LONG-TERM GROUNDWATER SAMPLING AND ANALYSIS PLAN

CBJ – Mendenhall Wastewater Treatment Plant

Juneau, Alaska

Prepared for:

City and Borough of Juneau

155 S. Seward Street

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Submitted to:

Alaska Department of Environmental Conservation

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Contaminated Sites Program

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May 2012

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TABLE OF CONTENTS

1 Introduction 1

2 Scope of Work 1

2.1 Weekly Gauging of Monitoring Wells and Mendenhall River Observations 1

2.2 Free-Product Recovery 2

2.3 Annual Groundwater Sampling 2

2.3.1 Laboratory Analyses 2

2.3.2 ADEC Cleanup Levels 3

3 Documentation and Reporting 3

3.1 Semi-Annual Reporting 3

3.2 Annual Reporting 3

Attachment A

Figure 1. Site Plan

1 Introduction

This Long-Term Groundwater Sampling and Analysis Plan (LTG-SAP) presents the objectives and strategies for the continuation of groundwater sampling activities at the CBJ – Mendenhall Wastewater Treatment Plant (site) in Juneau, Alaska. Carson Dorn, Inc. (CDI) has been contracted by the City & Borough of Juneau (CBJ) to provide environmental services in support of further characterization of the site. The general purpose of this LTG-SAP is to provide a detailed description of additional site characterization activities to be conducted at the site to further delineate the extent of contaminant impacts. This will provide additional data to be used in working towards a closure determination for the site.

2 Scope of Work

The planned scope of work to be conducted under this LTG-SAP will generally consist of:

- Weekly gauging of all monitoring wells located at the site and adjacent property (9509 Antler Way).
- Weekly observation of the Mendenhall River for sheens.
- Free-product recovery from MW-8 and MW-9.
- Annual collection and analysis of groundwater samples (plus one field duplicate) from the following wells located at the site and adjacent property.
    - MW-1, MW-2, MW-3, MW-7, MW-10, MW-11, MW-12, MW-13, NMW-2

Additional rounds of groundwater sampling in the future will be conducted following the procedures outlined in this LTG-SAP. Proposed groundwater sampling locations are indicated on Figure 1, Attachment A.

2.1 Weekly Gauging of Monitoring Wells and Mendenhall River Observations

Weekly gauging of groundwater monitoring wells for depth to product, depth to groundwater, oil sheen, and product thickness will continue to be conducted by CBJ personnel. The locations of the groundwater monitoring wells are shown on Figure 1, Attachment A. Observations of the

Mendenhall River will also be conducted weekly by CBJ personnel. NMW-1 and NMW-2 (installed by Nortech) located on the adjacent property have been incorporated into the weekly gauging of monitoring wells.

2.2 Free-Product Recovery

Attempts to recover free product from MW-8 and MW-9 will continue to be conducted by CBJ MWWTP personnel. The locations of the free product recovery wells are shown on Figure 1, Attachment A. Free product (2.5-4 inches) was reportedly observed during site investigation activities by Nortech (October 2011) in NMW-1 located on the adjacent property. If free product continues to be present in NMW-1 at the end of the 2nd Quarter of 2012 in recoverable amounts, CBJ plans to replace NMW-1 with a permanent monitoring well and initiate attempts to recover free product. If free product is observed in recoverable amounts in other wells on site or the adjacent property, CBJ plans to evaluate and initiate attempts to recover free product.

2.3 Annual Groundwater Sampling

The annual groundwater sampling activities will be performed in June (end of 2nd Quarter) of each calendar year in general accordance with ADEC's *Draft Field Sampling Guidance*, May 2010. CDI personnel will use a peristaltic pump and teflon tubing to development and purge the well. CDI personnel will use a disposable bailer to collect groundwater samples after development and purge. Prior to handling any groundwater, CDI personnel will don a new pair of disposable nitrile gloves which will be interchanged prior to collection of each groundwater sample. Each groundwater sample will be placed into a laboratory certified 125-mL amber glass jar or 40-mL glass vial. Groundwater samples to be analyzed for DRO, RRO, and VOCs and TAH will immediately be preserved with hydrochloric acid (HCL). All sample jars and vials will be labeled with the project name, sample identification number, date/time of sample collection, preservative, analysis requested, and sampler's initials. The samples will be kept in a sample cooler with ice (at 4°C ± 2°C) pending delivery to the contract laboratory.

