

C A M B R I A

July 5, 2006

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

RECEIVED  
JUL 12 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

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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 were 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 ( $\mu\text{g/L}$ ) GRO, 10,000  $\mu\text{g/L}$  DRO, and 4,200  $\mu\text{g/L}$  RRO (Figure 5). Grab groundwater samples collected from boring B-14 contained no RRO, 1,300  $\mu\text{g/L}$  GRO, 29,000  $\mu\text{g/L}$  DRO and 1.1  $\mu\text{g/L}$  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.


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.

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'.

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.

**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.**



for

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.

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Juneau, AK\June 2006 Soil Assessment\8-2307 SSI-Final July 2006.doc

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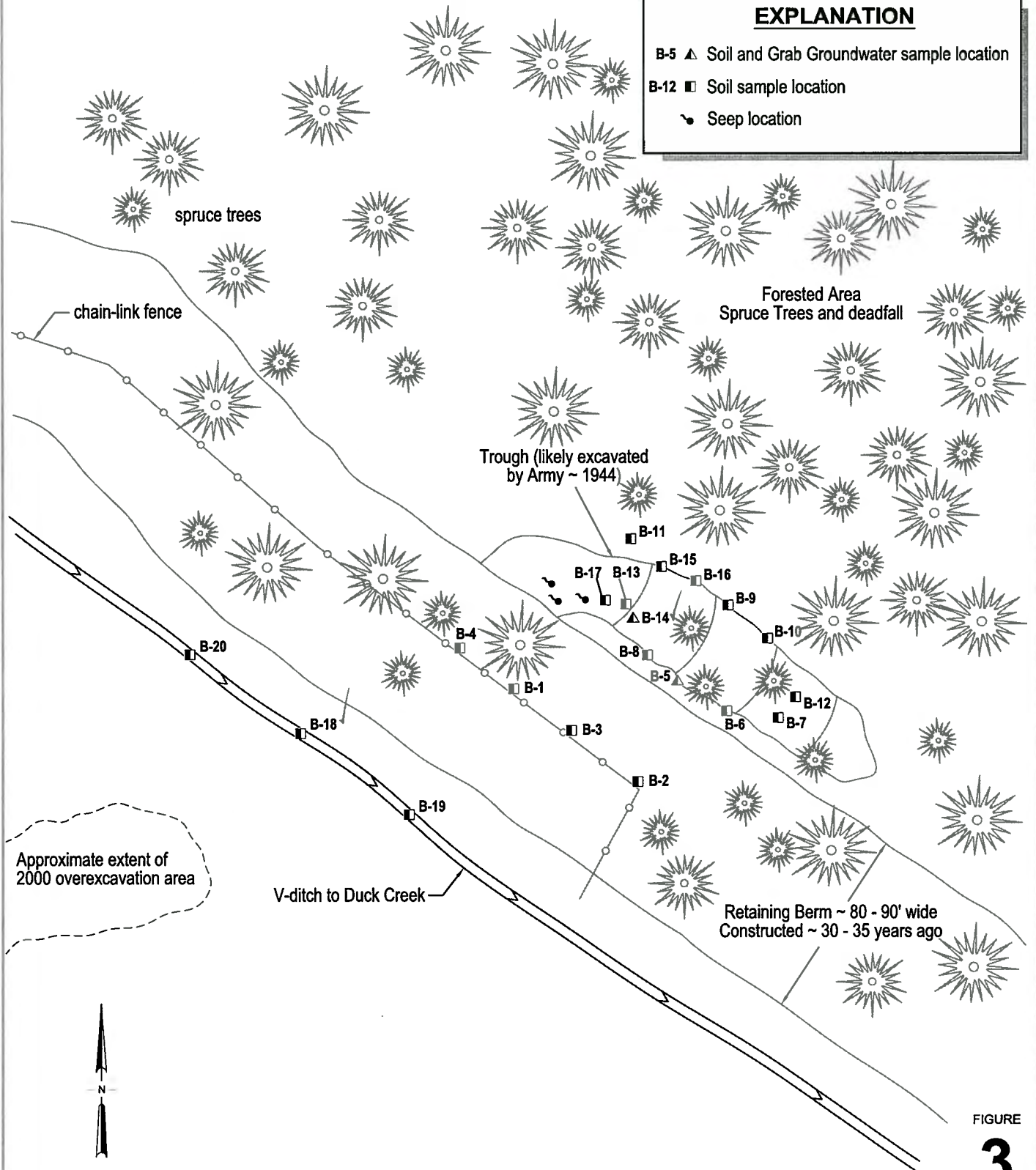
### Vicinity Map



