MEMORANDUM

Project No.: 090066-004-07

August 13, 2012

To: Steven Rowe, Darigold, Inc.

From: Dave Heffner, PE
Associate Remediation Engineer

Re: **May/June 2012 Round of Post-Removal-Action Groundwater Monitoring, Rainier Avenue Facility**

In July/August 2011, soil impacted by petroleum hydrocarbons and the gasoline additive methyl tertiary-butyl ether (MTBE) was excavated from the North Yard of the dairy-processing facility located at 4058 Rainier Avenue South in Seattle, Washington (Figure 1). The contaminant source is attributed to former underground storage tanks (USTs) and associated piping at the property. The removal action was conducted on behalf of Darigold, Inc. (Darigold), as an independent cleanup action under the Washington Model Toxics Control Act (MTCA; WAC 173-340-515).

Groundwater monitoring has been conducted periodically at the site since 2004, after nine monitoring wells (MW01 through MW09) were installed as part of an environmental investigation in January of that year. Additional wells were installed during subsequent investigations, and a total of 22 wells (MW01 through MW21 and PE01) were being monitored in early 2011. Seven of these wells (MW02, MW03, MW04, MW07, MW10, MW11, and PE01), located in the immediate vicinity of the planned excavation, were decommissioned prior to removal action construction, and seven replacement wells (MW22 through MW28) were installed in late August 2011, at the conclusion of construction. Figure 2 shows the locations of both existing and decommissioned monitoring wells. Well decommissioning and installation activities associated with the removal action are documented in *Aspect, 2011*. Results of previous groundwater monitoring rounds are documented in *SES, 2012*.

This technical memorandum documents the third (May/June 2012) round of post-removal-action groundwater monitoring. The first two rounds (in August and November 2011) were conducted on a quarterly basis (i.e., three months apart), consistent with the preconstruction frequency. However, monitoring frequency has now been changed to semi-annually.

May/June 2012 Groundwater Monitoring

On May 22, 2012, depth-to-groundwater was measured in all wells except MW18, which was inaccessible. Groundwater elevations were then calculated by subtracting the depth-to-groundwater measurements from the top-of-casing elevations. Calculated groundwater elevations are provided in Table 1, and inferred groundwater elevation contours are illustrated on Figure 2. Subsequent to depth measurements, groundwater samples were collected for laboratory analysis from eleven wells (identified in Table 2). Prior to sampling, each well was purged at less than 0.5 liter per minute using a peristaltic pump with dedicated tubing. During purging, field parameters including temperature, specific conductance, dissolved oxygen, pH, and oxidation/reduction potential (ORP) were monitored until they stabilized. All purge water was drummed for future disposal.

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Once field parameters stabilized, laboratory-supplied sample containers were filled directly from the pump discharge tubing using the same pumping flow rate. Samples were immediately stored in a cooler with ice packs to maintain their temperature at or below 4°C. The cooler was transported under chain-of-custody protocols to Friedman and Bruya, Inc., in Seattle. The water samples were analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), and MTBE by EPA Method 8260 modified, for gasoline-range total petroleum hydrocarbons (TPH) by Method NWTPH-Gx, and for diesel- and motor oil-range TPH by Method NWTPH-Dx. Sample extracts were passed through a silica gel column prior to analysis.

Upon preliminary review of the laboratory report, it was noted that groundwater quality results for the sample labeled "MW23" were very different from previous results for that well (discussed further below). To confirm that a sampling error had not occurred, Aspect re-sampled Well MW23 on June 25, 2012. Depth-to-groundwater was measured prior to sampling (see Table 1). Then the well was purged and a sample collected in the manner described above. The sample was submitted for laboratory analysis of BTEX and gasoline-range TPH.

Groundwater quality results are summarized in Table 2 along with the results of the first two post-removal-action monitoring rounds. Table 2 also lists MTCA Method A groundwater cleanup levels, which are applicable to this site. Laboratory reports for the current round are included as Appendix A.

