                      | **      | к        | к        | ĸ         |   |
| delta-BHC [2C]                | ND                      | 0.100              | п          | п                                      | ĸ       | α        | к        | *         |   |
| gamma-BHC (Lindane) [2C]      | ND                      | 0.0400             | н          | H                                      | nt      | *        | 16       | и         |   |
| Chlordane (tech) [2C]         | ND                      | 0.500              | *          | н                                      | ĸ       | н        | ж        | 19        |   |
| alpha-Chlordane [2C]          | ND                      | 0.0400             | к          | n                                      |         | ય        | н        | is .      |   |
| gamma-Chlordane [2C]          | ND                      | 0.0400             | к          | ĸ                                      | R       | к        | ĸ        | в         |   |
| 4,4'-DDD [2C]                 | ND                      | 0.0400             | ж          | n                                      | 0       | н        | н        | м         |   |
| 4,4'-DDE [2C]                 | ND                      | 0.0800             | н          | n                                      | к       | В        | н        | н         |   |
| 4,4'-DDT [2C]                 | ND                      | 0.0800             | ч          |  | *       | *        | *        | 68        |   |
| Dieldrin [2C]                 | ND                      | 0.0800             | et,        | н                                      | н       |          | я        | н         |   |
| Endosulfan I [2C]             | 0.0226                  | 0.0200             | n          | н                                      | и       | *        | *        | я         |   |
| Endosulfan II [2C]            | ND                      | 0.0800             | **         | h                                      | *       | и        | Ħ        | 64        |   |
| Endosulfan sulfate [2C]       | ND                      | 0.100              | *          | a                                      | н       | +        | н        | н         |   |
| Endrin (2C)                   | ND                      | 0.0800             | н          | n                                      | н       | н        | =        | II .      |   |
| Endrin aldehyde [2C]          | ND                      | 0.160              | 0          | к                                      | 84      | tı       | u        | *         |   |
| Endrin ketone [2C]            | ND                      | 0.0800             |            | *                                      | н       | H        | 4        | н         |   |
| Heptachlor [2C]               | ND                      | 0.0800             | *          | н                                      | н       | и        | *        | *         |   |
| Heptachlor epoxide [2C]       | ND                      | 0.0400             | *          | α                                      | *       | *        | и        | n         |   |
| Methoxychlor                  | ND                      | 0.500              | н          | *                                      | *       | *        | н        | н         |   |
| Toxaphene [2C]                | ND                      | 2.00               | *          | n                                      | a       | и        | ŧ        | 15        |   |
| Surrogate: TCX [2C]           | 81.0                    | 24-143             |            | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | n       | п        | "        | "         |   |
| Surrogate: Decachlorobiphenyl | [2C] 84.0               | 10-145             |            |  | n       | *        | н        | н         |   |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Polychlorinated Biphenyls by EPA Method 8082 North Creek Analytical - Bothell

| Analyte                        | Result                  | Reporting<br>Limit | Units       | Dilution   | Batch                                  | Prepared   | Analyzed   | Method  | Notes  |
|--------------------------------|-------------------------|--------------------|-------------|--|--|--|--|---|--|
| TC-7 (4-4.5) (S5F0098-01) Soil | Sampled: 06/15/05 11:00 | Received: 06/      | 16/05 12:53 |  | ······································ |  | Con Contraction Co |   | manager of the second s |
| Aroclor 1016                   | ND                      | 25.0               | ug/kg dry   | 1  | 5F28056                                | 06/28/05   | 06/30/05   | EPA 8082  |  |
| Aroclor 1221                   | ND                      | 50.0               | 8           | 11   | er.                                    | п  | 48   | я   |  |
| Aroclor 1232                   | ND                      | 25.0               | n           | н  | н                                      | н  | к  | 9   |  |
| Aroclor 1242                   | ND                      | 25.0               | **          | N  | 11                                     | ¢I   | н  | Ŕ   |  |
| Aroclor 1248                   | ND                      | 25.0               | nt.         | ıe   | R                                      | ж  | 6  | н   |  |
| Aroclor 1254                   | ND                      | 25.0               | н           | к  | н                                      | 'n   | Ħ  | н   |  |
| Aroclor 1260                   | 87.8                    | 25.0               | tf.         | *  | н                                      | *  | tr   | и   |  |
| Aroclor 1262                   | ND                      | 25.0               | H           | n  | w                                      | te   | *  | н   |  |
| Aroclor 1268                   | ND                      | 25.0               | к           | a  | R                                      | ĸ  | *  |   |  |
| Surrogate: TCX                 | 86.9                    | 19-149             |             |  | п                                      | n  | н  | н   |  |
| Surrogate: Decachlorobiphenyl  | 96.5                    | 37-151             |             |  |  | "  | 11   | ti .  |  |
| TC-9 (4-4.5) (S5F0098-03) Soil | Sampled: 06/15/05 14:00 | Received: 06/      | 16/05 12:53 | operations and the second seco |  | gaganigados estas estas estás es |  | networkstatusen states of the |  |
| Aroclar 1016                   | ND                      | 25.0               | ug/kg dry   | 1  | 5F28056                                | 06/28/05   | 06/29/05   | EPA 8082  |  |
| Aroclor 1221                   | ИД                      | 50.0               | *           | R  | н                                      | *  | 8  | #C  |  |
| Aroclor 1232                   | ND                      | 25.0               | NS.         | H  | 4                                      |  | #  | 16  |  |
| Aroclor 1242                   | ND                      | 25.0               | No.         | *  | н                                      | п  | *  | 91  |  |
| Aroclor 1248                   | ND                      | 25.0               | *           | ĸ  | n                                      | н  | Ħ  | ь.  |  |
| Aroclor 1254                   | ND                      | 25.0               | te          | п  | н                                      | *  | ĸ  | *   |  |
| Aroclor 1260                   | 49.7                    | 25.0               | н           | u  | *                                      | н  | *  | н   |  |
| Aroclor 1262                   | ND                      | 25.0               | Ħ           | *  | Ħ                                      | и  | n  | 36  |  |
| Aroclor 1268                   | ND                      | 25.0               | н           |  | *                                      | н  | rt   | **  |  |
| Surrogate: TCX                 | 90.3                    | 19-149             |             |  | n                                      | u  | н  | n   |  |
| Surrogate: Decachlorobiphenyl  | 98.3                    | 37-151             |             |  | ĸ                                      | н  | н  | H   |  |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Polychlorinated Biphenyls by EPA Method 8082 North Creek Analytical - Bothell

|                               |                         | Reporting      |            |   |         |          |          |          |       |
|-------------------------------|-------------------------|----------------|------------|---|---------|----------|----------|----------|-------|
| Analyte                       | Result                  | Limit          | Units      | Dilution  | Batch   | Prepared | Analyzed | Method   | Notes |
| TC-WS1 (S5F0098-04) Water     | Sampled: 06/15/05 09:00 | Received: 06/1 | 6/05 12:53 | aren and delication and an area and a second |         |          |          |          |       |
| Aroclor 1016                  | ND                      | 0.500          | ug/l       | 1   | 5F22064 | 06/22/05 | 06/28/05 | EPA 8082 |       |
| Aroclor 1221                  | ND                      | 0.500          | **         | п   | ţr.     | 41       | N        | н        |       |
| Aroclor 1232                  | ND                      | 0.500          | 16         | *   | Ħ       | **       | R        | и        |       |
| Aroclor 1242                  | ND                      | 0.500          | 15         | n   | n       | 16       | N        | н        |       |
| Aroclor 1248                  | ND                      | 0.500          | ×          | *   | n       | я        | N        | n        |       |
| Aroclor 1254                  | ND                      | 0.500          | u          | 16  | и       | W        | к        | н        |       |
| Aroclor 1260                  | ND                      | 0.500          | "          | 0   | •       | н        | **       | *        |       |
| Aroclor 1262                  | ND                      | 0,500          | м          | н   | н       | *        | н        | 19-      |       |
| Aroclor 1268                  | ND                      | 0.500          | и          | *   | **      | н        | n        | н        |       |
| Surrogate: TCX                | 81.5                    | 25-129         |            |   | 11      | "        | n        | er       |       |
| Surrogate: Decachlorobiphenyl | 99. <i>5</i>            | 22-125         |            |   | 17      | "        | n        | #        |       |

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Anchorage

Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Physical Parameters by APHA/ASTM/EPA Methods North Creek Analytical - Bothell

| Analyte                        | Result                  | Reporting<br>Limit | Units      | Dilution  | Batch   | Prepared  | Analyzed  | Method   | Notes  |
|--------------------------------|-------------------------|--------------------|------------|---|---------|---|---|--|--|
| TC-7 (4-4.5) (S5F0098-01) Soil | Sampled: 06/15/05 11:00 | Received: 06/1     | 6/05 12:53 | of the second | ·····   | The second control of | anacons assures star effective and estimates as |  | Description of the Control of the Co |
| Dry Weight                     | 76.3                    | 1.00               | %          | ì   | 5F29068 | 06/30/05  | 06/30/05  | BSOPSPL003R08                                  |  |
| TC-9 (4-4.5) (S5F0098-03) Soil | Sampled: 06/15/05 14:00 | Received: 06/1     | 6/05 12:53 |   |         |   | novanamentetetatikan nekitamihikako resi        | energen er |  |
| Dry Weight                     | 75.0                    | 1.00               | %          | 1   | 5F29068 | 06/30/05  | 06/30/05  | BSOPSPL003R08                                  |  |

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Spokane 11722 C. 131 AVEILING, SUDMARKE VAILEY, WA 57207-3302 509,924,9200 fax 509,924,9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503,906,9200 fax 503,966,9210 20332 Empire Avenue, Sulte F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 Anchorage

