Rolls-Royce

Rolls-Royce Engine Services-Oakland Inc.
7200 Earhart Road
Oakland, California 94621-4504
(510) 613-1000

RECEIVED
By Alameda County Environmental Health at 1:02 pm, Jan 14, 2015

December 16, 2014

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Rolls-Royce Engine Services Test Facility**
6701 Old Earhart Road
Oakland, California
Alameda County Site #RO0002606

I have reviewed the attached routine groundwater monitoring report dated December 22, 2014.

I agree with the conclusions and recommendation presented in the referenced report. The information is this report is accurate to the best of my knowledge. This report was prepared by Gettler-Ryan Incorporated, whose assistance and advice I have relied upon.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Dave Goldberg
Facilities HS&E Specialist

140193.11

GETTLER-RYAN INC.

December 22, 2014

Mr. Keith Nowell
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Ste. 250
Alameda, California 94502

Subject: **Second Semi-Annual 2014 Event**
Groundwater Monitoring and Sampling Report
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road, Oakland, California
Alameda County Site #RO0002606

Mr. Nowell,

On behalf of Rolls-Royce Engine Services-Oakland Inc. (R-R), Gettler-Ryan Inc. (GR) has prepared this Second Semi-Annual 2014 Event, Groundwater Monitoring and Sampling Report for the site referenced above. This report describes the field and analytical methods, provides a summary of groundwater monitoring results, and presents conclusions and recommendations regarding groundwater conditions at the site.

SITE LOCATION AND DESCRIPTION

The subject site is located at 6701 Old Earhart Road, adjacent to the Metropolitan Oakland International Airport (MOIA)-North Field, Oakland, California (Figure 1). Topography in the vicinity of the subject site is relatively flat at an average elevation of approximately 7.5 feet above mean sea level. The closest surface water is within the tidal wetlands bordering the site to the east.

Pertinent site features consist of six engine test cells with auxiliary structures (sheds, pumphouse, waste water sumps, aboveground oil/water separator, control buildings, gas conditioning facility, air receivers, cooling towers, flare stack, etc), one 30,000-gallon aboveground liquefied petroleum fuel tank, one 10,000-gallon jet A fuel underground storage tank (UST) and two paired 8,000-gallon jet A fuel USTs. Pertinent site features and the location of the USTs are shown on Figure 2.

For site background and previous environmental investigation, please refer to GR report No. 25-948218.07, *Well Installation Report*, dated January 11, 2008.

GROUNDWATER MONITORING

On October 16, 2014, GR personnel conducted semi-annual groundwater monitoring of nineteen wells (MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4). Work at the site included measuring static groundwater levels, evaluating groundwater in the wells for the presence of petroleum hydrocarbons, and purging and sampling the wells for laboratory analysis. Groundwater monitoring and sampling were performed in accordance with GR Field Methods and Procedures, Groundwater Sampling (attached).

On October 16, 2014, GR collected depth to groundwater measurements in nineteen wells (MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4) and checked groundwater for the presence of Separate-Phase Hydrocarbons (SPH). No SPH were detected in any wells during this event. Water level data, groundwater elevations, and SPH thicknesses are presented in attached Table 1. SPH thicknesses and approximate SPH volumes purged are summarized in Table 3. Field data sheets for this event are attached.

Rolls-Royce personnel have been periodically removing SPH present in well MW-18 through the use of absorbent socks. SPH removal logs for the most recent and historic events are attached to this report.

Groundwater monitoring wells MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4 were purged and sampled on the same date they were monitored. Groundwater samples were submitted under chain-of-custody protocol to Kiff Analytical (NELAP #08263CA) of Davis, California. A copy of the laboratory analytical reports and chain-of-custody documents are attached. Purge water generated from the sampling activities was stored onsite in 55-gallon DOT approved drums pending disposal. GR understands that the disposal of water generated will be handled by R-R.

ANALYTICAL METHODS

Groundwater samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), Methyl-tert Butyl Ether (MtBE), and naphthalene by EPA Method 8260B, and for Total Petroleum Hydrocarbons as diesel (TPHd), Total Petroleum Hydrocarbons as motor oil (TPHmo), and Total Petroleum Hydrocarbons as jet fuel (TPHjf) by modified EPA Method 8015. Current and historic groundwater analytical results are presented in Tables 1 and 2.

RESULTS

Groundwater Gradient

On October 16, 2014, the groundwater flow direction was to the south at hydraulic gradients of 0.01 to 0.03 ft/ft. A Potentiometric Map is presented as Figure 3.

Analytical Results

TPHd was detected in groundwater samples collected from twelve wells at concentrations ranging from 55 parts per billion (ppb) in well MW-4 to 12,000 ppb in well MW-18. Concentrations of TPHmo were detected in twelve wells at levels ranging from 180 ppb in well MW-4 to 25,000 ppb in well MW-18. TPHjf were detected in fourteen wells at concentrations ranging from 93 ppb in well MW-2 to 17,000 ppb in well MW-18.

TPHg was detected in wells MW-3, MW-13 and MW-18 at concentrations of 95 ppb, 180 ppb and 450 ppb, respectively. Concentrations of TPHg were reported below the laboratory method detection limits in water samples collected from the remaining wells.

BTEX constituents were reported as below the laboratory method detection limits in all of the wells except for 0.77 ppb total Xylenes detected in MW-18. MtBE was detected in wells MW-13, MW-14 and MW-18 at concentrations of 1.9 ppb, 0.83 ppb and 2.2 ppb, respectively. Concentrations of Naphthalene were reported below the laboratory method detection limits in water samples collected from the wells. TPHg, TPHd, TPHmo and TPHjf concentrations are presented on Figure 4.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this groundwater monitoring and sampling event, GR concludes and recommends the following:

- Concentrations of TPHd, TPHmo and TPHjf in groundwater samples were generally consistent with those observed during the previous monitoring and sampling events;
- Concentrations of TPHg were limited to the vicinity of wells MW-3, MW-13 and MW-18;
- No measurable thickness of Separate-Phase Hydrocarbons was detected in MW-18;
- GR recommends the continuation of the current semi-annual monitoring and sampling program for the site. SPH will continue to be removed from well MW-18 on a periodic basis.

If you have any questions about this report, please feel free to contact our Dublin office at (925) 551-7555.

Sincerely,
Gettler-Ryan Inc.

Deanna L. Harding
Project Manager

Hagop Kevork
P.E. No. C55734

Attachments:
Table 1, Groundwater Monitoring Results
Table 2, Field Measurements and Groundwater Analytical Results
Table 3, SPH Thickness and Volumes Purged - MW-18
Figure 1, Vicinity Map
Figure 2, Site Plan
Figure 3, Potentiometric Map
Figure 4, Concentration Map
GR Field Methods and Procedures
Field Data Sheets
SPH Removal Logs
Laboratory Analytical Report and Chain of Custody

CC: Mr. Dave Goldberg, Rolls-Royce Engine Services-Oakland Inc
Ms. Colleen Liang, Port of Oakland