Concentration Trends

Groundwater quality data from the three post-removal-action groundwater monitoring rounds completed to date indicate the following:

- Benzene, ethylbenzene, and xylenes were detected at very low concentrations in the resample of Well MW23 on June 25, 2012. While these compounds were below detection limits in the May 22, 2012, sample, the resample confirmed that BTEX concentrations in this well were more than two orders of magnitude lower than those measured in the first two post-removal-action monitoring rounds. Regarding second-round (November 2011) results, it is interesting to note that the sum of the measured BTEX concentrations (14,770 µg/L) is more than twice the gasoline-range TPH concentration (6,800 µg/L), although one would expect the BTEX sum to be less than the TPH value. Well MW23 is located within the excavation footprint at the approximate location of decommissioned Well MW07, in which separate-phase product was typically observed prior to the removal action. Soil was excavated to more than a foot below the water table at this location and, based on field monitoring, the separate-phase product was judged to be effectively removed. It is not known what may have caused such a precipitous drop in petroleum hydrocarbon concentrations in this well compared to the November 2011 monitoring round, or whether concentrations will remain low in future rounds.

- Concentrations of MTBE exceed the MTCA Method A cleanup level in wells MW01, MW05, MW12, and MW24 through MW27. Concentrations are highest, exceeding five times the MTBE cleanup level, in the three wells located inside the excavation footprint (MW24, MW25, and MW26).

- The current-round benzene concentration of 11 µg/L detected in Well MW28 (down from 27 and 24 µg/L detected in the previous two rounds) is marginally above the 5 µg/L cleanup level for benzene. Among the on-property wells, this is the only exceedence of petroleum hydrocarbon cleanup levels measured in the current round.

- Among the off-property wells, MW12 continues to exhibit significant petroleum hydrocarbon cleanup level exceedences, primarily with respect to benzene and gasoline-range TPH.

The next groundwater monitoring round is scheduled for November 2012.

References

Aspect, 2011, Soil Removal Action, Rainier Avenue Facility Remediation, December 8, 2011.

SES, 2012, Letter to S. Rowe, Darigold, Inc., Subject: 2011 Semi-Annual Groundwater Performance Monitoring Report, Darigold, Inc. Rainier Avenue Facility, 4058 Rainier Avenue South, February 2, 2012.

Limitations

Work for this project was performed and this memorandum prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Darigold for specific application to the referenced property. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

Attachments

Table 1 – Post-Removal-Action Groundwater Elevations
Table 2 – Summary of Post-Removal-Action Groundwater Quality Data
Figure 1 – Site Location Map
Figure 2 – Well Location Map and Groundwater Elevation Contours on May 22, 2012
Appendix A – Laboratory Reports

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Table 1 - Post-Removal-Action Groundwater Elevations

Darigold Rainier Avenue Facility 090066

Well ID:	MW01	MW05	MW06	MW08	MW09	MW12	MW13	MW14	MW15	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26	MW27	MW28
Installation Date:	May04	May04	May04	May04	May04	Feb08	Feb08	Jan08	Jan08	Jan08	Jan08	Aug08	Oct09	Oct09	Oct09	Aug11	Aug11	Aug11	Aug11	Aug11	Aug11	Aug11
TOC Elevation:	89.15	90.75	91.65	92.17	94.58	89.32	89.34	81.99	82.00	81.88	81.88	91.13	88.93	88.70	88.70	92.07	92.67	91.05	89.81	89.13	89.28	89.88
Date of Measurement	Groundwater Elevation																					
08/29/11	81.51	81.76	81.57	81.07	81.52	81.78	81.56	79.75	79.77	79.74	79.78	81.69	80.63	80.72	83.70	82.56	81.60	81.59	81.60	81.60	80.66	81.58
11/21/11	81.63	80.95	81.53	81.13	82.68	81.88	81.92	79.99	79.91	80.84	80.03	81.80	81.12	81.17	84.02	82.67	81.67	81.67	81.68	81.68	82.16	81.68
05/22/12	82.19	82.46	82.33	80.08	83.26	82.47	82.63	80.47	80.55	81.07	81.01	NM	82.04	81.90	83.84	83.26	82.27	82.26	82.26	82.25	82.75	82.26
06/25/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	82.02	NM	NM	NM	NM	NM

NM not measured TOC top of well casing

Notes:

1) Elevations are in units of feet, and are relative to an arbitrary site datum designated 100.00 feet.