2.3.1 Laboratory Analyses

Groundwater samples will be analyzed by our contract laboratory, Test America, Inc. Groundwater samples from MW-1, MW-2, and MW-11 will be analyzed for DRO using Alaska

Method AK102, RRO using Alaska Method AK 103, VOCs and TAH using USEPA Method 624, and SVOCs and TPAH using USEPA Method 625. TAqH will be calculated based on the results of USEPA Methods 624 and 625 by Test America, Inc. Groundwater samples from MW-3, MW-7, MW-10, MW-12, MW-13, and NMW-2 will be analyzed for DRO using Alaska Method AK102 and RRO using Alaska Method AK 103.

Analytical data validation will be performed by CDI by filling out the ADEC Laboratory Data Review Checklist for each laboratory data deliverable.

2.3.2 ADEC Cleanup Levels

For the purposes of this investigation, analytical data will be compared to ADEC cleanup levels in 18 AAC 75.341 Table C.

3 Documentation and Reporting

Records shall be maintained as necessary for implementing and documenting the weekly groundwater gauging & river observations, free-product recovery, and annual groundwater sampling activities. The information documented in these records and any other associated forms (i.e. laboratory chain of custody, field sampling collection logs) will then be used to prepare reports to be submitted to ADEC.

3.1 Semi-Annual Reporting

A semi-annual report will provide written documentation of weekly gauging of groundwater monitoring wells for depth to product, depth to groundwater, oil sheen, and product thickness; weekly observations of the Mendenhall River; and results of attempts to recover free product. This report will include activities completed during the 3rd and 4th quarters and will be completed at the end of the 4th quarter each year.

3.2 Annual Reporting

An annual report will provide written documentation of annual field sampling activities, provide figures showing the sampling locations, and summarize analytical data and resultant comparisons to existing ADEC action levels. Additionally, the annual report will provide written

documentation of weekly gauging of groundwater monitoring wells for depth to product, depth to groundwater, oil sheen, and product thickness; weekly observations of the Mendenhall River; and results of attempts to recover free product. This report will include activities completed during the 1st and 2nd quarters and will be completed at the end of the 2nd quarter each year. Each year upon review of analytical results from the annual groundwater sampling activities, CDI will make a recommendation for continued monitoring which will be conducted under this SAP.

Attachment 1

MW–11
LOCATION NOT TO SCALE

NMW–2

NMW–1

6" OIL RECOVERY WELL

8" WATER DRAWDOWN WELL

MW–8

NORTH

Mendenhall River

MW–9

MW–12

MH–3

UST

UST

CONCRETE PAD

BURIED FUEL LINES

INFLUENT PUMP STATION

GENERATOR ROOM

MW–13

MW–4

DISINFECTION BUILDING

UV ROOM

GARAGE

MH–1

SBR BUILDING

EBB

FLOOD

MW–1

CONTROL BUILDING

BURIED FUEL LINES

TEST HOLES

ABF PLANT

8" WATER DRAWDOWN WELL

MW–6 (BH–3)

6" OIL RECOVERY WELL

BOILER ROOM

PROPERTY LINE

BH–7

BURIED FUEL LINES

RS–2

MW–5 (BH–8)

RS–3

CHILLER UNIT

SUPPLY LINE LEAK AREA (NOT EXTENT OF CONTAMINATION)

ELECTRIC PAD

SLUDGE DEWATERING BUILDING

DRIVEWAY

CHLORINE BUILDING

BH–2

MW–10

GARAGE

MW–2

MW–3

BH–4

BH–5

GRAVEL PARKING

BH–1

PROPERTY LINE

RADCLIFFE ROAD

EXISTING CULVERT

P.P.

P.P.

MW–7 (BH–6)

RADCLIFFE ROAD

20 0 20 40 FEET

ASPHALT PARKING

LEGEND

- MONITOR WELL (MW)
- OIL RECOVERY WELL
- WATER DRAWDOWN WELL
- BORE HOLE (BH)
- TEST HOLE 3/14/08
- MANHOLE (MH, RS)
- UST
- FUEL LINE
- SUSPECTED SUPPLY–LINE LEAK AREA

Path/File Name: \2cad\CBJ\MWTP\MWs & Oil Recovery Wells\2009 COMPOSIT.V8
Date Plotted: 4/28/2012
Time Plotted: 8:16:02 AM

REV	DATE	BY	DESCRIPTION

SCALE GRAPHIC
DESIGNED SJH
DRAWN EHH
CHECKED
DATE APRIL 2012

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

CITY AND BOROUGH OF JUNEAU

MWWTP OIL INVESTIGATION

Carson Dorn Inc.
712 WEST 12TH STREET
JUNEAU, ALASKA 99801
(907) 586–4447

MWWTP SITE PLAN
MONITORING WELLS
&
OIL RECOVERY WELLS

Figure 1

SHEET No.
of