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-1															
10/03/07	7.17	3.04	0.00	4.13	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	7.17	3.02	0.00	4.15	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.17	3.38	0.00	3.79	<50	<50	<100	51[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.17	3.03	0.00	4.14	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.17	2.82	0.00	4.35	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.17	3.30	0.00	3.87	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.17	2.57	0.00	4.60	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.17	3.08	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.17	2.21	0.00	4.96	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.17	2.95	0.00	4.22	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.17	2.31	0.00	4.86	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.17	2.94	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.17	3.00	0.00	4.17	<50	<50	280[23]	72[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.17	3.15	0.00	4.02	<50	<50	160	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.17	3.30	0.00	3.87	<50	<50	<100	59	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.17	3.17	0.00	4.00	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.17	2.85	0.00	4.32	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**7.17**	**2.77**	**0.00**	**4.40**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-2															
10/03/07	7.03	2.80	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	7.03	2.94	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.03	3.32	0.00	3.71	<50	<50	<100	97[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.03	2.75	0.00	4.28	<50	<50	<100	410[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.03	2.54	0.00	4.49	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.03	3.15	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.03	2.52	0.00	4.51	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.03	2.87	0.00	4.16	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.03	2.15	0.00	4.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.03	2.79	0.00	4.24	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.03	1.92	0.00	5.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.03	2.70	0.00	4.33	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.03	2.41	0.00	4.62	<50	62[6]	340	170[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.03	3.03	0.00	4.00	<50	<50	190	51[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-2 (cont)															
03/25/13	7.03	3.21	0.00	3.82	<50	<50	<100	60	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.03	2.85	0.00	4.18	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.03	2.47	0.00	4.56	<50	53[6]	490	67[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**7.03**	**2.56**	**0.00**	**4.47**	**<50**	**110[6]**	**830**	**93[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-3															
10/02/07	6.73	4.56	0.00	2.17	<50	<50	<100	410	<0.50	<0.50	<0.50	<0.50	1.6[4]	<0.50	NA
03/14/08	6.73	3.98	0.00	2.75	<50	<50	<100	120[9]	<0.50	<0.50	<0.50	<0.50	0.99	<0.50	NA
06/26/08	6.73	4.21	0.00	2.52	<50	<50	<100	610[7]	<0.50	1.7	<0.50	<0.50	0.93	<0.50	NA
09/25/08	6.73	4.25	0.00	2.48	<50	<50	<100	650[16]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
12/19/08	6.73	4.25	0.00	2.48	<50	<50	<100	520[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/26/09	6.73	3.82	0.00	2.91	<50	<50	<100	400[18]	<0.50	<0.50	<0.50	<0.50	0.69	<0.50	NA
06/24/09	6.73	4.21	0.00	2.52	<50	<50	<100	460	<0.50	<0.50	<0.50	<0.50	0.80	<0.50	NA
09/24/09	6.73	4.33	0.00	2.40	<50	<50	<100	400	<0.50	<0.50	<0.50	<0.50	0.70	<0.50	NA
01/15/10	6.73	3.92	0.00	2.81	<50	<50	110	420[18]	<0.50	<0.50	<0.50	<0.50	0.70	<0.50	NA
09/09/10	6.73	4.52	0.00	2.21	<50	<50	<100	450	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	NA
03/21/11	6.73	3.20	0.00	3.53	<50	<50	500	400	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	6.73	4.48	0.00	2.25	<50	70	340	590[18]	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	NA
04/17/12	6.73	3.66	0.00	3.07	<50	56[6]	870	680[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	6.73	4.54	0.00	2.19	<50	<50	120	470	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	NA
03/25/13	6.73	4.35	0.00	2.38	<50	<50	<100	760	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	6.73	4.48	0.00	2.25	<50	62	210	520	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	6.73	4.30	0.00	2.43	<50	<50	460	500[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**6.73**	**4.23**	**0.00**	**2.50**	**95**	**<50**	**210**	**440**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-4															
10/2/07[4]	9.79	5.81	0.00	3.98	<50	86	<100	280	<0.50	0.63	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	9.79	5.82	0.00	3.97	<50	3,300	2,400	3,400[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	9.79	6.08	0.00	3.71	<50	2,300	1,900	2,700[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.79	5.98	0.00	3.81	<50	1,600	1,400	2,100[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	9.79	5.93	0.00	3.86	<50	<50[19]	<100[19]	440[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.79	5.65	0.00	4.14	<50	720	550	1,000[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.79	5.72	0.00	4.07	<50	<50	<100	480[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.79	5.85	0.00	3.94	<50	1,300	1,100	1,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-4 (cont)															
01/15/10	9.79	4.86	0.00	4.93	<50	210	280	580[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.79	5.75	0.00	4.04	<50	380[6]	510	680[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.79	4.95	0.00	4.84	<50	<50	<100	220	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.79	5.76	0.00	4.03	<50	60	<100	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.79	4.98	0.00	4.81	<50	240[6]	920	1,000[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.79	5.92	0.00	3.87	<50	200[6]	600	780[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.79	5.90	0.00	3.89	<50	180	170	640	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.79	5.78	0.00	4.01	<50	<50	150[13]	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	9.79	5.58	0.00	4.21	<50	73	250	330[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**9.79**	**5.36**	**0.00**	**4.43**	**<50**	**55[6]**	**180[13]**	**380[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-5															
10/02/07	8.35	4.75	0.00	3.60	<50	5,600	11,000	5,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	8.35	4.40	0.00	3.95	<50	1,200[6]	1,700	1,100[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	8.35	4.68	0.00	3.67	<50	1,400[6]	3,200	2,000[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	8.35	4.52	0.00	3.83	<50	670[6]	1,200	940[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.35	4.43	0.00	3.92	<50	2,100[6]	4,100	1,900[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.35	4.25	0.00	4.10	<50	2,400[6]	5,500	2,600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.35	4.38	0.00	3.97	<50	1,300[6]	2,700	990[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.35	4.47	0.00	3.88	<50	1,400[6]	3,000	1,400[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.35	3.47	0.00	4.88	<50	450[6]	1,800	870[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.35	4.34	0.00	4.01	<50	890[6]	2,200	600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.35	3.59	0.00	4.76	<50	670[6]	1,600	460[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.35	4.39	0.00	3.96	<50	310[6]	760	450[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.35	3.88	0.00	4.47	<50	450[6]	960	1,500[18]	<0.50	0.57	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.35	4.54	0.00	3.81	<50	190[6]	470	470[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.35	4.58	0.00	3.77	<50	510[6]	1,200	680	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.35	4.43	0.00	3.92	<50	2,000[6]	4,500	1,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	8.35	4.21	0.00	4.14	<50	180[6]	690	330[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**8.35**	**4.10**	**0.00**	**4.25**	**<50**	**160[6]**	**690**	**350[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-6															
10/02/07	9.51	5.90	0.00	3.61	<50	3,000[6]	7,700	2,500[7]	<0.50	<0.50	0.86	1.1	<0.50	0.53	NA
03/14/08	9.51	5.55	0.00	3.96	<50	3,600[10]	7,600	2,800[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-6 (cont)															
06/26/08	9.51	5.80	0.00	3.71	<50	3,200[10]	9,400	3,200[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.51	5.69	0.00	3.82	<50	3,500[10]	8,800	3,800[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	9.51	5.43	0.00	4.08	<50	1,500[10]	5,500	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.51	5.38	0.00	4.13	<50	2,400[6]	6,800	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.51	5.46	0.00	4.05	<50	490[6]	1,600	450[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.51	5.60	0.00	3.91	<50	1,100[10]	3,400	860[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.51	4.57	0.00	4.94	<50	450[6]	2,700	790[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.51	5.45	0.00	4.06	<50	620[6]	2,800	370[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.51	4.68	0.00	4.83	<50	<50	200	100[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.51	5.50	0.00	4.01	<50	310[6]	970	260[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.51	5.25	0.00	4.26	<50	62[1]	130[23]	650[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.51	5.64	0.00	3.87	<50	400[6]	1,300	500[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.51	5.64	0.00	3.87	<50	290[6]	870	620	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.51	5.51	0.00	4.00	<50	<50	<100[13]	200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	9.51	5.30	0.00	4.21	<50	400[6]	2,600	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**9.51**	**5.18**	**0.00**	**4.33**	**<50**	**670[6]**	**4,400**	**680[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-7															
10/02/07	9.23	5.68	0.00	3.55	<50	12,000[6]	34,000	9,100[7]	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	NA
03/14/08	9.23	5.32	0.00	3.91	<50	7,900[6]	20,000	5,500[11]	<0.50	<0.50	<0.50	<0.50	<0.50	3.5	NA
06/26/08	9.23	5.56	0.00	3.67	<50	3,300[6]	10,000	3,300[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.23	5.46	0.00	3.77	<50	5,300[10]	13,000	6,000[16]	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	NA
12/19/08	9.23	5.38	0.00	3.85	<50	<50[19]	<100[19]	350[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.23	5.11	0.00	4.12	<50	710[6]	2,300	790[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.23	5.22	0.00	4.01	<50	<50	<100	390	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.23	5.38	0.00	3.85	<50	950[6]	2,600	980[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.23	4.38	0.00	4.85	<50	910[6]	4,900	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.23	5.25	0.00	3.98	<50	1,800[6]	6,800	850[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.23	4.49	0.00	4.74	<50	<50	160	240[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.23	5.28	0.00	3.95	<50	2,100[6]	6,200	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.23	4.78	0.00	4.45	<50	810[6]	2,600	2,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.23	5.31	0.00	3.92	<50	510[6]	1,700	700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.23	5.48	0.00	3.75	<50	1,100[6]	3,900	1,800	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.23	5.31	0.00	3.92	<50	<50	<100	380[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-7 (cont)															
06/26/14	9.23	5.09	0.00	4.14	<50	660[6]	4,100	830[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**9.23**	**5.01**	**0.00**	**4.22**	**<50**	**290[6]**	**2,000**	**520[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-8															
09/14/07	8.25	4.65	0.00	3.60	<50	790[3]	2,700	1,000[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	8.25	4.49	0.00	3.76	<50	1,200[6]	4,400	1,800[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	8.25	4.41	0.00	3.84	<50	<50	130	140[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.25	4.31	0.00	3.94	<50	160[6]	840	340[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.25	4.05	0.00	4.20	<50	470[3]	1,500	570[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.25	4.21	0.00	4.04	<50	<50	<100	650[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.25	4.32	0.00	3.93	<50	130[10]	330	340[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.25	3.57	0.00	4.68	<50	120[6]	640	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.25	4.17	0.00	4.08	<50	82[6]	430	260[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.25	3.38	0.00	4.87	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.25	4.22	0.00	4.03	<50	63[6]	<100	240[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.25	3.70	0.00	4.55	<50	69[6]	340	370[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.25	4.33	0.00	3.92	<50	62[6]	210	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.25	4.31	0.00	3.94	<50	<50	<100	300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.25	4.25	0.00	4.00	<50	96[6]	250	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	8.25	4.04	0.00	4.21	<50	72[6]	850	330[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**8.25**	**3.92**	**0.00**	**4.33**	**<50**	**110[6]**	**860**	**250[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-9															
10/03/07	9.44	5.81	0.00	3.63	<50	7,700	10,000	6,700	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	9.44	5.51	0.00	3.93	<50	6,400	8,000	4,000[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	9.44	5.72	0.00	3.72	<50	1,600[10]	1,800	1,800[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.44	5.59	0.00	3.85	<50	5,900[10]	9,300	6,300[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	9.44	5.43	0.00	4.01	<50	4,100[6]	8,500	4,000[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.44	5.26	0.00	4.18	<50	6,900[6]	9,700	5.600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.44	5.42	0.00	4.02	<50	2,900[6]	5,200	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.44	5.53	0.00	3.91	<50	600[10]	1,100	720[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.44	4.69	0.00	4.75	<50	1,300[6]	3,100	1,600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.44	5.43	0.00	4.01	<50	1,900[6]	4,500	960[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-9 (cont)															
03/21/11	9.44	4.58	0.00	4.86	<50	280[6]	780	460[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.44	5.39	0.00	4.05	<50	250[6]	500	700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.44	4.85	0.00	4.59	<50	1,200[6]	2,500	2,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.44	5.57	0.00	3.87	<50	750[6]	1,700	940[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.44	5.48	0.00	3.96	<50	870[6]	2,600	1,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.44	5.50	0.00	3.94	<50	420[6]	1,200	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	9.44	5.27	0.00	4.17	<50	610[6]	3,000	710[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**9.44**	**5.20**	**0.00**	**4.24**	**<50**	**220[6]**	**880**	**510[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-10															
10/03/07	7.51	3.89	0.00	3.62	110	4,200	1,300	4,500	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.51	3.68	0.00	3.83	53	420	270	420[7]	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	NA
06/26/08	7.51	3.80	0.00	3.71	120	1,200	1,000	2,000	<0.50	<0.50	<0.50	<0.50	<0.50	5.0	NA
09/25/08	7.51	3.68	0.00	3.83	<50	3,100[10]	2,200	3,600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.51	3.54	0.00	3.97	<50	1,700	1,200	1,900[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.51	3.36	0.00	4.15	53	1,500[8]	1,300	2,900	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	NA
06/24/09	7.51	3.54	0.00	3.97	<50	710[8]	750	1,400	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.51	3.61	0.00	3.90	<50	480[10]	600	1,100[18]	<0.50	<0.50	<0.50	0.69	<0.50	<0.50	NA
01/15/10	7.51	2.81	0.00	4.70	<50	180	210	500[18]	<0.50	<0.50	0.66	3.5	<0.50	3.4	<10 - <50[21,22]
09/09/10	7.51	3.48	0.00	4.03	<50	66[8]	<100	380[18]	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	NA
03/21/11	7.51	2.70	0.00	4.81	<50	<50	<100	610[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.51	3.51	0.00	4.00	<50	93	260[23]	890[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.51	2.97	0.00	4.54	<50	<50	<100	670[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.51	3.64	0.00	3.87	<50	77	180	600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	NA
03/25/13	7.51	3.98	0.00	3.53	<50	120[24]	<100	750	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.51	3.60	0.00	3.91	<50	53	<100	270[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.51	3.40	0.00	4.11	<50	<50	210	330[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**7.51**	**3.25**	**0.00**	**4.26**	**<50**	**<50**	**<100**	**250[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-11															
10/03/07	7.60	4.01	0.00	3.59	80	250	490	610	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.60	3.71	0.00	3.89	61	410[6]	1,200	520[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.60	3.92	0.00	3.68	<50	2,700[10]	7,300	3,600[15]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.60	3.82	0.00	3.78	<50	2,800[10]	5,900	3,800[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-11 (cont)															
12/19/08	7.60	3.71	0.00	3.89	<50	1,500[6]	3,700	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.60	3.49	0.00	4.11	<50	2,300[6]	4,200	2,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.60	3.70	0.00	3.90	<50	1,100[6]	2,600	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.60	3.37	0.00	4.23	<50	1,400[10]	3,800	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.60	3.02	0.00	4.58	<50	260[6]	860	620[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	7.60	3.63	0.00	3.97	<50	510[10]	1,200	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.60	2.85	0.00	4.75	<50	83[6]	280	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.60	3.70	0.00	3.90	<50	470[6]	990	720[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.60	3.13	0.00	4.47	<50	95[6]	220	1,300[18]	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	NA
09/18/12	7.60	3.83	0.00	3.77	<50	230	600	660[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.60	3.80	0.00	3.80	<50	230	450	1,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.60	3.87	0.00	3.73	<50	130[6]	280	350[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.60	3.55	0.00	4.05	<50	220[6]	1,000	560[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**7.60**	**3.48**	**0.00**	**4.12**	**<50**	**110[6]**	**430**	**340[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-12															
10/03/07	7.32	3.61	0.00	3.71	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.32	3.35	0.00	3.97	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.32	3.60	0.00	3.72	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.32	3.50	0.00	3.82	<50	<50	<100	51[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.32	3.09	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.32	3.13	0.00	4.19	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.32	3.21	0.00	4.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.32	3.38	0.00	3.94	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.32	2.80	0.00	4.52	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.32	3.39	0.00	3.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.32	2.30	0.00	5.02	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.32	3.36	0.00	3.96	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.32	2.72	0.00	4.60	<50	<50	<100	99[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.32	3.56	0.00	3.76	<50	<50	<100	97[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.32	3.53	0.00	3.79	<50	<50	<100	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.32	3.44	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.32	3.08	0.00	4.24	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**7.32**	**3.04**	**0.00**	**4.28**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-13															
10/03/07	6.10	2.86	0.00	3.24	160	70[8]	<100	660	<0.50	<0.50	<0.50	<0.50	1.2[4]	1.7	NA
03/14/08	6.10	1.96	0.00	4.14	350[12]	490	130[13]	1,200	0.89	<0.50	<0.50	<0.50	2.0	8.9	NA
06/26/08	6.10	2.57	0.00	3.53	720	200[8]	<100	4,100[15]	2.0	<0.50	<0.50	0.60	3.3	3.3	NA
09/25/08	6.10	2.48	0.00	3.62	600	<200[17]	130[13]	1,900[16]	1.2	<0.50	<0.50	<0.50	2.9	11	NA
12/19/08	6.10	2.68	0.00	3.42	280	130[8]	<100	1,300[18]	0.89	<0.50	<0.50	<0.50	1.7	4.8	NA
03/26/09	6.10	2.44	0.00	3.66	310	86	120[13]	1,800[18]	0.81	<0.50	<0.50	<0.50	1.7	2.2	NA
06/24/09	6.10	2.91	0.00	3.19	330	170[8]	<100	2,000[19]	1.0	<0.50	<0.50	<0.50	1.9	5.2	NA
09/24/09	6.10	2.81	0.00	3.29	380	180	130[13]	5,400[18]	1.5	<0.50	<0.50	<0.50	2.5	6.8	NA
01/15/10	6.10	1.58	0.00	4.52	230	140	<100	1,600[18]	0.58	<0.50	<0.50	<0.50	1.4	3.1	NA
09/09/10	6.10	2.20	0.00	3.90	230	180[8]	<100	1,400[18]	0.95	<0.50	<0.50	<0.50	2.3	3.6	NA
03/21/11	6.10	1.10	0.00	5.00	260	76[8]	<100	2,400[18]	1.0	<0.50	<0.50	<0.50	1.7	3.1	NA
09/02/11	6.10	2.23	0.00	3.87	380[12]	500	260	1,400[18]	<0.50	<0.50	<0.50	<0.50	1.4	1.4	NA
04/17/12	6.10	1.50	0.00	4.60	310	190	110	3,400[18]	1.0	<0.50	<0.50	<0.50	2.6	1.4	NA
09/18/12	6.10	2.25	0.00	3.85	280	190	140	1,800[18]	0.68	<0.50	<0.50	<0.50	2.3	0.89	NA
03/25/13	6.10	2.52	0.00	3.58	170[12]	<50	<100	610	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	NA
09/16/13	6.10	2.28	0.00	3.82	190[12]	110	<100	1,400[18]	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	NA
06/26/14	6.10	2.17	0.00	3.93	340	110	150[13]	1,900[18]	0.73	<0.50	<0.50	<0.50	2.4	0.6	NA
10/16/14	**6.10**	**1.89**	**0.00**	**4.21**	**180[12]**	**58**	**<100**	**1,500[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**1.9**	**<0.50**	**NA**
MW-14															
10/02/07	6.42	2.40	0.00	4.02	67	300	870	1,400	<0.50	<0.50	<0.50	<0.50	1.4[4]	6.1	NA
03/14/08	6.42	2.44	0.00	3.98	50	250[6]	350	500[7]	<0.50	<0.50	<0.50	<0.50	1.7	5.0	NA
06/26/08	6.42	2.62	0.00	3.80	<50	570[10]	2,700	2,000[15]	<0.50	<0.50	<0.50	<0.50	1.4	3.1	NA
09/25/08	6.42	2.58	0.00	3.84	<50	510[10]	1,700	1,800[16]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
12/19/08	6.42	2.14	0.00	4.28	<50	480[6]	2,100	1,200[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/26/09	6.42	2.23	0.00	4.19	<50	79[6]	540	1,000[18]	<0.50	<0.50	<0.50	<0.50	0.89	<0.50	NA
06/24/09	6.42	2.33	0.00	4.09	<50	<50	290	1,100[18]	<0.50	<0.50	<0.50	<0.50	1.2	0.52	NA
09/24/09	6.42	2.47	0.00	3.95	<50	88[10]	350	1,200[18]	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	NA
01/15/10	6.42	1.95	0.00	4.47	<50	60[6]	490	1,100[18]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
09/09/10	6.42	2.52	0.00	3.90	<50	150[10]	500	890[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/21/11	6.42	1.40	0.00	5.02	<50	<50	230	730[18]	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	NA
09/02/11	6.42	2.49	0.00	3.93	<50	140[6]	550	900[18]	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	NA
04/17/12	6.42	1.83	0.00	4.59	<50	140[6]	800	2,400[18]	<0.50	0.69	<0.50	<0.50	1.2	<0.50	NA
09/18/12	6.42	2.65	0.00	3.77	51	130[6]	680	1,300[18]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
03/25/13	6.42	2.63	0.00	3.79	<50	160	640	2,000	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-14 (cont)															
09/16/13	6.42	2.53	0.00	3.89	<50	86[6]	360	920[18]	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	NA
06/26/14	6.42	2.15	0.00	4.27	<50	100[6]	650	950[18]	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	NA
10/16/14	**6.42**	**2.08**	**0.00**	**4.34**	**<50**	**100[6]**	**880**	**920[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**0.83**	**<0.50**	**NA**
MW-15															
10/02/07	7.51	4.85	0.00	2.66	<50	99	<100	120	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	7.51	4.62	0.00	2.89	<50	<50	<100	88[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.51	4.81	0.00	2.70	<50	<50	<100	84[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.51	4.81	0.00	2.70	<50	<50	<100	53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.51	4.67	0.00	2.84	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.51	4.45	0.00	3.06	<50	<50	<100	110[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.51	4.68	0.00	2.83	<50	<50	<100	59	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.51	4.75	0.00	2.76	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.51	4.29	0.00	3.22	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.51	4.78	0.00	2.73	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.51	2.71	0.00	4.80	<50	<50	<100	200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.51	4.77	0.00	2.74	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.51	3.65	0.00	3.86	<50	<50	120[23]	170[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.51	4.89	0.00	2.62	<50	<50	<100	50[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.51	4.78	0.00	2.73	<50	<50	<100	76	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.51	4.80	0.00	2.71	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	7.51	4.58	0.00	2.93	<50	<50	100	71[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**7.51**	**4.43**	**0.00**	**3.08**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-17															
09/14/07	0.04	4.10	0.00	-4.06	<50	<50	220	150[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	0.04	1.98	0.00	-1.94	<50	<50	<100	84[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
9/25/08[14]	0.04	4.77	0.00	-4.73	<50	<50	120	110[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	0.04	2.24	0.00	-2.20	<50	<50	<100	54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	0.04	1.85	0.00	-1.81	<50	<50	<100	71[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	Not able to sample well-Oakland Airport security failed to provide access to well														
09/24/09	0.04	2.97	0.00	-2.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
1/15/10[14]	0.04	2.49	0.00	-2.45	<50	<50	<100	59[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