%REC

907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

RPD

### Semivolatile Petroleum Products by NWTPH-Dx - Quality Control North Creek Analytical - Spokane

Reporting

| Analyte                          | Result          | Limit | Units     | Level | Result                                   | %REC                                    | Limits   | RPD  | Limit                                  | Notes  |
|----------------------------------|-----------------|-------|-----------|-------|--|---|--|--|--|--|
| Batch 5060156: Prepared 06/20/05 | Using EPA 3550B |       |           |       | ann an ann an | MI (Marine Marine)                      | THE PERSON NAMED OF THE PE | MANAGEMENT AND | 99000000000000000000000000000000000000 |  |
| Blank (5060156-BLK1)             |                 |       |           |       |  |   |  |  |  | A COMMON TO SERVICE OF THE PARTY OF THE PART |
| Diesel Range Hydrocarbons        | ND              | 10.0  | mg/kg wet |       |  | *************************************** |  |  |  |  |
| Heavy Oil Range Hydrocarbons     | ND              | 25.0  | я         |       |  |   |  |  |  |  |
| Surrogate: 2-FBP                 | 6.14            |       | п         | 6.67  | ***************************************  | 92.1                                    | 50-150   |  |  |  |
| Surrogate: p-Terphenyl-d14       | 6.28            |       | n         | 6.67  |  | 94.2                                    | 50-150   |  |  |  |
| LCS (5060156-BS1)                |                 |       |           |       |  |   |  |  |  |  |
| Diesel Range Hydrocarbons        | 86.6            | 10.0  | mg/kg wet | 83.3  |  | 104                                     | 50-150   | ***************************************            |  |  |
| Surrogate: 2-FBP                 | 7.51            |       | h         | 6.67  |  | 113                                     | 50-150   |  |  |  |
| Surrogate: p-Terphenyl-d14       | 6.64            |       | ri        | 6.67  |  | 99.6                                    | 50-150   |  |  |  |
| Duplicate (5060156-DUP1)         |                 |       |           |       | Source: St                               | F0079-01                                |  |  |  |  |
| Diesel Range Hydrocarbons        | ND              | 100   | mg/kg dry |       | ND                                       | *************************************** |  |  | 25                                     |  |
| Heavy Oil Range Hydrocarbons     | 361             | 250   | *         |       | 261                                      |   |  | 32.2   | 25                                     | Q-05   |
| Surrogate: 2-FBP                 | 10.2            |       | #         | 10.9  |  | 93.6                                    | 50-150   |  |  | **************************************   |
| Surrogate: p-Terphenyl-d14       | 11.2            |       | и         | 10.9  |  | 103                                     | 50-150   |  |  |  |
| Matrix Spike (5060156-MS1)       |                 |       |           |       | Source: S5                               | F0079-01                                |  |  |  |  |
| Diesel Range Hydrocarbons        | 157             | 100   | mg/kg dry | 136   | ND                                       | 115                                     | 50-150   |  |  |  |
| Surrogate: 2-FBP                 | 12.5            |       | u         | 10.9  |  | 115                                     | 50-150   |  |  | **************************************   |
| Surrogate: p-Terphenyl-d14       | 11.8            |       | n         | 10.9  |  | 108                                     | 50-150   |  |  |  |

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Anchorage

Geo Engineers - Spokane 523 East Second Ave.

Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09

Reported: 07/11/05 11:59

Project Manager: Dave Enos Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### North Creek Analytical - Spokane RPD Spike %REC Reporting RPD %REC Limits Limit Notes Limit Level Result Analyte Result Units

| Batch 5060180: Pre        | pared 06/21/05 | Using GC/MS V | olatiles | American construction of the second s | gree's |
|---------------------------|----------------|---------------|----------|--|--------|
| Blank (5060180-BLK1)      |                |               |          |  |        |
| Acetone                   |                | ND            | 1.00     | mg/kg wet  | _      |
| Benzene                   |                | ND            | 0.0300   | 55   |        |
| Bromobenzene              |                | ND            | 0,100    | к  |        |
| Bromochloromethane        |                | ND            | 0.100    | и  |        |
| Bromodichloromethane      |                | ND            | 0.100    | **   |        |
| Bromoform                 |                | ND            | 0.100    | *  |        |
| Bromomethane              |                | ND            | 0.500    | **   |        |
| 2-Butanone                |                | ND            | 1.00     | **   |        |
| n-Butylbenzene            |                | ND            | 0.100    | st   |        |
| sec-Butylbenzene          |                | ND            | 0.100    | н  |        |
| tert-Butylbenzene         |                | ND            | 0.100    | н  |        |
| Carbon disulfide          |                | ND            | 0.100    | n  |        |
| Carbon tetrachloride      |                | ND            | 0.100    | м.   |        |
| Chlorobenzene             |                | ND            | 0.100    |  |        |
| Chloroethane              |                | ND            | 0.100    | н  |        |
| Chloroform                |                | מא            | 0.100    | *  |        |
| Chloromethane             |                | ND            | 0.500    | *  |        |
| 2-Chlorotoluene           |                | ND            | 0.100    | et   |        |
| 4-Chlorotoluene           |                | ND            | 0.100    | н  |        |
| Dibromochloromethane      |                | ND            | 0.100    | Ħ  |        |
| 1,2-Dibromo-3-chloropropa | ne             | ND            | 0,500    | н  |        |
| 1,2-Dibromoethane         |                | ND            | 0.100    | и  |        |
| Dibromomethane            |                | ND            | 0.100    | и  |        |
| 1,2-Dichlorobenzene       |                | ND            | 0.100    | n  |        |
| 1,3-Dichlorobenzene       |                | DM            | 0.100    | в  |        |
| 1,4-Dichlorobenzene       |                | ND            | 0.100    | ĸ  |        |
| Dichlorodifluoromethane   |                | ИD            | 0.100    | 4  |        |
| 1,1-Dichloroethane        |                | ND            | 0.100    | н  |        |
| 1,2-Dichloroethane (EDC)  |                | ND            | 0.100    | ы  |        |
| 1,1-Dichloroethene        |                | ND            | 0.100    | B  |        |
| cis-1,2-Dichloroethene    |                | ND            | 0.100    | 4  |        |
| trans-1,2-Dichloroethene  |                | ND            | 0.100    | *  |        |
| 1,2-Dichloropropane       |                | ND            | 0.100    | Ħ  |        |
| 1,3-Dichloropropane       |                | ND            | 0.100    | 15   |        |
| 2,2-Dichloropropane       |                | ND            | 0.100    | к  |        |

North Creek Analytical - Spokane

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Source

Result

%REC

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%REC

Limits

RPD

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Analyte

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

RPD

Limit

Notes

### Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

Units

Spike

Level

Reporting

Limit

Result

ND

1.05

1.04

0.676

0.400

| Batch 5060180: Prepared 06/21/05 | Using GC/MS V | olatiles |           |
|----------------------------------|---------------|----------|-----------|
| Blank (5060180-BLK1)             |               |          |           |
| 1,1-Dichloropropene              | ND            | 0.100    | mg/kg wet |
| cis-1,3-Dichloropropene          | ND            | 0.100    | W         |
| trans-1,3-Dichloropropene        | ND            | 0.100    | к         |
| Ethylbenzene                     | ND            | 0,100    | n         |
| Hexachlorobutadiene              | ND            | 0.100    | н         |
| 2-Hexanone                       | ND            | 1.00     | n         |
| Isopropylbenzene                 | ND            | 0.100    | **        |
| p-Isopropyltoluene               | ND            | 0.100    | H         |
| Methylene chloride               | ND            | 1.00     | ıı        |
| 4-Methyl-2-pentanone             | ND            | 1,00     | к         |
| Methyl tert-butyl ether          | ND            | 0.100    | u         |
| Naphthalene                      | ND            | 0.100    | 8         |
| n-Propylbenzene                  | ND            | 0.100    | N         |
| Styrene                          | ND            | 0,100    | *         |
| 1,1,1,2-Tetrachloroethane        | ND            | 0.100    | u         |
| 1,1,2,2-Tetrachloroethane        | ND            | 0.100    | N         |
| Tetrachloroethene                | ND            | 0.0300   | н         |
| Toluene                          | ND            | 0.100    |           |
| 1,2,3-Trichlorobenzene           | ND            | 0.100    | н         |
| 1,2,4-Trichlorobenzene           | ND            | 0.100    | н         |
| 1,1,1-Trichloroethane            | ND            | 0.100    | *         |
| 1,1,2-Trichloroethane            | ND            | 0.100    | ж         |
| Trichloroethene                  | ND            | 0.0300   | н         |
| Trichlorofluoromethane           | ND            | 0.100    | н         |
| 1,2,3-Trichloropropane           | ND            | 0.100    | k         |
| 1,2,4-Trimethylbenzene           | ND            | 0.100    | n         |
| 1,3,5-Trimethylbenzene           | ND            | 0.100    | н         |
| Vinyl chloride                   | ND            | 0.100    | н         |
| o-Xylene                         | ND            | 0.200    | н         |
|                                  |               | 0.400    |           |

North Creek Analytical - Spokane

Surrogate: Dibromofluoromethane

Surrogate: 4-bromofluorobenzene

Surrogate: Toluene-d8

m,p-Xylene

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105

104

67.6

1.00

1.00

1.00

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North Creek Analytical, Inc. Environmental Laboratory Network

