

July 5, 2006

Mr. Bruce Wanstall Alaska Department of Environmental Conservation Contaminated Sites Program 410 Willoughby, Suite 302 Juneau, Alaska 99803

JUL 1 2 2006 DEC SPAR-CS

Re:

**Subsurface Investigation Report** 

Former Delta Western/Chevron Bulk Terminal #8-2307 Block J Airport Lease Properties Tract A, Juneau International Airport Subdivision Juneau, Alaska Cambria Project No. 31J-2237



Dear Mr. Wanstall:

Cambria Environmental Technology (Cambria) is submitting this Subsurface Investigation Report to the Alaska Department of Environmental Conservation (ADEC) on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. The ADEC granted verbal approval of Cambria's May 23, 2006 Shallow Soil Assessment Workplan in a May 23, 2005 prefield telephone conference with Cambria. Petro Marine of Juneau, Alaska has proposed to develop a new fuel storage tank farm on Lots 5 and 6, of Block J-Airport Lease Properties, Tract A-Juneau International Airport (JIA) Subdivision, located north of the former and current Delta Western facilities on Lot 8A and 8B, Block J Airport Lease Properties, Tract A JIA Subdivision. The purpose of this investigation was to assess whether any historical release associated with the former Delta Western/Chevron facility on Lot 8B has impacted the proposed development area north of the site, and to investigate the potential for contaminant migration along the containment v-ditch that drains towards Duck Creek. Cambria prepared this report summarizing site investigation activities.

## SITE BACKGROUND

The site is a former bulk fuel terminal located on the northern portion of the Juneau International Airport at 9203 Cessna Drive in Juneau, Alaska (Figure 1). The former bulk terminal consisted of two 25,000-gallon aboveground storage tanks (ASTs) and one 25,000-gallon underground storage tank (UST). The two ASTs contained jet fuel and the UST contained aviation gasoline. Other fuel distribution equipment consisted of a pump house and two overhead loading racks. Chevron operated the facility from approximately 1958 to 1987. In 1987, Delta Western purchased the facility equipment and resumed operation until November 4, 1998. The ASTs, UST, pump

Cambria Environmental Technology, Inc.

2828 N. Speer Blvd. Suite 140 Denver, CO 80211 Tel (303) 433-3650 Fax (303) 433-3974

Mr. Bruce Wanstall July 5, 2006

house, loading racks and associated equipment were removed in November 1998. Prior to demolishing the aforementioned facilities, Delta Western constructed a new bulk fuel facility, approximately 100 feet southeast of the former location, consisting of three 30,000-gallon ASTs. Two of the ASTs contain jet fuel while the remaining one contains aviation gasoline.

The proposed development area is separated from the sites mentioned above by an earthen containment berm approximately 80 ft wide that trends northeast to northwest across Block J. The berm was likely constructed of nearby excavated material approximately 30-35 years ago during the initial development of the tank farm. The proposed Petro Marine tank farm area is in a forested and undeveloped area north of the former and current Delta Western/Chevron facilities on Lots 8A and 8B and adjoined by a Greenbelt and Berners Avenue to the North. A chain-linked fence is present atop the containment berm.



## **INVESTIGATION ACTIVITIES**

## **Investigation Rationale**

The ADEC informed Cambria of the proposed development in a March 23, 2006 meeting at the ADEC, in Juneau, Alaska. Cooper Consulting Engineers of Juneau, Alaska (Cooper) submitted an email notification to ADEC on April 12, 2006 reporting that petroleum hydrocarbons were observed in geotechnical test pits excavated along the v-ditch located south of the existing containment berm at the site. ADEC, Cooper and JIA staff conducted a site inspection on April 21, 2006 and advanced test borings at select locations on Lots 5 and 6 where petroleum odors were observed in a soil and groundwater seeps north of the existing containment berm. No samples were collected during this inspection. Chevron, Cambria, JIA, and the ADEC agreed to conduct a shallow soil subsurface investigation to investigate the site conditions observed on April 12 and May 23, 2006.

## Soil Borings

Cambria completed twenty shallow soil borings to assess the site subsurface conditions and to investigate whether petroleum hydrocarbons are present in soil and groundwater beneath the proposed Petro Marine tank farm area (Figure 2). Soil borings B1 through B4 were advanced within the containment berm along the north side of the site to determine whether petroleum hydrocarbon constituents were present within the earthen berm. Cambria advanced shallow soil borings B-5 through B-17 in the forested area north of the containment berm where visual indications of hydrocarbon impact where observed during the April 21, 2006 ADEC site visit. Three borings were also advanced in the current v-ditch located south of the containment berm and north of the current Delta Western facility. Grab groundwater samples were collected from borings B-5 and B-14, the only two borings where groundwater was encountered. Cambria

conducted all activities in accordance with the ADEC's Underground Storage Tanks Procedures Manual, Guidance for Treatment of Petroleum-Contaminated Soil and Groundwater and Standard Sampling Procedures outlined in Chapter 2, Standard Sampling Procedures. Details of the investigation are presented below.

Drilling Dates: June 1-2, 2006.

**Drilling Company:** Juneau International Airport, Juneau, Alaska (JIA) conducted the sampling activities under the direction of Cambria personnel



Cambria Personnel: Morgan Hargrave and John Riggi, Alaska Qualified Person, conducted all fieldwork.

**Soil Borings:** Soil borings B-1 through B-20 were advanced. Boring logs are presented in Attachment A.

Subsurface Utility Clearance: Locate Alaska was notified by JIA to locate and mark any subsurface utilities. A magnetometer was used as an additional safety measure to clear each drilling location.

**Drilling Method:** Borings B-1 through B-4 were advanced using a Hitachi excavator provided by JIA. The sample area was excavated to the targeted depth and a sample was collected from the bucket of the excavator. The remaining borings were drilled using a 6-inch flight auger attached to a Ford 4630 tractor. Soil samples were collected from auger cuttings, from a hand auger bucket, or from sidewall scrapings based on the integrity of the borehole and sample accessibility.

Geology: The site is located in southeastern Alaska, situated on filled tidal wetlands at the southern terminus of the Mendenhall Valley. Soils at the site have been described as consisting of primarily gravelly sand with cobbles from the surface to approximately 7 to 10 feet below ground surface (bgs), underlain by sandy silt from 10 to 12 feet bgs. Soils underlying this layer are described as gravelly sand to the total depth explored, at approximately 21 feet bgs. Sediments encountered during this investigation included shallow silty sands with organic material overlying gray silt on the north side of the property and silty gravel fill in, and south of the, containment berm.

*Hydrogeology:* Groundwater has historically fluctuated between approximately 15.53 to 24.54 ft bgs in site monitoring wells. Historical groundwater flow direction has varied to the west, south and southwest with an approximate gradient of 0.002 ft/ft.

**Soil Screening:** Soil samples were screened for petroleum hydrocarbon constituents using a photo ionization detector (PID) during sampling activities. PID readings, evidence of discoloration, and stratigraphic location, were used to select soil samples for laboratory analyses.

Laboratory Analyses: Soil analytical results are presented in Table 1. The laboratory analytical report is included as Attachment B. Selected soil samples and two grab groundwater samples were analyzed for:

- Gasoline Range Organics (GRO) by AK101;
- Diesel Range Organics (DRO) by AK102;
- Residual Range Organics (RRO) by AK103; and
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021.

Soil Disposal: Soil borings were backfilled with drilling cuttings.