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Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-17 (cont)															
09/09/10	0.04	2.79	0.00	-2.75	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	0.04	2.25	0.00	-2.21	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	0.04	2.69	0.00	-2.65	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	0.04	2.49	0.00	-2.45	<50	<50	<100	240[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	0.04	2.96	0.00	-2.92	<50	<50	140[23]	84[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	0.04	2.51	0.00	-2.47	<50	<50	<100	93	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	0.04	2.88	0.00	-2.84	<50	<50	<100	69[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	0.04	2.73	0.00	-2.69	<50	<50	<100	70[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**0.04**	**2.47**	**0.00**	**-2.43**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-18															
10/02/07	7.05	4.15	0.55	3.34**	Not developed or sampled due to presence of SPH										
03/14/08	7.05	3.62	0.63	3.93**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
06/26/08	7.05	4.11	1.14	3.85**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/25/08	7.05	3.77	0.56	3.73**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
12/19/08	7.05	3.30	0.36	4.04**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
03/26/09	7.05	3.28	0.55	4.21**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
06/24/09	7.05	3.53	0.48	3.90**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/24/09	7.05	3.57	0.46	3.85**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
01/15/10	7.05	3.02	0.66	4.56**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/09/10	7.05	3.18	0.10	3.95**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
03/21/11	7.05	1.99	0.15	5.18**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/02/11	7.05	3.49	0.51	3.97**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
04/17/12	7.05	2.52	0.15	4.65**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/18/12	7.05	3.14	0.00	3.91	2,100	210,000[10]	190,000	290,000	<0.50	<0.50	<0.50	2.4	2.0	<2.0	NA
03/25/13	7.05	3.27	0.15	3.90**	740	35,000	39,000	61,000	<0.50	<0.50	<0.50	1.7	2.2	<0.80	NA
09/16/13	7.05	3.15	0.00	3.90	570	35,000[10]	37,000	48,000	<0.50	<0.50	<0.50	1.2	1.8	<0.80	NA
06/26/14	7.05	2.91	0.00	4.14	600	100,000[8]	150,000	110,000	<0.50	<0.50	<0.50	1.0	1.8	<0.80	NA
10/16/14	**7.05**	**2.77**	**0.00**	**4.28**	**450**	**12,000**	**25,000**	**17,000[18]**	**<0.50**	**<0.50**	**<0.50**	**0.77**	**2.2**	**<0.50**	**NA**
NPORD MW-3															
09/14/07	8.11	4.43	0.00	3.68	<50	<50	<100	64[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	8.11	3.96	0.00	4.15	<50	<50	<100	99[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
NPORD MW-3 (cont)															
09/25/08	8.11	4.06	0.00	4.05	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.11	3.78	0.00	4.33	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.11	4.22	0.00	3.89	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.11	4.02	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.11	4.19	0.00	3.92	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.11	3.51	0.00	4.60	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.11	3.96	0.00	4.15	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.11	3.28	0.00	4.83	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.11	4.10	0.00	4.01	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.11	4.00	0.00	4.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.11	4.18	0.00	3.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.11	4.35	0.00	3.76	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.11	4.23	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	8.11	3.91	0.00	4.20	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**8.11**	**3.69**	**0.00**	**4.42**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
NPORD MW-4															
09/14/07	10.06	6.48	0.00	3.58	50	1,000[3]	1,400	2,000[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	10.06	6.26	0.00	3.80	<50	360[6]	700	960[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	10.06	6.28	0.00	3.78	<50	150[6]	240	820[16]	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
12/19/08	10.06	6.15	0.00	3.91	<50	320[10]	640	1,400[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	10.06	5.91	0.00	4.15	<50	95	160	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	10.06	6.10	0.00	3.96	<50	200[6]	100	1,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	10.06	6.20	0.00	3.86	<50	200[10,20]	180[20]	500[18,20]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	10.06	5.45	0.00	4.61	<50	93	<100	770[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	10.06	6.06	0.00	4.00	<50	<50	<100	290[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	10.06	5.31	0.00	4.75	<50	<50	<100	270	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	10.06	6.11	0.00	3.95	<50	95	<100	320[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	10.06	5.58	0.00	4.48	<50	64	130[23]	940[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	10.06	6.27	0.00	3.79	<50	150	250	800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	10.06	6.23	0.00	3.83	<50	57	<100	820	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	10.06	6.25	0.00	3.81	<50	72	120[13]	560[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	10.06	6.01	0.00	4.05	<50	90[6]	260	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**10.06**	**6.91**	**0.00**	**3.15**	**<50**	**200**	**480**	**690[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
QA															
09/14/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/02/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
6/26/08[14]	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
07/03/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/16/14	**--**	**--**	**--**	**--**	**<50**	**NA**	**NA**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

EXPLANATIONS:

TOC = Top of Casing Elevation
DTW = Depth to Water
GWE = Groundwater Elevation
ft = feet
SPHT = Separate Phase Hydrocarbon Thickness
TPH-G= Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil
TPH-JF = Total Petroleum Hydrocarbons as Jet Fuel
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
MTBE = Methyl Tertiary Butyl Ether
SVOC = Semi-Volatile Organic Compounds
(µg/L) = Micrograms per liter
NA = Not Analyzed
-- = Not Measured
QA = Trip Blank

ANALYTICAL METHODS:

Kiff Analytical LLC (NELAP #08263CA)
TPH-G, BTEX, MTBE, and Napthalene by EPA Method 8260B
TPH-D, TPH-MO, and TPH-JF by modified EPA Method 8015
SVOC by EPA Method 8270C

* TOC elevations surveyed relative to mean sea level by Morrow Surveying (PLS #5161) on October 8, 2007

** = GWE corrected for the presence of SPH [(TOC-DTW) + (SPH thickness x SPH specific gravity)]. Specific gravity of SPH is assumed to be 0.8.

[1] Analyzed with Silica Gel Cleanup
[2] Discrete peaks, higher boiling hydrocarbons present in sample that are atypical for Jet Fuel
[3] Discrete peaks, higher boiling hydrocarbons present in sample that are atypical for Diesel Fuel
[4] Matrix spike/matrix spike duplicate results associated with these samples for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.
[5] Due to the formation of an emulsion in this sample, the sample was centrifruged and decanted prior to extraction.
[6] Hydrocarbons present in this sample are higher-boiling than typical Diesel Fuel.
[7] Hydrocarbons present in this sample are higher-boiling than typical Jet Fuel.
[8] Lower boiling hydrocarbons are present in this sample that are atypical for Diesel Fuel.
[9] Discrete peaks present in this sample that are atypical for Jet Fuel.
[10] Some lower-boiling hydrocarbons than Diesel and some higher-boiling hydrocarbons than Diesel are present in this sample.
[11] Both lower-boiling and higher-boiling hydrocarbons than Jet Fuel are present in this sample.
[12] Sample contained primarily compounds not found in typical Gasoline.
[13] Hydrocarbons present in this sample are lower-boiling than typical Motor Oil
[14] Sample was analyzed by EPA Method 8260B using bottles that contained headspace bubbles greater than 1/4-inch in diameter.
[15] Lower boiling hydrocarbons are present in this sample that are atypical for Jet Fuel.
[16] Chromatographic pattern not typical for Jet Fuel.
[17] Diesel method reporting limit for this sample was increased due to interference from Gasoline range hydrocarbons.
[18] Higher-boiling hydrocarbons are present in this sample that are atypical for Jet Fuel.
[19] Laboratory confirmed results

EXPLANATIONS:

[20] Repeat analysis by Modified EPA Method 8015 yielded inconsistent results for sample NPORD MW-4. The concentrations appear to vary between bottles. The highest concentration results are reported.

[21] All analytes were ND or less than their respective reporting limits

[22] Analysis for SVOC requested by Client.

[23] Discrete peaks in Motor Oil range, atypical for Motor Oil.

[24] Discrete peaks in Diesel Range, atypical for Diesel Fuel.