2) For all wells except MW14 through MW17, TOC and groundwater elevations are derived from well surveys performed by Aspect Consulting in September 2011, relative to SoundEarth's measured TOC elevation of 89.15 feet for MW01.

3) TOC and groundwater elevations for monitoring wells MW14 through MW17 are assumed accurate to within 0.1 feet, and assume design basement Finish Floor Elevation of 34.1 feet, per James M. Klontz Architects Sheet A-6 dated October 8, 1986.

4) For groundwater elevations prior to the Summer 2011 soil removal action, see *SoundEarth Strategies, 2012* .

Table 2 - Summary of Post-Removal-Action Groundwater Quality Data

Darigold Rainier Avenue Facility 090066

Well ID	Date Sampled	Total Petroleum Hydrocarbon (TPH)			BTEX Compounds				MTBE
		Gasoline-Range	Diesel-Range	Motor Oil-Range	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MW01	08/29/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**80**
	11/21/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**78**
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**66**
MW05	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**58**
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**45**
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**33**
MW06	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	4.9
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	3.2
MW08	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1.3
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	2.2
MW09	08/29/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/21/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW12	08/30/11	**13,000**	**1,500** x	250 U	**1,500**	1 U	**1,400**	**1,200**	**170**
	11/22/11	**7,700**	**1,600** x	250 U	**1,000**	100 U	**800**	410	**100**
	05/22/12	**12,000**	**1,400** x	250 U	**1,000**	1 U	**1,200**	990	**100**
MW13	08/29/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	6.5
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**21**
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	8.9
MW14	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW15	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW16	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW17	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW18	08/29/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/21/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW19	08/29/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW20	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW21	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	11/21/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW22	08/29/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1.0
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
MW23	08/30/11	**29,000**	**2,100** x	250 U	**1,600**	**2,400**	**1,800**	**9,600**	6.6
	11/22/11	**6,800**	**840** x	250 U	**1,800**	370	**3,100**	**9,500**	100 U
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	1 U
	06/25/12	100 U	--	--	3.1	1 U	6.4	7.7	--
MW24	08/30/11	100 U	50 U	250 U	**5.3**	1 U	1 U	3.3	**190**
	11/22/11	100 U	50 U	250 U	**5.6**	10 U	10 U	30 U	**160**
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**200**
MW25	08/30/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**490**
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**680**
	05/22/12	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**200**
MW26	08/30/11	260	50 U	250 U	**77**	1 U	1 U	3 U	**670**
	11/21/11	100 U	50 U	250 U	1.7	1 U	1 U	3 U	**510**
	05/22/12	100 U	50 U	250 U	3.3	1 U	1 U	3 U	**540**
MW27	08/30/11	100 U	--	--	0.48	1 U	1 U	3 U	**100**
	11/22/11	100 U	50 U	250 U	0.35 U	1 U	1 U	3 U	**93**
MW28	08/30/11	350	240 x	250 U	**27**	43	9.3	46	4.5
	11/21/11	480	180 x	250 U	**24**	37	8.4	44	3.5
	05/22/12	290	380 x	320	**11**	19	5.3	26	7.6
Method A Cleanup Levels		**800**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**20**