## Soil and Groundwater Analytical Results

Twenty one soil samples were analyzed during this investigation (Figure 3). One soil sample was analyzed from each boring with the exception of B-6, where soil samples were collected and analyzed at 2 and 4 ft bgs. GRO was detected in 9 of 21 samples with a maximum GRO concentration of 1,700 mg/kg in sample B-18-1.5' (Figure 4). DRO concentrations in soil ranged from below laboratory detection limits to a maximum concentration of 1,600 mg/kg in sample B-18-1.5'. Low concentrations of RRO ranging from 8.5 mg/kg to 620 mg/kg were detected in 19 of 21 analyzed soil samples. Soil samples B-14-2', B-15-3' and B-18-1.5' contained benzene concentrations of 0.2 mg/kg, 0.05 mg/kg and 4.1 mg/kg, respectively. Soil analytical data is summarized in Table 1.

Grab groundwater samples collected from boring B-5 contained no benzene above laboratory detection limits and 330 micrograms per liter ( $\mu$ g/L) GRO, 10,000  $\mu$ g/L DRO, and 4,200  $\mu$ g/L RRO (Figure 5). Grab groundwater samples collected from boring B-14 contained no RRO, 1,300  $\mu$ g/L GRO, 29,000  $\mu$ g/L DRO and 1.1  $\mu$ g/L benzene. Grab groundwater analytical data is summarized on Table 2. The laboratory analytical report is presented as Attachment B.

## **CONCLUSIONS**

Sediments encountered beneath the site consisted of fill south of the berm and native sandy gravels underlain by a low permeability gray silt layer present at approximately 2-4 ft bgs, consistent with historical data.

Mr. Bruce Wanstall July 5, 2006

Soil samples collected from borings B-1 through B-4 advanced within the containment berm, south of the existing fence, contained no benzene and low concentrations of GRO, DRO, or RRO that were well below ADEC soil clean up levels. It is unlikely that soil material from within the containment berm is a source of contamination for Lots 5 and 6.

0

Groundwater seeps were observed surfacing north from the containment berm located near the southern property corner of Lots 5 and 6. Borings B-5 through B-17 were advanced in the topographical swale southeast/east of the seep locations to assess the lateral and vertical extent of hydrocarbon impact in Lots 5 and 6. No GRO, DRO or RRO were detected in any analyzed sample collected along the perimeter of the swale (Figure 2) above ADEC Method II, over 40-Inch Zone, Migration to Groundwater Soil Cleanup Levels. Benzene was detected in two samples slightly above the 0.02 mg/kg ADEC Method II, over 40-Inch Zone, Migration to Groundwater Soil Cleanup Level for benzene. Samples B-14-2' and B-15-3' contained 0.2 mg/kg and 0.05 mg/kg benzene, respectively. The soil sample collected from boring B-14-2' was collected directly above the potentiometric surface, and it is likely that the 0.05 mg/kg benzene concentration detected in samples B-14-2' was a result of the dissolved phase hydrocarbons present in groundwater. Borings B-14 and B-15 are located approximately 20-30 ft from the observed groundwater seeps.

The extent of soil contamination is defined and appears to be vertically contained by the predominant low permeability silt layer underlying the site and surrounding area from approximately 2 to 12 ft bgs. Borings logs from previous investigations indicate the silt layer ranges in thickness from approximately 6 to 12 ft. Based on topographical and natural observations made during the field activities the zone of contamination appears to be limited to a swale area that extends approximately 70 ft by 20 ft wide. The dimensions and younger vegetation suggest the area may have been excavated for military purpose during the 1940's.

Soil borings B-18, B-19 and B-20 were advanced in the v-ditch south of the fence and containment berm to investigate an area where geotechnical explorations were explored during the April 21, 2006 ADEC site visit. Soil sample B-18-1.5' contained the maximum GRO, DRO and benzene concentrations and were above the ADEC Method II, over 40-Inch Zone, Migration to Groundwater Soil Cleanup Levels of 230 mg/kg, 260 mg/kg, and 0.02 mg/kg, respectively. Boring B-19 was drilled approximately 60 ft downgradient in the v-ditch to assess whether hydrocarbon constituents were migrating towards Duck Creek. No GRO, DRO, RRO or BTEX was detected above laboratory detections limits in soil sample B-19-2'.

Mr. Bruce Wanstall July 5, 2006

The analytical data and field observations indicate that the current v-ditch is a not preferential pathway for dissolved phase contaminant migration. Soil boring B-20 was drilled to determine the lateral extent of residual and dissolved phase hydrocarbons northwest/west of B-19. Soil sample analytical data collected from B-20 suggests the western lateral extent is limited to approximately 40 ft.



GRO, DRO and RRO were detected in grab groundwater samples B-5 and B-14 above ADEC Table C Groundwater Cleanup Levels. These sample locations are north of the containment berm and topographical downgradient of the seep area. The analytical data and field observations suggest that dissolved phase hydrocarbons have migrated through a high permeability channel that has eroded beneath the containment berm. Although the site groundwater flow direction data is not historically consistent and is influenced by tidal fluctuations, it is likely that the in-situ residual mass remaining from outside the 2000 Delta Western/Chevron excavation is the source area.

Mr. Bruce Wanstall July 5, 2006

## **CLOSING**

We appreciate the opportunity to work with all parties involved on this project. Please call John Riggi at (303) 433-3923 if you have any questions.

Sincerely,

Cambria Environmental Technology, Inc.



Morgan Hargrave Senior Staff Scientist

John Riggi, P.G.

Senior Project Geologist Alaska Qualified Person

Figures:

1 - Vicinity Map

2 - Site Plan

3 – Site Diagram

4- Hydrocarbon Concentrations in Soil

5 – Hydrocarbon Concentrations in Groundwater

Tables:

1 – Soil Analytical Results

2 - Grab Groundwater Analytical Results

Attachments:

A – Boring/Well Logs

B – Lancaster Laboratories Analytical Reports

cc:

Ms. Stacie Hartung-Frerichs, Chevron Environmental Management Company, P.O. Box

6012, Room K2200, San Ramon, CA 94583

Mr. John Cooper, Cooper Consulting Engineers 8183 Threadneedle Street, Juneau, Alaska 99801

Ms. Bev Niemann, Delta Western

2700 West Commodore Way, Seattle, Washington 98199

Mr. Ben Mello, Juneau International Airport 1873 Shell Simmons Drive, Juneau, Alaska

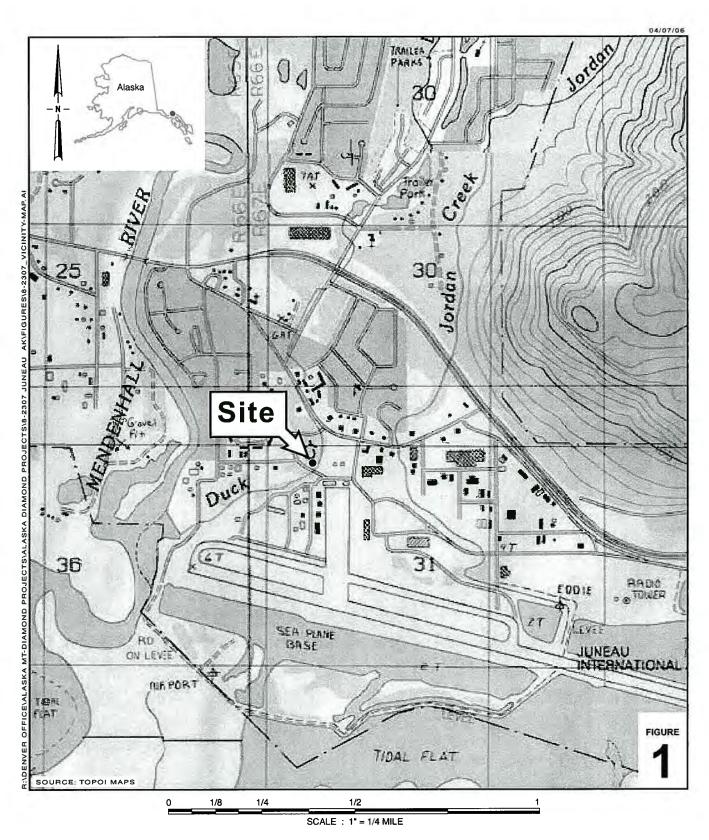
Cambria Environmental Technology, Inc.