Table 2

Field Measurements and Groundwater Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	D.O. Pre-Purge (mg/L)	D.O. Post-Purge (mg/L)	ORP Pre-Purge (mV)	ORP Post-Purge (mV)	Ferric Iron (mg/L)	Ferrous Iron (mg/L)	Nitrate as NO_3 (mg/L)	Sulfate as SO_4 (mg/L)	Methane (µg/L)
MW-1									
09/09/10	0.00	0.74	-462.4	-124.7	3.2	0.81	<10	2,000	117
MW-2									
09/09/10	0.03	0.29	-261.9	-233.5	--	--	--	--	--
MW-3									
09/09/10	0.38	0.24	-149.2	-123.5	--	--	--	--	--
MW-4									
09/09/10	0.09	0.06	-295.2	-299.4	91	2.4	<2.5	8.6	6,590
MW-5									
09/09/10	0.84	0.05	-374	-459	68	12	<2.5	<2.5	4,760
MW-6									
09/09/10	0.22	0.20	-271.8	-273.5	40	<0.10	<2.5	540	3,280
MW-7									
09/09/10	0.07	0.09	-260.7	-257.4	340	18	<2.5	<2.5	6,350
MW-8									
09/09/10	0.14	0.11	-276	-281	23	2.1	<2.5	3.9	8,500
MW-9									
09/09/10	0.00	0.65	-548.1	-501.4	13	<0.10	<2.5	23	8,310
MW-10									
09/09/10	0.11	0.58	-333.3	-391.2	--	--	--	--	--
MW-11									
09/09/10	0.84	0.96	-399.4	-370.1	--	--	--	--	--
MW-12									
09/09/10	0.15	0.49	-340.1	-348.2	--	--	--	--	--
MW-13									
09/09/10	0.45	0.82	-142.9	-130.5	--	--	--	--	--
MW-14									
09/09/10	0.20	0.14	-264.6	-223.9	--	--	--	--	--

Table 2

Field Measurements and Groundwater Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	D.O. Pre-Purge (mg/L)	D.O. Post-Purge (mg/L)	ORP Pre-Purge (mV)	ORP Post-Purge (mV)	Ferric Iron (mg/L)	Ferrous Iron (mg/L)	Nitrate as NO_3 (mg/L)	Sulfate as SO_4 (mg/L)	Methane (µg/L)
MW-15									
09/09/10	0.51	0.63	196.1	180.2	--	--	--	--	--
MW-17									
09/09/10	0.40	0.51	168.4	149.1	--	--	--	--	--
NPORD MW-3									
09/09/10	0.46	0.50	-208.2	-211.6	3.2	3.2	<10	1,200	27.8

Table 2

Field Measurements and Groundwater Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

EXPLANATIONS:

ORP = Oxidation Reduction Potential
D.O. = Dissolved Oxygen
(mV) = Millivolts
(µg/L) = Micrograms per liter
(mg/L) = Milligrams per liter
-- = Not Measured

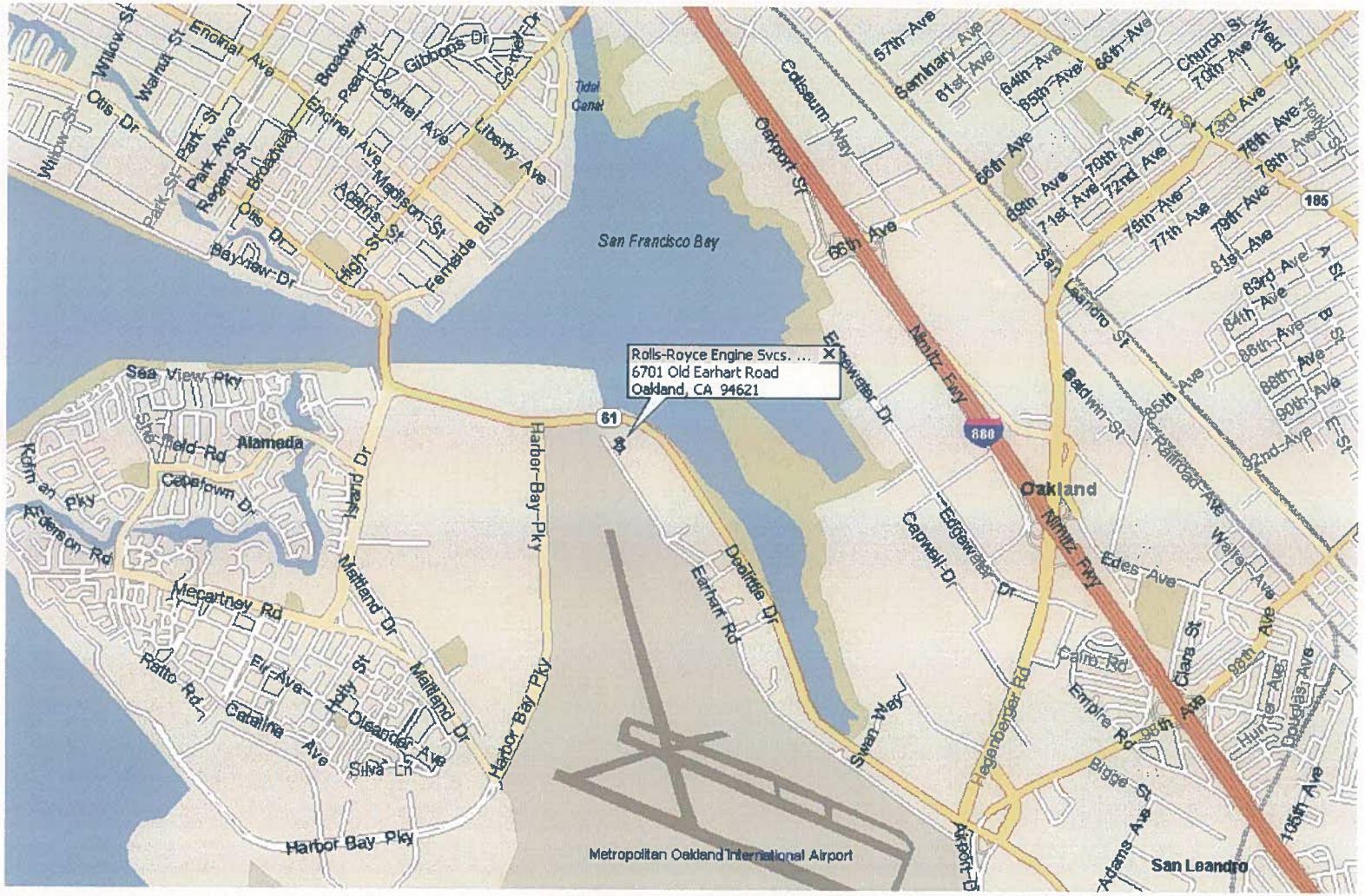
ANALYTICAL METHODS:

Nitratre as NO_3 and Sulfate as SO_3 by EPA Method 300.0
Ferric Iron by 200.7/SM 3500 Fe D
Ferrous Iron by SM 3500 Fe D
Methane by Method RSK-175M

Table 3
SPH Thickness and Volumes Purged - MW-18
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

Date	SPH Thickness (feet)	Depth To SPH From Top of Casing (feet)	Approximate Volume of Water Purged (gallons)	Approximate Volume of SPH Purged (gallons)
9/14/07	0.55	3.60	2.00	2.50
3/14/08	0.63	2.99	0.80	0.30
6/26/08	1.14	2.97	1.00	0.13
9/25/08	0.56	3.21	2.00	0.07
12/19/08	0.36	2.94	0.13	0.16
3/26/09	0.55	2.73	0.08	0.08
6/24/09	0.48	3.05	0.05	0.06
9/24/09	0.46	3.11	0.00	0.07
1/15/10	0.66	2.36	2.00	0.14
9/9/10	0.10	3.08	0.13	0.01
3/21/11	0.15	1.84	0.26	0.03
9/2/11	0.51	2.98	0.16	0.26
4/17/12	0.15	2.37	0.05	0.26
9/18/12	0.00	NA	3.50	0.00
3/25/13	0.15	3.12	4.50	0.15
9/16/13	0.00	NA	3.00	0.00
6/26/14	0.00	NA	4.00	0.00
10/16/14	**0.00**	**NA**	**4.00**	**0.00**
		Totals:	**27.66**	**4.21**

NA = Not Applicable



SITE LOCATION MAP
ROLLS-ROYCE ENGINE SERVICES TEST FACILITY
6701 OLD EARHART RD.
OAKLAND, CA

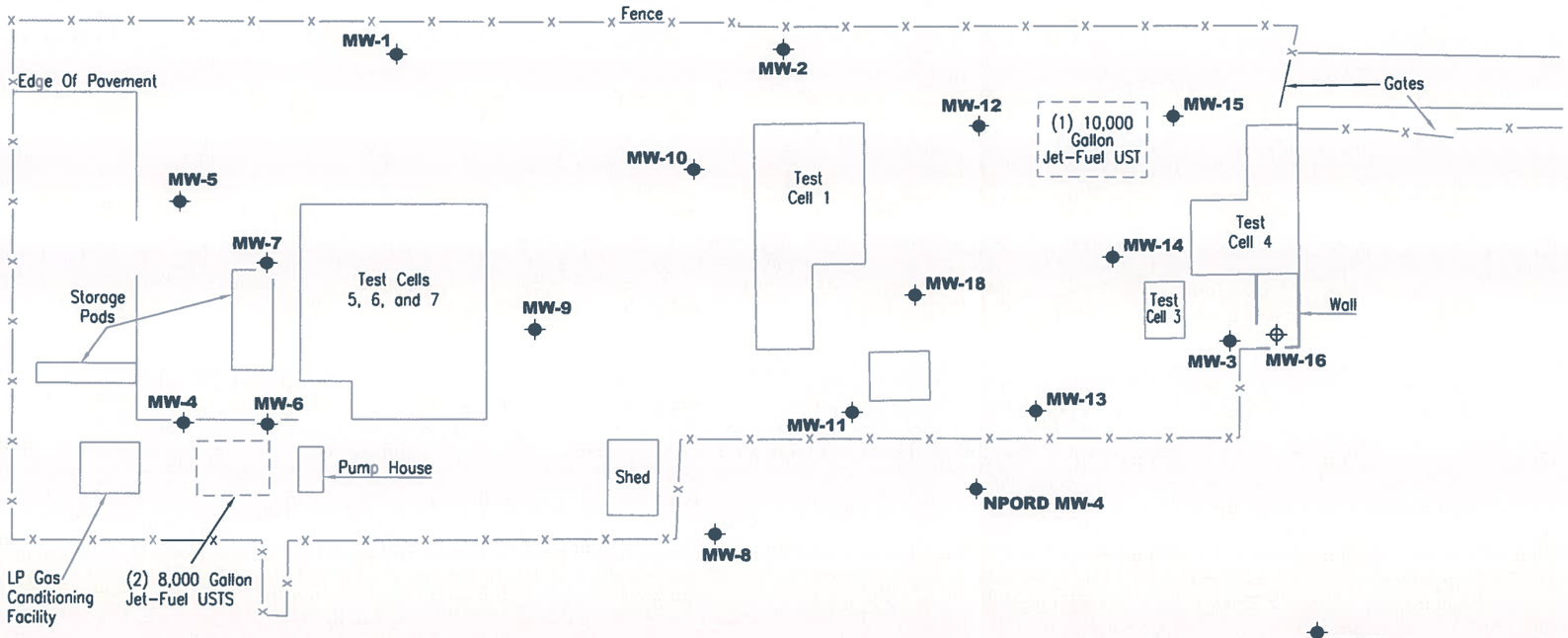
FIGURE
1

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
25-948218.7		11/13/07	

FILE NAME: P:\Enviro\Rolls Royce\1-Site Location Map.dwg | Layout Tab: Vicinity Map

EXPLANATION

- Groundwater monitoring well
- Proposed monitoring well – not installed location inaccessible by drill rig



Source: Figure modified from drowing provided by Morrow Surveying, Dated: 10/8/07.

