

# MEMORANDUM

Project No.: 090066-004-08

July 27, 2013

**To:** Ross Wilson, Darigold, Inc.

**From:** Dave Heffner, PE  
Associate Remediation Engineer

**Re:** **May 2013 Round of Post-Removal-Action Groundwater Monitoring, Rainier Avenue Facility**

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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*, *Aspect, 2012*, and *Aspect, 2013*.

This technical memorandum documents the fifth (May 2013) 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. Beginning with the third post-removal-action round, monitoring frequency was changed to semi-annually.

## May 2013 Groundwater Monitoring

On May 23, 2013, depth-to-groundwater was measured in all outdoor monitoring wells. 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 ten 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,

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specific conductance, dissolved oxygen, pH, and oxidation/reduction potential (ORP) were monitored until they stabilized. All purge water was drummed for future disposal.

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, and for gasoline-range total petroleum hydrocarbons (TPH) by Method NWTPH-Gx. Samples from three of the wells were also analyzed for diesel- and motor oil-range TPH by Method NWTPH-Dx. Extracts of these samples were passed through a silica gel column prior to analysis.

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

### ***Concentration Trends***

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

- **In the current round, concentrations of petroleum hydrocarbons (BTEX and TPH in the gasoline, diesel, and motor oil ranges) were below Method A cleanup levels for all on-property monitoring wells sampled. This is the second consecutive monitoring round for which on-property groundwater quality has been in compliance with Method A cleanup levels for all constituents of concern except the gasoline additive MTBE.**
- MW12 is the only off-property monitoring well still exhibiting petroleum hydrocarbon concentrations above Method A cleanup levels, including those for benzene and TPH in the gasoline and diesel ranges. The benzene concentration is clearly decreasing in this well, but it still exceeds the corresponding Method A cleanup level by more than two orders of magnitude. The two TPH ranges do not exhibit consistent declining concentration trends over the five post-removal-action monitoring rounds. However, current-round concentrations of all three of these constituents are the lowest measured since completion of the removal action.
- Current-round MTBE concentrations exceed the 20 microgram per liter (µg/L) Method A cleanup level for that compound in on-property wells MW01, MW05, and MW24 through MW27, and in off-property well MW12. An MTBE concentration of 230 µg/L was measured in the sample from well MW26, the highest detection in the current round. Most of these wells exhibit overall declining concentration trends, although significant variability is observed from one round to the next (see Table 2).

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## **References**

- Aspect, 2011, Soil Removal Action, Rainier Avenue Facility Remediation, December 8, 2011.
- Aspect, 2012, Memorandum to S. Rowe, Darigold, Inc., Re: May/June 2012 Round of Post-Removal-Action Groundwater Monitoring, Rainier Avenue Facility, August 13, 2012.
- Aspect, 2013, Memorandum to S. Rowe, Darigold, Inc., Re: November 2012 Round of Post-Removal-Action Groundwater Monitoring, Rainier Avenue Facility, January 3, 2013.
- 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 23, 2013  
Appendix A – Laboratory Report

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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    |
| 11/29/12            | 82.22                 | 82.69 | 82.45 | 81.65 | 83.02 | 82.82 | 82.43 | 80.39 | 80.47 | 81.05 | 80.78 | 82.31 | 83.41 | 82.72 | 84.24 | 83.01 | 82.32 | 82.35 | 82.36 | 82.37 | 82.73 | 82.36 |
| 05/23/13            | 82.06                 | 82.40 | 82.10 | 81.51 | 83.11 | 82.57 | 82.29 | NM    | NM    | NM    | NM    | 82.25 | 81.69 | 81.52 | 84.11 | 82.77 | 82.08 | 82.11 | 82.12 | 82.18 | 82.49 | 82.24 |