44.8-146

62.3-143

52.5-138

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%REC

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco

Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

RPD

### Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

Reporting

Spike

| Analyte               |                   | Result        | Limit    | Units          | Level                   | Result    | %REC   | Limits                             | RPD   | Limit  | Notes              |
|-----------------------|-------------------|---------------|----------|----------------|-------------------------|-----------|--|------------------------------------|---|--|--------------------|
| Batch 5060180:        | Prepared 06/21/05 | Using GC/MS V | olatiles |                | nakowanie o sokowanie o |           | osensus automobiles and although a second and | egaseromania and an analysis and a | USUNUHAASIA QAARTA OO SAARTA AARAA AARA | hannoles des alemandes conservantes de la conservante de la conservante de la conservante de la conservante de | - Slovenske stereo |
| LCS (5060180-BS1)     | )                 |               |          |                |                         |           |  |                                    |   |  |                    |
| Benzene               |                   | 0.522         | 0.0300   | mg/kg wet      | 0.500                   |           | 104  | 72.5-130                           |   |  |                    |
| Chlorobenzene         |                   | 0.510         | 0.100    | R              | 0.500                   |           | 102  | 78.4-120                           |   |  |                    |
| 1,1-Dichloroethene    |                   | 0.602         | 0.100    | fe .           | 0.500                   |           | 120  | 50-150                             |   |  |                    |
| Toluene               |                   | 0.526         | 0,100    | **             | 0.500                   |           | 105  | 75.3-120                           |   |  |                    |
| Trichloroethene       |                   | 0.495         | 0.0300   | 45             | 0,500                   |           | 99.0   | 64.5-131                           |   |  |                    |
| Surrogale: Dibromoflu | ioromethane       | 1.06          |          | t <sup>2</sup> | 1.00                    |           | 106  | 44.8-146                           |   |  |                    |
| Surrogaie: Toluene-d8 |                   | 0,996         |          | "              | 1.00                    |           | 99.6   | 62.3-143                           |   |  |                    |
| Surrogaie: 4-bromoflu | orobenzene        | 0.976         |          | **             | 1.00                    |           | <i>97.6</i>  | 52.5-138                           |   |  |                    |
| LCS Dup (5060180      | -BSDI)            |               |          |                |                         | <b></b>   |  |                                    |   |  |                    |
| Benzene               |                   | 0.513         | 0.0300   | mg/kg wet      | 0.500                   |           | 103  | 72.5-130                           | 1.74  | 25   |                    |
| Chlorobenzene         |                   | 0.509         | 0.100    | и              | 0,500                   |           | 102  | 78,4-120                           | 0.196   | 25   |                    |
| I, I-Dichloroethene   |                   | 0.602         | 0.100    | n              | 0.500                   |           | 120  | 50-150                             | 0.00  | 25   |                    |
| Toluene               |                   | 0.514         | 0.100    | ĸ              | 0.500                   |           | 103  | 75.3-120                           | 2.31  | 25   |                    |
| Trichloroethene       |                   | 0.483         | 0.0300   | *              | 0.500                   |           | 96.6   | 64.5-131                           | 2.45  | 25   |                    |
| Surrogate: Dibromofli | uoromethane       | 1.02          |          | tr             | 1.00                    |           | 102  | 44.8-146                           |   |  |                    |
| Surrogate: Toluene-di |                   | 0.964         |          | H              | 1.00                    |           | 96.4   | 62.3-143                           |   |  |                    |
| Surrogate: 4-bromofli | ıorobenzene       | 0.892         |          | er .           | 1.00                    |           | 89.2   | 52.5-138                           |   |  |                    |
| Matrix Spike (506     | 0180-MS1)         |               |          |                |                         | Source: S | 5F0135-02  |                                    |   |  |                    |
| Benzene               |                   | 0.658         | 0.0300   | mg/kg dry      | 0.769                   | ND        | 85.6   | 62-130                             |   |  |                    |
| Chlorobenzene         |                   | 0.652         | 0.100    | п              | 0.769                   | ND        | 84.8   | 70.3-119                           |   |  |                    |
| 1,1-Dichloroethene    |                   | 0.758         | 0.100    | h              | 0.769                   | ND        | 98.6   | 50-150                             |   |  |                    |
| Toluene               |                   | 0.675         | 0.100    | н              | 0.769                   | 0.0514    | 1.18   | 63,8-120                           |   |  |                    |
| Trichloroethene       |                   | 0.621         | 0.0300   | "              | 0.769                   | ND        | 80.8   | 73.9-122                           |   |  |                    |
| Surrogate: Dibromoft  | uoromethane       | 1.51          |          | n              | 1.54                    |           | 98.1   | 44.8-146                           |   |  |                    |
| Surrogate: Toluene-d  | 8                 | 1.26          |          | n              | 1.54                    |           | 81.8   | 62.3-143                           |   |  |                    |
| Surrogate: 4-bromoft  | uorohenzene       | 1.40          |          | 0              | 1.54                    |           | 90.9   | 52.5-138                           |   |  |                    |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Volatile Organic Compounds by EPA Method 8260B - Quality Control North Creek Analytical - Spokane

|                                  |             | Reporting |  | Spike                          | Source                                     |  | %REC  |  | RPD                       |  |
|----------------------------------|-------------|-----------|--|--------------------------------|--|--|---|--|---------------------------|--|
| Analyte                          | Result      | Limit     | Units  | Level                          | Result                                     | %REC   | Limits  | RPD  | Limit                     | Notes  |
| Batch 5060180: Prepared 06/21/05 | Using GC/MS | Volatiles | construction of the second construction of the s | Market Market State Commission | enchololololololololololololololololololol | and the second of the second o | toriji deli vireni en | E-FLANCEN AND AND AND AND AND AND AND AND AND AN | UST COMPANY OF THE STREET | MANAGEMENT AND |
| Matrix Spike Dup (5060180-MSD1)  |             |           |  |                                | Source: S5                                 | F0135-02   |   |  |                           |  |
| Benzene                          | 0,666       | 0.0300    | mg/kg dry  | 0.769                          | ND   | 86.6   | 62-130  | 1,21   | 25                        |  |
| Chlorobenzene                    | 0.673       | 0.100     | K  | 0.769                          | ND   | 87.5   | 70.3-119  | 3,17   | 25                        |  |
| 1,1-Dichloroethene               | 0.665       | 0.100     | ×  | 0.769                          | ND   | 86.5   | 50-150  | 13.1   | 25                        |  |
| Toluene                          | 0.681       | 0.100     | ы  | 0.769                          | 0.0514                                     | 81.9   | 63.8-120  | 0.885  | 25                        |  |
| Trichloroethene                  | 0.613       | 0.0300    | ĸ  | 0.769                          | ND   | 79.7   | 73.9-122  | 1.30   | 25                        |  |
| Surrogate: Dibromofluoromethane  | 1.42        |           | a  | 1.54                           |  | 92.2   | 44.8-146  |  |                           |  |
| Surrogate: Toluene-d8            | 1.22        |           | ti   | 1.54                           |  | 79.2   | 62.3-143  |  |                           |  |
| Surrogate: 4-bromofluorobenzene  | 1.27        |           | "  | 1.54                           |  | 82.5   | 52.5-138  |  |                           |  |

North Creek Analytical - Spokane

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control North Creek Analytical - Spokane

|                                  |   | ì              | Reporting   |   | Spike  | Source                             |   | %REC   |                            | RPD  |  |
|----------------------------------|---|----------------|---|---|--|------------------------------------|---|--|----------------------------|--|--|
| Analyte                          |   | Result         | Limit   | Units   | Level  | Result                             | %REC  | Limits   | RPD                        | Limit  | Notes  |
| Batch 5060182:                   | Prepared 06/22/05                                 | Using Wet Chem |   | inances and the second of the | Markon Danishi, ang palikan di Silah Per   | esconocomonin-esconocomonin-escale | Demys Automost and |  |                            |  | #AP-ANGGERGIAGA PARA PARA PARA PARA PARA PARA PARA P |
| LCS (5060182-BS1                 | )   |                |   |   |  |                                    |   |  |                            |  |  |
| pH                               |   | 6.94           |   | pH Units  | 7.00   |                                    | 99.1  | 80-120   |                            |  |  |
| Duplicate (5060182               | 2-DUP1)   |                |   |   |  | Source: S5                         | F0121-01  |  |                            |  |  |
| pH                               |   | 8.17           |   | pH Units  |  | 8.21                               |   |  | 0.488                      | 20   |  |
| Batch 5060229:                   | Prepared 06/28/05                                 | Using Wet Chem | uddadasudasudas paga an | ersonnes et di Deskribigh in version de la constant   | n constant and the second  | ternioudovinioudus (LEPOV          | рициниченностив   | HARLES STATES OF THE STATES OF | nantussonantidekkenterrein | ndeninka propositiva por de de de la compositiva por la compositiva po | ann near meastach a stàite                           |
| Blank (5060229-Bl                | CK1)  |                |   |   |  |                                    |   |  |                            |  |  |
| DIMIN (2000 PR) - DI             | DIEI)   |                |   |   |  |                                    |   |  |                            |  |  |
| Cyanide (total)                  | Ditty   | ND             | 0.0500  | mg/kg   |  |                                    |   |  |                            |  |  |
|                                  | 0000000 V (000 - 000 - 000 000 000 000 000 000 00 | ND             | 0.0500  | mg/kg   | and the second s |                                    |   |  |                            |  |  |
| Cyanide (total)                  | 0000000 V (000 - 000 - 000 000 000 000 000 000 00 | ND<br>0.0543   | 0.0500  | mg/kg<br>mg/kg  | 0.0500   |                                    | 109   | 56-120   |                            |  |  |
| Cyanide (total) LCS (5060229-BS) | 1)  |                |   |   | 0.0500   | Source: S5                         |   | 56-120   |                            |  |  |