**EXPLANATION**

- B-5 ▲ Soil and Grab Groundwater sample location  
 B-12 ■ Soil sample location  
 ♣ Seep location

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FIGURE

**3**

Schematic Not to Scale

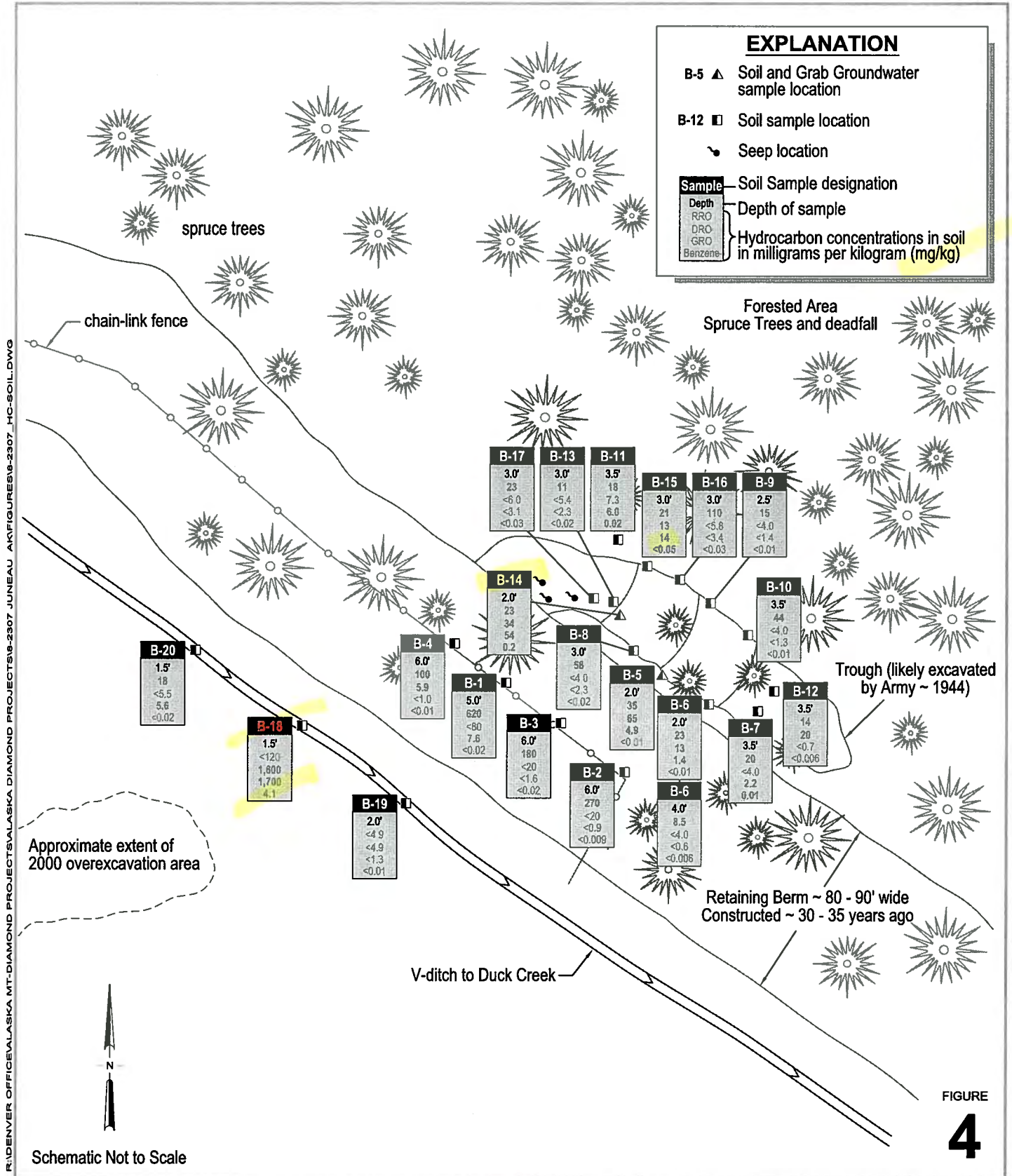
**Former Delta Western/  
 Chevron Bulk Terminal 8-2307**