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**

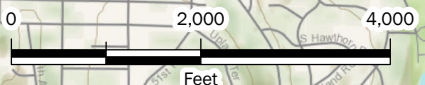
Darigold Rainier Avenue Facility 090066

| 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         |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | 62         |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | 37         |
| 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         |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | 23         |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | 21         |
| 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        |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | 2.8        |
| 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     | <b>13,000</b>                     | <b>1,500</b> x | 250 U           | <b>1,500</b>   | 1 U          | <b>1,400</b>  | <b>1,200</b>  | <b>170</b> |
|                                | 11/22/11     | <b>7,700</b>                      | <b>1,600</b> x | 250 U           | <b>1,000</b>   | 100 U        | <b>800</b>    | 410           | <b>100</b> |
|                                | 05/22/12     | <b>12,000</b>                     | <b>1,400</b> x | 250 U           | <b>1,000</b>   | 1 U          | <b>1,200</b>  | 990           | <b>100</b> |
|                                | 11/29/12     | <b>9,000</b>                      | <b>2,700</b> x | 250 U           | <b>650</b>     | 1 U          | 530           | 280           | <b>59</b>  |
|                                | 05/23/13     | <b>6,400</b>                      | <b>1,100</b> x | 250 U           | <b>590</b>     | 10 U         | 310           | 92            | <b>80</b>  |
| 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        |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | 26         |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | 6.2        |
| 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        |
|                                | 11/29/12     | 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     | <b>29,000</b>                     | <b>2,100</b> x | 250 U           | <b>1,600</b>   | <b>2,400</b> | <b>1,800</b>  | <b>9,600</b>  | 6.6        |
|                                | 11/22/11     | <b>6,800</b>                      | <b>840</b> x   | 250 U           | <b>1,800</b>   | 370          | <b>3,100</b>  | <b>9,500</b>  | 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           | --         |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | 1 U        |
|                                | 05/23/13     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | 1 U        |
| MW24                           | 08/30/11     | 100 U                             | 50 U           | 250 U           | <b>5.3</b>     | 1 U          | 1 U           | 3.3           | <b>190</b> |
|                                | 11/22/11     | 100 U                             | 50 U           | 250 U           | <b>5.6</b>     | 10 U         | 10 U          | 30 U          | <b>160</b> |
|                                | 05/22/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>200</b> |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>34</b>  |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>130</b> |
| MW25                           | 08/30/11     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>490</b> |
|                                | 11/22/11     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>680</b> |
|                                | 05/22/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>200</b> |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>340</b> |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>87</b>  |
| MW26                           | 08/30/11     | 260                               | 50 U           | 250 U           | <b>77</b>      | 1 U          | 1 U           | 3 U           | <b>670</b> |
|                                | 11/21/11     | 100 U                             | 50 U           | 250 U           | 1.7            | 1 U          | 1 U           | 3 U           | <b>510</b> |
|                                | 05/22/12     | 100 U                             | 50 U           | 250 U           | 3.3            | 1 U          | 1 U           | 3 U           | <b>540</b> |
|                                | 11/29/12     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>270</b> |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>230</b> |
| MW27                           | 08/30/11     | 100 U                             | --             | --              | 0.48           | 1 U          | 1 U           | 3 U           | <b>100</b> |
|                                | 11/22/11     | 100 U                             | 50 U           | 250 U           | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>93</b>  |
|                                | 11/29/12     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>35</b>  |
|                                | 05/23/13     | 100 U                             | --             | --              | 0.35 U         | 1 U          | 1 U           | 3 U           | <b>41</b>  |
| MW28                           | 08/30/11     | 350                               | 240 x          | 250 U           | <b>27</b>      | 43           | 9.3           | 46            | 4.5        |
|                                | 11/21/11     | 480                               | 180 x          | 250 U           | <b>24</b>      | 37           | 8.4           | 44            | 3.5        |
|                                | 05/22/12     | 290                               | 380 x          | 320             | <b>11</b>      | 19           | 5.3           | 26            | 7.6        |
|                                | 11/29/12     | 230                               | 180 x          | 250 U           | 4.3            | 9.1          | 2.7           | 15            | 9.2        |
|                                | 05/23/13     | 170                               | 150 x          | 250 U           | 4.6            | 12           | 3.8           | 20            | 12         |
| <b>Method A Cleanup Levels</b> | <b>800</b>   | <b>500</b>                        | <b>500</b>     | <b>5</b>        | <b>1,000</b>   | <b>700</b>   | <b>1,000</b>  | <b>20</b>     |            |