Mr. Bruce Wanstall July 5, 2006

R:\Denver Office\Alaska MT-Diamond Projects\Alaska Diamond Projects\8-2307, Juneau, AK\8-2307 Juneau, AK\June 2006 Soil Assessment\8-2307 SSI-Final July 2006.doc

Cambria Environmental Technology, Inc. (Cambria) prepared this document for use by our client and appropriate regulatory agencies. It is based partially on information available to Cambria from outside sources and/or in the public domain, and partially on information supplied by Cambria and its subcontractors. Cambria makes no warranty or guarantee, expressed or implied, included or intended in this document, with respect to the accuracy of information obtained from these outside sources or the public domain, or any conclusions or recommendations based on information that was not independently verified by Cambria. This document represents the best professional judgment of Cambria. None of the work performed hereunder constitutes or shall be represented as a legal opinion of any kind or nature.

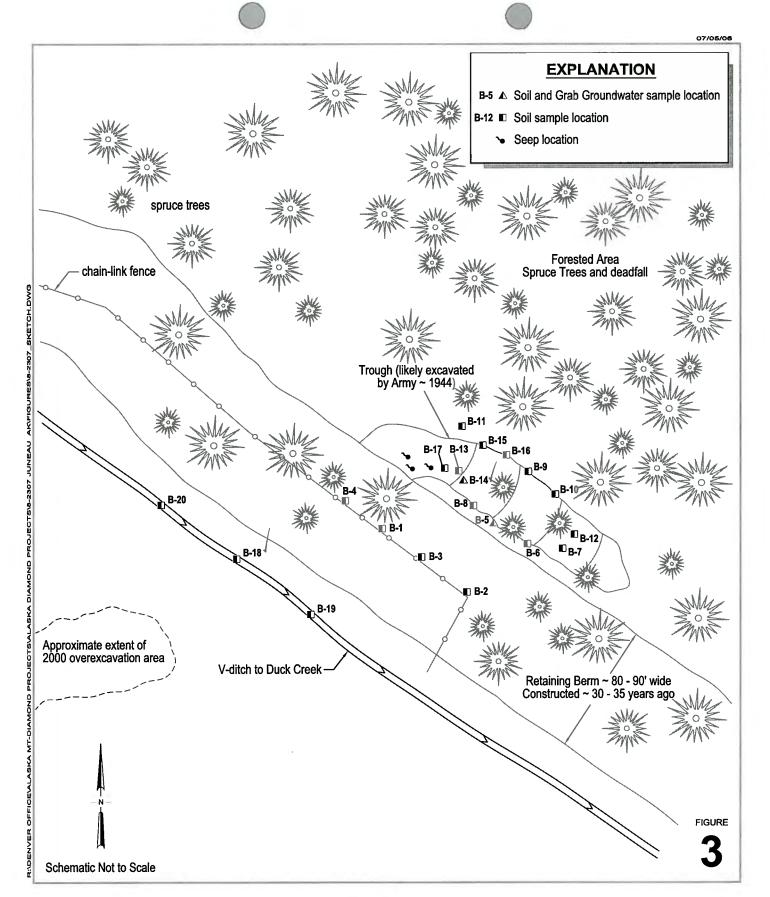




# Former Delta Western Bulk Terminal 8-2307

3

**Vicinity Map** 

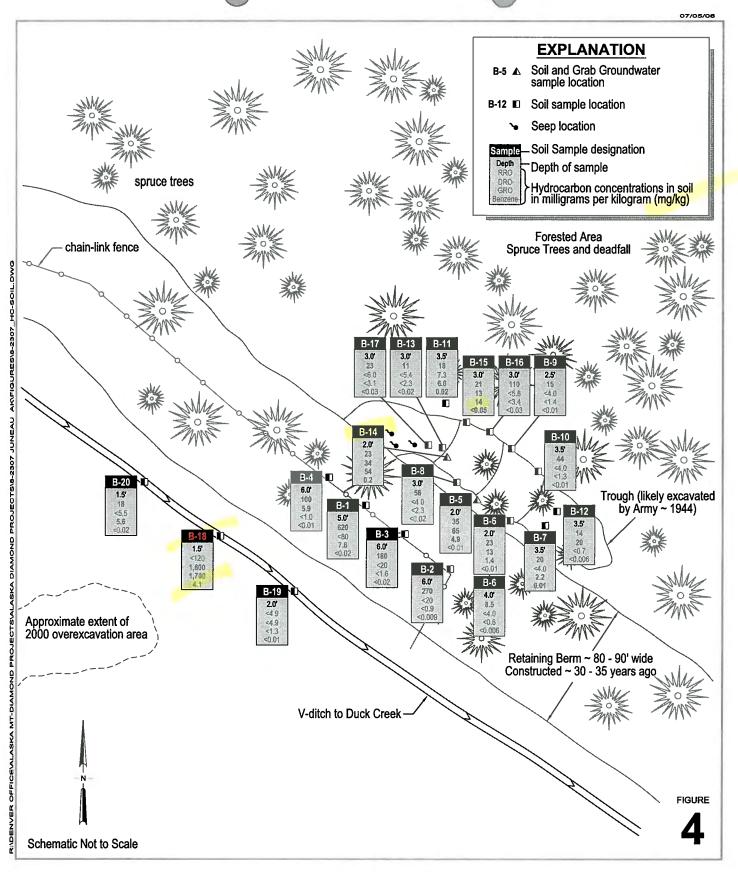


Former Delta Western/ Chevron Bulk Terminal 8-2307

9203 Cessna Drive Juneau, Alaska



Area Diagram



Former Delta Western/
Chevron Bulk Terminal 8-2307

9203 Cessna Drive

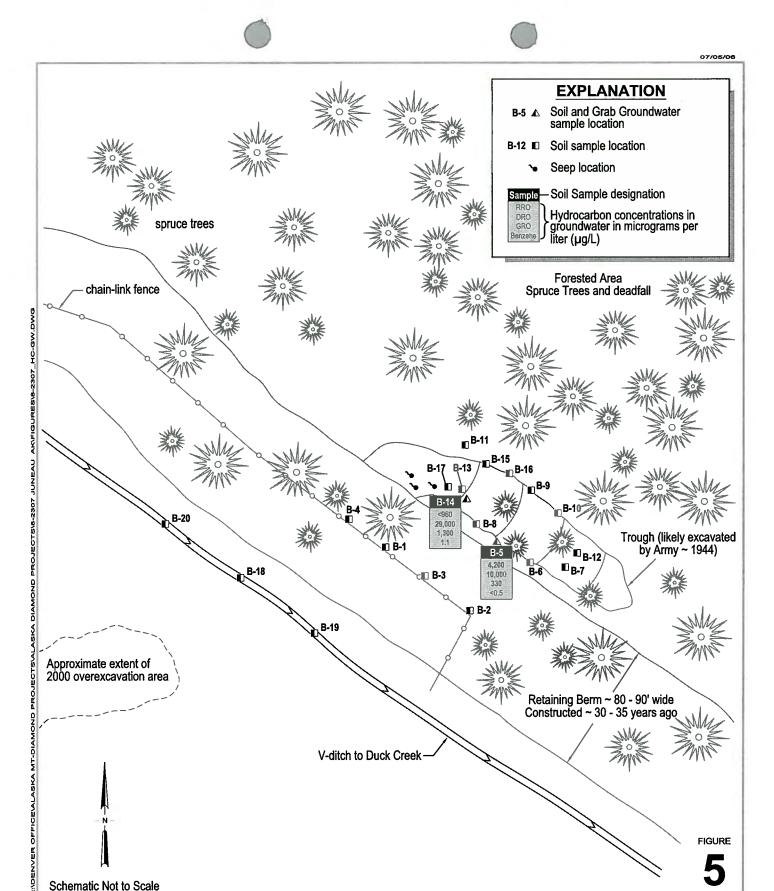
Juneau, Alaska



CAMBRIA

Hydrocarbon Concentrations in Soil

June 1 and 2, 2006





9203 Cessna Drive Juneau, Alaska



Hydrocarbon Concentrations in Groundwater

June 1 and 2, 2006

Table 1. Soil Analytical Data
Former Delta Western/Chevron Bulk Terminal #8-2307, 9203 Cessna Drive, Juneau, Alaska

	Sample ID	Date Sampled	Sample Dep (ft bgs)		RRO		DRO		GRO (C	Benzene oncentrations in n	Toluene	Е	thylbenzen	e	Xylenes	_
	ADEC Cleanup	Levels*			9,700		230		260	0.02	4.8		5.0		69	
	B-1-5'	6/1/2006	5.0		620		<80		7.6	<0.02	0.02		0.04		5.5	-
	B-2-6'	6/1/2006	6.0		270		<20		<0.9	<0.009	<0.009		<0.009		<0.03	
	B-3-6'	6/1/2006	6.0		180		<20		<1.6	<0.02	<0.02		<0.02		<0.05	
	B-4-6'	6/1/2006	6.0		100		5.9		<1.0	<0.01	<0.01		<0.01		<0.03	
	B-5-2'	6/1/2006	2.0		35		65		4.9	<0.01	<0.01		<0.01		<0.04	
L	B-6-2' B-6-4'	6/1/2006 6/1/2006	2.0 4.0	•	23 8.5		13 <4.0		1.4 <0.6	<0.01 <0.006	<0.01 <0.006	-	<0.01 <0.006		<0.03 <0.02	
	B-7-3.5'	6/1/2006	3.5		20		<4.0		2.2	0.01	< 0.01		<0.01		< 0.03	
	B-8-3'	6/1/2006	3.0		58		<4.0		<2.3	<0.02	<0.02		<0.02		<0.07	
	B-9-2.5'	6/1/2006	2.5		15		<4.0		<1.4	<0.01	<0.01		<0.01		<0.04	
	B-10-3.5'	6/1/2006	3,5		44		<4.0		<1.3	<0.01	0.02		<0.01		<0.04	
	B-11-3.5'	6/1/2006	3.5		18		7.3		6.0	0.02	<0.02		0.02		<0.04	
•	B-12-3.5'	6/2/2006	3.5	-	14	-	20	-	<0.7	<0.006	<0.006	V	<0.006		<0.02	
	B-13-3'	6/2/2006	3.0		Н		<5.4		<2.3	<0.02	<0.02		<0.02		<0.07	
	B-14-2'	6/2/2006	2.0		23		34		54	0.2	<0.08		<0.08		<0.2	
	B-15-3'	6/2/2006	3.0		21		13		14	0.05	<0.02		<0.02		<0.06	
	B-16-3'	6/2/2006	3.0		110		<5.8		<3.4	< 0.03	0.04		< 0.03		<0.1	