9203 Cessna Drive  
 Juneau, Alaska



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**Area Diagram**



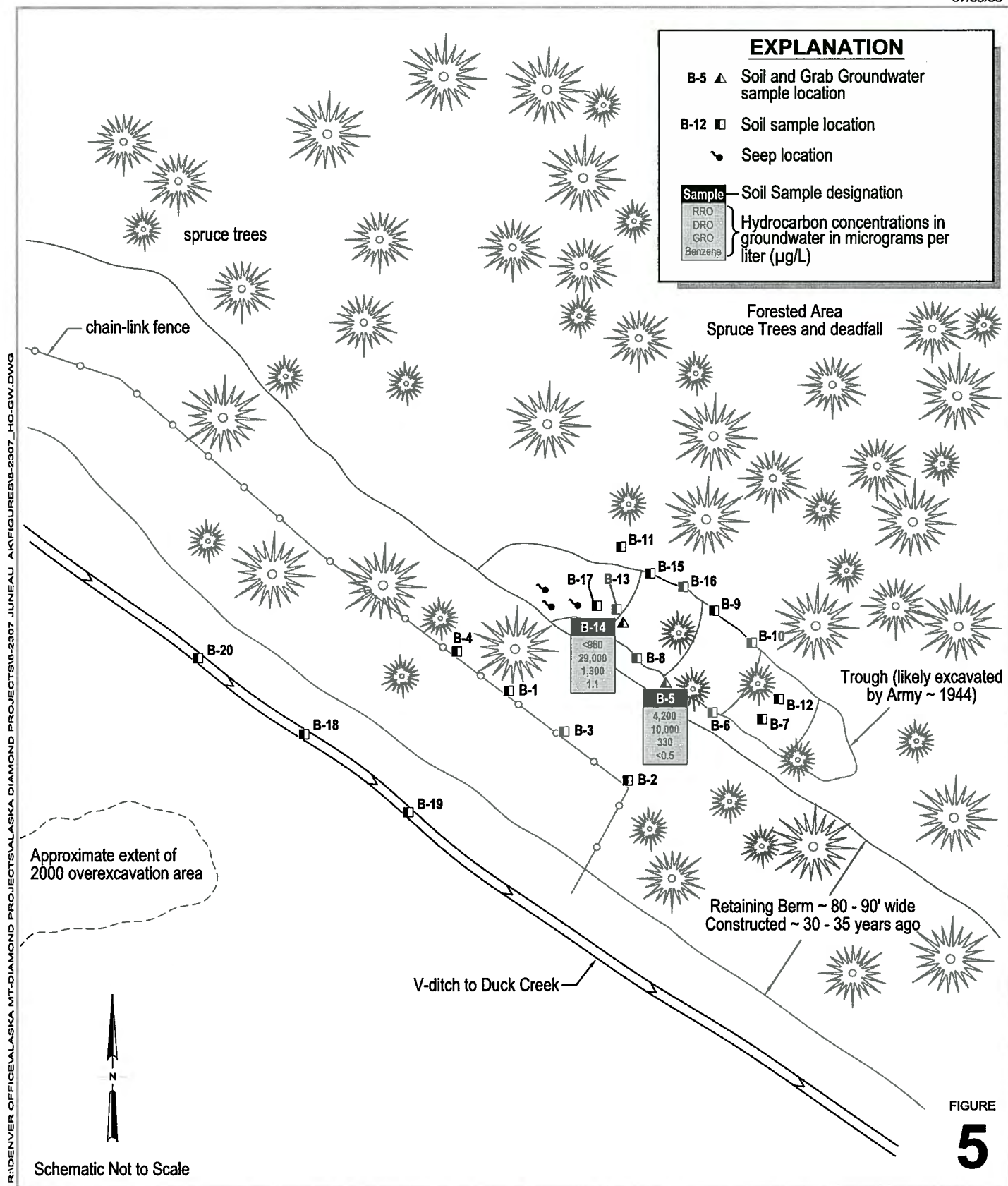
**Former Delta Western/  
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9203 Cessna Drive  
Juneau, Alaska