-- Not analyzed U Not detected at specified reporting limit  
 MTBE Methyl tertiary-butyl ether 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

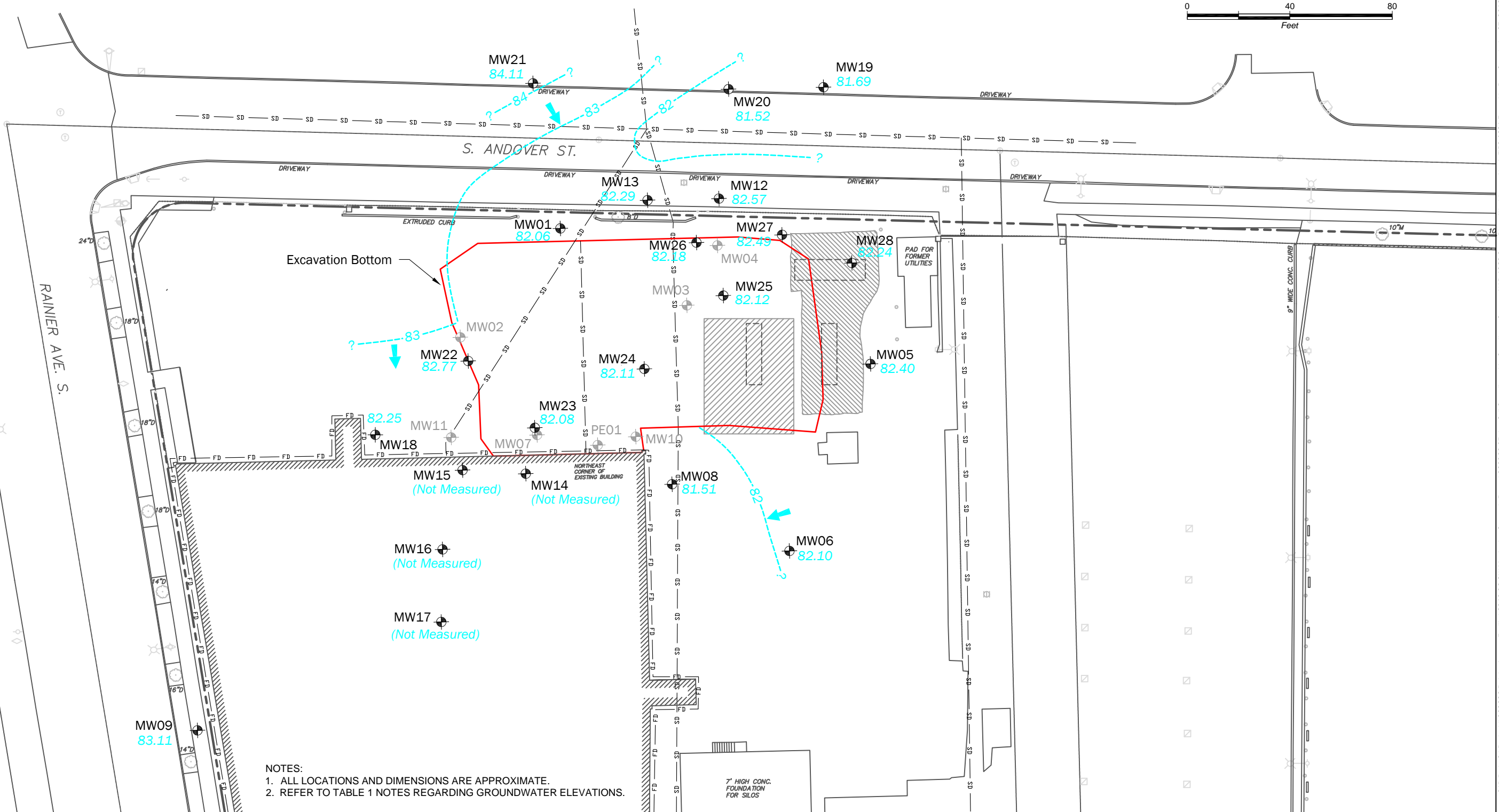
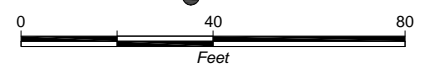
Darigold - Rainier Avenue Facility  
Seattle, Washington