North Creek Analytical - Spokane

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%REC

907.563.9200 fax 907.563.9210

Project: Teck Cominco Geo Engineers - Spokane Project Number: 6601-003-09 523 East Second Ave. Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A - Quality Control

#### North Creek Analytical - Bothell

Reporting

|                                    |                | Kepornng                        |       | Бріке  | Ponice |                | 70REC  |     | RPD  |                          |
|------------------------------------|----------------|---------------------------------|-------|--|--------|----------------|--------|-----|--|--------------------------|
| Analyte                            | Result         | Limit                           | Units | Level  | Result | %REC           | Limits | RPD | Limit  | Notes                    |
| Batch 5F22064: Prepared 06/22/05   | Using EPA 3520 | C                               |       | economic constitutiva (a la cons |        | WIWWINSTON CO. |        |     | NAMES OF THE PARTY | nacesanice and appropria |
| Blank (5F22064-BLK1)               |                |                                 |       |  |        |                |        |     |  |                          |
| Aldrin [2C]                        | DN             | 0.0800                          | ug/l  |  |        |                |        |     |  |                          |
| alpha-BHC [2C]                     | ND             | 0.0400                          | ч     |  |        |                |        |     |  |                          |
| beta-BHC [2C]                      | ND             | 0.0400                          | N     |  |        |                |        |     |  |                          |
| delta-BHC [2C]                     | ND             | 0.100                           | Ħ     |  |        |                |        |     |  |                          |
| gamma-BHC (Lindane) [2C]           | מא             | 0.0400                          | н     |  |        |                |        |     |  |                          |
| Chlordane (tech) [2C]              | ND             | 0.500                           | н     |  |        |                |        |     |  |                          |
| alpha-Chlordane [2C]               | ND             | 0,0400                          | я     |  |        |                |        |     |  |                          |
| gamma-Chlordane [2C]               | ND             | 0.0400                          | k     |  |        |                |        |     |  |                          |
| 4,4'-DDD [2C]                      | ND             | 0.0400                          | н     |  |        |                |        |     |  |                          |
| 4,4'-DDE [2C]                      | ND             | 0.0800                          | ×     |  |        |                |        |     |  |                          |
| 4,4'-DDT [2C]                      | ND             | 0.080,0                         | *     |  |        |                |        |     |  |                          |
| Dieldrin [2C]                      | ND             | 0.0800                          | н     |  |        |                |        |     |  |                          |
| Endosulfan I [2C]                  | ND             | 0.0200                          | N     |  |        |                |        |     |  |                          |
| Endosulfan II [2C]                 | ND             | 0.0800                          | *     |  |        |                |        |     |  |                          |
| Endosulfan sulfate [2C]            | ND             | 0.100                           | *     |  |        |                |        |     |  |                          |
| Endrin [2C]                        | ND             | 0.0800                          | re    |  |        |                |        |     |  |                          |
| Endrin aldehyde [2C]               | ND             | 0.160                           | *     |  |        |                |        |     |  |                          |
| Endrin ketone [2C]                 | ND             | 0.0800                          | 4     |  |        |                |        |     |  |                          |
| Heptachlor [2C]                    | ND             | 0.0800                          | н     |  |        |                |        |     |  |                          |
| Heptachlor epoxide [2C]            | ND             | 0,0400                          | *     |  |        |                |        |     |  |                          |
| Methoxychlor                       | ди             | 0.500                           | *     |  |        |                |        |     |  |                          |
| Toxaphene [2C]                     | ND             | 2.00                            | н     |  |        |                |        |     |  |                          |
| Surrogate: TCX [2C]                | 0.146          | · w.c.um - C <sup>11-11-1</sup> | n     | 0.200  |        | 73.0           | 24-143 |     |  |                          |
| Surragate: Decachlorobiphenyl [2C] | 0.157          |                                 | "     | 0.200  |        | 78.5           | 10-145 |     |  |                          |
| LCS (5F22064-BS1)                  |                |                                 |       |  |        |                |        |     |  |                          |
| Aldrin [2C]                        | 0.226          | 0.0800                          | ug/l  | 0.250  |        | 90.4           | 57-124 |     |  |                          |
| alpha-BHC [2C]                     | 0.204          | 0.0400                          | *     | 0.250  |        | 81.6           | 52-138 |     |  |                          |
| beta-BHC [2C]                      | 0.230          | 0.0400                          | *     | 0.250  |        | 92.0           | 63-129 |     |  |                          |
| delta-BHC [2C]                     | 0.203          | 0.100                           | **    | 0.250  |        | 81.2           | 19-140 |     |  |                          |
| gamma-BHC (Lindane) [2C]           | 0.207          | 0.0400                          | *     | 0.250  |        | 82.8           | 59-129 |     |  |                          |
| alpha-Chlordane [2C]               | 0.223          | 0.0400                          | н     | 0.250  |        | 89.2           | 60-120 |     |  |                          |
| gamma-Chlordane [2C]               | 0.228          | 0.0400                          | н     | 0.250  |        | 91.2           | 58-121 |     |  |                          |
| 4,4'-DDD [2C]                      | 0.470          | 0.0400                          | 18    | 0,500  |        | 94.0           | 57-129 |     |  |                          |
|                                    |                | 0.0800                          | н     | 0.500  |        | 90,4           | 60-128 |     |  |                          |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Project Manager: Dave Enos

|                             |               |                | Reporting |       | Spike            | Source  |                              | %REC                                       |   | RPD   |                         |
|-----------------------------|---------------|----------------|-----------|-------|------------------|---|------------------------------|--|---|-------|-------------------------|
| Analyte                     |               | Result         | Limit     | Units | Level            | Result  | %REC                         | Limits                                     | RPD   | Limit | Notes                   |
| Batch 5F22064: Prep         | ared 06/22/05 | Using EPA 3520 | )C        |       | municipality (2) | OORGANISMENSOON NEEDSOON NEEDS | leenssandeleessenskandressen | HTTM: OCCUPANT MOCKSTAKKING SELVANA MANUAL | M200M16500-00-00-00-00-00-00-00-00-00-00-00-00- |       | manacher (Manistron Alb |
| .CS (5F22064-BS1)           |               |                |           |       |                  |   |                              |  | ~*·   |       |                         |
| 1,4'-DDT [2C]               |               | 0.402          | 0.0800    | ug/i  | 0.500            |   | 80.4                         | 60-147                                     |   |       |                         |
| Dieldrin (2C)               |               | 0.453          | 0.0800    | ŧſ    | 0.500            |   | 90.6                         | 58-123                                     |   |       |                         |
| Endosulfan I (2C)           |               | 0.227          | 0.0200    | и     | 0.250            |   | 90.8                         | 55-131                                     |   |       |                         |
| Endosulfan II [2C]          |               | 0,466          | 0.0800    | *     | 0.500            |   | 93.2                         | 53-135                                     |   |       |                         |
| Endosulfan sulfate [2C]     |               | 0,455          | 0.100     | н     | 0.500            |   | 91.0                         | 58-120                                     |   |       |                         |
| Endrin [2C]                 |               | 0.376          | 0.0800    | Ħ     | 0.500            |   | 75.2                         | 61-134                                     |   |       |                         |
| Endrin aldehyde (2C)        |               | 0.466          | 0.160     | ii .  | 0,500            |   | 93.2                         | 46-123                                     |   |       |                         |
| Endrin ketone [2C]          |               | 0.528          | 0.0800    | k.    | 0.500            |   | 106                          | 55-138                                     |   |       |                         |
| Heptachlor (2C)             |               | 0.189          | 0.0800    | к     | 0.250            |   | 75.6                         | 60-128                                     |   |       |                         |
| Heptachlor epoxide [2C]     |               | 0.227          | 0.0400    | K     | 0.250            |   | 90,8                         | 62-123                                     |   |       |                         |
| Methoxychlor                |               | 2.06           | 0,500     | H     | 2,50             |   | 82.4                         | 60-155                                     |   |       |                         |
| Surrogate: TCX [2C]         |               | 0.160          |           | "     | 0.200            |   | 80.0                         | 24-143                                     |   |       |                         |
| Surrogate: Decachlorobiphen | yl [2C]       | 0.163          |           | R     | 0.200            |   | 81.5                         | 10-145                                     |   |       |                         |
| CS Dup (5F22064-BSD)        | 1)            |                |           |       |                  |   |                              |  |   |       |                         |
| Aldrin (2C)                 |               | 0.233          | 0.0800    | ug/l  | 0.250            |   | 93.2                         | 57-124                                     | 3.05  | 30    |                         |
| alpha-BHC [2C]              |               | 0.203          | 0.0400    | *     | 0.250            |   | 81.2                         | 52-138                                     | 0.491   | 30    |                         |
| beta-BHC [2C]               |               | 0.234          | 0,0400    | R     | 0.250            |   | 93.6                         | 63-129                                     | 1.72  | 30    |                         |
| delta-BHC [2C]              |               | 0.205          | 0.100     | e     | 0.250            |   | 82.0                         | 19-140                                     | 0.980   | 30    |                         |
| gamma-BHC (Lindane) [2C]    |               | 0.210          | 0.0400    | n     | 0.250            |   | 84.0                         | 59-129                                     | 1.44  | 30    |                         |
| alpha-Chlordane [2C]        |               | 0.229          | 0,0400    | *     | 0.250            |   | 91.6                         | 60-120                                     | 2.65  | 30    |                         |
| gamma-Chlordane [2C]        |               | 0.235          | 0.0400    | **    | 0.250            |   | 94.0                         | 58-121                                     | 3.02  | 30    |                         |
| 4,4"-DDD [2C]               |               | 0.487          | 0.0400    | и     | 0.500            |   | 97.4                         | 57-129                                     | 3.55  | 30    |                         |
| 4,4'-DDE [2C]               |               | 0.470          | 0.0800    | 16    | 0.500            |   | 94.0                         | 60-128                                     | 3.90  | 30    |                         |
| 4,4'-DDT [2C]               |               | 0.406          | 0.0800    | N     | 0.500            |   | 81.2                         | 60-147                                     | 0.990   | 30    |                         |
| Dieldrin [2C]               |               | 0,480          | 0.0800    | н     | 0.500            |   | 96.0                         | 58-123                                     | 5.79  | 30    |                         |
| Endosulfan 1 [2C]           |               | 0.234          | 0.0200    | M     | 0.250            |   | 93.6                         | 55-131                                     | 3.04  | 30    |                         |
| Endosulfan II (2C)          |               | 0.474          | 0.0800    | н     | 0.500            |   | 94.8                         | 53-135                                     | 1.70  | 30    |                         |
| Endosulfan sulfate [2C]     |               | 0.461          | 0.100     |       | 0.500            |   | 92.2                         | 58-120                                     | 1.31  | 30    |                         |
| Endrin (2C)                 |               | 0.445          | 0.0800    | и     | 0.500            |   | 89.0                         | 61-134                                     | 16.8  | 30    |                         |
| Endrin aldehyde [2C]        |               | 0.471          | 0.160     | **    | 0.500            |   | 94.2                         | 46-123                                     | 1.07  | 30    |                         |
| Endrin ketone [2C]          |               | 0.490          | 0.080.0   | 11    | 0.500            |   | 98.0                         | 55-138                                     | 7.47  | 30    |                         |
| Heptachlor [2C]             |               | 0.195          | 0.0800    | *     | 0.250            |   | 78.0                         | 60-128                                     | 3.12  | 30    |                         |
| Heptachlor epoxide [2C]     |               | 0.233          | 0.0400    | H     | 0.250            |   | 93,2                         | 62-123                                     | 2.61  | 30    |                         |
| Methoxychlor                |               | 2.07           | 0.500     | R     | 2.50             |   | 82.8                         | 60-155                                     | 0.484   | 30    |                         |