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**Hydrocarbon Concentrations  
in Soil**

June 1 and 2, 2006



**Former Delta Western/  
Chevron Bulk Terminal 8-2307**

9203 Cessna Drive  
Juneau, Alaska



C A M B R I A

**Hydrocarbon Concentrations  
in Groundwater**

June 1 and 2, 2006

# CAMBRIA

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

Sample ID	Date Sampled	Sample Depth (ft bgs)	RRO	DRO	GRO	Benzene	Toluene	Ethylbenzene	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
B-6-2'	6/1/2006	2.0	23	13	1.4	<0.01	<0.01	<0.01	<0.03
B-6-4'	6/1/2006	4.0	8.5	<4.0	<0.6	<0.006	<0.006	<0.006	<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	<0.006	<0.02
B-13-3'	6/2/2006	3.0	11	<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	<0.01	<0.04
B-20-1.5'	6/2/2006	1.5	18	<5.5	5.6	<0.02	<0.02	<0.02	1.5

## Abbreviations and Methods:

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.

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

\* = 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

mg/kg = milligram per kilogram

<x = constituent not detected above x milligrams per kilogram

# CAMBRIA

**Table 2. Groundwater Analytical Data**  
Former Delta Western/Chevron Bulk Terminal #8-2307, 9203 Cessna Drive, Juneau, Alaska

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

## 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.

µg/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 (interferent)  
NQC - unsupported by quality control data

**ATTACHMENT A**

**BORING LOGS**





Cambria Environmental Technology, Inc.  
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Rocklin, CA  
Telephone: 916.630.1855  
Fax: 916.630.1856

## BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-1
JOB/SITE NAME	8-2307	DRILLING STARTED	01-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	01-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Excavator	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located in containment berm.		



PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0		B-1@5'		5	GM		<b>Silty GRAVEL with sand:</b> Brown to gray; dry to moist; 60% gravel, 20% silt, 20% sand; low to high estimated permeability.	5.0	 Backfilled With Native Material  Bottom of Boring @ 5 ft

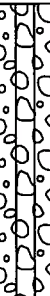





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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-2  
JOB/SITE NAME 8-2307 DRILLING STARTED 01-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 01-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Excavator TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA   
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA   
REMARKS Located in containment berm.



PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0		B-2@6'	5	GM		<u>Silty GRAVEL with sand:</u> Brown to gray; dry to moist; 60% gravel, 20% silt, 20% sand; high estimated permeability.	6.0	 Backfilled With Native Material  Bottom of Boring @ 6 ft

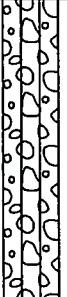
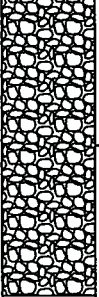
WELL LOG (PID) R:\DENVER-1\ALASKA-1\ALASKA-218-2307-118-2307-2\GINTB-2307 BORING LOGS GPJ DEFAULT.GDT 7/5/06



Cambria Environmental Technology, Inc.  
4111 Citrus Ave. Suite 12  
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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-3  
JOB/SITE NAME 8-2307 DRILLING STARTED 01-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 01-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Excavator TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA   
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA   
REMARKS Located in containment berm.

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0		B-3@6'		5	GM		<b>Silty GRAVEL with sand:</b> Brown to gray; moist; 60% gravel, 20% silt, 20% sand; fill material; high estimated permeability.	6.0	 Backfilled With Native Material  Bottom of Boring @ 6 ft

WELL LOG (PID) R:\DENVER-1\ALASKA-2\8-2307-2\GINT\8-2307 BORING LOGS.GPJ DEFAULT.GDT 7/5/06



Cambria Environmental Technology, Inc.  
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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-4  
JOB/SITE NAME 8-2307 DRILLING STARTED 01-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 01-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Excavator TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA   
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA   
REMARKS Located in containment berm.