AUG-2012  
PROJECT NO.  
090066

By:  
SCC  
REV BY:  
SCC

FIGURE NO.  
**1**



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

LEGEND

- APPROXIMATE GROUNDWATER FLOW DIRECTIONS
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER ELEVATION (MAY 23, 2013)
- MONITORING WELL LOCATION (ASPECT, AUGUST 2011)

UTILITIES

- MONITORING WELL LOCATION (SES, 2004-2009)
- MONITORING WELL LOCATION (DECOMMISSIONED)
- FOOTING DRAIN
- 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 23, 2013

Darigold-Rainier Avenue Facility  
Seattle, Washington



JUN-2012  
PROJECT NO.  
090066

BY:  
MV/SCC  
REV BY:  
SCC

FIGURE NO.  
**2**

# **APPENDIX A**

## **Laboratory Report**

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
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June 7, 2013

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

Dear Mr. Heffner:

Included are the results from the testing of material submitted on May 23, 2013 from the Darigold 090066, F&BI 305471 project. There are 19 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  
ASP0607R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2013 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Darigold 090066, F&BI 305471 project. Samples were logged in under the laboratory ID's listed below.

| <u>Laboratory ID</u> | <u>Aspect Consulting, LLC</u> |
|----------------------|-------------------------------|
| 305471-01            | MW-01-052313                  |
| 305471-02            | MW-05-052313                  |
| 305471-03            | MW-12-052313                  |
| 305471-04            | MW-13-052313                  |
| 305471-05            | MW-23-052313                  |
| 305471-06            | MW-24-052313                  |
| 305471-07            | MW-25-052313                  |
| 305471-08            | MW-26-052313                  |
| 305471-09            | MW-27-052313                  |
| 305471-10            | MW-28-052313                  |

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/13  
Date Received: 05/23/13  
Project: Darigold 090066, F&BI 305471  
Date Extracted: 05/28/13  
Date Analyzed: 05/28/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**  
Results Reported as ug/L (ppb)

| <u>Sample ID</u><br>Laboratory ID | <u>Gasoline Range</u> | <u>Surrogate</u><br><u>(% Recovery)</u><br>(Limit 51-134) |
|-----------------------------------|-----------------------|-----------------------------------------------------------|
| MW-01-052313<br>305471-01         | <100                  | 87                                                        |
| MW-05-052313<br>305471-02         | <100                  | 81                                                        |
| MW-12-052313<br>305471-03 1/10    | 6,400                 | 79                                                        |
| MW-13-052313<br>305471-04         | <100                  | 85                                                        |
| MW-23-052313<br>305471-05         | <100                  | 81                                                        |
| MW-24-052313<br>305471-06         | <100                  | 82                                                        |
| MW-25-052313<br>305471-07         | <100                  | 85                                                        |
| MW-26-052313<br>305471-08         | <100                  | 85                                                        |
| MW-27-052313<br>305471-09         | <100                  | 80                                                        |
| MW-28-052313<br>305471-10         | 170                   | 84                                                        |
| Method Blank<br>03-1006 MB        | <100                  | 83                                                        |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/13  
Date Received: 05/23/13  
Project: Darigold 090066, F&BI 305471  
Date Extracted: 05/29/13  
Date Analyzed: 06/03/13