	B-17-3'	6/2/2006	3.0		23		<6.0		<3.1	<0.03	<0.03		<0.03		<0.09	
	B-18-1.5'	6/2/2006	1.5		<120		1,600		1,700	4.1	<0.9		<0.9		6.7	
	B-19-2'	6/2/2006	2.0		<4.9		<4.9		<1.3	<0.01	<0.01		10.0>		<0.04	
	B-20-1.5'	6/2/2006	1.5		18		<5.5		5.6	<0.02	<0.02		<0.02		1.5	

mg/kg = milligram per kilogram

<x = constituent not detected above x milligrams per kilogram</p>

#### Abbreviations and Methods:

 $\label{eq:fitting} ft \; bgs = Feet \; below \; ground \; surface$ 

RRO = Residual range organics (C25-C36) by Method AK 103, DRO = Deisel range organics (C10-<C25) by Method AK 102, GRO = Gasoline range organics by Method AK 101,

GRO = Cussoline range organics by Method AR 101,

\*= Levels established in ADEC Method II, over 40-Inch Zone, Migration to Groundwater

Groundwater Soil Cleanup Levels (ADEC, 18 AAC 75,345)

Bold = Constituent detected above ADEC Cleanup Level

## **Table 2. Groundwater Analytical Data**

Former Delta Western/Chevron Bulk Terminal #8-2307, 9203 Cessna Drive, Juneau, Alaska

Sample ID	Date Sampled	RRO <b>←</b>	DRO	GRO (C	Benzene Concentrations	Toluene in µg/L) —	Ethylbenzene	Xylenes
ADEC Cleanup	p Levels*	1,100	1,500	1,300	5	1,000	700	10,000
B-5	6/1/2006	4,200	10,000	330	<0.5	<0.5	3.9	<5.0
B-14	6/2/2006	<960 NQC	29,000	1,300	1.1	2.5	41	<25UND

#### Abbreviations and Methods:

RRO = Residual range organics (C25-C36) by Method AK 103.

DRO = Deisel range organics (C10-<C25) by Method AK 102.

GRO = Gasoline range organics by Method AK 101.

Benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8021B.

 $\mu g/L = micrograms per liter.$ 

<x = constituent not detected above x milligrams per kilogram

\* = ADEC Table C Groundwater Cleanup Levels

**Bold** = Constituent detected above ADEC Cleanup Level

UND-analyte concentration could not be determined (interprent)
NOC-ansupported by quality control data

**ATTACHMENT A** 

**BORING LOGS** 



Cambria Environmenta, 1echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

Separative view	CLIENT JOB/SIT LOCATIO PROJECT DRILLEF DRILLIN BORING LOGGEI REVIEW REMARI	E NAME ON CT NUME R G METH G DIAMET D BY ED BY KS	8. 99. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	230 203 1J-2 unea xcav Rig Rig	Cessna 237 au Intervator ggi, PG agi, PG	# 7262 ontains	al Airpo		DRILLING STARTED DRILLING COMPLETED WELL DEVELOPMENT DO GROUND SURFACE ELE TOP OF CASING ELEVAT SCREENED INTERVAL DEPTH TO WATER (First	ATE (YIELD) VATION FIONNot Sur NA Encountered)	veyed NA NA		<u> </u>
	PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG		DLOGIC DESCRIPTION		CONTACT DEPTH (ft bgs)	WEI	L DIAGRAM
WELL LOG (PID) RIDENVER-11ALASKA-11ALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS GPJ DEFAULT GDT 7/5/06	0		ъ В-1@5 '		5 —	GM		Silty GRAVEL with s 60% gravel, 20% silt permeability.	sand: Brown to gray; dry to , 20% sand; low to high est	moist; imated	5.0		■ Backfilled With Native Material Bottom of Boring @ 5 ft
VELL LOG (PID) RIDENVE			ii ii								77		2005 4 05