FIGURE 2

SITE PLAN
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, CA

REVISED DATE

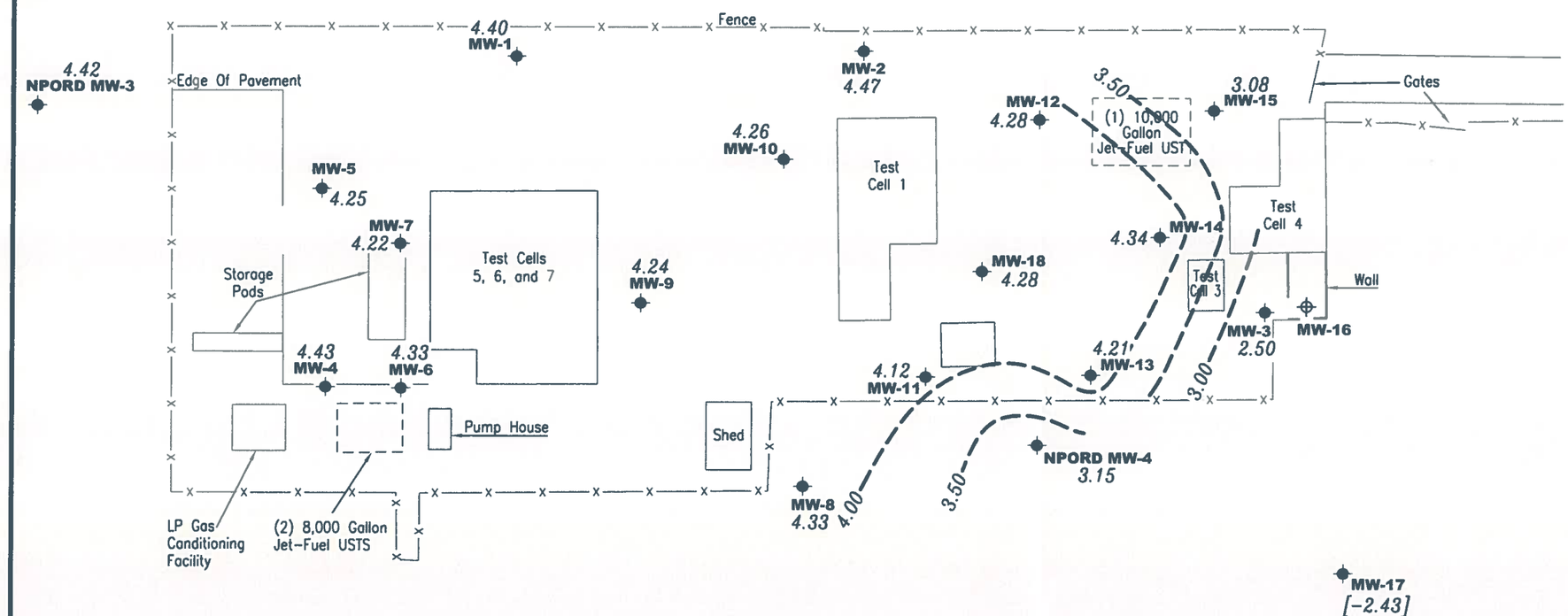
GETTLER-RYAN INC.
6805 Sierra Court, Suite G
Dublin, CA 94568
(925) 551-7555

PROJECT NUMBER 948218.2
REVIEWED BY
DATE 11/07

FILE NAME: P:\Enviro\Rolls Royce\014-Rolls Royce.dwg | Layout Tab: Site Plan

EXPLANATION

- Groundwater monitoring well
- Proposed monitoring well – not installed location inaccessible by drill rig
- *99.99* Groundwater elevation in feet referenced to Mean Sea Level
- *99.99* Groundwater elevation contour, dashed where inferred
- *[99.99]* Not used in contouring



Source: Figure modified from drawing provided by Morrow Surveying, Dated: 10/8/07.

POTENTIOMETRIC MAP
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, CA

FIGURE 3

DATE: October 16, 2014

REVISED DATE

REVIEWED BY

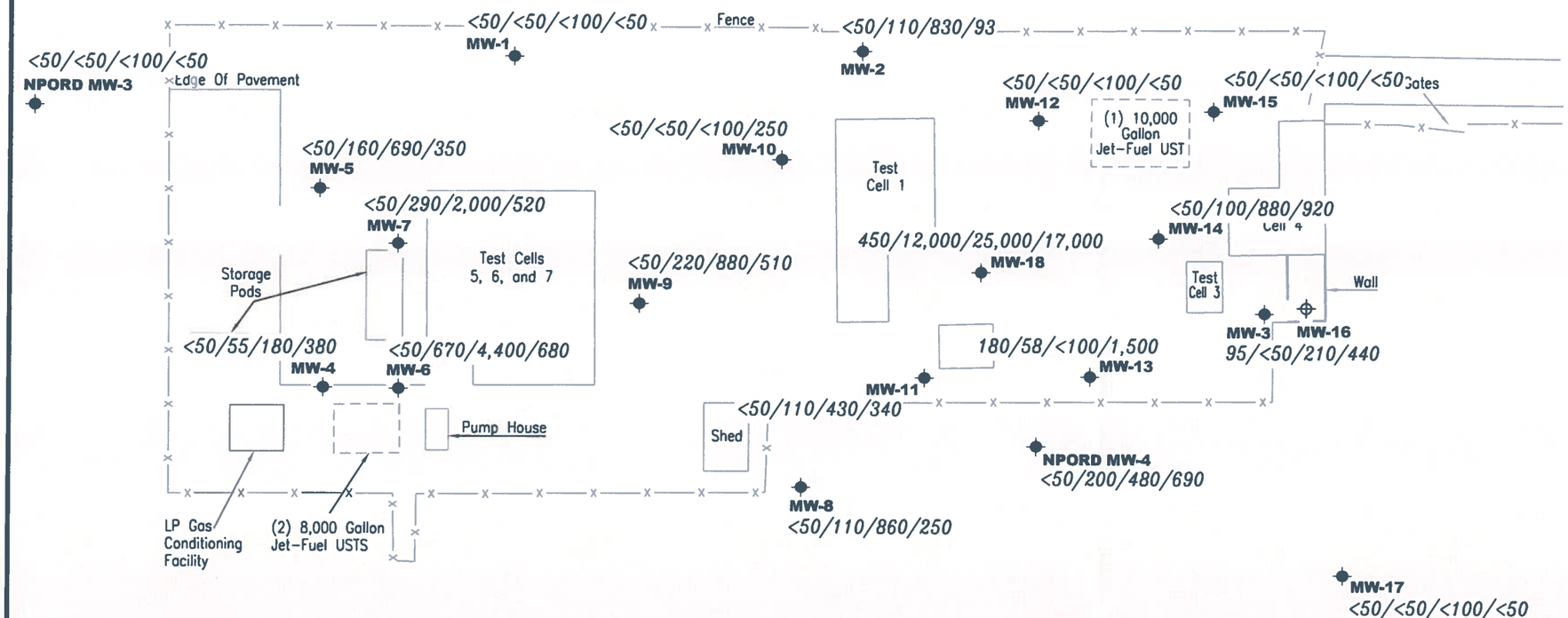
PROJECT NUMBER 948218.2

FILE NAME: P:\Enviro\Rolls Royce\Q14-Rolls Royce.dwg | Layout Tab: Pot4

GETTLER-RYAN INC.
6805 Sierra Court, Suite G
Dublin, CA 94568
(925) 551-7555

EXPLANATION

- Groundwater monitoring well
- Proposed monitoring well – not installed location inaccessible by drill rig
- **A/B/C/D** Total Petroleum Hydrocarbons TPH as Gasoline/TPH as Diesel/ TPH as Motor Oil/TPH as Jet Fuel concentrations in ppb



0 60

Scale in Feet

Source: Figure modified from drawing provided by Morrow Surveying, Dated: 10/8/07.

FIGURE 4

CONCENTRATION MAP
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, CA

DATE
October 16, 2014

REVISED DATE

REVIEWED BY

PROJECT NUMBER
948218.2

FILE NAME: P:\Enviro\Rolls Royce\Q14-Rolls Royce.dwg | Layout Tab: Con4

GETTLER-RYAN INC.
6805 Sierra Court, Suite G
Dublin, CA 94568
(925) 551-7555

GR FIELD METHODS AND PROCEDURES - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 10-16-14 (inclusive)

City: **Oakland, CA** Sampler: AW

Well ID MW-01 Date Monitored: 10-16-14

Well Diameter (2)4 in.

Total Depth 8.43 ft.

Depth to Water 2.77 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

5.66 xVF .17 = 0.96 x3 case volume = Estimated Purge Volume: 3.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.90

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 0955 Weather Conditions: Sunny

Sample Time/Date: 1030 / 10-16-14 Water Color: Cloudy Odor: Y / (N)

Approx. Flow Rate: — gpm. Sediment Description: Cloudy

Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 3.77

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1000	1.0	8.13	out of range	23.4		
1005	2.0	7.62	↓	24.4		
1010	3.0	7.47	↓	24.7		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 10-16-14 (inclusive)
City: Oakland, CA Sampler: AW

Well ID MW-2 Date Monitored: 10-16-14
Well Diameter (2)/4 in.
Total Depth 8.93 ft.
Depth to Water 2.56 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.37 xVF .17 = 1.08 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.83

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1400 Weather Conditions: Sunny
Sample Time/Date: 1430 / 10-16-14 Water Color: Cloudy Odor: Y / (N)
Approx. Flow Rate: - gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: - Volume: - gal. DTW @ Sampling: 3.34

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1405	1.5	8.03	out of range	22.8		
1410	2.5	7.74	↓	23.4		
1415	3.5	7.55	↓	24.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10.16.14 (inclusive)
Sampler: FT

Well ID: MW-3
Well Diameter: 2 | 4 in.
Total Depth: 12.10 ft.
Depth to Water: 4.23 ft.

Date Monitored: 10.16.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.87 xVF .17 = 1.33 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.80

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1210
Sample Time/Date: 1230 / 10.16.14
Approx. Flow Rate: ✓ gpm.
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 4.64

Weather Conditions: CLOUDY / SUNNY
Water Color: CLEAR Odor: Y / (N)
Sediment Description: NONE

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1213	1.5	7.36	1296	21.6		
1216	3.0	7.31	1321	21.2		
1219	4.0	7.27	1375	20.8		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: BOLT L. 8" (1SE, 2 BROKEN BOLTS IN FLANGES)

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 10/16/14 (inclusive)
City: Oakland, CA | Sampler: GM

Well ID: MW-4
Well Diameter: (2) 4 in.
Total Depth: 9.95 ft.
Depth to Water: 5.36 ft.
Date Monitored: 10/16/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

4.59 xVF 0.17 = 0.78 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.27

Purge Equipment:

Disposable Bailer	X
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 0850 | Weather Conditions: Sunny
Sample Time/Date: 0920 / 10/16/14 | Water Color: BLACK TINT Odor: (Y) N SLIGHT
Approx. Flow Rate: — gpm. | Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 5.97

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) mS µmhos/cm)	Temperature (C) / F)	D.O. (mg/L)	ORP (mV)
0853	1	6.64	OUT OF RANGE	21.6		
0855	1.75	6.60	↓	21.5		
0857	2.5	6.61	↓	21.5		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 10/16/14 (inclusive)
City: Oakland, CA | Sampler: GM

Well ID: MW-5 | Date Monitored: 10/16/14
Well Diameter: (2) 4 in.
Total Depth: 9.62 ft.
Depth to Water: 4.10 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.52 xVF 0.17 = 0.93 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.20

Purge Equipment:

Disposable Bailer	X
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: ~~0~~ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1050 | Weather Conditions: Sunny
Sample Time/Date: 1125 / 10/16/14 | Water Color: TAN | Odor: Y / N SLIGHT
Approx. Flow Rate: — gpm. | Sediment Description: SILT
Did well de-water? NO | If yes, Time: — Volume: — gal. DTW @ Sampling: 4.66

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1052	1	6.73	OUT OF RANGE	22.5		
1055	2	6.72	↓	22.0		
1058	3	6.70	↓	22.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 10/16/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-6 Date Monitored: 10/16/14
Well Diameter 2/4 in.
Total Depth 10.67 ft.
Depth to Water 5.18 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

5.49 xVF 0.17 = 0.93 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.27

Purge Equipment:
Disposable Bailer X
Stainless Steel Bailer
Stack Pump
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer X
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: Ø ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0932 Weather Conditions: SUNNY
Sample Time/Date: 1000 / 10/16/14 Water Color: CHARCOAL Odor: (Y) N SLIGHT
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 5.88

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0935	1	6.70	OUT OF RANGE	21.1		
0937	2	6.72		21.1		
0940	3	6.68	↓	21.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	7x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 10/16/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-7
Well Diameter 2 4 in.
Total Depth 19.10' ft.
Depth to Water 5.01 ft.
Date Monitored: 10/16/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.09 xVF 0.17 = 0.86 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.02

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	X	Disposable Bailer	X
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1015 Weather Conditions: Sunny
Sample Time/Date: 1040 / 10/16/14 Water Color: CHARCOAL Odor: (Y) I N MODERATE
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1017	1	6.72	OUT OF RANGE	19.9		
1019	2	6.70	↓	19.9		
1021	3	6.69	↓	19.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 10/16/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-8
Well Diameter (2) 4 in.
Total Depth 9.79 ft.
Depth to Water 3.92 ft.
Date Monitored: 10/16/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.87 xVF 0.17 = 0.99 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.09

Purge Equipment:
Disposable Bailer X
Stainless Steel Bailer
Stack Pump
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer X
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1240
Sample Time/Date: 1315 / 10/16/14
Approx. Flow Rate: gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 4.57

Weather Conditions: SUNNY
Water Color: CHARCOAL Odor: (Y) N MODERATE
Sediment Description: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/ mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1243	1	6.89	OUT OF RANGE	22.6		
1246	2	6.85	↓	22.4		
1248	3	6.84	↓	22.3		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	7x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 10-16-14 (inclusive)
City: Oakland, CA | Sampler: AW

Well ID: MW-9
Well Diameter: 2 | 4 in.
Total Depth: 9.95 ft.
Depth to Water: 5.20 ft.
Date Monitored: 10-16-14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

4.75 xVF .17 = 0.80 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.15

Purge Equipment:

Disposable Bailer	✓
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	✓
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1045 | Weather Conditions: Sunny
Sample Time/Date: 1120 / 10-16-14 | Water Color: Cloudy | Odor: Y / (N)
Approx. Flow Rate: — gpm. | Sediment Description: Cloudy
Did well de-water? N | If yes, Time: — | Volume: — gal. | DTW @ Sampling: 6.00

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1048	1.0	7.34	out of range	22.4		
1052	2.0	7.40	↓	22.7		
1057	2.5	7.42	↓	22.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 10-16-14 (inclusive)

City: **Oakland, CA** Sampler: AW

Well ID MW-10 Date Monitored: 10-16-14

Well Diameter (2) 4 in.