**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)**

| <u>Sample ID</u><br>Laboratory ID | <u>Diesel Range</u><br>(C <sub>10</sub> -C <sub>25</sub> ) | <u>Motor Oil Range</u><br>(C <sub>25</sub> -C <sub>36</sub> ) | <u>Surrogate</u><br>(% Recovery)<br>(Limit 51-134) |
|-----------------------------------|------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------|
| MW-12-052313<br>305471-03         | 1,100 x                                                    | <250                                                          | 65                                                 |
| MW-23-052313<br>305471-05         | <50                                                        | <250                                                          | 67                                                 |
| MW-28-052313<br>305471-10         | 150 x                                                      | <250                                                          | 78                                                 |
| Method Blank<br>03-1021 MB        | <50                                                        | <250                                                          | 76                                                 |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-01-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-01                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052414.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

| Surrogates:           | % Recovery: | Lower Limit: | Upper Limit: |
|-----------------------|-------------|--------------|--------------|
| 1,2-Dichloroethane-d4 | 98          | 50           | 150          |
| Toluene-d8            | 100         | 50           | 150          |
| 4-Bromofluorobenzene  | 101         | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 37                          |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-05-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-02                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052410.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

| Surrogates:           | % Recovery: | Lower Limit: | Upper Limit: |
|-----------------------|-------------|--------------|--------------|
| 1,2-Dichloroethane-d4 | 100         | 50           | 150          |
| Toluene-d8            | 97          | 50           | 150          |
| 4-Bromofluorobenzene  | 98          | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 21                          |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-12-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-03 1/10               |
| Date Analyzed:    | 05/24/13     | Data File:  | 052419.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| 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  | 103         | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 80                          |
| Benzene                     | 590                         |
| Toluene                     | <10                         |
| Ethylbenzene                | 310                         |
| m,p-Xylene                  | 82                          |
| o-Xylene                    | <10                         |

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ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-13-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-04                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052411.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

| Surrogates:           | % Recovery: | Lower Limit: | Upper Limit: |
|-----------------------|-------------|--------------|--------------|
| 1,2-Dichloroethane-d4 | 96          | 50           | 150          |
| Toluene-d8            | 100         | 50           | 150          |
| 4-Bromofluorobenzene  | 101         | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 6.2                         |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-23-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-05                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052408.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| 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  | 106         | 50           | 150          |

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-24-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-06                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052412.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| 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  | 101         | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 130                         |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-25-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-07                    |
| Date Analyzed:    | 05/29/13     | Data File:  | 052904.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

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

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 87                          |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-26-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-08                    |
| Date Analyzed:    | 05/29/13     | Data File:  | 052905.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

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

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 280 ve                      |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-26-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-08 1/5                |
| Date Analyzed:    | 05/24/13     | Data File:  | 052418.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

| Surrogates:           | % Recovery: | Lower Limit: | Upper Limit: |
|-----------------------|-------------|--------------|--------------|
| 1,2-Dichloroethane-d4 | 98          | 50           | 150          |
| Toluene-d8            | 100         | 50           | 150          |
| 4-Bromofluorobenzene  | 103         | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 230                         |
| Benzene                     | <1.7                        |
| Toluene                     | <5                          |
| Ethylbenzene                | <5                          |
| m,p-Xylene                  | <10                         |
| o-Xylene                    | <5                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-27-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-09                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052413.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| 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  | 98          | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 41                          |
| Benzene                     | <0.35                       |
| Toluene                     | <1                          |
| Ethylbenzene                | <1                          |
| m,p-Xylene                  | <2                          |
| o-Xylene                    | <1                          |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