Cambria Environmen echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

CLIENT				Environm	ental M	lanagement Company		B-2			
JOB/SIT			-2307				DRILLING STARTED	01-Jun-06			
LOCATI					e, June	au, Alaska	DRILLING COMPLETED WELL DEVELOPMENT DA		NA		
PROJEC			1J-2237	nternation	ol Aim					urveyed	
DRILLE					ai Airpo	on	GROUND SURFACE ELETTOP OF CASING ELEVAT			urveyeu	
			xcavato	<u> </u>			SCREENED INTERVAL		veyeu		
LOGGE	DIAMET			PG# 7262	<b>)</b>		DEPTH TO WATER (First		NA		$\bar{\Sigma}$
	-	J					DEPTH TO WATER (Statio		N/		Ţ
REMAR				n contain		erm.		•		-	
			T 1		1					T	
PID (ppm)	BLOW	SAMPLE ID	EXTENT	(ft bgs) U.S.C.S.	GRAPHIC LOG		DLOGIC DESCRIPTION		CONTACT DEPTH (# bgs)	WEL	.L DIAGRAM
O		B-2@6 '		GM	0.000000000000000000000000000000000000	Silty GRAVEL with a 60% gravel, 20% sill permeability.	sand: Brown to gray; dry to ri, 20% sand; high estimated	moist;	6.0		■ Backfilled With Native Material Bottom of Boring @ 6 ft
:	<u> </u>	<u> </u>				L.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<u> </u>		PAGE 1 OF 1



Cambria Environmenta Technology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



PAGE 1 OF 1

,	JOB/SIT LOCATION PROJECT DRILLEN DRILLIN BORING LOGGET REVIEW REMARI	ON T NUMB R G METH DIAMET DBY LED BY	8. 99 8ER 3 JI OD E FER 6 J J	-230 203 1J-2 unea xcav " . Rig	7	a Drive rnation # 7262 # 7262	, Junea		DRILLING STARTED DRILLING COMPLETED WELL DEVELOPMENT D. GROUND SURFACE ELE TOP OF CASING ELEVAT SCREENED INTERVAL DEPTH TO WATER (First	ATE (YIELD) _ VATION _ ION _ Not Sur NA Encountered)	Not S veyed NA NA		<u> </u>
	PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG		DLOGIC DESCRIPTION		CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM
WFI I I OG PID) RIDENVER-INALASKA-1NALASKA-218-2307-218-2307-216INT8-2307 BORING LOGS, GP.J. DEFAULT GDT 715/06	0		B-3@6 '			GM	20000000000000000000000000000000000000	Silty GRAVEL with s gravel, 20% silt, 20% permeability.	sand: Brown to gray; moist; 6 sand; fill material; high es	60% timated	6.0		■ Backfilled With Native Material  Bottom of Boring @ 6 ft



Cambria Environment Technology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

B-4

	CLIENT JOB/SIT LOCATIO PROJECT DRILLEF DRILLIN BORING LOGGET REVIEW REMARI	E NAME ON ET NUMB R G METH DIAMET OBY ED BY	8- 92 ER 31 Ju OD E: FER 6 J. J.	230 203 1J-2 unea xcav Rig	7	Drive	Junea		BORING/WELL NAME  DRILLING STARTED  DRILLING COMPLETED  WELL DEVELOPMENT DA  GROUND SURFACE ELEV  TOP OF CASING ELEVATE  SCREENED INTERVAL  DEPTH TO WATER (Station	TE (YIELD)  'ATION  ION _Not Sur  NA  Encountered)	Not Soveyed  NA		<u> </u>
***************************************	PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG		OLOGIC DESCRIPTION		CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM
WELL LOG (PID) RIDENVER-1/ALASKA-1/ALASKA-2/8-2307-1/8-2307-2/GINT/8-2307 BORING LOGS, GP.) DEFAULT GDT 7/5/06	1.2		B-4@6'		5	GM		Silty GRAVEL with 60% gravel, 20% sil permeability.	sand: Brown to gray; dry to nt, 20% sand; high estimated	noist;	6.0		■ Backfilled With Native Material  Bottom of Boring @ 6 ft



Cambria Environment Technology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

CLIENT	NAME				<u> ⁄ironme</u>	ental M	lanagement Company		B-5			
JOB/SIT	E NAME	8	-2307					DRILLING STARTED _	01-Jun-06			
LOCATI	ON	9	203 C	:essna	a Drive	, June	au, Alaska	DRILLING COMPLETED _				
PROJEC	T NUMB		1J-22					WELL DEVELOPMENT DA	TE (YIELD)	NA		
DRILLE	₹	J	uneau	ս Inter	nationa	al Airpo	ort	GROUND SURFACE ELEV	/ATION	Not S	urveyed	
DRILLIN	G METH	OD F		_				TOP OF CASING ELEVAT	ION Not Surv	veyed		
BORING								SCREENED INTERVAL	NA			
LOGGE			. Rigg	ji, PG	# 7262			DEPTH TO WATER (First		2.0	ft (01-Jun-	
	_	J						DEPTH TO WATER (Statio		NA	\	Ā
REMAR	_						nent berm. Lots 5-6					
			7			,				· ·	T = ==================================	-
€	တ	Ω	_		, , i	ပ				₽ã	-	
udd	ΝĖ	픠	品	F g	S	품의	LITHO	OLOGIC DESCRIPTION		¥ ±	WEL	L DIAGRAM
PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	E. 11 10			ΘĚ		- · - ··-
<u> </u>	ပ	δ	"		ا ر	ا ۳				CONTACT DEPTH (ft bgs)	_	
					_SM		Silty SAND: Brown;	dry to moist; 60% fine sand,	40%	0.3		
					ML		\silt; organic material \permeability.	present; moderate estimate	a /			
2.7		B-5@2 '			IAIT		SILT: Gray; moist; 9	0% silt, 10% fine sand; nonp	olastic;	2.0		Native Material
2.7		b-ാ <u>ധ</u> മ		+		┵┸╙	very low estimated r	permeability.	<del>\</del>		1 1901 79	Bottom of
											]	Boring @ 2 ft
1												
					ı							
				j								
										1		=
Ì												
		10										
i						1				1		
										]		
							_					
		•			1					-		
				+								
					ĺ							
					İ		9					
		-			1							
		55		ļ								
					1							
					1							
					1					1		
					1							
					1							
					1							
					1							
<u> </u>				1	1							
<u> </u>				ļ		1						
\$												
	1					1						
3	1											
2											1	
3					1							
¥					<u></u>	1	<u> </u>			<u></u>	<u></u>	PAGE 1 OF 1