Total Depth 10.09 ft.

Depth to Water 3.25 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.84 xVF .17 = 1.16 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.61

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1225 Weather Conditions: Sunny

Sample Time/Date: 1300 / 10-16-14 Water Color: Cloudy Odor: Y / N moderate

Approx. Flow Rate: — gpm. Sediment Description: Cloudy

Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 4.11

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1230	1.5	8.57	out of range	23.5		
1235	2.5	7.66	↓	23.9		
1240	3.5	7.58		24.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW10	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 10-16-14 (inclusive)
City: Oakland, CA | Sampler: AW

Well ID: MW-11 | Date Monitored: 10-16-14
Well Diameter: (2) 4 in.
Total Depth: 9.70 ft.
Depth to Water: 3.48 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

6.22 xVF .17 = 1.05 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.72

Purge Equipment:

Disposable Bailer	✓
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	✓
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1135 | Weather Conditions: Sunny
Sample Time/Date: 1210 / 10-16-14 | Water Color: Cloudy | Odor: (Y) / N Sulfur Smell
Approx. Flow Rate: - gpm. | Sediment Description: Cloudy
Did well de-water? N | If yes, Time: - | Volume: - gal. | DTW @ Sampling: 4.46

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/ mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1140	1.5	7.50	out of range	21.9		
1145	2.5	7.48	↓	21.7		
1150	3.5	7.47		21.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-11	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: **10-16-14** (inclusive)
City: **Oakland, CA** Sampler: **AW**

Well ID **MW-12** Date Monitored: **10-16-14**
Well Diameter **(2) 4** in.
Total Depth **9.95** ft.
Depth to Water **3.04** ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.91 xVF .17 = 1.17 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.42

Purge Equipment:		**Sampling Equipment:**	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1315 Weather Conditions: Sunny
Sample Time/Date: 1345 / 10-16-14 Water Color: Cloudy Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 4.00

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
1320	1.5	8.02	out of range	23.9		
1325	2.5	7.82	↓	24.2		
1330	3.5	7.74		24.5		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-12	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 10.16.14 (inclusive)

City: **Oakland, CA** Sampler: FT

Well ID MW-13

Well Diameter (2)4 in.

Total Depth 9.52 ft.

Depth to Water 1.89 ft.

Date Monitored: 10.16.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.63 xVF .66 = 5.03 x3 case volume = Estimated Purge Volume: 15.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.41

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1245 Weather Conditions: CLOUDY / SUNNY

Sample Time/Date: 1345 / 10.16.14 Water Color: CLEAR Odor: Ⓨ / N SLIGHT

Approx. Flow Rate: — gpm. Sediment Description: NONE

Did well de-water? YES If yes, Time: 1252 Volume: 5.0 gal. DTW @ Sampling: 3.37

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (Ⓒ / F)	D.O. (mg/L)	ORP (mV)
1252	5.0	7.19	1746	22.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-13	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 12" OK

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 10.16.14 (inclusive)
City: Oakland, CA | Sampler: FT

Well ID: MW-14
Well Diameter: 2/4 in.
Total Depth: 10.04 ft.
Depth to Water: 2.08 ft.
Date Monitored: 10.16.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.96 xVF .17 = 1.35 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.67

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1135 | Weather Conditions: CLOUDY / SUNNY
Sample Time/Date: 1155 / 10.16.14 | Water Color: CLEAR | Odor: Ⓨ / N | MODERATE
Approx. Flow Rate: ✓ gpm. | Sediment Description: NONE
Did well de-water? NO | If yes, Time: _____ | Volume: _____ gal. | DTW @ Sampling: 2.19

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1138	1.5	7.26	1846	23.2		
1141	3.0	7.22	1887	22.8		
1144	4.0	7.18	1921	22.3		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-14	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8" (ISE)

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 10.16.14 (inclusive)
City: Oakland, CA | Sampler: FT

Well ID: MW-15
Well Diameter: 4 in.
Total Depth: 10.00 ft.
Depth to Water: 4.43 ft.
Date Monitored: 10.16.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.57 xVF .17 = .94 x3 case volume = Estimated Purge Volume: 3.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.54

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1100 | Weather Conditions: CLOUDY / SUNNY
Sample Time/Date: 1120 / 10.16.14 | Water Color: CLEAR | Odor: Y / (N)
Approx. Flow Rate: ✓ gpm. | Sediment Description: NONE
Did well de-water? NO | If yes, Time: | Volume: gal. | DTW @ Sampling: 4.52

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1103	1.0	7.20	2552	23.3		
1106	2.0	7.15	2572	22.9		
1109	3.0	7.10	2603	22.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-15	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MONITOR 8" DW

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: **10-16-14** (inclusive)
City: **Oakland, CA** Sampler: **AW**

Well ID: MW-17
Well Diameter: (2) 4 in.
Total Depth: 9.81 ft.
Depth to Water: 2.47 ft.
7.34 xVF .17 = 1.24 x3 case volume = Estimated Purge Volume: 4.0 gal.

Date Monitored: 10-16-14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.93

Purge Equipment:

Disposable Bailer	✓
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	✓
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 0905 Weather Conditions: Sunny
Sample Time/Date: 0940 / 10-16-14 Water Color: yellow Odor: (Y) / N Slight
Approx. Flow Rate: — gpm. Sediment Description: Clear
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 3.90

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
0910	1.5	7.46	out of range	21.6		
0915	3.0	7.42	↓	21.8		
0920	4.0	7.38		21.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-17	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: H_2S reactive with HCl

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 10.16.14 (inclusive)

City: **Oakland, CA** Sampler: FT

Well ID MW-18

Well Diameter Ø/4 in.

Total Depth 9.95 ft.

Depth to Water 2.77 ft.

Date Monitored: 10.16.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.18 xVF .17 = 1.22 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.20

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1310 Weather Conditions: CLOUDY / SUNNY

Sample Time/Date: 1330 / 10.16.14 Water Color: CLEAR Odor: Ⓨ / N STRONG

Approx. Flow Rate: ✓ gpm. Sediment Description: NONE

Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 3.26

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (Ⓒ / F)	D.O. (mg/L)	ORP (mV)
1313	1.5	7.12	2900	23.3		
1316	3.0	7.10	2956	23.9		
1319	4.0	7.06	2997	24.3		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-18	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MONNISON 8" (2BF)
SHEEN PRESENT IN WELL / SOCK IN WELL

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test
Site Address: 6701 Old Earhart Road
City: Oakland, CA
Job Number: 25-948218.1
Event Date: 10/16/14 (inclusive)
Sampler: GM

Well ID: NPORDMW-3
Well Diameter: 2 (4) in.
Total Depth: 16.46 ft.
Depth to Water: 3.69 ft.
Date Monitored: 10/16/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

12.77 xVF 0.666 = 8.42 x3 case volume = Estimated Purge Volume: 26 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.24

Purge Equipment:

Disposable Bailer	
Stainless Steel Bailer	
Stack Pump	X
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1330
Sample Time/Date: 1413 / 10/16/14
Approx. Flow Rate: 2 gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 6.00

Weather Conditions: Sunny
Water Color: CLEAR Odor: (Y) N SLIGHT
Sediment Description: NONE

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS mS µmhos/cm)	Temperature (C F)	D.O. (mg/L)	ORP (mV)
1335	10	7.33	OUT OF RANGE	22.6		
1339	18	7.29	↓	22.5		
1343	26	7.25	↓	22.5		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
NPORDMW-3	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 10/16/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID NPORDMW-4
Well Diameter (2) 4 in.
Total Depth 11.43 ft.
Depth to Water 6.91 ft.
Date Monitored: 10/16/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

4.52 xVF 0.17 = 0.76 x3 case volume = Estimated Purge Volume: 25 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.81

Purge Equipment:

Disposable Bailer	X
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: ~~0~~ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1155 Weather Conditions: Sunny
Sample Time/Date: 1225/10/16/14 Water Color: CHARCOAL Odor: (Y) N MODERATE
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 7.34

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / ~~mS~~ µmhos/cm)	Temperature ((C) / F)	D.O. (mg/L)	ORP (mV)
1158	1	7.05	OUT OF RANGE	20.7		
1200	1.75	7.03	↓	20.6		
1203	2.5	7.00	↓	20.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
NPORDMW-4	7x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

BAG 30

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: BRESO TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
12-9-13	13:00	MW18				120	
12-17-13	05:00	MW18				80	
12-23-13	08:00	MW18				90	
1-8-14	05:00	MW18				270	
8-14-14	16:00	MW18				110	
1-22-14	10:45	MW18				112	
1-30-14	05:00	MW18				90	
2-11-14	05:00	MW18				310	
2-24-14	05:00	MW18				190	
3-11-14	07:00	MW18				480	
3-18-14	5:30	MW18				370	
3-28-14	05:00	MW18				440	

70

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: BRESO TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
4-2-14	05:10	MW18				100	
4-11-14	05:00	MW18				470	
4-16-14	05:14	MW18				470	
4-23-14	05:15	MW18				450	
5-6-14	05:25	MW18				110	
5-12-14	05:05	MW18				80	
5-22-14	05:30	MW18				460	
6-3-14	05:15	MW18				520	
6-11-14	05:10	MW18				500	
6-18-14	05:00	MW18				410	
6-30-14	05:00	MW18				400	
7-8-14	05:10	MW18				510	

~~30~~ 100

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: RB650 TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
7-17-14	5:15	MW18				410	
7-21-14	5:10	MW18				106	
7-30	5:15	MW18				90	
8-4	5:05	MW18				420	
8-11	5:00	MW18				300	
8-18	5:00	MW18				20	
8-26	5:00	MW18				120	
9-2	5:00	MW18				330	
9-8	5:00	MW18				250	
9-15	5:00	MW18				20	
9-22	5:45	MW18				20	
9-29	5:15	MW18				30	

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: RRESO TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
10/6/14	05:00	MW18				20	
10/13/14	06:00	MW18				10	
10/20/14	05:15	MW18				30	
10/27/14	05:00	MW18				80	
11/3/14	05:00	MW18				50	
11/10/14	05:00	MW18				10	
11/17/14	05:00	MW18				70	
12/1/14	05:00	MW18				440	

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Laboratory Results

Deanna L. Harding
Gettler-Ryan Inc.
6805 Sierra Court, Suite G
Dublin, CA 94568

Subject : 20 Water Samples
Project Name : Rolls-Royce Engine Test Facility
Project Number : 25-948218.1

Dear Ms. Harding,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC.
Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab number 08263CA.
If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy G. Turpen

Troy Turpen

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Subject : 20 Water Samples
Project Name : Rolls-Royce Engine Test Facility
Project Number : 25-948218.1

Case Narrative

Recoveries for some Matrix Spike/ Matrix Spike Duplicate analytes were outside control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **QA** Matrix : Water Lab Number : 89440-01
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 22:37
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 22:37
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 22:37
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 22:37
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 22:37
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/17/14 22:37
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 22:37
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/17/14 22:37
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/17/14 22:37
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	10/17/14 22:37

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-1** Matrix : Water Lab Number : 89440-02
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:12
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:12
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:12
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:12
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:12
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/17/14 23:12
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:12
1,2-Dichloroethane-d4 (Surr)	99.6		% Recovery	EPA 8260B	10/17/14 23:12
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/17/14 23:12
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	10/17/14 23:12
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	10/22/14 14:07
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/22/14 14:07
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/22/14 13:37
Octacosane (Diesel Surrogate)	108		% Recovery	M EPA 8015	10/22/14 14:07
Octacosane (Silica Gel Surr)	110		% Recovery	M EPA 8015	10/22/14 13:37