North Creek Analytical - Spokane

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Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09 Spokane, WA 99202 Project Manager: Dave Enos

7.45

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

|                        |                   | R               | eporting   | MANAGEMPER SECTION OF A CONTRACT OF A CONTRA | Spike               | Source                                  | TOWNSHIP OF THE PROPERTY OF TH | %REC   | ACCOUNTY ON NAME OF A PARTY. | RPD   | ***************************************  |
|------------------------|-------------------|-----------------|--|--|---------------------|---|--|--------|------------------------------|-------|--|
| Analyte                |                   | Result          | Limit  | Units  | Level               | Result                                  | %REC   | Limits | RPD                          | Limit | Notes                                    |
| Batch 5F22064:         | Prepared 06/22/05 | Using EPA 3520C |  |  |                     |   |  |        |                              |       | 40 x 1 x 1 x 1 x 1 x 1 x 1 x 1 x 1 x 1 x |
| LCS Dup (5F22064       | -BSD1)            |                 |  |  |                     |   |  |        |                              |       |  |
| Surrogate: TCX [2C]    |                   | 0.162           |  | ug/l   | 0.200               |   | 81.0   | 24-143 |                              |       |  |
| Surrogate: Decachloro  | biphenyl [2C]     | 0.166           |  | u  | 0.200               |   | 83.0   | 10-145 |                              |       |  |
| Batch 5F28056:         | Prepared 06/28/05 | Using EPA 3550B | WHI SOME CONTRACT OF THE SOURCE OF THE SOURC | 50 440pm   | fornasauryumanuroum | Grannen Grander (1980)                  |  |        |                              |       | 000000000000000000000000000000000000000  |
| Blank (5F28056-BL      | -K1)              |                 |  |  |                     |   |  |        |                              |       |  |
| Aldrin [2C]            |                   | ND              | 1.00   | ug/kg wet  |                     |   |  |        |                              |       |  |
| alpha-BHC [2C]         |                   | П               | 1.00   | п  |                     |   |  |        |                              |       |  |
| beta-BHC [2C]          |                   | ND              | 2.00   | п  |                     |   |  |        |                              |       |  |
| delta-BHC [2C]         |                   | ND              | 1.00   | *  |                     |   |  |        |                              |       |  |
| gamma-BHC (Lindane)    | ) [2C]            | ND              | 1,00   | н  |                     |   |  |        |                              |       |  |
| Chlordane (tech) [2C]  |                   | ND              | 10.0   | *  |                     |   |  |        |                              |       |  |
| alpha-Chlordane [2C]   |                   | ND              | 1.00   | ×  |                     |   |  |        |                              |       |  |
| gamma-Chlordane [2C]   | ]                 | ND              | 1.00   | **   |                     |   |  |        |                              |       |  |
| 4,4'-DDD [2C]          |                   | ND              | 2.00   | e e  |                     |   |  |        |                              |       |  |
| 4,4'-DDE [2C]          |                   | ND              | 2.00   | н  |                     |   |  |        |                              |       |  |
| 4,4'-DDT [2C]          |                   | ND              | 2.00   | ×  |                     |   |  |        |                              |       |  |
| Dieldrin [2C]          |                   | ND              | 2.00   | ×  |                     |   |  |        |                              |       |  |
| Endosulfan I [2C]      |                   | ND              | 1.00   | N  |                     |   |  |        |                              |       |  |
| Endosulfan II [2C]     |                   | ИD              | 2.00   | н  |                     |   |  |        |                              |       |  |
| Endosulfan sulfate [2C | ]                 | ND              | 2.00   | ĸ  |                     |   |  |        |                              |       |  |
| Endrin [2C]            |                   | ND              | 2.00   | *  |                     |   |  |        |                              |       |  |
| Endrin aldehyde [2C]   |                   | DИ              | 2.00   | *  |                     |   |  |        |                              |       |  |
| Endrin ketone [2C]     |                   | ND              | 2.00   | n  |                     |   |  |        |                              |       |  |
| Heptachlor [2C]        |                   | ND              | 1.00   | H  |                     |   |  |        |                              |       |  |
| Heptachlor epoxide [20 | <b>[</b> ]        | ND              | 1.00   | h  |                     |   |  |        |                              |       |  |
| Methoxychlor [2C]      |                   | ND              | 2.00   | н  |                     |   |  |        |                              |       |  |
| Toxaphene [2C]         |                   | ND              | 50.0   | н  |                     |   |  |        |                              |       |  |
| Surrogate: TCX [2C]    |                   | 6.60            | ***************************************  | н  | 6.67                | *************************************** | 99.0   | 47-134 |                              |       |  |

North Creek Analytical - Spokane

Surrogate: Decachlorobiphenyl [2C]