Cambria Environment echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

CLIENT		-			vironme	entai N	nanagement Company	BOKING/WELL NAME _	04 1 00			
JOB/SIT	E NAME		230					DRILLING STARTED	01-Jun-06			
LOCATION					a Drive	<u>, June</u>	au, Alaska	DRILLING COMPLETED _		NA		
PROJEC				2237				WELL DEVELOPMENT DA			unveved	
DRILLE				au Inter			ort	GROUND SURFACE ELEV			urveyed	
		OD FI		t Auger	/ Ford	<u>4630</u>		TOP OF CASING ELEVAT		veyea		
BORING				. 20	# 7000			SCREENED INTERVAL	NA	NA		Δ
LOGGE	_		_	gi, PG				DEPTH TO WATER (First				<u> </u>
		J.						DEPTH TO WATER (Statio	;)	NA	·	
REMAR	KS _	Lo	oca	ted nor	th of co	ntainn	nent berm. Lots 5-6				-	
	31.44.2		Π			<u> </u>				CONTACT DEPTH (ft bgs)		
PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG				A F	10/51	LDIAGDAM
9	ا کِیکِ	<u>₹</u>		F P	S	٦ٍڴ	LITHO	LOGIC DESCRIPTION		ZE.	VVEL	L DIAGRAM
l II	⊞႘	N S	Ē		ם ו	Ö				잉և		
	-	ļ <u> </u>			SM		Silfy SAND: Brown: o	Irv to moist: 60% fine sand.	40% /	0.3	<b>300-300</b>	
·							silt; organic material	Iry to moist; 60% fine sand, present; moderate estimate	d /			
				Γ ΄		1111	\permeability.	% silt, 10% fine sand; nonp	olastic:	İ		
21		B-6@2'			ML		very low estimated p	ermeability.		ŀ		■ Backfilled With
												Native Material
				_	l							
3		B-6@4 '				┦┸┖	<b> </b>			4.0		Bottom of
	•			8		ŀ						Boring @ 4 ft
l												
						ļ					1	
							W.			1	-	
							=					
			1									
					ļ	İ						
		_										
		1	1							1		
				ł								
											}	
			l								1	
					1							
						1						
			1									
4						1						
						1						
3												
										1		
<u> </u>				<u></u>	1						1	PAGE 1 OF 1



Cambria Environment echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



PAGE 1 OF

B-7 Chevron Environmental Management Company **BORING/WELL NAME CLIENT NAME** 01-Jun-06 **DRILLING STARTED** 8-2307 JOB/SITE NAME DRILLING COMPLETED 01-Jun-06 9203 Cessna Drive, Juneau, Alaska LOCATION WELL DEVELOPMENT DATE (YIELD)\_ NA 31J-2237 PROJECT NUMBER Not Surveyed **GROUND SURFACE ELEVATION** Juneau International Airport DRILLER TOP OF CASING ELEVATION Not Surveyed Flight Auger / Ford 4630 **DRILLING METHOD** SCREENED INTERVAL BORING DIAMETER **DEPTH TO WATER (First Encountered)** J. Riggi, PG# 7262 **LOGGED BY DEPTH TO WATER (Static)** NA J. Riggi, PG# 7262 REVIEWED BY REMARKS Located north of containment berm. Lots 5-6 CONTACT DEPTH (ft bgs) SAMPLE ID GRAPHIC LOG PID (ppm) BLOW U.S.C.S. DEPTH (ft bgs) EXTENT WELL DIAGRAM LITHOLOGIC DESCRIPTION Silty SAND: Brown; dry to moist; 60% fine sand, 40% silt; organic material present; moderate estimated permeability. SILT: Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability. **Backfilled With** ML **Native Material** 3.5 B-7@3 .5' 8.1 Bottom of Boring @ 3.5 ft NELL LOG (PID) R'IDENVER-11ALASKA-11ALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS GPJ DEFAULT, GDT 7/5/06



Cambria Environment echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



PAGE 1 OF

B-8 Chevron Environmental Management Company **BORING/WELL NAME CLIENT NAME** 01-Jun-06 DRILLING STARTED JOB/SITE NAME 8-2307 DRILLING COMPLETED 01-Jun-06 9203 Cessna Drive, Juneau, Alaska LOCATION WELL DEVELOPMENT DATE (YIELD) NA 31J-2237 PROJECT NUMBER **GROUND SURFACE ELEVATION** Not Surveyed Juneau International Airport DRILLER TOP OF CASING ELEVATION Not Surveyed Flight Auger / Ford 4630 **DRILLING METHOD** SCREENED INTERVAL BORING DIAMETER \_ **DEPTH TO WATER (First Encountered)** NA J. Riggi, PG# 7262 **LOGGED BY DEPTH TO WATER (Static)** NA J. Riggi, PG# 7262 REVIEWED BY \_\_ REMARKS Located north of containment berm. Lots 5-6 CONTACT DEPTH (ft bgs) GRAPHIC LOG PID (ppm) BLOW COUNTS EXTENT U.S.C.S. DEPTH (ft bgs) SAMPLE WELL DIAGRAM LITHOLOGIC DESCRIPTION Silty SAND: Brown; dry to moist; 60% fine sand, 40% 0.3 silt; organic material present; moderate estimated permeability. Backfilled With SILT: Gray; moist; 90% silt, 10% fine sand; nonplastic; ML Native Material very low estimated permeability. 3.0 B-8@3' 9.2 Bottom of Boring @ 3 ft WELL LOG (PID) RIDENVER-MALASKA-MALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS GPJ DEFAULT,GDT 7/6/06



Cambria Environmenta echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



PAGE 1 OF

B-9 Chevron Environmental Management Company **BORING/WELL NAME CLIENT NAME** 01-Jun-06 **DRILLING STARTED** 8-2307 JOB/SITE NAME DRILLING COMPLETED 01-Jun-06 LOCATION 9203 Cessna Drive, Juneau, Alaska WELL DEVELOPMENT DATE (YIELD) NA 31J-2237 PROJECT NUMBER \_ Not Surveyed **GROUND SURFACE ELEVATION** Juneau International Airport **DRILLER** TOP OF CASING ELEVATION Not Surveyed Flight Auger / Ford 4630 **DRILLING METHOD** SCREENED INTERVAL **BORING DIAMETER** NA **DEPTH TO WATER (First Encountered)** J. Riggi, PG# 7262 LOGGED BY NA **DEPTH TO WATER (Static)** J. Riggi, PG# 7262 REVIEWED BY

REMARKS Located north of containment berm. Lots 5-6 CONTACT DEPTH (ft bgs) GRAPHIC LOG PID (ppm) BLOW U.S.C.S. EXTENT DEPTH (ft bgs) SAMPLE WELL DIAGRAM LITHOLOGIC DESCRIPTION Silty SAND: Brown; dry; 60% fine sand, 40% silt; organic 0.3 material present; high estimated permeability.