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-2** Matrix : Water Lab Number : 89440-03
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:46
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:46
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:46
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:46
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:46
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/17/14 23:46
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/17/14 23:46
1,2-Dichloroethane-d4 (Surr)	99.6		% Recovery	EPA 8260B	10/17/14 23:46
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	10/17/14 23:46
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	10/17/14 23:46
TPH as Jet Fuel	**93**	50	ug/L	M EPA 8015	10/22/14 14:36
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**830**	100	ug/L	M EPA 8015	10/22/14 14:36
TPH as Diesel (Silica Gel)	**110**	50	ug/L	M EPA 8015	10/22/14 15:23
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	108		% Recovery	M EPA 8015	10/22/14 14:36
Octacosane (Silica Gel Surr)	103		% Recovery	M EPA 8015	10/22/14 15:23

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-3** Matrix : Water Lab Number : 89440-04
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:21
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:21
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:21
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:21
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:21
TPH as Gasoline	**95**	50	ug/L	EPA 8260B	10/18/14 00:21
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:21
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/18/14 00:21
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 00:21
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	10/18/14 00:21
TPH as Jet Fuel	**440**	50	ug/L	M EPA 8015	10/22/14 15:05
TPH as Motor Oil	**210**	100	ug/L	M EPA 8015	10/22/14 15:05
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/22/14 15:58
Octacosane (Diesel Surrogate)	99.0		% Recovery	M EPA 8015	10/22/14 15:05
Octacosane (Silica Gel Surr)	102		% Recovery	M EPA 8015	10/22/14 15:58

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-4** Matrix : Water Lab Number : 89440-05
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 15:20
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 15:20
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 15:20
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 15:20
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 15:20
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/21/14 15:20
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 15:20
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/21/14 15:20
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/21/14 15:20
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	10/21/14 15:20
TPH as Jet Fuel	**380**	50	ug/L	M EPA 8015	10/22/14 17:03
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**180**	100	ug/L	M EPA 8015	10/22/14 17:03
(Note: Hydrocarbons are lower-boiling than typical Motor Oil)					
TPH as Diesel (Silica Gel)	**55**	50	ug/L	M EPA 8015	10/22/14 16:33
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	127		% Recovery	M EPA 8015	10/22/14 17:03
Octacosane (Silica Gel Surr)	114		% Recovery	M EPA 8015	10/22/14 16:33

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-5** Matrix : Water Lab Number : 89440-06
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:55
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:55
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:55
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:55
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:55
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 00:55
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 00:55
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	10/18/14 00:55
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 00:55
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	10/18/14 00:55
TPH as Jet Fuel	**350**	50	ug/L	M EPA 8015	10/22/14 17:32
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**690**	100	ug/L	M EPA 8015	10/22/14 17:32
TPH as Diesel (Silica Gel)	**160**	50	ug/L	M EPA 8015	10/22/14 17:08
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	113		% Recovery	M EPA 8015	10/22/14 17:32
Octacosane (Silica Gel Surr)	106		% Recovery	M EPA 8015	10/22/14 17:08

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-6** Matrix : Water Lab Number : 89440-07
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 01:30
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 01:30
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 01:30
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 01:30
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 01:30
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 01:30
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 01:30
1,2-Dichloroethane-d4 (Surr)	99.3		% Recovery	EPA 8260B	10/18/14 01:30
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 01:30
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	10/18/14 01:30
TPH as Jet Fuel	**680**	50	ug/L	M EPA 8015	10/22/14 20:28
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**4400**	250	ug/L	M EPA 8015	10/23/14 12:24
TPH as Diesel (Silica Gel)	**670**	50	ug/L	M EPA 8015	10/22/14 17:43
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	111		% Recovery	M EPA 8015	10/23/14 12:24
Octacosane (Silica Gel Surr)	102		% Recovery	M EPA 8015	10/22/14 17:43

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-7** Matrix : Water Lab Number : 89440-08
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:04
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:04
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:04
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:04
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:04
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 02:04
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:04
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/18/14 02:04
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 02:04
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	10/18/14 02:04
TPH as Jet Fuel	**520**	50	ug/L	M EPA 8015	10/22/14 20:57
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**2000**	250	ug/L	M EPA 8015	10/23/14 12:53
TPH as Diesel (Silica Gel)	**290**	50	ug/L	M EPA 8015	10/22/14 21:12
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	110		% Recovery	M EPA 8015	10/23/14 12:53
Octacosane (Silica Gel Surr)	106		% Recovery	M EPA 8015	10/22/14 21:12

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-8** Matrix : Water Lab Number : 89440-09
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:39
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:39
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:39
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:39
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:39
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 02:39
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 02:39
1,2-Dichloroethane-d4 (Surr)	99.6		% Recovery	EPA 8260B	10/18/14 02:39
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 02:39
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	10/18/14 02:39
TPH as Jet Fuel	**250**	50	ug/L	M EPA 8015	10/22/14 21:26
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**860**	100	ug/L	M EPA 8015	10/23/14 13:52
TPH as Diesel (Silica Gel)	**110**	50	ug/L	M EPA 8015	10/22/14 20:38
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	114		% Recovery	M EPA 8015	10/23/14 13:52
Octacosane (Silica Gel Surr)	108		% Recovery	M EPA 8015	10/22/14 20:38

KIFF Analytical LLC

Report Number : 89440
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Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-9** Matrix : Water Lab Number : 89440-10
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:13
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:13
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:13
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:13
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:13
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 03:13
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:13
1,2-Dichloroethane-d4 (Surr)	99.5		% Recovery	EPA 8260B	10/18/14 03:13
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 03:13
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	10/18/14 03:13
TPH as Jet Fuel	**510**	50	ug/L	M EPA 8015	10/22/14 21:56
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**880**	100	ug/L	M EPA 8015	10/23/14 13:41
TPH as Diesel (Silica Gel)	**220**	50	ug/L	M EPA 8015	10/23/14 09:02
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	109		% Recovery	M EPA 8015	10/23/14 13:41
Octacosane (Silica Gel Surr)	105		% Recovery	M EPA 8015	10/23/14 09:02

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-10** Matrix : Water Lab Number : 89440-11
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:48
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:48
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:48
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:48
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:48
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 03:48
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 03:48
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/18/14 03:48
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 03:48
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	10/18/14 03:48
TPH as Jet Fuel	**250**	50	ug/L	M EPA 8015	10/22/14 15:35
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/22/14 15:35
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/22/14 13:08
Octacosane (Diesel Surrogate)	112		% Recovery	M EPA 8015	10/22/14 15:35
Octacosane (Silica Gel Surr)	115		% Recovery	M EPA 8015	10/22/14 13:08

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Report Number : 89440
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Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-11** Matrix : Water Lab Number : 89440-12
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:22
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:22
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:22
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:22
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:22
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 04:22
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:22
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/18/14 04:22
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	10/18/14 04:22
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	10/18/14 04:22
TPH as Jet Fuel	**340**	50	ug/L	M EPA 8015	10/22/14 22:25
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**430**	100	ug/L	M EPA 8015	10/23/14 14:17
TPH as Diesel (Silica Gel)	**110**	50	ug/L	M EPA 8015	10/23/14 09:37
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	110		% Recovery	M EPA 8015	10/23/14 14:17
Octacosane (Silica Gel Surr)	108		% Recovery	M EPA 8015	10/23/14 09:37

KIFF Analytical LLC

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-12** Matrix : Water Lab Number : 89440-13
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:57
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:57
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:57
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:57
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:57
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 04:57
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 04:57
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/18/14 04:57
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 04:57
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	10/18/14 04:57
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	10/23/14 02:20
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/23/14 11:56
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/23/14 00:06
Octacosane (Diesel Surrogate)	107		% Recovery	M EPA 8015	10/23/14 11:56
Octacosane (Silica Gel Surr)	107		% Recovery	M EPA 8015	10/23/14 00:06

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Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-13** Matrix : Water Lab Number : 89440-14
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 05:31
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 05:31
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 05:31
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 05:31
Methyl-t-butyl ether (MTBE)	**1.9**	0.50	ug/L	EPA 8260B	10/18/14 05:31
TPH as Gasoline	**180**	50	ug/L	EPA 8260B	10/18/14 05:31
(Note: Primarily compounds not found in typical Gasoline)					
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 05:31
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	10/18/14 05:31
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 05:31
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	10/18/14 05:31
TPH as Jet Fuel	**1500**	50	ug/L	M EPA 8015	10/22/14 22:55
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/23/14 12:31
TPH as Diesel (Silica Gel)	**58**	50	ug/L	M EPA 8015	10/23/14 00:41
Octacosane (Diesel Surrogate)	110		% Recovery	M EPA 8015	10/23/14 12:31
Octacosane (Silica Gel Surr)	103		% Recovery	M EPA 8015	10/23/14 00:41

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Report Number : 89440
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Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-14** Matrix : Water Lab Number : 89440-15
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 06:06
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 06:06
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 06:06
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 06:06
Methyl-t-butyl ether (MTBE)	**0.83**	0.50	ug/L	EPA 8260B	10/18/14 06:06
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/18/14 06:06
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/18/14 06:06
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	10/18/14 06:06
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/18/14 06:06
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	10/18/14 06:06
TPH as Jet Fuel	**920**	50	ug/L	M EPA 8015	10/22/14 23:24
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**880**	100	ug/L	M EPA 8015	10/23/14 14:51
TPH as Diesel (Silica Gel)	**100**	50	ug/L	M EPA 8015	10/23/14 01:16
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Surrogate)	106		% Recovery	M EPA 8015	10/23/14 14:51
Octacosane (Silica Gel Surr)	103		% Recovery	M EPA 8015	10/23/14 01:16

KIFF Analytical LLC

Report Number : 89440
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Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-15** Matrix : Water Lab Number : 89440-16
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 03:29
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 03:29
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 03:29
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 03:29
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 03:29
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/21/14 03:29
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 03:29
1,2-Dichloroethane-d4 (Surr)	99.9		% Recovery	EPA 8260B	10/21/14 03:29
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	10/21/14 03:29
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	10/21/14 03:29
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	10/22/14 23:53
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/22/14 23:53
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/23/14 01:51
Octacosane (Diesel Surrogate)	119		% Recovery	M EPA 8015	10/22/14 23:53
Octacosane (Silica Gel Surr)	110		% Recovery	M EPA 8015	10/23/14 01:51

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Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-17** Matrix : Water Lab Number : 89440-17
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:54
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:54
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:54
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:54
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:54
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/21/14 02:54
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:54
1,2-Dichloroethane-d4 (Surr)	97.2		% Recovery	EPA 8260B	10/21/14 02:54
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	10/21/14 02:54
4-Bromofluorobenzene (Surr)	99.5		% Recovery	EPA 8260B	10/21/14 02:54
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	10/23/14 00:23
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/23/14 00:23
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/23/14 02:26
Octacosane (Diesel Surrogate)	120		% Recovery	M EPA 8015	10/23/14 00:23
Octacosane (Silica Gel Surr)	110		% Recovery	M EPA 8015	10/23/14 02:26

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Report Number : 89440
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Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-18** Matrix : Water Lab Number : 89440-18
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:20
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:20
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:20
Total Xylenes	**0.77**	0.50	ug/L	EPA 8260B	10/21/14 02:20
Methyl-t-butyl ether (MTBE)	**2.2**	0.50	ug/L	EPA 8260B	10/21/14 02:20
TPH as Gasoline	**450**	50	ug/L	EPA 8260B	10/21/14 02:20
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 02:20
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	10/21/14 02:20
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/21/14 02:20
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	10/21/14 02:20
TPH as Jet Fuel	**17000**	2500	ug/L	M EPA 8015	10/24/14 13:01
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**25000**	2500	ug/L	M EPA 8015	10/23/14 14:21
TPH as Diesel (Silica Gel)	**12000**	50	ug/L	M EPA 8015	10/23/14 03:00
Octacosane (Diesel Surrogate)	Diluted Out		% Recovery	M EPA 8015	10/23/14 14:21
Octacosane (Silica Gel Surr)	101		% Recovery	M EPA 8015	10/23/14 03:00

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Report Number : 89440
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Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **NPORD-MW-3** Matrix : Water Lab Number : 89440-19
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 01:45
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 01:45
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 01:45
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 01:45
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 01:45
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/21/14 01:45
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 01:45
1,2-Dichloroethane-d4 (Surr)	99.2		% Recovery	EPA 8260B	10/21/14 01:45
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	10/21/14 01:45
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	10/21/14 01:45
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	10/23/14 01:22
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/23/14 10:46
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/23/14 03:35
Octacosane (Diesel Surrogate)	111		% Recovery	M EPA 8015	10/23/14 10:46
Octacosane (Silica Gel Surr)	111		% Recovery	M EPA 8015	10/23/14 03:35

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Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **NPORD-MW-4** Matrix : Water Lab Number : 89440-20
Sample Date :10/16/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 14:48
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 14:48
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 14:48
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 14:48
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 14:48
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/21/14 14:48
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/14 14:48
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	10/21/14 14:48
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/21/14 14:48
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	10/21/14 14:48
TPH as Jet Fuel	**690**	50	ug/L	M EPA 8015	10/23/14 01:51
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**480**	100	ug/L	M EPA 8015	10/23/14 11:21
TPH as Diesel (Silica Gel)	**200**	50	ug/L	M EPA 8015	10/23/14 08:27
Octacosane (Diesel Surrogate)	128		% Recovery	M EPA 8015	10/23/14 11:21
Octacosane (Silica Gel Surr)	105		% Recovery	M EPA 8015	10/23/14 08:27