|                   |              |             |                              |
|-------------------|--------------|-------------|------------------------------|
| Client Sample ID: | MW-28-052313 | Client:     | Aspect Consulting, LLC       |
| Date Received:    | 05/23/13     | Project:    | Darigold 090066, F&BI 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 305471-10                    |
| Date Analyzed:    | 05/24/13     | Data File:  | 052409.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

| Surrogates:           | % Recovery: | Lower Limit: | Upper Limit: |
|-----------------------|-------------|--------------|--------------|
| 1,2-Dichloroethane-d4 | 100         | 50           | 150          |
| Toluene-d8            | 96          | 50           | 150          |
| 4-Bromofluorobenzene  | 98          | 50           | 150          |

| Compounds:                  | Concentration<br>ug/L (ppb) |
|-----------------------------|-----------------------------|
| Methyl t-butyl ether (MTBE) | 12                          |
| Benzene                     | 4.6                         |
| Toluene                     | 12                          |
| Ethylbenzene                | 3.8                         |
| m,p-Xylene                  | 11                          |
| o-Xylene                    | 8.5                         |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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 305471 |
| Date Extracted:   | 05/24/13     | Lab ID:     | 03-0955 mb                   |
| Date Analyzed:    | 05/24/13     | Data File:  | 052407.D                     |
| Matrix:           | Water        | Instrument: | GCMS7                        |
| Units:            | ug/L (ppb)   | Operator:   | JS                           |

| Surrogates:           | % Recovery: | Lower Limit: | Upper Limit: |
|-----------------------|-------------|--------------|--------------|
| 1,2-Dichloroethane-d4 | 100         | 50           | 150          |
| Toluene-d8            | 96          | 50           | 150          |
| 4-Bromofluorobenzene  | 99          | 50           | 150          |

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/13

Date Received: 05/23/13

Project: Darigold 090066, F&BI 305471

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

Laboratory Code: Laboratory Control Sample

| Analyte  | Reporting<br>Units | Spike<br>Level | Percent<br>Recovery<br>LCS | Percent<br>Recovery<br>LCSD | Acceptance<br>Criteria | RPD<br>(Limit 20) |
|----------|--------------------|----------------|----------------------------|-----------------------------|------------------------|-------------------|
| Gasoline | ug/L (ppb)         | 1,000          | 100                        | 101                         | 69-134                 | 1                 |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/13

Date Received: 05/23/13

Project: Darigold 090066, F&BI 305471

**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<br>Units | Spike<br>Level | Percent<br>Recovery<br>LCS | Percent<br>Recovery<br>LCSD | Acceptance<br>Criteria | RPD<br>(Limit 20) |
|-----------------|--------------------|----------------|----------------------------|-----------------------------|------------------------|-------------------|
| Diesel Extended | ug/L (ppb)         | 2,500          | 105                        | 108                         | 58-134                 | 3                 |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/07/13

Date Received: 05/23/13

Project: Darigold 090066, F&BI 305471

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

Laboratory Code: 305473-01 (Matrix Spike)

| Analyte                     | Reporting<br>Units | Spike<br>Level | Sample<br>Result | Percent        | Acceptance<br>Criteria |
|-----------------------------|--------------------|----------------|------------------|----------------|------------------------|
|                             |                    |                |                  | Recovery<br>MS |                        |
| Methyl t-butyl ether (MTBE) | ug/L (ppb)         | 50             | <1               | 95             | 50-150                 |
| Benzene                     | ug/L (ppb)         | 50             | 2.2              | 97             | 50-150                 |
| Toluene                     | ug/L (ppb)         | 50             | <1               | 100            | 50-150                 |
| Ethylbenzene                | ug/L (ppb)         | 50             | 3.2              | 100            | 50-150                 |
| m,p-Xylene                  | ug/L (ppb)         | 100            | 5.2              | 99             | 50-150                 |
| o-Xylene                    | ug/L (ppb)         | 50             | 1.8              | 97             | 50-150                 |