SILT: Gray; moist; 90% silt, 10% fine sand; nonplastic; Backfilled With ML very low estimated permeability. Native Material 2.5 2.5 B-9@2 .5' Bottom of Boring @ 3 ft WELL LOG (PID) R:IDENVER-114LASKA-114LASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS, GPJ DEFAULT, GDT



Cambria Environmenta echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

PAGE 1 OF 1

CLIENT NA JOB/SITE I LOCATION PROJECT DRILLER DRILLING BORING D LOGGED E REVIEWED	NAME I NUMBEI METHOI IAMETE BY D BY	8- 92 R 31 Ju D FI R 6" J.	230 203 J-2: inea ight Rig Rig	7 Cessna 237 u Inter Auger gi, PG	nationa / Ford # 7262	, June al Airpo 4630	au, Alaska  ort  nent berm. Lots 5-6	BORING/WELL NAME DRILLING STARTED DRILLING COMPLETED WELL DEVELOPMENT DA GROUND SURFACE ELEN TOP OF CASING ELEVAT SCREENED INTERVAL DEPTH TO WATER (First	ATE (YIELD)	veyed		<u> </u>
PID (ppm)	COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITH	OLOGIC DESCRIPTION		CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM
OG (PID) R.DENVER-11ALASKA-218-2307-118-2307-21GINTB-2307 BORING LOGS GPJ DEFAULT GDT 775/06 P. DEFAULT GDT 775/06 P. DEFAULT GDT 775/06 P. DEFAULT GDT 775/06		B-10@ 3.5'			ML		material present: his	dry; 60% fine sand, 40% silt hestimated permeability.  10% silt, 10% fine sand; nonpermeability.	/	3.5		■ Backfilled With Native Material Bottom of Boring @ 3.5 ft



Cambria Environmenta, 1 echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

	CLIENT I JOB/SITI LOCATIO PROJEC DRILLER DRILLING BORING LOGGEE REVIEW REMARK	E NAME ON T NUMB C G METHO DIAMET O BY ED BY	8- 92 ER 311 Ju OD FI ER 6" J. J.	230 J-2 inea ight Rig Rig	7 Cessna 237 au Interr Auger / gi, PG#	Drive, national Ford 7262	Junea al Airpo 4630	au, Alaska ort  nent berm. Lots 5-6	BORING/WELL NAME DRILLING STARTED  DRILLING COMPLETED  O1-Jun-06  WELL DEVELOPMENT DATE (YIELD) GROUND SURFACE ELEVATION  TOP OF CASING ELEVATION  SCREENED INTERVAL  DEPTH TO WATER (First Encountered DEPTH TO WATER (Static)	Not S rveyed NA		<u>∑</u> <u>¥</u>
	PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG		DLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM
WFI I I OG IPID) R UDENVER-ITALASKA-11ALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS GPJ DEFAULT GDT 7/5/06	1.7		B-11@ 3.5'			ML		gravel, 20% silt, 20%	0% silt, 10% fine sand; nonplastic;	0.3		■ Backfilled With Native Material Bottom of Boring @ 3.5 ft



Cambria Environmenta Jechnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



Chevron Environmental Management Company BORING/WELL NAME B-12 **CLIENT NAME** 02-Jun-06 DRILLING STARTED JOB/SITE NAME 8-2307 DRILLING COMPLETED 02-Jun-06 9203 Cessna Drive, Juneau, Alaska LOCATION WELL DEVELOPMENT DATE (YIELD) NA 31J-2237 PROJECT NUMBER Not Surveyed **GROUND SURFACE ELEVATION** Juneau International Airport DRILLER TOP OF CASING ELEVATION Not Surveyed Flight Auger / Ford 4630 **DRILLING METHOD** SCREENED INTERVAL BORING DIAMETER \_\_\_ J. Riggi, PG# 7262 NA **DEPTH TO WATER (First Encountered)** LOGGED BY

	VED BY	J.	Rig	igi, PG	# 7262		DEPTH TO WATER (Static)		IA	<u> </u>
REMAR (wdd) QId	BLOW	SAMPLE ID	EXTENT	7	U.S.C.S.	GRAPHIC LOG	ent berm. Lots 5-6  LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bas)	WEL	L DIAGRAM
1.4		B-12@ 3.5			sw		SAND with gravel: Brown/orange; moist; 75% fine to coarse sand, 15% gravel, 10% silt; rounded clasts; very high estimated permeability.	3.5		■ Backfilled With Native Materia Bottom of Boring @ 3.5 ft
en enter en enter en enter en enter en enter en enter en enter en enter en enter en enter en enter en enter en		-								
1										PAGE 1 OF



Cambria Environmenta Technology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

**BORING/WELL LOG** 

JOB/SI LOCAT PROJE DRILLI DRILLI BORIN LOGG	ECT NUME ER ING METH IG DIAME ED BY _ WED BY _	8-   92   3   Ji   OD   F   FER   6   J	2307 203 Ces 1J-2237 uneau I light Au ' Riggi,	ssna Drive 7 nternationa ger / Ford PG# 7262 PG# 7262	Junea Il Airpo 4630	anagement Company au, Alaska ort  ent berm. Lots 5-6	DRILLING STARTED 02-Jun-06 DRILLING COMPLETED 02-Jun-06 WELL DEVELOPMENT DATE (YIELD) GROUND SURFACE ELEVATION TOP OF CASING ELEVATION Not Su SCREENED INTERVAL NA DEPTH TO WATER (First Encountered DEPTH TO WATER (Static)	rveyed ) NA		<u>\bar{Y}</u>
PID (ppm)	BLOW	SAMPLE ID	EXTENT	(ft bgs)	GRAPHIC LOG		DLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM
WELL LOG (PID) R IDENVER-11ALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS, GPJ DEFAULT GDT 7/5/06  O		රි B-12@ 3	-	SM	3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	estimated nermeabil	0% silt, 10% fine sand; nonplastic;	0.5		■ Backfilled With Native Material Bottom of Boring @ 3 ft
WELL LOG (PID) R \( \text{ID} \)										PAGE 1 OF 1



Cambria Environmenta Technology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



JO LO PR DR DR BC LC	CATION CONTRACTOR CONT	E NAME ON T NUMB C G METH OBY DIAMET ED BY ED BY	8- 92 ER 31 Ju DD Fi ER 6' J. J.	230 203 J-2 inea ight Rig Rig	7 Cessna 237 au Inter Auger gi, PGi	nationa / Ford # 7262	Junea al Airpoi 4630	u, Alaska  tt  ent berm. Lots 5-6	BORING/WELL NAME				
	PID (ppm)	BLOW	SAMPLE ID	**				DLOGIC DESCRIPTION		CONTACT DEPTH (ft bgs)	WEL	. DIAGRAM	
LOG (PID) R.DENVER-1/ALASKA-1/ALASKA-2/8-2307-1/8-2307-2/GIN /8-2307 BOKING LOGS, GF J DEFACEL SOFT 1/2/20	.9		B-14@ 2			ML		motorial present: his	dry; 60% fine sand, 40% sigh estimated permeability. % silt, 10% fine sand; nonpoermeability.	lastic;	2.3		Backfilled With Native Material Bottom of Boring @ 2.25 ft



Cambria Environmen echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA

BORING/WELL LOG

Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856

B-15 **CLIENT NAME** Chevron Environmental Management Company BORING/WELL NAME 8-2307 **DRILLING STARTED** 02-Jun-06 JOB/SITE NAME 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06 LOCATION WELL DEVELOPMENT DATE (YIELD)\_ NA 31J-2237 PROJECT NUMBER Not Surveyed **GROUND SURFACE ELEVATION** DRILLER Juneau International Airport TOP OF CASING ELEVATION Not Surveyed DRILLING METHOD Flight Auger / Ford 4630 SCREENED INTERVAL NA **BORING DIAMETER** J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) LOGGED BY

PEVIEW			_	ngi PG			DEPTH TO WATER (First Encountered	N/		Ţ
REMAR		J. Riggi, PG# 7262 Located north of con							•	
(mdd) QId	BLOW	SAMPLE ID	EXTENT		U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WEI	L DIAGRAM
63.2	-0	B-15@ 3			GM ML	l	Silty GRAVEL with sand: Brown; dry to moist; 60% gravel, 20% silt, 20% fine sand; organic material present; high estimated permeability.  SILT: Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3		■ Backfilled With Native Material Bottom of Boring @ 3 ft
35 GPJ DEFAULT GD1 7806										3 0
WELL LOG (PID) R (DENVER1VALASKA1VALASKA208-2307118-2307-2XGINTV8-2307 BORING LOGS GPJ DEFAULT GDT 7/506										
WELL LOG (PID), R'UDENVER-1ALASKA-1ALAS										PAGE 1 OF 1