-- Not analyzed

MTBE Methyl tertiary-butyl ether

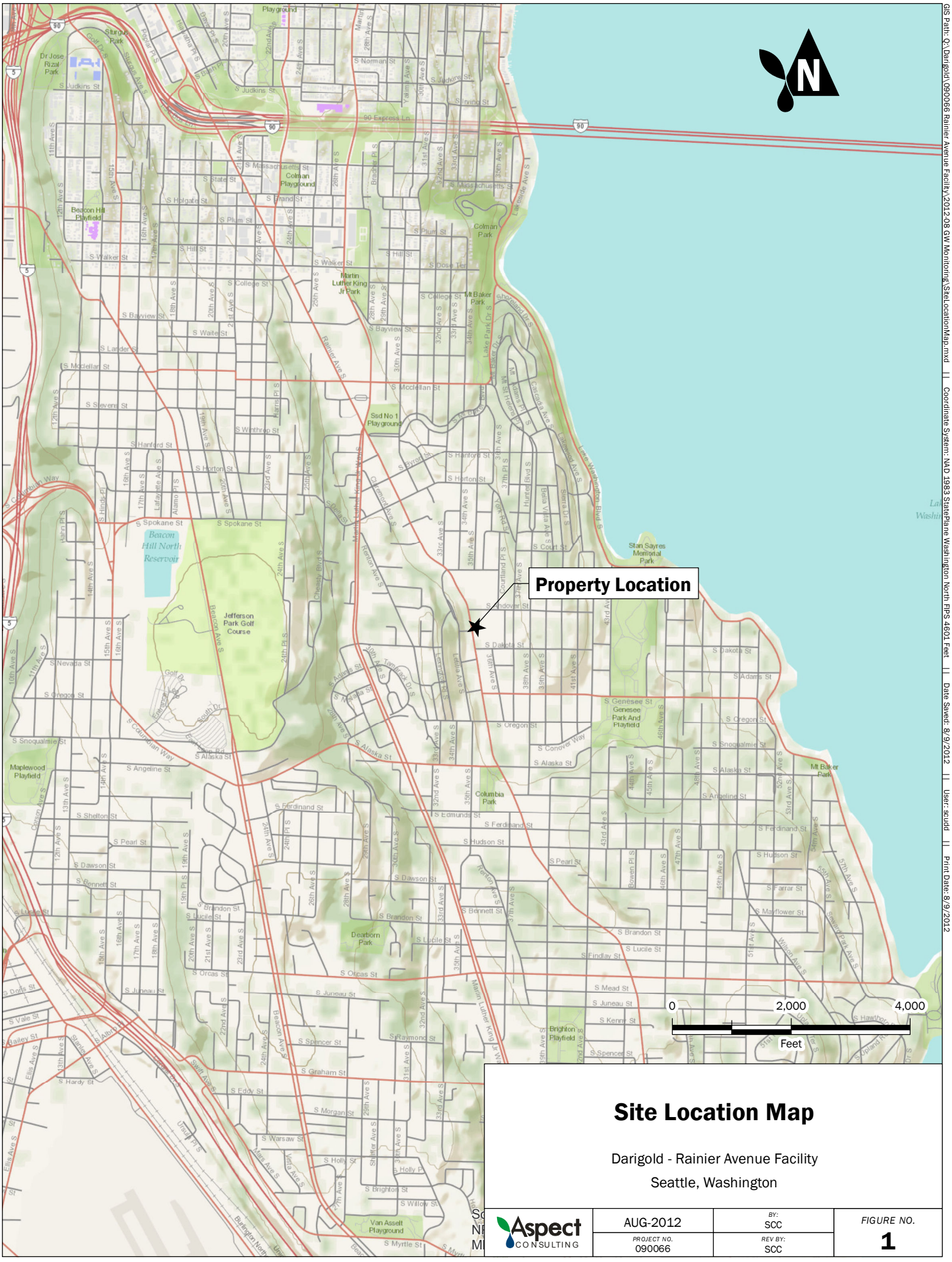
U Not detected at specified reporting limit

x The pattern of peaks present is not indicative of diesel fuel.

Notes:

1) All concentrations are in micrograms per liter (µg/L). Bolded concentrations exceed Washington State Model Toxics Control Act (MTCA) Method A groundwater cleanup levels.

2) For groundwater chemistry data prior to the Summer 2011 soil removal action, see *SoundEarth Strategies, 2012* .