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
1.2		B-4@6'	5	GM		<b>Silty GRAVEL with sand:</b> Brown to gray; dry to moist; 60% gravel, 20% silt, 20% sand; high estimated permeability.	6.0	 Backfilled With Native Material Bottom of Boring @ 6 ft

WELL LOG (PID) R:\DENVER-1\ALASKA-2\8-2307-1\8-2307-2\GINT08-2307 BORING LOGS.GPJ DEFAULT GDT 7/5/06



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## BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-5
JOB/SITE NAME	8-2307	DRILLING STARTED	01-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	01-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Flight Auger / Ford 4630	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	2.0 ft (01-Jun-06)
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located north of containment berm. Lots 5-6		


PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
2.7		B-5@2'			SM ML		<p><b>Silty SAND:</b> Brown; dry to moist; 60% fine sand, 40% silt; organic material present; moderate estimated permeability.</p> <p><b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.</p>	0.3 2.0	<p>Backfilled With Native Material Bottom of Boring @ 2 ft</p>



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-6  
JOB/SITE NAME 8-2307 DRILLING STARTED 01-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 01-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6


PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
21		B-6@2'			SM		<b>Silty SAND:</b> Brown; dry to moist; 60% fine sand, 40% silt; organic material present; moderate estimated permeability.	0.3	
3		B-6@4'			ML		<b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	4.0	 Backfilled With Native Material  Bottom of Boring @ 4 ft



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-7  
JOB/SITE NAME 8-2307 DRILLING STARTED 01-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 01-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6


PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
8.1		B-7@3.5'			SM ML		<b>Silty SAND:</b> Brown; dry to moist; 60% fine sand, 40% silt; organic material present; moderate estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3 3.5	 Backfilled With Native Material Bottom of Boring @ 3.5 ft



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## BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-8  
JOB/SITE NAME 8-2307 DRILLING STARTED 01-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 01-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
9.2		B-8@3'		SM ML		<b>Silty SAND:</b> Brown; dry to moist; 60% fine sand, 40% silt; organic material present; moderate estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3 3.0	 Backfilled With Native Material Bottom of Boring @ 3 ft



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# BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-9
JOB/SITE NAME	8-2307	DRILLING STARTED	01-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	01-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Flight Auger / Ford 4630	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located north of containment berm. Lots 5-6		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
2.5		B-9@2.5'			SM ML		<p><b>Silty SAND:</b> Brown; dry; 60% fine sand, 40% silt; organic material present; high estimated permeability.</p> <p><b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.</p>	0.3 2.5	<p>Backfilled With Native Material</p> <p>Bottom of Boring @ 3 ft</p>






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# BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-10
JOB/SITE NAME	8-2307	DRILLING STARTED	01-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	01-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Flight Auger / Ford 4630	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located north of containment berm. Lots 5-6		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
2.4		B-10@ 3.5'			SM ML		<b>Silty SAND:</b> Brown; dry; 60% fine sand, 40% silt; organic material present; high estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3 3.5	 Backfilled With Native Material Bottom of Boring @ 3.5 ft

# BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-11
JOB/SITE NAME	8-2307	DRILLING STARTED	01-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	01-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Flight Auger / Ford 4630	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located north of containment berm. Lots 5-6		



[illegible]



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-12  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6


PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
1.4		B-12@ 3.5'			SW		<b>SAND with gravel:</b> Brown/orange; moist; 75% fine to coarse sand, 15% gravel, 10% silt; rounded clasts; very high estimated permeability.	3.5	 Backfilled With Native Material Bottom of Boring @ 3.5 ft



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-13  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6


PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0		B-12 @ 3'			SM		<b>Silty SAND:</b> Brown; moist; 80% sand, 20% silt; high estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.5	
					ML			3.0	 Backfilled With Native Material Bottom of Boring @ 3 ft



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-14  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) 2.3 ft (02-Jun-06)  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) 2.3 ft (02-Jun-06)  
REMARKS Located north of containment berm. Lots 5-6

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
1.9		B-14@ 2'			SM ML		<b>Silty SAND:</b> Brown; dry; 60% fine sand, 40% silt; organic material present; high estimated permeability. <b>SILT:</b> Gray; wet; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3 2.3	 Backfilled With Native Material Bottom of Boring @ 2.25 ft