Cambria Environmenta, Technology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



LOCATI PROJECT DRILLE DRILLIN BORING LOGGE	T NUMB  R  G METH  DIAMET  D BY  LED BY	92 ER 31  Ju DD FI ER 6"  J. J.	230 J-22 inea ight Rig	7 Cessna 237 u Interr Auger / gi, PG#	Drive, nationa Ford 7 Ford 7 7262	Junea I Airpor 4630	u, Alaska  tt  ent berm. Lots 5-6	DRILLING STARTED 02-Jun-06  DRILLING COMPLETED 02-Jun-06  WELL DEVELOPMENT DATE (YIELD) NA  GROUND SURFACE ELEVATION Not Surveyed  TOP OF CASING ELEVATION Not Surveyed  SCREENED INTERVAL NA  DEPTH TO WATER (First Encountered) NA  DEPTH TO WATER (Static) NA					
PID (ppm)	BLOW	SAMPLEID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG		DLOGIC DESCRIPTION		CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM	
WELL LOG (PID) K UENVERT TALASKAT INLASKAT VOZSOT TO SOOT SOOT SOOT SOOT SOOT SOOT S		B-16@ 3'			ML		gravel, 20% silt, 20%	0% silt, 10% fine sand; non	ı present;	3.0		■ Backfilled With Native Material Bottom of Boring @ 3 ft	



Cambria Environmenta, echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



B-17 Chevron Environmental Management Company **BORING/WELL NAME CLIENT NAME** 02-Jun-06 **DRILLING STARTED** JOB/SITE NAME 8-2307 DRILLING COMPLETED \_ 02-Jun-06 9203 Cessna Drive, Juneau, Alaska LOCATION WELL DEVELOPMENT DATE (YIELD) NA 31J-2237 PROJECT NUMBER Not Surveyed **GROUND SURFACE ELEVATION** Juneau International Airport DRILLER TOP OF CASING ELEVATION Not Surveyed Flight Auger / Ford 4630 DRILLING METHOD SCREENED INTERVAL BORING DIAMETER \_ **DEPTH TO WATER (First Encountered)** J. Riggi, PG# 7262 **LOGGED BY DEPTH TO WATER (Static)** NA J. Riggi, PG# 7262 REVIEWED BY\_ Located north of containment berm. Lots 5-6 REMARKS CONTACT DEPTH (ft bgs) GRAPHIC LOG (mdd) BLOW COUNTS U.S.C.S. DEPTH (ft bgs) EXTENT SAMPLE WELL DIAGRAM LITHOLOGIC DESCRIPTION PBO Silty GRAVEL with sand: Brown; dry to moist; 60% 0.3 gravel, 20% silt, 20% fine sand; organic material present; high estimated permeability. SILT: Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability. **Backfilled With** ML Native Material 3.0 B-17@ 3' 6.1 Bottom of Boring @ 3 ft RIDENVER-11ALASKA-11ALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS GPJ DEFAULT GDT 7/6/06 PAGE 1 OF



Cambria Environmenta echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



BORING/WELL NAME B-18 Chevron Environmental Management Company **CLIENT NAME** 02-Jun-06 **DRILLING STARTED** JOB/SITE NAME 8-2307 DRILLING COMPLETED 02-Jun-06 9203 Cessna Drive, Juneau, Alaska LOCATION NA WELL DEVELOPMENT DATE (YIELD)\_ PROJECT NUMBER 31J-2237 Not Surveyed **GROUND SURFACE ELEVATION** Juneau International Airport DRILLER TOP OF CASING ELEVATION Not Surveyed DRILLING METHOD Flight Auger / Ford 4630 SCREENED INTERVAL BORING DIAMETER NA J. Riggi, PG# 7262 **DEPTH TO WATER (First Encountered)** LOGGED BY

LOGGED BY REVIEWED F	3Y			# 7262 # 7262		DEPTH TO WATER (Static)	NA		Ţ
REMARKS					south o	of containment berm.			
PID (ppm)	COUNTS SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WEL	L DIAGRAM
1,800	B-18@ 1.5'		-	GM —		Silty GRAVEL with sand: Gray; moist; 50% gravel, 30% silt, 20% fine to coarse sand; fill material; high estimated permeability.	1.5		■ Backfilled With Native Materia Bottom of Boring @ 1.5 ft
			-						
									*
									-
							_		
									PAGE 1 0



Cambria Environmenta echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



B-19 Chevron Environmental Management Company **BORING/WELL NAME CLIENT NAME** 02-Jun-06 **DRILLING STARTED** 8-2307 **JOB/SITE NAME** DRILLING COMPLETED 02-Jun-06 LOCATION 9203 Cessna Drive, Juneau, Alaska NA WELL DEVELOPMENT DATE (YIELD) 31J-2237 PROJECT NUMBER Not Surveyed **GROUND SURFACE ELEVATION** Juneau International Airport DRILLER TOP OF CASING ELEVATION Not Surveyed Flight Auger / Ford 4630 **DRILLING METHOD** SCREENED INTERVAL BORING DIAMETER \_ NA **DEPTH TO WATER (First Encountered)** J. Riggi, PG# 7262 **LOGGED BY DEPTH TO WATER (Static)** NA J. Riggi, PG# 7262 REVIEWED BY REMARKS Located in V-ditch, south of containment berm. CONTACT DEPTH (ft bgs) SAMPLE ID GRAPHIC LOG (mdd) U.S.C.S. EXTENT DEPTH (ft bgs) BLOW WELL DIAGRAM LITHOLOGIC DESCRIPTION 은 Silty GRAVEL with sand: Gray; moist; 50% gravel, 30% silt, 20% fine to coarse sand; fill material; high estimated **Backfilled With** GM permeability. Native Material 2.0 B-19@ 2' Bottom of Boring @ 2 ft LOG (PID) RIDENVER-11ALASKA-11ALASKA-218-2307-118-2307-21GINT18-2307 BORING LOGS GPJ DEFAULT GDT 7/5/06



Cambria Environmenta, echnology, Inc. 4111 Citrus Ave. Suite 12 Rocklin, CA Telephone: 916.630.1855 Fax: 916.630.1856



CLIENT N JOB/SITE LOCATIO PROJEC DRILLER DRILLING BORING LOGGEE REVIEW REMARK	E NAME ON T NUMBE G METHO DIAMETE O BY ED BY	8-3 92 ER 31 Ju DD Fli ER 6" J. J.	2307 03 ( J-22 nea ght Rig	7 Cessna 237 u Interi Auger gi, PG#	Drive, nationa / Ford	Juneau Il Airpor 4630	u, Alaska t  f containment berm.	DRILLING STARTED					
PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG		LITHOLOGIC DESCRIPTION			WELL	WELL DIAGRAM	
LL LOG (PID) KULENVERT IMLAGRAT INLOG (PID) KULENVERT IMLAGRAT SUSSON TO SOOT		B-20@ 1.5			GM		Silty GRAVEL with silt, 20% fine to coa permeability.	sand: Gray; moist; 50% grays sand; fill material; high	estimated	1.5		Backfilled With Native Material Bottom of Boring @ 1.5 ft	