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35-151

6.67

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

|                                    | R               | eporting | entermination de la Constitution | Spike | Source | AAPERO AMILIO DE BERNANCO | %REC   |   | RPD  |   |
|------------------------------------|-----------------|----------|--|-------|--------|---------------------------|--------|---|--|---|
| Analyte                            | Result          | Limit    | Units  | Level | Result | %REC                      | Limits | RPD                                     | Limit  | Notes   |
| Batch 5F28056: Prepared 06/28/05   | Using EPA 3550B |          |  |       |        |                           |        |   | en de la companyament de la comp | anning a state of the state of |
| LCS (5F28056-BS1)                  |                 |          |  |       |        |                           |        |   |  |   |
| Aldrin (2C)                        | 7.94            | 1.00     | ug/kg wet  | 8.33  |        | 95.3                      | 60-125 |   |  |   |
| alpha-BHC [2C]                     | 7.50            | 1.00     | н  | 8.33  |        | 90.0                      | 61-125 |   |  |   |
| beta-BHC [2C]                      | 7.75            | 2.00     | R  | 8.33  |        | 93.0                      | 37-147 |   |  |   |
| delta-BHC [2C]                     | 6.47            | 1.00     | H  | 8.33  |        | 77.7                      | 57-110 |   |  |   |
| gamma-BHC (Lindane) [2C]           | 7.12            | 1.00     | n  | 8.33  |        | 85.5                      | 61-125 |   |  |   |
| alpha-Chlordane [2C]               | 7,67            | 1.00     | *  | 8.33  |        | 92.1                      | 35-151 |   |  |   |
| gamma-Chlordane [2C]               | 7.65            | 1.00     | *  | 8.33  |        | 91.8                      | 65-125 |   |  |   |
| 4,4'-DDD [2C]                      | 15.4            | 2.00     | 11   | 16.7  |        | 92.2                      | 70-125 |   |  |   |
| 4,4'-DDE [2C]                      | 15.4            | 2.00     | н  | 16.7  |        | 92.2                      | 69-125 |   |  |   |
| 4,4'-DDT [2C]                      | 15.9            | 2.00     |  | 16.7  |        | 95.2                      | 60-127 |   |  |   |
| Dieldrin [2C]                      | 15.1            | 2.00     |  | 16.7  |        | 90.4                      | 59-128 |   |  |   |
| Endosulfan I (2C)                  | 7.01            | 1.00     | *  | 8,33  |        | 84.2                      | 32-153 |   |  |   |
| Endosulfan II [2C]                 | 16.3            | 2.00     | я  | 16.7  |        | 97.6                      | 61-125 |   |  |   |
| Endosulfan sulfate [2C]            | 16.0            | 2.00     | н  | 16.7  |        | 95.8                      | 56-125 |   |  |   |
| Endrin (2C)                        | 15.5            | 2.00     | R  | 16.7  |        | 92.8                      | 58-132 |   |  |   |
| Endrin aldehyde [2C]               | 13.7            | 2.00     | H  | 16.7  |        | 82.0                      | 22-144 |   |  |   |
| Endrin ketone [2C]                 | 16,2            | 2.00     | n  | 16.7  |        | 97.0                      | 50-140 |   |  |   |
| Heptachior [2C]                    | 7.19            | 1.00     | *  | 8.33  |        | 86.3                      | 59-129 |   |  |   |
| Heptachlor epoxide [2C]            | 7.89            | 1.00     | н  | 8.33  |        | 94.7                      | 55-125 |   |  |   |
| Methoxychlor [2C]                  | 79.8            | 2.00     | it   | 83.3  |        | 95.8                      | 50-135 |   |  |   |
| Surrogale: TCX [2C]                | 6.44            |          | 11   | 6.67  |        | 96.6                      | 47-134 | *************************************** |  |   |
| Surrogate: Decachlorobiphenyl [2C] | 7.27            |          | n  | 6.67  |        | 109                       | 35-15i |   |  |   |
| LCS Dup (5F28056-BSD1)             |                 |          |  |       |        |                           |        |   |  |   |
| Aldrin [2C]                        | 8.19            | 1.00     | ug/kg wet  | 8.33  |        | 98.3                      | 60-125 | 3.10                                    | 30   |   |
| alpha-BHC [2C]                     | 7.68            | 1.00     | u  | 8.33  |        | 92.2                      | 61-125 | 2.37                                    | 35   |   |
| beta-BHC [2C]                      | 8.03            | 2.00     |  | 8.33  |        | 96.4                      | 37-147 | 3,55                                    | 35   |   |
| delta-BHC (2C)                     | 6,74            | 1.00     | #  | 8.33  |        | 80.9                      | 57-110 | 4.09                                    | 35   |   |
| gamma-BHC (Lindane) [2C]           | 7.23            | 1.00     | н  | 8.33  |        | 86.8                      | 61-125 | 1.53                                    | 30   |   |
| alpha-Chlordane [2C]               | 8.09            | 1.00     | *  | 8.33  |        | 97.1                      | 35-151 | 5.33                                    | 35   |   |
| gamma-Chlordane [2C]               | 8.12            | 1.00     | Ħ  | 8.33  |        | 97.5                      | 65-125 | 5.96                                    | 35   |   |
| 4,4'-DDD [2C]                      | 16.2            | 2.00     | at .   | 16.7  |        | 97.0                      | 70-125 | 5,06                                    | 35   |   |
| 4,4'-DDE [2C]                      | 16.2            | 2.00     | н  | 16.7  |        | 97.0                      | 69-125 | 5.06                                    | 35   |   |
| 4,4'-DDT [2C]                      | 16.9            | 2.00     | р  | 16,7  |        | 101                       | 60-127 | 6.10                                    | 35   |   |
| Dieldrin [2C]                      | 15.9            | 2,00     | ,,   | 16.7  |        | 95.2                      | 59-128 | 5.16                                    | 35   |   |

North Creek Analytical - Spokane

Dennis D Wells, Laboratory Director

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Geo Engineers - Spokane Project: Teck Cominco 523 East Second Ave. Project Number: 6601-003-09 Spokane, WA 99202 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

|                                    | Ro              | porting  | and the second s | Spike  | Source    | THE RESERVE THE PROPERTY OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLU | %REC   |      | RPD   | Reserved Transporter |
|------------------------------------|-----------------|--|--|--|-----------|--|--------|------|-------|----------------------|
| Analyte                            | Result          | Limit  | Units  | Level  | Result    | %REC   | Limits | RPD  | Limit | Notes                |
| Batch 5F28056: Prepared 06/28/05   | Using EPA 3550B | i de partir de la companya de la co |  | overstance of the second secon |           | ***************************************  |        |      |       |                      |
| LCS Dup (5F28056-BSD1)             |                 |  |  |  |           |  |        |      |       |                      |
| Endosulfan I [2C]                  | 7.32            | 1.00   | ug/kg wet  | 8.33   |           | 87.9   | 32-153 | 4.33 | 35    |                      |
| Endosulfan II [2C]                 | 17.2            | 2.00   | н  | 16.7   |           | 103  | 61-125 | 5.37 | 35    |                      |
| Endosulfan sulfate [2C]            | 16.9            | 2.00   | 7  | 16.7   |           | 101  | 56-125 | 5.47 | 35    |                      |
| Endrin (2C)                        | 16.4            | 2.00   | n  | 16.7   |           | 98.2   | 58-132 | 5.64 | 35    |                      |
| Endrin aldehyde [2C]               | 14.3            | 2.00   | н  | 16.7   |           | 85.6   | 22-144 | 4.29 | 35    |                      |
| Endrin ketone [2C]                 | 17.0            | 2.00   | n  | 16.7   |           | 102  | 50-140 | 4.82 | 35    |                      |
| Heptachlor [2C]                    | 7.42            | 1.00   | я  | 8.33   |           | 89.1   | 59-129 | 3.15 | 30    |                      |
| Heptachlor epoxide [2C]            | 8.27            | 1.00   | м  | 8.33   |           | 99.3   | 55-125 | 4.70 | 35    |                      |
| Methoxychlor [2C]                  | 83.0            | 2.00   | н  | 83.3   |           | 99.6   | 50-135 | 3.93 | 35    |                      |
| Surrogate: TCX [2C]                | 6.63            |  | 23   | 6.67   |           | 99.4   | 47-134 |      |       |                      |
| Surrogate: Decachlorobiphenyl [2C] | 7.54            |  | tt   | <b>6</b> .67   |           | 113  | 35-151 |      |       |                      |
| Matrix Spike (5F28056-MS1)         |                 |  |  |  | Source: B | 5F0448-02  |        |      |       |                      |
| Aldrin [2C]                        | 9,98            | 1.00   | ug/kg dry  | 9.26   | ND        | 108  | 51-125 |      |       |                      |
| alpha-BHC [2C]                     | 8.61            | 1.00   | IF   | 9.26   | ND        | 93.0   | 39-125 |      |       |                      |
| beta-BHC [2C]                      | 9.37            | 2.00   | 15   | 9.26   | ND        | 101  | 13-152 |      |       |                      |
| delta-BHC [2C]                     | 7.61            | 1.00   | н  | 9.26   | ND        | 82.2   | 21-133 |      |       |                      |
| gamma-BHC (Lindane) [2C]           | 8.17            | 1.00   | н  | 9.26   | ND        | 88.2   | 36-125 |      |       |                      |
| alpha-Chłordane (2C)               | 8,06            | 1.00   | н  | 9.26   | ND        | 87.0   | 24-156 |      |       |                      |
| gamma-Chlordane [2C]               | 9.07            | 1.00   | а  | 9.26   | ND        | 97.9   | 34-143 |      |       |                      |
| 4,4'-DDD (2C)                      | 17.6            | 2.00   | N  | 18.5   | ND        | 95.1   | 29-153 |      |       |                      |
| 4,4'-DDE [2C]                      | 18.3            | 2.00   | н  | 18.5   | ND        | 98.9   | 30-160 |      |       |                      |
| 4,4'-DDT [2C]                      | 18.4            | 2.00   | к  | 18.5   | ND        | 99.5   | 31-149 |      |       |                      |
| Dieldrin [2C]                      | 17.9            | 2.00   |  | 18.5   | ND        | 96.8   | 41-134 |      |       |                      |
| Endosulfan I [2C]                  | 5,89            | 1.00   | я  | 9.26   | ND        | 63.6   | 20-155 |      |       |                      |
| Endosulfan II [2C]                 | 19.0            | 2.00   | *  | 18.5   | ND        | 103  | 30-140 |      |       |                      |
| Endosulfan sulfate [2C]            | 19.4            | 2.00   | n  | 18.5   | ND        | 105  | 14-143 |      |       |                      |
| Endrin [2C]                        | 18.8            | 2.00   | *  | 18.5   | ND        | 102  | 42-137 |      |       |                      |
| Endrin aldehyde [2C]               | 12.0            | 2.00   | ч  | 18.5   | ND        | 64.9   | 10-144 |      |       |                      |
| Endrin ketone [2C]                 | 19.0            | 2.00   | N  | 18.5   | ND        | 103  | 14-149 |      |       |                      |
| Heptachlor [2C]                    | 8.11            | 1.00   | W  | 9.26   | ND        | 87.6   | 43-125 |      |       |                      |
| Heptachlor epoxide [2C]            | 9.16            | 1.00   | н  | 9.26   | ND        | 98.9   | 51-125 |      |       |                      |
| Methoxychlor [2C]                  | 95.5            | 2.00   | и  | 92 6   | 0.399     | 103  | 24-138 |      |       |                      |
| Surrogate: TCX [2C]                | 7.37            |  | *  | 7.41   |           | 99.5   | 47-134 |      |       |                      |
| Surrogate: Decachlorobiphenyl [2C] | 8.54            |  | и  | 7.41   |           | 115  | 35-151 |      |       |                      |
|                                    |                 |  |  |  |           |  |        |      |       |                      |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reporting