WELL LOG (PID) R:\DENVER-1\ALASKA-216-2307-118-2307-2\GINT8-2307 BORING LOGS.GPJ DEFAULT GDT 7/5/06



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# BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-15
JOB/SITE NAME	8-2307	DRILLING STARTED	02-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	02-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Flight Auger / Ford 4630	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located north of containment berm. Lots 5-6		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
63.2		B-15@ 3'			GM ML		<b>Silty GRAVEL with sand:</b> Brown; dry to moist; 60% gravel, 20% silt, 20% fine sand; organic material present; high estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3 3.0	 Backfilled With Native Material Bottom of Boring @ 3 ft


WELL LOG (PID) R:\DENVER-1\ALASKA-1\ALASKA-218-2307-2\GINT18-2307 BORING LOGS GPJ DEFAULT.GDT 7/5/06



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-16  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
6.7		B-16@ 3'			GM - SILT ML		<b>Silty GRAVEL with sand:</b> Brown; dry to moist; 60% gravel, 20% silt, 20% fine sand; organic material present; high estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3 3.0	 Backfilled With Native Material Bottom of Boring @ 3 ft

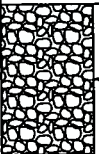
WELL LOG (PID) R. IDENVER-1VALASKA-218-2307-118-2307-2GINT8-2307 BORING LOGS GPJ DEFAULT GDT 7/5/06



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-17  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located north of containment berm. Lots 5-6

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
6.1		B-17@ 3'			GM		<b>Silty GRAVEL with sand:</b> Brown; dry to moist; 60% gravel, 20% silt, 20% fine sand; organic material present; high estimated permeability. <b>SILT:</b> Gray; moist; 90% silt, 10% fine sand; nonplastic; very low estimated permeability.	0.3	
					ML			3.0	Bottom of Boring @ 3 ft





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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-18  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located in V-ditch, south of containment berm.

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
1,800		B-18@ 1.5'			GM		<u>Silty GRAVEL with sand:</u> Gray; moist; 50% gravel, 30% silt, 20% fine to coarse sand; fill material; high estimated permeability.	1.5	 Backfilled With Native Material Bottom of Boring @ 1.5 ft



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## BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Company	BORING/WELL NAME	B-19
JOB/SITE NAME	8-2307	DRILLING STARTED	02-Jun-06
LOCATION	9203 Cessna Drive, Juneau, Alaska	DRILLING COMPLETED	02-Jun-06
PROJECT NUMBER	31J-2237	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Juneau International Airport	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Flight Auger / Ford 4630	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	6"	SCREENED INTERVAL	NA
LOGGED BY	J. Riggi, PG# 7262	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	J. Riggi, PG# 7262	DEPTH TO WATER (Static)	NA
REMARKS	Located in V-ditch, south of containment berm.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
		B-19 @ 2'			GM		<b>Silty GRAVEL with sand:</b> Gray; moist; 50% gravel, 30% silt, 20% fine to coarse sand; fill material; high estimated permeability.	2.0	 Backfilled With Native Material Bottom of Boring @ 2 ft



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# BORING/WELL LOG

CLIENT NAME Chevron Environmental Management Company BORING/WELL NAME B-20  
JOB/SITE NAME 8-2307 DRILLING STARTED 02-Jun-06  
LOCATION 9203 Cessna Drive, Juneau, Alaska DRILLING COMPLETED 02-Jun-06  
PROJECT NUMBER 31J-2237 WELL DEVELOPMENT DATE (YIELD) NA  
DRILLER Juneau International Airport GROUND SURFACE ELEVATION Not Surveyed  
DRILLING METHOD Flight Auger / Ford 4630 TOP OF CASING ELEVATION Not Surveyed  
BORING DIAMETER 6" SCREENED INTERVAL NA  
LOGGED BY J. Riggi, PG# 7262 DEPTH TO WATER (First Encountered) NA  
REVIEWED BY J. Riggi, PG# 7262 DEPTH TO WATER (Static) NA  
REMARKS Located in V-ditch, south of containment berm.

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
0		B-20@ 1.5'			GM		<u>Silty GRAVEL with sand:</u> Gray; moist; 50% gravel, 30% silt, 20% fine to coarse sand; fill material; high estimated permeability.	1.5	 Backfilled With Native Material Bottom of Boring @ 1.5 ft