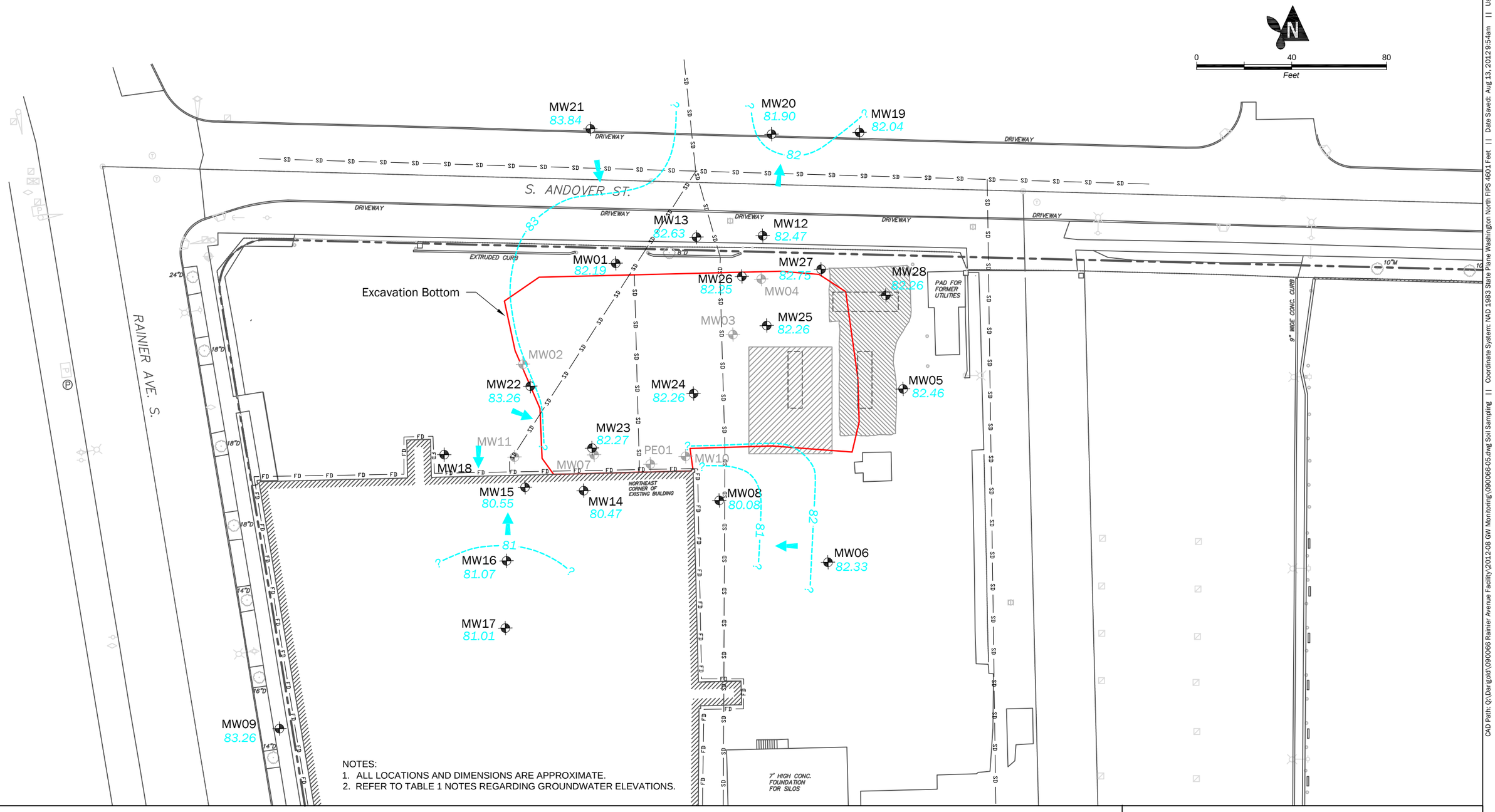
Site Location Map

Darigold - Rainier Avenue Facility

Seattle, Washington

Aspect CONSULTING	AUG-2012	BY: SCC	FIGURE NO. 1
	PROJECT NO. 090066	REV BY: SCC	

GIS Path: Q:\Darigold\090066 Rainier Avenue Facility\2012-08 GW Monitoring\SiteLocationMap.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 8/9/2012 || User: scudd || Print Date: 8/9/2012



NOTES:
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. REFER TO TABLE 1 NOTES REGARDING GROUNDWATER ELEVATIONS.

LEGEND

- APPROXIMATE GROUNDWATER FLOW DIRECTIONS
- 83 ------ GROUNDWATER ELEVATION CONTOUR
- 83.26 GROUNDWATER ELEVATION (MAY 22, 2012)
- MW24 MONITORING WELL LOCATION (ASPECT, AUGUST 2011)

UTILITIES

- MW01 MONITORING WELL LOCATION (SES, 2004-2009)
- MW7 MONITORING WELL LOCATION (DECOMMISSIONED)
- FD FOOTING DRAIN
- SD STORM DRAIN

- FORMER UST
- APPROXIMATE FORMER UST EXCAVATION (SES, 2004)
- APPROXIMATE FORMER UST EXCAVATION (SD&C, 1998)

Well Location Map and Groundwater Elevation Contours on May 22, 2012

Darigold-Rainier Avenue Facility
Seattle, Washington

Aspect Consulting	AUG-2012	BY: MV/SCC	FIGURE NO. 2
	PROJECT NO. 090066	REV BY: SCC	

APPENDIX A

Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

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Seattle, WA 98119-2029
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June 6, 2012

Matthew van der Ahe, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. van der Ahe:

Included are the results from the testing of material submitted on May 23, 2012 from the Darigold 090066, F&BI 205347 project. There are 26 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0606R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2012 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Darigold 090066, F&BI 205347 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
205347-01	MW-01-052212
205347-02	MW-05-052212
205347-03	MW-08-052212
205347-04	MW-12-052212
205347-05	MW-13-052212
205347-06	MW-22-052212
205347-07	MW-23-052212
205347-08	MW-24-052212
205347-09	MW-25-052212
205347-10	MW-26-052212
205347-11	MW-28-052212

All quality control requirements were acceptable.

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347
Date Extracted: 05/24/12
Date Analyzed: 05/25/12 and 05/26/12

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-01-052212 205347-01	<100	95
MW-05-052212 205347-02	<100	96
MW-08-052212 205347-03	<100	95
MW-12-052212 205347-04 1/10	12,000	87
MW-13-052212 205347-05	<100	98
MW-22-052212 205347-06	<100	96
MW-23-052212 205347-07	<100	97
MW-24-052212 205347-08	<100	96
MW-25-052212 205347-09	<100	97
MW-26-052212 205347-10	<100	100

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347
Date Extracted: 05/24/12
Date Analyzed: 05/25/12 and 05/26/12

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-28-052212 205347-11	290	101
Method Blank 02-0905 MB	<100	102

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347
Date Extracted: 05/25/12
Date Analyzed: 06/01/12

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-01-052212 205347-01	<50	<250	105
MW-05-052212 205347-02	<50	<250	114
MW-08-052212 205347-03	<50	<250	113
MW-12-052212 205347-04	1,400 x	<250	104
MW-13-052212 205347-05	<50	<250	112
MW-22-052212 205347-06	<50	<250	114
MW-23-052212 205347-07	<50	<250	117
MW-24-052212 205347-08	<50	<250	108
MW-25-052212 205347-09	<50	<250	99
MW-26-052212 205347-10	<50	<250	90
MW-28-052212 205347-11	380 x	320	145
Method Blank 02-908 MB2	<50	<250	84

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-01-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-01
Date Analyzed:	05/23/12	Data File:	052318.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	66
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-05-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-02
Date Analyzed:	05/23/12	Data File:	052319.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	33
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-08-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-03
Date Analyzed:	05/23/12	Data File:	052320.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	2.2
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-04
Date Analyzed:	05/23/12	Data File:	052321.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	100
Benzene	820 ve
Toluene	<1
Ethylbenzene	660 ve
m,p-Xylene	940 ve
o-Xylene	4.8

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/24/12	Lab ID:	205347-04 1/10
Date Analyzed:	05/24/12	Data File:	052428.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	110
Benzene	1,000
Toluene	<10
Ethylbenzene	1,200
m,p-Xylene	990
o-Xylene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-05
Date Analyzed:	05/23/12	Data File:	052322.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	8.9
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-22-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-06
Date Analyzed:	05/23/12	Data File:	052323.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-23-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-07
Date Analyzed:	05/23/12	Data File:	052324.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-24-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-08
Date Analyzed:	05/23/12	Data File:	052325.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	160 ve
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-24-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/24/12	Lab ID:	205347-08 1/10
Date Analyzed:	05/24/12	Data File:	052429.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	200
Benzene	<3.5
Toluene	<10
Ethylbenzene	<10
m,p-Xylene	<20
o-Xylene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-25-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-09
Date Analyzed:	05/23/12	Data File:	052326.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	210 ve
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-25-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/24/12	Lab ID:	205347-09 1/10
Date Analyzed:	05/25/12	Data File:	052430.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	200
Benzene	<3.5
Toluene	<10
Ethylbenzene	<10
m,p-Xylene	<20
o-Xylene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-26-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-10
Date Analyzed:	05/23/12	Data File:	052327.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	450 ve
Benzene	3.3
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-26-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/24/12	Lab ID:	205347-10 1/10
Date Analyzed:	05/25/12	Data File:	052431.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	540
Benzene	<3.5
Toluene	<10
Ethylbenzene	<10
m,p-Xylene	<20
o-Xylene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-28-052212	Client:	Aspect Consulting, LLC
Date Received:	05/23/12	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	205347-11
Date Analyzed:	05/23/12	Data File:	052328.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	7.6
Benzene	11
Toluene	19
Ethylbenzene	5.3
m,p-Xylene	15
o-Xylene	11

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	NA	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/23/12	Lab ID:	02-0799 mb
Date Analyzed:	05/23/12	Data File:	052317.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	NA	Project:	Darigold 090066, F&BI 205347
Date Extracted:	05/24/12	Lab ID:	02-0800 mb
Date Analyzed:	05/24/12	Data File:	052408.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 205346-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	97	69-134

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	81	79	63-142	2

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 205347-11 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	7.6	96	50-150
Benzene	ug/L (ppb)	50	11	92 b	50-150
Toluene	ug/L (ppb)	50	19	94 b	50-150
Ethylbenzene	ug/L (ppb)	50	5.3	96	50-150
m,p-Xylene	ug/L (ppb)	100	15	94	50-150
o-Xylene	ug/L (ppb)	50	11	98 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	96	96	70-130	0
Benzene	ug/L (ppb)	50	96	96	70-130	0
Toluene	ug/L (ppb)	50	99	99	70-130	0
Ethylbenzene	ug/L (ppb)	50	100	99	70-130	1
m,p-Xylene	ug/L (ppb)	100	99	98	70-130	1
o-Xylene	ug/L (ppb)	50	101	98	70-130	3

Date of Report: 06/06/12
Date Received: 05/23/12
Project: Darigold 090066, F&BI 205347

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 205261-16 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	97	50-150
Benzene	ug/L (ppb)	50	<0.35	99	50-150
Toluene	ug/L (ppb)	50	<1	101	50-150
Ethylbenzene	ug/L (ppb)	50	<1	100	50-150
m,p-Xylene	ug/L (ppb)	100	<2	98	50-150
o-Xylene	ug/L (ppb)	50	<1	99	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	98	99	70-130	1
Benzene	ug/L (ppb)	50	96	96	70-130	0
Toluene	ug/L (ppb)	50	101	102	70-130	1
Ethylbenzene	ug/L (ppb)	50	100	102	70-130	2
m,p-Xylene	ug/L (ppb)	100	98	99	70-130	1
o-Xylene	ug/L (ppb)	50	98	101	70-130	3

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205347 Matthew vander Ahe

SAMPLE CHAIN OF CUSTODY

ME 05/23/12 DO3/V5

Page # 1 of

Send Report To ~~Dave Hefner~~

Company Aspect Consulting

Address 401 2nd Ave S Suite 201

City, State, ZIP Seattle, WA 98104

Phone # _____ Fax # _____

SAMPLERS (signature)

PROJECT NAME/NO. Darigold

PO# 090066

REMARKS *Dx-Silica gel

TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH _____
Rush charges authorized by _____

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED * TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	BTEX, MTBE by 8260C						Notes
MW-01-052212	01A-F	5/22/12	1115	water	6	X	X					X						
MW-05-052212	02AG		0955		7	X	X					X						
MW-08-052212	03AG		1230		7	X	X					X						
MW-12-052212	04AG		1555		7	X	X					X						
MW-13-052212	05AG		1615		7	X	X					X						
MW-22-052212	06AF		1400		6	X	X					X						
MW-23-052212	07AG		1500		7	X	X					X						
MW-24-052212	08AG		1230		7	X	X					X						
MW-25-052212	09AG		1140		7	X	X					X						
MW-26-052212	10AG		1045		7	X	X					X						

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Amy Tice	Aspect	5/23/12	PM
Received by:	Nhan Phan	FEBI	5/23/12	1245
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

205347

SAMPLE CHAIN OF CUSTODY

ME 05/23/12

D03/V5

Page # 2 of

Send Report To Matthew vander Ahe

Company Aspect Consulting

Address 401 2nd Ave S, #201

City, State, ZIP Seattle, WA 98104

Phone # _____ Fax # _____

SAMPLERS (signature)

PROJECT NAME/NO. Darigold

PO# 090066

REMARKS
* Dx-silica gel

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH _____
Rush charges authorized by _____

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel *	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	BTEX, MTBE 8260C						Notes
MW-28-052212	11A6	5/22/12	0950	water	7	X	X					X						
																		Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Amy Tice	Aspect	5/23/12	pm
Received by: Amy Tice				
Relinquished by:				
Received by:	Nhan Phan	FEBI	5/23/12	1245

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

June 28, 2012

Dave Heffner, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. Heffner:

Included are the results from the testing of material submitted on June 26, 2012 from the 090066 Darigold, F&BI 206362 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0628R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 26, 2012 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC 090066 Darigold, F&BI 206362 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
206362-01	MW-23-062512

All quality control requirements were acceptable.

Date of Report: 06/28/12
Date Received: 06/26/12
Project: 090066 Darigold, F&BI 206362
Date Extracted: 06/26/12
Date Analyzed: 06/26/12

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
MW-23-062512 206362-01	3.1	<1	6.4	7.7	<100	85
Method Blank 02-1108 MB	<1	<1	<1	<3	<100	77

Date of Report: 06/28/12
Date Received: 06/26/12
Project: 090066 Darigold, F&BI 206362

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 206360-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	1.1	1.2	8
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	88	72-119
Toluene	ug/L (ppb)	50	89	71-113
Ethylbenzene	ug/L (ppb)	50	89	72-114
Xylenes	ug/L (ppb)	150	84	72-113
Gasoline	ug/L (ppb)	1,000	102	70-119

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

206362

SAMPLE CHAIN OF CUSTODY

ME 06-26-12 VI

Page # 1 of 1

Send Report To Dave Heffner dheffner@aspectconsulting.com

Company ~~Aspect~~ Consulting

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. 090066 Darigold

PO#

REMARKS

TURNAROUND TIME
- ☒ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS						Notes
MW-23-062512	01A-D	6/25/12	1700	water	4		X	X									
																	Samples received at 5 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Matthew van der Ahe	Aspect Consulting	6-26-12	10:15 am
Received by:	Ken Dawson	Postal Express	6-26-12	10:15 am
Relinquished by:				
Received by:	D D	FX B2	6-26-12	10:46

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