Reported: 07/11/05 11:59

### Organochlorine Pesticides by EPA Method 8081A - Quality Control North Creek Analytical - Bothell

Spike

| Analyte                            | Result                  | Limit                                   | Units     | Level | Result                                     | %REC     | Limits | RPD   | Limit  | Notes |
|------------------------------------|-------------------------|---|-----------|-------|--|----------|--------|-------|--|-------|
| Batch 5F28056: Prepared 06         | 6/28/05 Using EPA 3550B | 224124000000000000000000000000000000000 |           |       | · <del>Line Partinipolitato de Maria</del> |          |        |       | a tentamanticularanch ain, glise éinteiseara |       |
| Matrix Spike Dup (5F28056-MSD      | 1)                      |   |           |       | Source: B5                                 | F0448-02 |        |       |  |       |
| Aldrin [2C]                        | 9,86                    | 1.00                                    | ug/kg dry | 9.32  | ND   | 106      | 51-125 | 1.21  | 35   |       |
| alpha-BHC [2C]                     | 8.82                    | 1.00                                    | 10        | 9.32  | ND   | 94.6     | 39-125 | 2.41  | 35   |       |
| beta-BHC (2C)                      | 9.20                    | 2.00                                    | н         | 9.32  | ND   | 98.7     | 13-152 | 1.83  | 35   |       |
| delta-BHC [2C]                     | 7.30                    | 1.00                                    | R         | 9,32  | ND   | 78.3     | 21-133 | 4,16  | 35   |       |
| gamma-BHC (Lindane) [2C]           | 8.31                    | 1.00                                    | 2         | 9.32  | ND   | 89.2     | 36-125 | 1.70  | 35   |       |
| slpha-Chlordane [2C]               | 7.98                    | 1.00                                    | н         | 9.32  | ND   | 85.6     | 24-156 | 0,998 | 35   |       |
| gamma-Chlordane [2C]               | 8.93                    | 1.00                                    |           | 9.32  | ND   | 95.8     | 34-143 | 1.56  | 35   |       |
| 4,4"-DDD [2C]                      | 16.8                    | 2.00                                    | n         | 18.6  | ND   | 90.3     | 29-153 | 4,65  | 35   |       |
| 4,4"-DDE [2C]                      | 17.8                    | 2.00                                    | п         | 18.6  | ND   | 95.7     | 30-160 | 2.77  | 35   |       |
| 4,4'-DDT [2C]                      | 17.7                    | 2.00                                    | н         | 18.6  | ND   | 95.2     | 31-149 | 3.88  | 35   |       |
| Dieldrin [2C]                      | 17.5                    | 2.00                                    | n         | 18.6  | ND   | 94.1     | 41-134 | 2.26  | 35   |       |
| Endosulfan I [2C]                  | 5.59                    | 1.00                                    | w         | 9.32  | ND   | 60.0     | 20-155 | 5.23  | 35   |       |
| Endosulfan II [2C]                 | 18.4                    | 2.00                                    | H         | 18.6  | ND   | 98.9     | 30-140 | 3.21  | 35   |       |
| Endosulfan sulfate [2C]            | 18.5                    | 2.00                                    | *         | 18.6  | ND   | 99,5     | 14-143 | 4.75  | 35   |       |
| Endrin [2C]                        | 18.3                    | 2.00                                    | it        | 18.6  | ND   | 98.4     | 42-137 | 2.70  | 35   |       |
| Endrin aldehyde [2C]               | 11.5                    | 2.00                                    | 4         | 18.6  | ND   | 61.8     | 10-144 | 4.26  | 35   |       |
| Endrin ketone [2C]                 | 18.1                    | 2.00                                    | ж         | 18.6  | ND   | 97.3     | 14-149 | 4.85  | 35   |       |
| Heptachlor [2C]                    | 8,01                    | 1.00                                    | *         | 9.32  | ND   | 85.9     | 43-125 | 1.24  | 35   |       |
| Heptachlor epoxide [2C]            | 8.86                    | 1.00                                    | н         | 9.32  | ND   | 95.1     | 51-125 | 3,33  | 35   |       |
| Methoxychlor [2C]                  | 91.9                    | 2.00                                    | н         | 93.2  | 0.399                                      | 98.2     | 24-138 | 3.84  | 35   |       |
| Surrogate: TCX [2C]                | 7.59                    |   | N         | 7.46  |  | 102      | 47-134 |       |  |       |
| Surragate: Decachlorobiphenyl [2C] | 8.15                    |   | н         | 7.46  |  | 109      | 35-151 |       |  |       |

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

| Annual An |  | F                 | leporting  | <del>(marsinalmi sersimstensimsimsimsi</del> | Spike                                  | Source   |  | %REC   |  | RPD  | neceses con an international contesso  |
|--|--|-------------------|--|--|--|--|--|--|--|--|--|
| Analyte  |  | Result            | Limit  | Units  | Level                                  | Result   | %REC   | Limits   | RPD  | Limit  | Notes  |
| Batch 5F22064:   | Prepared 06/22/05  | Using EPA 3520C   | None to the second                                     |  |  | manusia (modus) (manus) (modus)  |  |  |  |  | STATEMENT AND  |
| Blank (5F22064-BLI   | K2)  |                   |  |  |  |  | ***************************************  | NO PORTUGUIS AND   | One Charles of the Control of the Co | the second contract of the second | an on the contract of the cont |
| Aroclor 1016   |  | ОИ                | 0.500  | ug/l   |  |  |  | - American Control of the Control of |  | ***************************************  | ·····  |
| Aroclor 1221   |  | ND                | 0.500  | н  |  |  |  |  |  |  |  |
| Aroclor 1232   |  | ND                | 0.500  | ×  |  |  |  |  |  |  |  |
| Aroclor 1242   |  | ND                | 0.500  | и  |  |  |  |  |  |  |  |
| Aroclor 1248   |  | ND                | 0.500  | н  |  |  |  |  |  |  |  |
| Aroclor 1254   |  | ПN                | 0.500  | ×  |  |  |  |  |  |  |  |
| Aroclor 1260   |  | ND                | 0.500  | *  |  |  |  |  |  |  |  |
| Aroclor 1262   |  | ND                | 0.500  | я  |  |  |  |  |  |  |  |
| Aroclor 1268   |  | DИ                | 0,500  | *  |  |  |  |  |  |  |  |
| Surrogate: TCX   |  | 0.151             | ***************************************                | u  | 0.200                                  |  | 75.5   | 25-129   |  |  |  |
| Surrogate: Decachlorob   | iphenyl  | 0.192             |  | н  | 0.200                                  |  | 96.0   | 22-125   |  |  |  |
| LCS (5F22064-BS2)  |  |                   |  |  |  |  |  |  |  |  |  |
| Aroclor 1016   |  | 2.07              | 0.500  | ug/l   | 2.50                                   |  | 82.8   | 57-123   |  |  |  |
| Aroclor 1260   |  | 2.42              | 0.500  | 8  | 2.50                                   |  | 96.8   | 56-125   |  |  |  |
| Surrogate: TCX   |  | 0.167             |  | и  | 0.200                                  |  | 83.5   | 25-129   | .,   |  |  |
| Surrogate: Decachlorob   | iphenyl  | 0.204             |  | и  | 0.200                                  |  | 102  | 22-125   |  |  |  |
| LCS Dup (5F22064-  | BSD2)  |                   |  |  |  |  |  |  |  |  |  |
| Aroclor 1016   | ****   | 2.03              | 0.500  | ug/l   | 2.50                                   | ·····  | 81.2   | 57-123   | 1.95   | 30   |  |
| Aroclor 1260   |  | 2.32              | 0.500  | к.   | 2.50                                   |  | 92.8   | 56-125   | 4.22   | 30   |  |
| Surrogate: TCX   |  | 0.173             |  | и  | 0.200                                  |  | 86.5   | 25-129   |  |  |  |
| Surrogate: Decachlorob   | iphenyl  | 0.193             |  | 26   | 0.200                                  |  | 96.5   | 22-125   |  |  |  |
| Batch 5F28056:   | Prepared 06/28/05  | Using EPA 3550B   |  |  |  |  |  |  |  |  |  |
| Blank (5F28056-BL)   | ar Gar-spiller and American Statement Statement Statement Statement Statement Statement Statement Statement St | Osting Dr A OSSOB | TOTAL PROPERTY AND |  | Securios de managemente de la legación | OMORIO CONTRACTOR CONT | CONTRACTOR INVESTIGATION OF THE PROPERTY OF TH |  | eranconomono de la conomono de la co  | V(7:110/10/00/10/2000/14/44/10/00/16/4/4/4/  | neman and a second seco |
| Arector 1016   | E NAO 9  | ND                | 25.0   | un/ka was                                    |  | ***  |  |  |  |  | · · · · · · · · · · · · · · · · · · ·  |
| Aroclor 1221   |  | ND                | 50.0   | ug/kg wet                                    |  |  |  |  |  |  |  |
| Aroclor 1232   |  | ND                | 25.0   | н  |  |  |  |  |  |  |  |
| Aroclor 1242   |  | ND                | 25.0   | а  |  |  |  |  |  |  |  |
| Arocior 1248   |  | ND                | 25.0   | *  |  |  |  |  |  |  |  |
| Aroclor 1254   |  | ND                | 25.0   | м  |  |  |  |  |  |  |  |
| Aroclor 1260   |  | ND                | 25.0   | Pt .   |  |  |  |  |  |  |  |
| Aroclor 1262   |  | ND                | 25.0   | к  |  |  |  |  |  |  |  |
|  |  |                   |  | n  |  |  |  |  |  |  |  |
| Aroclor 1268   |  | DM                | 25.0   | r  |  |  |  |  |  |  |  |

North Creek Analytical - Spokane

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Dennis D Wells, Laboratory Director

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Spokane

Source

Portland

11922 E. 1st Avenue, Spokane Valley, WA 992001-302 509.924-9200 fax 509.924.9790 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210 20332 Empire Avenue, Sulte F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588 2000 W International Airport Road, Sulte A-10, Anchorage, AK 99502-1119 Anchorage

%REC

907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09

Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Polychlorinated Biphenyls by EPA Method 8082 - Quality Control North Creek Analytical - Bothell

Reporting

| Analyte                         | Result             | Limit | Units     | Level               | Result   | %REC      | Limits   | RPD                              | Limit  | Notes                     |
|---------------------------------|--------------------|-------|-----------|---------------------|--|-----------|--|----------------------------------|--|---------------------------|
| Batch 5F28056: Prepared 06/28/  | 05 Using EPA 3550B |       |           | menthornwedtet+4444 | anomerican de la company d |           | and the contraction of the contract of the con | ngaransaranjayanning lingus meli | Coloris contraction construction and the construction of the const | TOTAL MONEYOU MENTALISMAN |
| Blank (5F28056-BLK2)            |                    |       |           |                     |  |           | A  |                                  |  | ~                         |
| Surrogate: TCX                  | 6.57               |       | ug/kg wei | 6.67                |  | 98.5      | 19-149   |                                  |  |                           |
| Surrogate: Decachlorobiphenyl   | 7.75               |       | rt        | 6.67                |  | 116       | 37-151   |                                  |  |                           |
| LCS (5F28056-BS2)               |                    |       |           |                     |  |           |  |                                  |  |                           |
| Aroclor 1016                    | 71.0               | 25.0  | ug/kg wet | 83,3                |  | 85.2      | 63-125   |                                  |  |                           |
| Aroclor 1260                    | 86.4               | 25.0  | к         | 83.3                |  | 104       | 64-125   |                                  |  |                           |
| Surrogate: TCX                  | 6.51               |       | n         | 6.67                | ., .,  | 97.6      | 19-149   |                                  |  |                           |
| Surrogate: Decachlorobiphenyl   | 7.35               |       | rr        | 6.67                |  | 110       | 37-151   |                                  |  |                           |
| LCS Dup (5F28056-BSD2)          |                    |       |           |                     |  |           |  |                                  |  |                           |
| Aroclor 1016                    | 72.0               | 25.0  | ug/kg wet | 83.3                |  | 86.4      | 63-125   | 1.40                             | 30   |                           |
| Aroclor 1260                    | 86.3               | 25.0  | н         | 83.3                |  | 104       | 64-125   | 0.116                            | 30   |                           |
| Surrogate: TCX                  | 6.60               |       | и         | 6.67                |  | 99.0      | 19-149   |                                  |  |                           |
| Surrogate: Decachlorobiphenyl   | 7.51               |       | н         | 6.67                |  | 113       | 37-151   |                                  |  |                           |
| Matrix Spike (5F28056-MS2)      |                    |       |           |                     | Source: B  | 5F0427-26 |  |                                  |  |                           |
| Aroclor 1016                    | 42.9               | 12.4  | ug/kg dry | 51.6                | МD   | 83.1      | 28-136   |                                  |  |                           |
| Aroclor 1260                    | 53.8               | 12.4  | 44        | 51.6                | 2.35   | 99.7      | 35-152   |                                  |  |                           |
| Surrogate: TCX                  | 3.65               |       | п         | 4.13                |  | 88.4      | 19-149   |                                  |  |                           |
| Surrogate: Decachlorobiphenyl   | 4,37               |       | "         | 4.13                |  | 106       | 37-151   |                                  |  |                           |
| Matrix Spike Dup (5F28056-MSD2) |                    |       |           |                     | Source: B  | 5F0427-26 |  |                                  |  |                           |
| Aroclor 1016                    | 39.7               | 12.4  | ug/kg dry | 51.8                | DM   | 76.6      | 28-136   | 7.75                             | 35   |                           |
| Aroclar 1260                    | 55.5               | 12.4  | ø         | 51.8                | 2.35   | 103       | 35-152   | 3.11                             | 35   |                           |
| Surrogate: TCX                  | 3.71               |       | н         | 4.14                |  | 89.6      | 19-149   |                                  |  |                           |
| Surrogate: Decachlorobiphenyl   | 4.43               |       | и         | 4.14                |  | 107       | 37-151   |                                  |  |                           |

North Creek Analytical - Spokane

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9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

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Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

### Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

#### North Creek Analytical - Bothell

|                   |                   | R                | eporting                      | ***************************************  | Spike  | Source | MATERIAL PROPERTY OF THE PROPE | %REC   |  | RPD                                    |  |
|-------------------|-------------------|------------------|-------------------------------|--|--|--------|--|--|--|--|--|
| Analyte           |                   | Result           | Limit                         | Units  | Level  | Result | %REC   | Limits   | RPD  | Limit                                  | Notes  |
| Batch 5F29068:    | Prepared 06/30/05 | Using Dry Weight | erenetaun etti e ettiliyeetii | and the Control of th | ***************************************  |        | Weeklerinsonkuppiperyb-  | virigi <del>o de</del> <del>Maria de Maria de Maria de Maria</del> de Maria | ***************************************  | ************************************** | PROVINCEMENTAL CONTRACTOR CONTRAC |
| Blank (5F29068-B1 | LKI)              |                  |                               | 200000000000000000000000000000000000000  | A CONTRACTOR OF THE CONTRACTOR |        | William Control of the Control of th | NOVER-LOUIS THE PROPERTY OF TH                   | HERETURNING THE HERE AND A PROPERTY OF THE PERSONNEL PROPERTY OF THE P | aldamid - 100 HNO-10 transcense        | COMMISSION OF THE PROPERTY OF  |

Dry Weight 100 1.00

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11922 E. 13t Nermies, Johann Valley, 509,924,9200 fax 509,924,9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503,906,9200 fax 503,906,9210 20332 Empire Avenue, Sulte F-1, Bend, OR 97701-5711

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Geo Engineers - Spokane 523 East Second Ave. Spokane, WA 99202

P-03

Project: Teck Cominco Project Number: 6601-003-09 Project Manager: Dave Enos

Reported: 07/11/05 11:59

#### Notes and Definitions

| Q-05 | RPD values are not controlled at sample concentrations less than 10 times the reporting limit.                 |
|------|--|
| S-04 | The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. |

Greater than 40% difference between two dissimilar columns. After evaluation, the lower result has been reported.

Х See case narrative.

DET Analyte DETECTED

Analyte NOT DETECTED at or above the reporting limit ND

NR Not Reported

Sample results reported on a dry weight basis đгу

Relative Percent Difference RPD

North Creek Analytical - Spokane

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9405 SW Nimbus Ave, Beaverton, OR 97008-7132 20332 Empire Ave Suite F-1, Bend, OR 99701-5711 3209 Denali St, Anchorage, AK 99503-4030

FAX 420-9210 FAX 924-9290 FAX 906-9210 FAX 334-9210 FAX 382-7588 907-334-9200 425-420-9200 503-906-9200 541-383-9310 509-924-9200

WO ID V \* Turnaround Requests less than standard may Incur Rush Charges. 100 S. 15 PMIL DATE: 6/16/05 TURNAROUND REQUEST Petroleum Hydrocarbon Analyses LOCATION / COMMENTS 64 Work Order #: SCO 尺 Organic & Inorganic Analyses in Business Days \* DATE TIME en. 3 OTHER Specify: 8 ADDITIONAL REMARKS: CAUTION: Sample TC-8 is an unknown chemical May be port cyanide occasion voc-nonlyted voc may be present-Call D Ense. Hold all Samples for further tests FIRM: NCA-S [2] [4] # OF MATRIX (W, S, O) Chis William REQUESTED ANALYSES RECEIVED BY: PRINT NAME: RECEIVED BY: PRINT NAME: PRESERVATIVE CHAIN OF CUSTODY REPORT 12:150 m DATE: 6/16/05 INVOICE TO: P.O. NUMBER Tabl Cylinde H & TIME DATE TIME × × × × A Softing MAN GET 523 E 2nd Ave Spokane, WA 99202 Geo Engineers, Inc. <u>8</u>  $\widetilde{g}$ 28 SAMPLING PROJECT NUMBER: 6601-003-09 FIRM: PROJECT NAME: TECK COMINGO TC-7(4-4.5) (6/15/05 SAMPLED BY: M. Kotting REPORT TO: Dave Gnes PHONE (509) 343-345 FAX ADDITIONAL REMARKS: CAUTION: TC-8(2-2-5) 34-4) 6-21 CLIENT SAMPLE DENTIFICATION ADDRESS: RELEASED BY: CLIENT PRINT NAME: RELEASÉD BY: PRINT NAME:

7.28 PAGE ( OF



APPENDIX D
REPORT LIMITATIONS AND GUIDELINES FOR USE

## APPENDIX D REPORT LIMITATIONS AND GUIDELINES FOR USE<sup>1</sup>

This Appendix provides information to help you manage your risks with respect to the use of this report.

# ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for the exclusive use of Teck Cominco American Incorporated, their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Potlatch should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

#### THIS REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

This report has been prepared for the Pend Oreille Mine site located near Metaline Falls, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project.
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

#### RELIANCE CONDITIONS FOR THIRD PARTIES

Our report was prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

#### **ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING**

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal

<sup>1</sup> Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.



regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

#### **UNCERTAINTY MAY REMAIN EVEN AFTER THIS ASSESSMENT IS COMPLETED**

No assessment can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

#### GEOTECHNICAL ENGINEERING REPORT RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the preliminary construction recommendations included in this report. These recommendations are not final, because they were developed principally from GeoEngineers' professional judgment and opinion. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for this report's recommendations if we do not perform construction observation.

Sufficient monitoring, testing and consultation by GeoEngineers should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

#### SUBSURFACE CONDITIONS CAN CHANGE

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

#### SOIL AND GROUNDWATER END USE

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

#### MOST GEOLOGICAL AND ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field

and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

#### Do Not Redraw The Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

#### READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

# GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

#### **BIOLOGICAL POLLUTANTS**

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Client desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.