Laboratory Code: Laboratory Control Sample

| Analyte                     | Reporting<br>Units | Spike<br>Level | Percent         | Percent          | Acceptance<br>Criteria | RPD<br>(Limit 20) |
|-----------------------------|--------------------|----------------|-----------------|------------------|------------------------|-------------------|
|                             |                    |                | Recovery<br>LCS | Recovery<br>LCSD |                        |                   |
| Methyl t-butyl ether (MTBE) | ug/L (ppb)         | 50             | 99              | 97               | 70-130                 | 2                 |
| Benzene                     | ug/L (ppb)         | 50             | 97              | 96               | 70-130                 | 1                 |
| Toluene                     | ug/L (ppb)         | 50             | 99              | 98               | 70-130                 | 1                 |
| Ethylbenzene                | ug/L (ppb)         | 50             | 99              | 98               | 70-130                 | 1                 |
| m,p-Xylene                  | ug/L (ppb)         | 100            | 99              | 97               | 70-130                 | 2                 |
| o-Xylene                    | ug/L (ppb)         | 50             | 98              | 97               | 70-130                 | 1                 |

**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.

305471

SAMPLE CHAIN OF CUSTODY

ME 05-23-13

402/113

Send Report To Dave Hefner

Company Aspect Consulting

Address 401 2nd Ave S. Ste 201

City, State, ZIP Seattle WA 98104

Phone # \_\_\_\_\_ Fax # \_\_\_\_\_

SAMPLERS (signature) Jared Bean

PROJECT NAME/NO. Drigold 090066

PO# 27

REMARKS \*by NUTPH - Q of silica gel cleanup by 3630  
\*\* by EPA Method 8021B/MWTPH-6x

Page # 1 of 1

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 |                |               |              |               |     |                   | Notes |  |                                             |
|--------------|--------|--------------|--------------|-------------|-----------------|--------------------|----------------|---------------|--------------|---------------|-----|-------------------|-------|--|---------------------------------------------|
|              |        |              |              |             |                 | TPH-Diesel**       | TPH-Gasoline** | BTEX by 8021B | VOCs by 8260 | SVOCs by 8270 | HFS | BTEX, MTBE, TPH** |       |  |                                             |
| MW-01-052313 | 01KUC  | 5/23/13      | 1245         | Water       | 3               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-05-052313 | 02KUC  | 5/23/13      | 0915         |             | 3               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-12-052313 | 03KUC  |              | 1200         |             | 4               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-13-052313 | 04KUC  |              | 1205         |             | 3               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-23-052313 | 05KUC  |              | 0945         |             | 4               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-24-052313 | 06KUC  |              | 1025         |             | 3               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-25-052313 | 07T    |              | 1100         |             | 3               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-26-052313 | 08     |              | 1100         |             | 3               | X                  | X              |               |              |               |     | X                 |       |  |                                             |
| MW-27-052313 | 09     |              | 1215         |             | 3               | X                  | X              |               |              |               |     | X                 |       |  | 1 of 3 = bad sample<br>air bulb blew at the |
| MW-28-052313 | 10KUC  |              | 0950         |             | 4               | X                  | X              |               |              |               |     | X                 |       |  |                                             |

Friedman & Bryna, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COC\COC.DOC

| SIGNATURE        |                   | PRINT NAME |                     | COMPANY |      | DATE | TIME |
|------------------|-------------------|------------|---------------------|---------|------|------|------|
| Retinquished by: | <u>Jared Bean</u> | JARED BEAN | Aspect              | 5/23/13 | 1450 |      |      |
| Received by:     | <u>D. D. V.</u>   | D. D. V.   | FR 82               | 11      | 11   |      |      |
| Retinquished by: |                   |            |                     |         |      |      |      |
| Received by:     |                   |            | Samples received at | 8       |      |      |      |