Report Number : 89440

Date : 10/24/2014

QC Report : Method Blank Data

Project Name : **Rolls-Royce Engine Test Facility**

Project Number : **25-948218.1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	10/23/2014
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	10/23/2014
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	10/23/2014
Octacosane (Diesel Surrogate)	114		%	M EPA 8015	10/23/2014
Octacosane (Silica Gel Surr)	111		%	M EPA 8015	10/23/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/20/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/20/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/20/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/20/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/20/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/20/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/20/2014
1,2-Dichloroethane-d4 (Surr)	98.8		%	EPA 8260B	10/20/2014
4-Bromofluorobenzene (Surr)	98.7		%	EPA 8260B	10/20/2014
Toluene - d8 (Surr)	99.2		%	EPA 8260B	10/20/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/17/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/17/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/17/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/17/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/17/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/17/2014
1,2-Dichloroethane-d4 (Surr)	99.8		%	EPA 8260B	10/17/2014
4-Bromofluorobenzene (Surr)	110		%	EPA 8260B	10/17/2014
Toluene - d8 (Surr)	99.7		%	EPA 8260B	10/17/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/21/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/21/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/21/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	10/21/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/21/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	10/21/2014
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	10/21/2014
4-Bromofluorobenzene (Surr)	100		%	EPA 8260B	10/21/2014
Toluene - d8 (Surr)	101		%	EPA 8260B	10/21/2014

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	89443-01	<0.50	40.0	40.0	36.6	36.4	ug/L	EPA 8260B	10/20/14	91.4	90.9	0.610	70.0-130	25
Ethylbenzene	89443-01	<0.50	40.0	40.0	33.0	31.6	ug/L	EPA 8260B	10/20/14	82.4	79.0	4.27	70.0-130	25
Methyl-t-butyl ether	89443-01	<0.50	40.0	40.0	36.1	36.4	ug/L	EPA 8260B	10/20/14	90.2	90.9	0.760	70.0-130	25
Naphthalene	89443-01	<0.50	40.0	40.0	36.7	35.5	ug/L	EPA 8260B	10/20/14	91.8	88.8	3.30	70.0-130	25
P + M Xylene	89443-01	<0.50	40.0	40.0	21.0	18.7	ug/L	EPA 8260B	10/20/14	**52.4**	**46.6**	11.6	70.0-130	25
Toluene	89443-01	<0.50	40.0	40.0	32.0	30.8	ug/L	EPA 8260B	10/20/14	80.1	77.1	3.81	70.0-130	25
Benzene	89436-03	<0.50	40.0	40.0	37.0	37.0	ug/L	EPA 8260B	10/17/14	92.4	92.4	0.00075	70.0-130	25
Ethylbenzene	89436-03	<0.50	40.0	40.0	39.6	39.8	ug/L	EPA 8260B	10/17/14	98.9	99.5	0.539	70.0-130	25
Methyl-t-butyl ether	89436-03	12	40.0	40.0	48.4	48.0	ug/L	EPA 8260B	10/17/14	92.1	91.1	1.11	70.0-130	25

KIFF ANALYTICAL, LLC
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QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Naphthalene	89436-03	<0.50	40.0	40.0	40.4	40.2	ug/L	EPA 8260B	10/17/14	101	100	0.660	70.0-130	25
P + M Xylene	89436-03	<0.50	40.0	40.0	37.8	37.6	ug/L	EPA 8260B	10/17/14	94.4	93.9	0.503	70.0-130	25
Toluene	89436-03	<0.50	40.0	40.0	37.8	37.7	ug/L	EPA 8260B	10/17/14	94.5	94.3	0.236	70.0-130	25
Benzene	89444-02	<0.50	40.0	40.0	40.2	40.1	ug/L	EPA 8260B	10/21/14	100	100	0.372	70.0-130	25
Ethylbenzene	89444-02	<0.50	40.0	40.0	41.7	42.0	ug/L	EPA 8260B	10/21/14	104	105	0.678	70.0-130	25
Methyl-t-butyl ether	89444-02	0.80	40.0	40.0	42.2	41.2	ug/L	EPA 8260B	10/21/14	104	101	2.47	70.0-130	25
Naphthalene	89444-02	<0.50	40.0	40.0	39.8	38.9	ug/L	EPA 8260B	10/21/14	99.4	97.3	2.16	70.0-130	25
P + M Xylene	89444-02	<0.50	40.0	40.0	40.4	40.7	ug/L	EPA 8260B	10/21/14	101	102	0.703	70.0-130	25
Toluene	89444-02	<0.50	40.0	40.0	39.7	39.4	ug/L	EPA 8260B	10/21/14	99.3	98.6	0.738	70.0-130	25

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)														
	89440-11	<50	1000	1000	1080	1060	ug/L	M EPA 8015	10/22/14	108	106	1.27	70-130	25
TPH as Diesel														
	89440-11	210	1000	1000	1440	1380	ug/L	M EPA 8015	10/22/14	124	117	5.29	70-130	25

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 89440
Date : 10/24/2014

QC Report : Laboratory Control Sample (LCS)

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH-D (Si Gel)	1000	ug/L	M EPA 8015	10/23/14	101	70-130
TPH as Diesel	1000	ug/L	M EPA 8015	10/23/14	114	70-130
Benzene	40.1	ug/L	EPA 8260B	10/20/14	90.0	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	10/20/14	96.5	70.0-130
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	10/20/14	87.6	70.0-130
Naphthalene	40.1	ug/L	EPA 8260B	10/20/14	103	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	10/20/14	94.2	70.0-130
TPH as Gasoline	492	ug/L	EPA 8260B	10/20/14	95.6	70.0-130
Toluene	40.1	ug/L	EPA 8260B	10/20/14	93.5	70.0-130
Benzene	40.0	ug/L	EPA 8260B	10/17/14	92.7	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	10/17/14	100	70.0-130
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	10/17/14	92.8	70.0-130
Naphthalene	40.0	ug/L	EPA 8260B	10/17/14	101	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	10/17/14	94.9	70.0-130
TPH as Gasoline	490	ug/L	EPA 8260B	10/17/14	94.8	70.0-130
Toluene	40.0	ug/L	EPA 8260B	10/17/14	95.1	70.0-130
Benzene	39.8	ug/L	EPA 8260B	10/21/14	99.0	70.0-130
Ethylbenzene	39.8	ug/L	EPA 8260B	10/21/14	103	70.0-130
Methyl-t-butyl ether	39.8	ug/L	EPA 8260B	10/21/14	106	70.0-130

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Report Number : 89440
Date : 10/24/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Naphthalene	39.8	ug/L	EPA 8260B	10/21/14	96.9	70.0-130
P + M Xylene	39.8	ug/L	EPA 8260B	10/21/14	100	70.0-130
TPH as Gasoline	490	ug/L	EPA 8260B	10/21/14	95.2	70.0-130
Toluene	39.8	ug/L	EPA 8260B	10/21/14	99.1	70.0-130

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

89440 1 of 2

Global ID #: T06019775776

☐ Yes
☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

Direct Bill To:
Deanna Harding
Gettler-Ryan Inc.
6805 Sierra Court
Suite G
Dublin, CA 94568

Facility: Rolls-Royce Engine Test Facility
Facility Address: 6701 Old Earhart Road, Oakland, CA
Consultant Project #: 25-948218.1
Consultant Name: GETTLER-RYAN INC.
Address: 6805 Sierra Court Suite G, Dublin, CA 94568
Project Contact: (Name) Deanna Harding
(Phone) 925-551-7444 x180 (e-mail) deanna@grinc.com

(Name) Deanna Harding
(Phone) 925-551-7444 x180
Laboratory Name: Kiff Analytical
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) Alex W., Gilbert M., Frank T
Signature:

State Method: ☑ CA ☐ OR ☐ WA ☐ NW Series ☐ CO ☐ UT ☐ ID

Sample I.D.	Number of Containers	Matrix S=Soil A=Air W=Water C=Charcoal	DATE/SAMPLE COLLECTION TIME	TPH-Jet A Fuel (8015) (HCL)	TPH-MO (8015) (HCL)	TPH-DRO with Silica Gel Cleanup (8015) (HCL)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (HCL)	TPH-Jet A Fuel (8015) (NP)	TPH-MO (8015) (NP)	TPH-DRO with Silica Gel Cleanup (8015) (NP)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (NP)	Remarks / Lab Sample No.
QA	2	W	10-16-14 / —				X					01
MW-1	7		/ 1030	X	X	X	X					02
MW-2			/ 1430									03
MW-3			/ 1230									04
MW-4			/ 0920									05
MW-5			/ 1125									06
MW-6			/ 1000									07
MW-7			/ 1040									08
MW-8			/ 1315									09
MW-9			/ 1120									10
MW-10			/ 1300									11
MW-11			/ 1210									12
MW-12			/ 1345									13
MW-13	↓	↓	↓ / 1345	↓	↓	↓	↓					14

EDF NEEDED

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	10-17-14				
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)
			Kiff Analytical		10/17/14 0726	

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

89440 2 of 2

Global ID #: T06019775776

☐ Yes
☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

Direct Bill To:
Deanna Harding
Gettler-Ryan Inc.
6805 Sierra Court
Suite G
Dublin, CA 94568

Facility: Rolls-Royce Engine Test Facility
Facility Address: 6701 Old Earhart Road, Oakland, CA
Consultant Project #: 25-948218.1
Consultant Name: GETTLER-RYAN INC.
Address: 6805 Sierra Court Suite G, Dublin, CA 94568
Project Contact: (Name) Deanna Harding
(Phone) 925-551-7444 x180 (e-mail) deanna@grinc.com

(Name) Deanna Harding
(Phone) 925-551-7444 x180
Laboratory Name: Kiff Analytical
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) Alex W., Gilbert M., Frank T
Signature:

State Method: ☑ CA ☐ OR ☐ WA ☐ NW Series ☐ CO ☐ UT ☐ ID

Sample I.D.	Number of Containers	Matrix S=Soil A=Air W=Water C=Charcoal	DATE/SAMPLE COLLECTION TIME	TPH-Jet A Fuel (8015) (HCL)	TPH-MO (8015) (HCL)	TPH-DRO with Silica Gel Cleanup (8015) (HCL)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (HCL)	TPH-Jet A Fuel (8015) (NP)	TPH-MO (8015) (NP)	TPH-DRO with Silica Gel Cleanup (8015) (NP)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (NP)	Remarks / Lab Sample No.
MW-14	7	W	10-16-14 / 1155	X	X	X	X					EDF NEEDED
MW-15			/ 1120									15
MW-17			/ 0940									16
MW-18			/ 1330									17
DUPORDMW-3			/ 1445									18
DUPORDMW-4			/ 1225									19
												20

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	10-17-14				
Relinquished By (Signature)	~~Organization~~	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)
					10/17/14 0915	

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
5 Days
10 Days
(As Contracted)

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

SRG #: 89440

Sample Receipt	Initials/Date: Eng 101714	Storage Time: 0726	Sample Login	Initials/Date: Eng 101714

TAT: [x] Standard [ ] Rush [ ] Split [ ] None — Method of Receipt: [ ] Courier [x] Over-the-counter [ ] Shipped

Temp °C 4.0 [ ] N/A — Therm ID IR3 — Time 0719 — Coolant present [x] Yes [ ] No [ ] Water [ ] Temp Excursion

For Shipments Only: Cooler Receipt Initials/Date/Time: — Custody Seals [ ] N/A [ ] Intact [ ] Broken

Chain-of-Custody:	Yes	No
Is COC present?	✓	
Is COC signed by relinquisher?	✓	
Is COC dated by relinquisher?	✓	
Is the sampler's name on the COC?	✓	
Are there analyses or hold for all samples?	✓	

Documented on	COC	Labels	Discrepancies:
Sample ID	✓	✓	
Project ID	✓	✓	
Sample Date	✓	✓	
Sample Time	✓		

Does COC match project history? [ ] N/A [x] Yes [ ] No

Samples:	N/A	Yes	No
Are sample custody seals intact?	✓		
Are sample containers intact?		✓	
Is preservation documented?		✓	
In-house Analysis:	**N/A**	**Yes**	**No**
Are preservatives acceptable?		✓	
Are samples within holding time?		✓	
Are sample container types correct?		✓	
Is there adequate sample volume?		✓	

Comments: Bubbles in most samples Eng 101714 0921

Receipt Details:

Matrix	Container Type	# of Containers
WA	Voa	135

CS Required: [ ]

Proceed With Analysis: [ ] YES [ ] NO Init/Date:
Client Communication: