1R – 1457

AGWMR

01 / 28 / 2015

REGENCY
ENERGY PARTNERS

January 28, 2015

Mr. Glenn von Gonten
Senior Hydrologist
Environmental Bureau
Oil Conservation Division (OCD)
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Jal #4 Annual Report
NMOCD Reference #RP-1457

Dear Mr. von Gonten:

I approve this report titled "Jal #4 Annual Report" dated January 16, 2015 that was prepared by CK Associates on behalf of Regency Energy Partners.

Sincerely,

Crystal D. Callaway

Crystal D. Callaway, BSN, RN, CHMM
Senior Environmental Remediation Specialist
Regency Energy Partners

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January 16, 2015

Mr. Glenn von Gonten
Senior Hydrologist
Environmental Bureau
Oil Conservation Division (OCD)
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Jal #4 2014 Annual Report
NMOCD Reference #RP-1457

Dear Mr. von Gonten:

CK Associates (CK) prepared this letter report on behalf of Regency Energy Partners (Regency) for the Jal #4 project site in Lea County, New Mexico. The site is east of the intersection of Deep Wells Road and J-8 (32.258541°, -103.195023°) in Section 31, Township 23S, and Range 37E (**Figure 1**). The approximately 1.4 acre site is not currently in use but was previously used for the storage of condensate and produced water. Regency's goals are to investigate and address impacts that resulted from a release that occurred historically on the site and to complete the steps necessary to obtain regulatory closure with the New Mexico OCD.

This letter report presents a brief history of the project site, the fourth quarter sampling results, a comparison to data collected previously, and recommended site activities for 2015.

1.0 Background

This section presents a brief history and overview of the project site.

1.1 Release and Remediation History

A 410-barrel (bbl) steel tank was found to be leaking in April of 2007. Approximately 140 bbls of condensate and 140 bbls of produced water were estimated to have been released. A vacuum truck was used to remove all liquids from the tank and from the earthen containment around the tank.

Soil remediation activities were completed between November 2012 and February 2013 and included excavation of approximately 7,400 cubic yards of impacted material. Confirmation soil

samples were taken on all sides of the excavation. With approval of the NMOCD, a 20-mil plastic liner was installed on the floor of the 15' excavation prior to backfilling with unaffected stockpiled soil and local non-impacted material. The liner was designed to inhibit further vertical migration of affected material left in place.

1.2 Monitoring Well Network

Five 2-inch monitoring wells (MW-1 through MW-5) and one 4-inch recovery well (RW-1) have been installed in and around the area of the former tank battery (**Figure 2**). The first monitoring well (MW-1) was installed after a soil boring through the area of impact exhibited hydrocarbon impacts from at least 20 feet to 70 feet below ground surface (bgs). Dissolved hydrocarbons were originally detected in MW-1 and eventually this well exhibited measureable light non-aqueous phase liquids (LNAPL). MW-2 through MW-6 were installed for the purpose of delineating hydrocarbon impacts and to determine the direction of groundwater flow. RW-1 is presumed to have been installed for the purpose of recovering LNAPL; however only a sheen has been observed in this well and no recovery has been conducted from this well.

2.0 Groundwater Monitoring Activities

Fourth quarter groundwater monitoring activities were conducted by CK Associates on December 10, 2014. Previous quarterly sampling events were performed by Talon/LPE.

In December 2014, depth to water measurements and product thickness measurements (where applicable) were made in all wells. Sheen checks were performed in wells that were suspected to contain LNAPL.

Monitoring wells were purged and sampled using a ProActive SS Hurricane submersible pump in accordance with the EPA low-flow purging and sampling protocol. Groundwater samples were collected once stabilization of indicator parameters was achieved (i.e. 3 successive readings of ±0.1 for pH, ±3% for conductivity, ±10 mV for ORP, and ±10% for dissolved oxygen). Samples were collected into pre-preserved laboratory-provided vials, packed on ice and sent to ESC Lab Sciences in Mt. Juliet, Tennessee with chain of custody forms. Purge water was disposed of in a waste water tank at the nearby Jal #4 plant.

Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA method 8021B and for polycyclic aromatic hydrocarbons (PAHs) by EPA method 8270C.

3.0 Results

During the fourth quarter 2014 sampling event, groundwater elevations ranged from 3,187.59' in MW-3 to 3,185.98' in RW-1. Data from December 2014 indicate a trough (i.e. potentiometric low spot) in the area of RW-1 with localized flow toward the trough and the southwest. Potentiometric data are presented in **Table 1**. Depth to water measurements were used to

construct the potentiometric surface map shown in **Figure 3**. Groundwater is assumed to flow regionally to the southeast based on topography and available data. The trough around RW-1 suggests a problem with the survey data; and therefore, plans will be developed to resurvey the wells to confirm top of casing elevation values.

LNAPL was present in only two wells, MW-1 (3.55 feet) and RW-1 (sheen) as shown on **Figure 4**. MW-1 and RW-1 are the closest wells to the former location of the storage tanks. Due to the presence of LNAPL, these two wells were not sampled.

Table 2 presents results of the December 2014 and historic sampling events and presents a comparison to the regulatory standard (Human Health Standard for groundwater of <10,000 mg/L TDS, NMAC Section 20.6.2.3103).

Low levels ("J-flagged" - laboratory estimated concentrations) of BTEX constituents were detected in MW-3, MW-4, MW-5, and MW-6. Only one well (MW-5) exhibited a detection above the regulatory standard. Specifically, benzene was detected at a concentration of 0.016 mg/L. Benzene had not been previously detected in MW-5. These results will be confirmed in subsequent sampling events.

Various PAHs were also detected at very low levels (predominantly "J-flagged" values) in all wells. No regulatory standards for PAHs are included in the New Mexico Human Health Standards list. The PAH results are consistent with past sampling events. The ESC analytical laboratory report is provided as **Appendix A**.

4.0 Conclusions

The following conclusions have been made based on the work done at the Jal #4 project site:

- Regional groundwater flow is toward the southeast. Based on gauging data, flow at the site has been mapped toward a trough at the center of the site and southwest. This may be caused by inaccurate survey data.
- LNAPL is present in two wells, RW-1 (sheen) and MW-1 (3.55').
- Dissolved hydrocarbon concentrations in groundwater are below regulatory standards with the exception of MW-5 that recently exhibited a concentration of benzene of 0.016 mg/L.

5.0 Recommendations

Based on the conclusions of this report, CK recommends the following path forward for the Jal #4 project site:

- Groundwater wells should be resurveyed to verify the direction of groundwater flow.
- Groundwater monitoring should continue on a quarterly basis. The next sampling event will take place in the first quarter of 2015.

- Based on the very low detections of PAHs in the fourth quarter (as well as during previous events), PAHs should be omitted from the laboratory analyses in the future.
- An evaluation of remedial technologies should be conducted in order to assess which technology will be most effective to remove the LNAPL. This evaluation would be conducted in accordance with the 2009 ITRC document "Evaluating LNAPL Remedial Technologies for Achieving Project Goals" and would include:
    - Transmissivity testing
    - Viscosity testing
    - Paraffins, Isoparaffins, Aromatics, Napthenes, and Olefins (PIANO) analysis
    - Specific gravity testing
- The information gathered from the remedial technology evaluation will be used in preparation of an abatement plan, as appropriate.

6.0 Closing

We appreciate your consideration of this report and look forward to discussing the project during our meeting on January 27, 2015. If you have any questions or comments, please feel free to contact our office at (281) 397-9016.

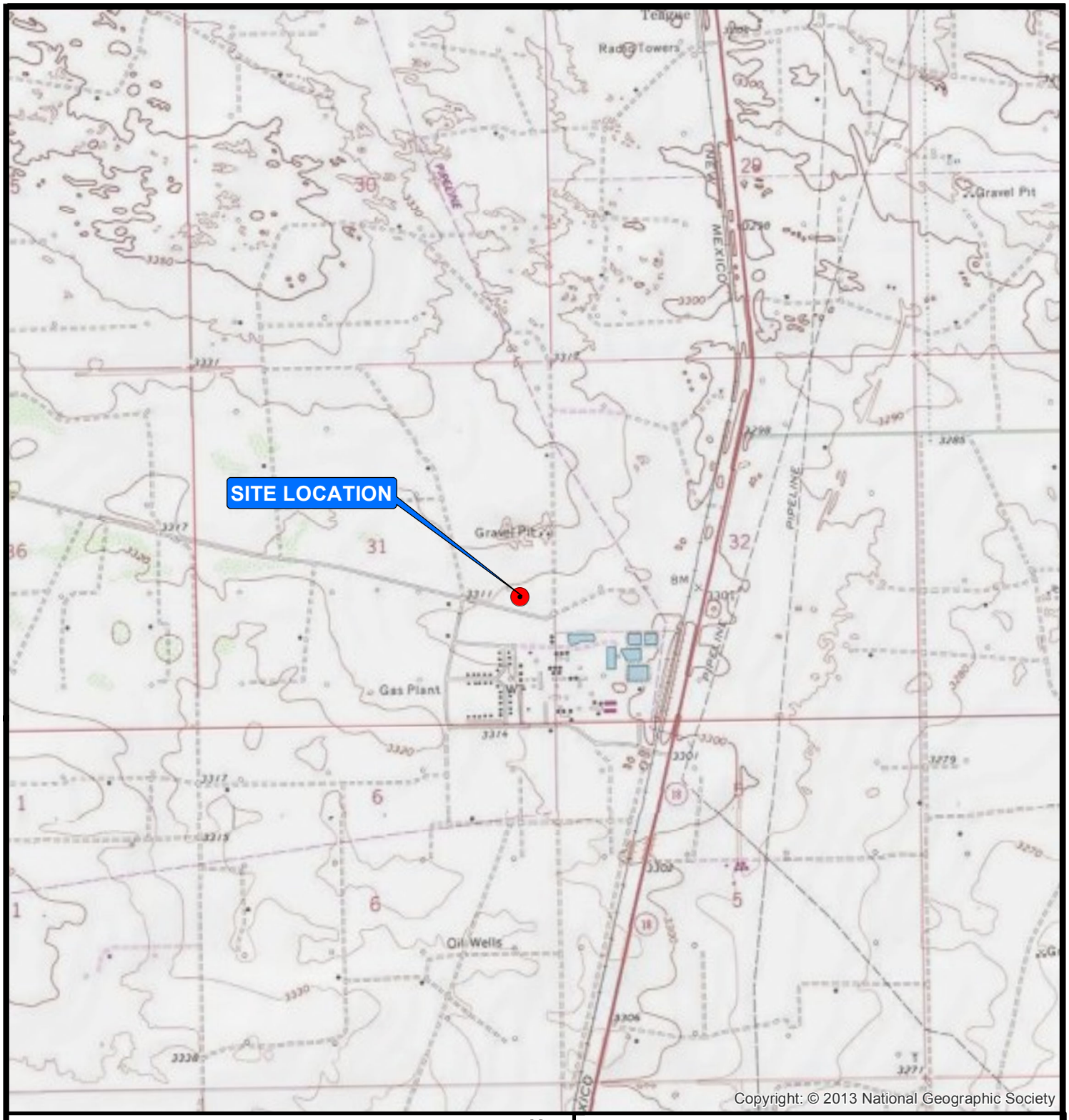
Sincerely,
C-K Associates

Kate Magee
Environmental Scientist

Hollis Millard, P.G.
Risk Assessment & Remediation
Team Leader

CC: Crystal Callaway, Regency Energy Partners, LP

Figures



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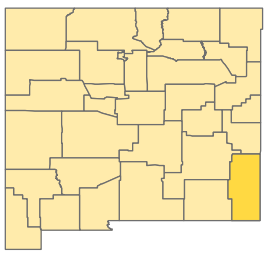


LEA COUNTY

Reference

U.S.G.S. 24K SERIES QUAD MAP, RATTLESNAKE CANYON & JAL NW, NM

esri Partner Network Silver

REGENCY ENERGY PARTNERS LP
DALLAS, TEXAS

Jal 4

VICINITY MAP

LEA COUNTY, NEW MEXICO

CK ASSOCIATES Environmental Consultants

Drawn:	JLN/AM10.1
Checked:	KLM
Approved:	---
Date:	01/06/2015
Map No.:	11561 Jal 4 Fig 1

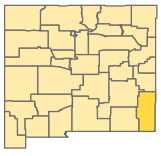
FIGURE 1

0 50 100 200

Feet

Legend

- Well Locations
- Former Tank Battery



esri Partner Network Silver

Note

Wellhead locations are approximate based on historical maps.

REGENCY ENERGY PARTNERS LP
DALLAS, TEXAS

Jal 4

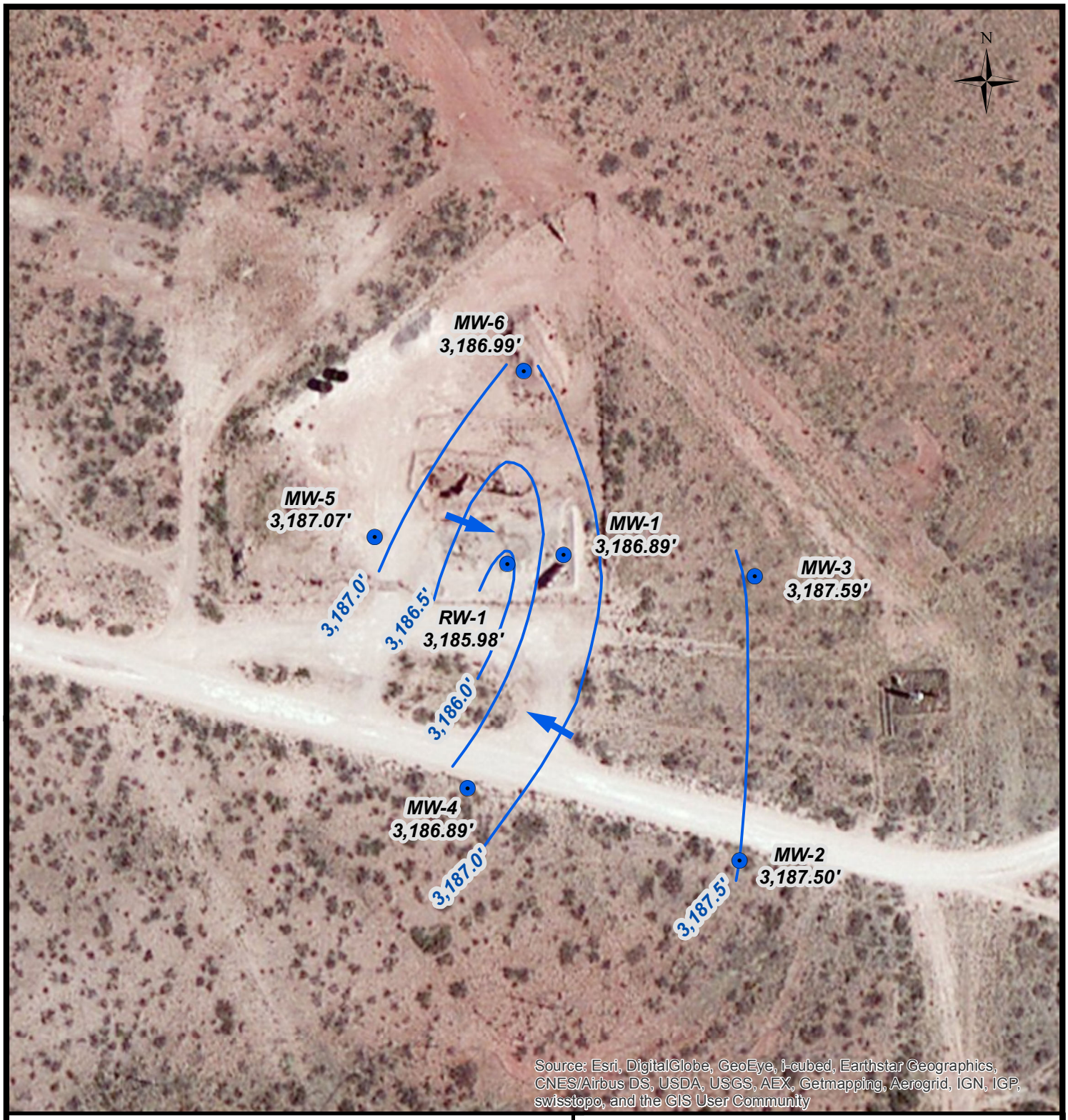
SITE MAP

LEA COUNTY, NEW MEXICO

CK Associates Environmental Consultants

Drawn:	JLN/AM10.1
Checked:	KLM
Approved:	---
Date:	01/06/2015
Map No.:	11561 Jal 4 Fig 2

FIGURE 2

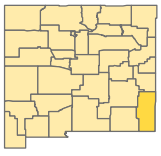


0 50 100 200

Feet

Legend

- Well Locations
- Potentiometric Contour Lines
- Groundwater Flow Direction



LEA COUNTY

esri Partner Network Silver

Note

Wellhead locations are approximate based on historical maps.

REGENCY ENERGY PARTNERS LP
DALLAS, TEXAS

Jal 4

POTENTIOMETRIC MAP
DECEMBER 2014

LEA COUNTY, NEW MEXICO

CK ASSOCIATES Environmental Consultants

Drawn:	JLN/AM10.1
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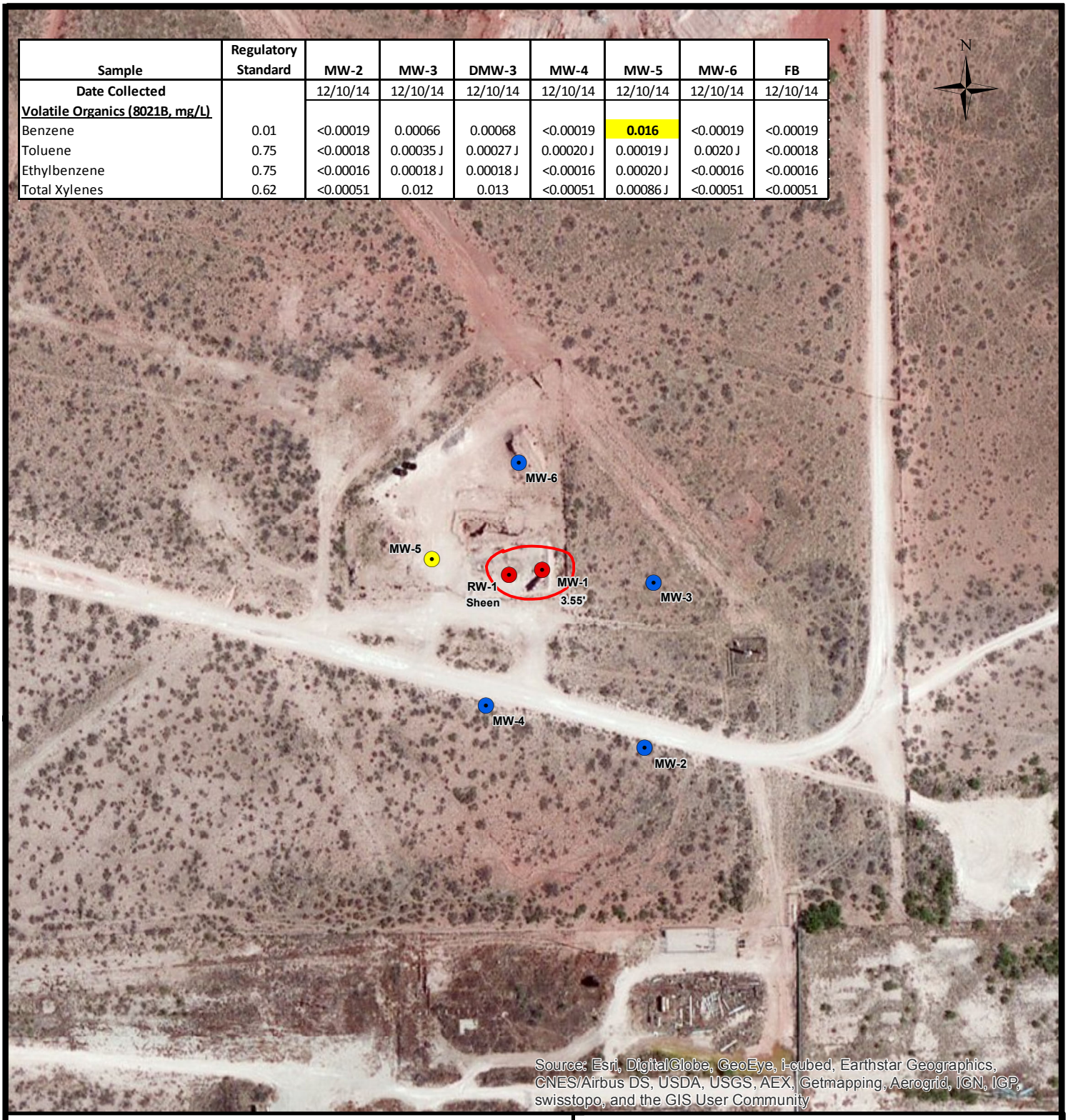
Approved:	---
Date:	01/06/2015
Map No.:	11561 Jal 4 Fig 3

FIGURE 3

Sample	Regulatory Standard	MW-2	MW-3	DMW-3	MW-4	MW-5	MW-6	FB
Date Collected		12/10/14	12/10/14	12/10/14	12/10/14	12/10/14	12/10/14	12/10/14
Volatile Organics (8021B, mg/L)								
Benzene	0.01	<0.00019	0.00066	0.00068	<0.00019	**0.016**	<0.00019	<0.00019
Toluene	0.75	<0.00018	0.00035 J	0.00027 J	0.00020 J	0.00019 J	0.0020 J	<0.00018
Ethylbenzene	0.75	<0.00016	0.00018 J	0.00018 J	<0.00016	0.00020 J	<0.00016	<0.00016
Total Xylenes	0.62	<0.00051	0.012	0.013	<0.00051	0.00086 J	<0.00051	<0.00051

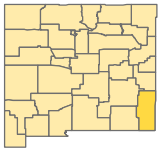


0 50 100 200
Feet

Legend

Well Locations

- Unaffected Well Location
- LNAPL Affected Well Location
- Groundwater Affected Well Location
- Measurable LNAPL



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Note

Wellhead locations are approximate based on historical maps.

REGENCY ENERGY PARTNERS LP
DALLAS, TEXAS

Jal 4

HYDROCARBON IMPACT MAP

LEA COUNTY, NEW MEXICO

CK Associates Environmental Consultants

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Checked:	KLM
Approved:	---
Date:	01/06/2015
Map No.:	11561 Jal 4 Fig 4

FIGURE 4

Tables

Table 1
Groundwater Elevation Table
Jal #4 Site
Regency Energy Partners, LP

Monitoring Well	Date Measured	Top of Casing Elevation (ft)[1]	Depth to Groundwater (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Groundwater Elevation (ft)[2]
RW-1				Diameter: 4 inch		Total Depth: 120.9 ft
	11/1/2013	3299.45	112.60	--	--	3186.85
	5/27/2014	3299.45	112.79	--	--	3186.66
	6/20/2014	3299.45	112.66	--	--	3186.79
	8/11/2014	3299.45	112.99	--	--	3186.46
	9/5/2014	3299.45	112.65	--	--	3186.80
	12/10/2014	3299.45	113.47	--	--	3185.98
MW-1				Diameter: 2 inch		Total Depth: 117.7 ft
	10/31/2013	3300.00	115.80	112.25	3.55	3186.86
	11/1/2013	3300.00	112.41	--	--	3187.59
	5/27/2014	3300.00	115.75	112.70	3.05	3186.54
	6/20/2014	3300.00	115.73	112.65	3.08	3186.58
	7/10/2014	3300.00	116.12	112.37	3.75	3186.69
	7/24/2014	3300.00	116.21	112.30	3.91	3186.72
	7/28/2014	3300.00	116.10	112.47	3.63	3186.62
	8/5/2014	3300.00	116.18	112.50	3.68	3186.58
	8/11/2014	3300.00	116.16	112.48	3.68	3186.60
	8/18/2014	3300.00	116.12	112.45	3.67	3186.63
	9/5/2014	3300.00	116.12	112.46	3.66	3186.63
	12/10/2014	3300.00	115.77	112.22	3.55	3186.89
MW-2				Diameter: 2 inch		Total Depth: 128.1 ft
	11/1/2013	3299.81	112.44	--	--	3187.37
	5/27/2014	3299.81	112.62	--	--	3187.19
	6/20/2014	3299.81	112.49	--	--	3187.32
	8/11/2014	3299.81	112.91	--	--	3186.90
	9/5/2014	3299.81	112.50	--	--	3187.31
	12/10/2014	3299.81	112.31	--	--	3187.50
MW-3				Diameter: 2 inch		Total Depth: 127.2 ft
	11/1/2013	3300.19	112.75	--	--	3187.44
	5/27/2014	3300.19	112.90	--	--	3187.29
	6/20/2014	3300.19	112.47	--	--	3187.72
	8/11/2014	3300.19	112.90	--	--	3187.29
	9/5/2014	3300.19	112.79	--	--	3187.40
	12/10/2014	3300.19	112.60	--	--	3187.59
MW-4				Diameter: 2 inch		Total Depth: 128.7 ft
	11/1/2013	3299.64	112.85	--	--	3186.79
	5/27/2014	3299.64	113.05	--	--	3186.59
	6/20/2014	3299.64	112.93	--	--	3186.71
	8/11/2014	3299.64	113.03	--	--	3186.61
	9/5/2014	3299.64	112.91	--	--	3186.73
	12/10/2014	3299.64	112.75	--	--	3186.89

Notes

1 Top of casing elevation as reported by Talon in the 2014 2nd Quarterly Report.

2 A specific gravity value of 0.75 was used in to calculate the potentiometric water level in LNAPL-affected wells.

Table 1
Groundwater Elevation Table
Jal #4 Site
Regency Energy Partners, LP

Monitoring Well	Date Measured	Top of Casing Elevation (ft)[1]	Depth to Groundwater (ft)	Depth to LNAPL (ft)	LNAPL Thickness (ft)	Groundwater Elevation (ft)[2]
MW-5				Diameter: 2 inch		Total Depth: 127.3 ft
	11/1/2013	3300.83	113.85	--	--	3186.98
	5/27/2014	3300.83	114.05	--	--	3186.78
	6/20/2014	3300.83	113.94	--	--	3186.89
	8/11/2014	3300.83	114.03	--	--	3186.80
	9/5/2014	3300.83	113.94	--	--	3186.89
	12/10/2014	3300.83	113.76	--	--	3187.07
MW-6				Diameter: 2 inch		Total Depth: 128.0 ft
	11/1/2013	3300.81	113.95	--	--	3186.86
	5/27/2014	3300.81	114.12	--	--	3186.69
	6/20/2014	3300.81	114.04	--	--	3186.77
	8/11/2014	3300.81	114.10	--	--	3186.71
	9/5/2014	3300.81	114.01	--	--	3186.80
	12/10/2014	3300.81	113.82	--	--	3186.99

Notes

1 Top of casing elevation as reported by Talon in the 2014 2nd Quarterly Report.

2 A specific gravity value of 0.75 was used in to calculate the potentiometric water level in LNAPL-affected wells.

Table 2
Groundwater Quality Table
Jal #4 Site
Regency Energy Partners, LP

Sample	Regulatory Standard[1]	MW-1	MW-2			MW-3			DMW-3
Date Collected		2/24/2013	6/20/2014	9/23/2014	12/10/2014	6/20/2014	9/23/2014	12/10/2014	12/10/2014
Volatile Organics (8021B, mg/L)									
Benzene	0.01	**4.91**	<0.00100	<0.00100	<0.00019	<0.00100	<0.00100	0.00066	0.00068
Toluene	0.75	**6.21**	<0.00100	<0.00100	<0.00018	<0.00100	<0.00100	0.00035 J	0.00027 J
Ethylbenzene	0.75	**0.798**	<0.00100	<0.00100	<0.00016	<0.00100	<0.00100	0.00018 J	0.00018 J
Total Xylenes	0.62	**2.24**	<0.00100	<0.00100	<0.00051	0.0398	0.204	0.012	0.013
Semivolatile Organics (8260D, mg/L)									
Anthracene	--	NA	NA	<0.000200	<0.0000076	NA	<0.000200	<0.0000076	<0.0000076
Acenaphthene	--	NA	NA	<0.000200	<0.0000082	NA	<0.000200	<0.0000082	<0.0000082
Acenaphthylene	--	NA	NA	<0.000200	<0.0000068	NA	<0.000200	<0.0000068	<0.0000068
Benzo(a)anthracene	--	NA	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	<0.000012
Benzo(a)pyrene	0.0007	NA	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	<0.000012
Benzo(b)fluoranthene	--	NA	NA	<0.000200	<0.000014	NA	<0.000200	<0.000014	<0.000014
Benzo(g,h,i)perylene	--	NA	NA	<0.000200	<0.000011	NA	<0.000200	<0.000011	<0.000011
Benzo(k)fluoranthene	--	NA	NA	<0.000200	<0.000014	NA	<0.000200	<0.000014	<0.000014
Chrysene	--	NA	NA	<0.000200	<0.000011	NA	<0.000200	<0.000011	<0.000011
Dibenzo(a,h)anthracene	--	NA	NA	<0.000200	<0.0000040	NA	<0.000200	<0.0000040	<0.0000040
Dibenzofuran	--	NA	NA	<0.000200	0.0000014 J	NA	<0.000200	0.0000083 J	0.0000087 J
Fluoranthene	--	NA	NA	<0.000200	<0.000016	NA	<0.000200	<0.000016	<0.000016
Fluorene	--	NA	NA	<0.000200	<0.0000085	NA	<0.000200	0.0000094 J	0.0000095 J
Indeno(1,2,3-cd)pyrene	--	NA	NA	<0.000200	<0.000015	NA	<0.000200	<0.000015	<0.000015
Naphthalene	--	NA	NA	<0.000200	<0.000020	NA	<0.000200	<0.000020	<0.000020
Phenanthrene	--	NA	NA	<0.000200	<0.0000082	NA	<0.000200	0.000012 J	<0.0000082
Pyrene	--	NA	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	<0.000012
1-Methylnaphthalene	--	NA	NA	<0.000200	<0.0000082	NA	<0.000200	0.0000088 J	0.0000083 J
2-Methylnaphthalene	--	NA	NA	<0.000200	<0.0000090	NA	<0.000200	<0.0000090	<0.0000090
2-Chloronaphthalene	--	NA	NA	NA	<0.0000065	NA	NA	<0.0000065	<0.0000065

Notes
1 - Human Health Standard for groundwater of <10,000 mg/L TDS (NMAC Section 20.6.2.3103)
NA - Not analyzed
-- indicates no standard established for analyte

Table 2
Groundwater Quality Table
Jal #4 Site
Regency Energy Partners, LP

Sample	Regulatory Standard[1]	MW-1	MW-2			MW-3			DMW-3
Date Collected		2/24/2013	6/20/2014	9/23/2014	12/10/2014	6/20/2014	9/23/2014	12/10/2014	12/10/2014
TPH (mg/L, SW8015)									
C6-C12 Gasoline Range Organics	--	42.9	NA	NA	NA	NA	NA	NA	NA
C12-C28 Diesel Range Organics	--	5.45	NA	NA	NA	NA	NA	NA	NA
C28-C35 Oil Range Organics	--	<1.50	NA	NA	NA	NA	NA	NA	NA
Other Constituents (mg/L)									
TDS (SM2540C)	--	650	NA	NA	NA	NA	NA	NA	NA
Chlorides (EPA 300/300.1)	--	57.1	NA	NA	NA	NA	NA	NA	NA
Field Parameters									
Temperature (°C)	--	NA	NA	NA	22.3	NA	NA	22.5	NA
pH	--	NA	NA	NA	7.33	NA	NA	6.86	NA
Oxidation-Reduction Potential (mV)	--	NA	NA	NA	102.7	NA	NA	-105.2	NA
Specific Conductivity (uS/cm)	--	NA	NA	NA	825	NA	NA	1166	NA
Dissolved Oxygen (mg/L)	--	NA	NA	NA	6.80	NA	NA	0.15	NA

Notes
1 - Human Health Standard for groundwater of <10,000 mg/L TDS (NMAC Section 20.6.2.3103)
NA - Not analyzed
-- indicates no standard established for analyte

Table 2
Groundwater Quality Table
Jal #4 Site
Regency Energy Partners, LP

Sample	Regulatory Standard[1]	MW-4			MW-5			MW-6			FB
Date Collected		6/20/2014	9/22/2014	12/10/2014	6/20/2014	9/22/2014	12/10/2014	6/20/2014	9/22/2014	12/10/2014	12/10/2014
Volatile Organics (8021B, mg/L)											
Benzene	0.01	<0.00100	<0.00100	<0.00019	<0.00100	<0.00100	**0.016**	<0.00100	<0.00100	<0.00019	<0.00019
Toluene	0.75	<0.00100	<0.00100	0.00020 J	<0.00100	<0.00100	0.00019 J	<0.00100	<0.00100	0.0020 J	<0.00018
Ethylbenzene	0.75	<0.00100	<0.00100	<0.00016	<0.00100	<0.00100	0.00020 J	<0.00100	<0.00100	<0.00016	<0.00016
Total Xylenes	0.62	<0.00100	0.0031	<0.00051	<0.00100	0.0014	0.00086 J	<0.00100	<0.00100	<0.00051	<0.00051
Semivolatile Organics (8260D, mg/L)											
Anthracene	--	NA	<0.000200	<0.0000076	NA	<0.000200	<0.0000076	NA	<0.000200	<0.0000076	<0.0000076
Acenaphthene	--	NA	<0.000200	<0.0000082	NA	<0.000200	<0.0000082	NA	<0.000200	<0.0000082	<0.0000082
Acenaphthylene	--	NA	<0.000200	<0.0000068	NA	<0.000200	<0.0000068	NA	<0.000200	<0.0000068	<0.0000068
Benzo(a)anthracene	--	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	<0.000012
Benzo(a)pyrene	0.0007	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	<0.000012
Benzo(b)fluoranthene	--	NA	<0.000200	<0.000014	NA	<0.000200	<0.000014	NA	<0.000200	<0.000014	<0.000014
Benzo(g,h,i)perylene	--	NA	<0.000200	<0.000011	NA	<0.000200	<0.000011	NA	<0.000200	<0.000011	<0.000011
Benzo(k)fluoranthene	--	NA	<0.000200	<0.000014	NA	<0.000200	<0.000014	NA	<0.000200	<0.000014	<0.000014
Chrysene	--	NA	<0.000200	<0.000011	NA	<0.000200	<0.000011	NA	<0.000200	<0.000011	<0.000011
Dibenzo(a,h)anthracene	--	NA	<0.000200	<0.0000040	NA	<0.000200	<0.0000040	NA	<0.000200	<0.0000040	<0.0000040
Dibenzofuran	--	NA	<0.000200	0.0000019 J	NA	<0.000200	<0.0000011	NA	<0.000200	0.0000021 J	0.0000012 J
Fluoranthene	--	NA	<0.000200	<0.000016	NA	<0.000200	<0.000016	NA	<0.000200	<0.000016	<0.000016
Fluorene	--	NA	<0.000200	<0.0000085	NA	<0.000200	<0.0000085	NA	<0.000200	<0.0000085	<0.0000085
Indeno(1,2,3-cd)pyrene	--	NA	<0.000200	<0.000015	NA	<0.000200	<0.000015	NA	<0.000200	<0.000015	<0.000015
Naphthalene	--	NA	<0.000200	<0.000020	NA	<0.000200	0.000028 J	NA	<0.000200	0.000030 J	<0.000020
Phenanthrene	--	NA	<0.000200	<0.0000082	NA	<0.000200	<0.0000082	NA	<0.000200	<0.0000082	<0.0000082
Pyrene	--	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	NA	<0.000200	<0.000012	<0.000012
1-Methylnaphthalene	--	NA	<0.000200	<0.0000082	NA	<0.000200	0.000010 J	NA	<0.000200	<0.0000082	<0.0000082
2-Methylnaphthalene	--	NA	<0.000200	<0.0000090	NA	<0.000200	0.000013 J	NA	<0.000200	<0.0000090	<0.0000090
2-Chloronaphthalene	--	NA	NA	<0.0000065	NA	NA	<0.0000065	NA	NA	<0.0000065	<0.0000065

Notes

1 - Human Health Standard for groundwater of <10,000 mg/L TDS (NMAC Section 20.6.2.3103)

NA - Not analyzed

-- indicates no standard established for analyte

Table 2
Groundwater Quality Table
Jal #4 Site
Regency Energy Partners, LP

Sample	Regulatory Standard[1]	MW-4			MW-5			MW-6			FB
Date Collected		6/20/2014	9/22/2014	12/10/2014	6/20/2014	9/22/2014	12/10/2014	6/20/2014	9/22/2014	12/10/2014	12/10/2014
TPH (mg/L, SW8015)											
C6-C12 Gasoline Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C12-C28 Diesel Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C28-C35 Oil Range Organics	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Constituents (mg/L)											
TDS (SM2540C)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorides (EPA 300/300.1)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters											
Temperature (°C)	--	NA	NA	21.4	NA	NA	23.0	NA	NA	23.0	NA
pH	--	NA	NA	7.18	NA	NA	6.79	NA	NA	7.13	NA
Oxidation-Reduction Potential (mV)	--	NA	NA	126.1	NA	NA	-123.5	NA	NA	89.8	NA
Specific Conductivity (uS/cm)	--	NA	NA	810	NA	NA	1489	NA	NA	655	NA
Dissolved Oxygen (mg/L)	--	NA	NA	6.04	NA	NA	0.16	NA	NA	4.23	NA

Notes
1 - Human Health Standard for groundwater of <10,000 mg/L TDS (NMAC Section 20.6.2.3103)
NA - Not analyzed
-- indicates no standard established for analyte

Appendix A

Laboratory Report

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

Report Summary

Wednesday December 17, 2014

Report Number: L738331
Samples Received: 12/11/14
Client Project: 1510

Description: Jal 4 Project

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-01

Site ID :

Project # : 1510

Date Received : December 11, 2014
Description : Jal 4 Project

Sample ID : FB

Collected By : Kate Magee
Collection Date : 12/10/14 11:30

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	U	0.00019	0.00019	0.00050	mg/l		8021B	12/16/14	1
Toluene	U	0.00018	0.00018	0.0050	mg/l		8021B	12/16/14	1
Ethylbenzene	U	0.00016	0.00016	0.00050	mg/l		8021B	12/16/14	1
Total Xylene	U	0.00051	0.00051	0.0015	mg/l		8021B	12/16/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	100.				% Rec.		8021B	12/16/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	0.0000012	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	U	0.0000085	0.0000085	0.000050	mg/l		8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	U	0.000020	0.000020	0.00025	mg/l		8270C-S	12/15/14	1
Phenanthrene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	U	0.0000082	0.0000082	0.00025	mg/l		8270C-S	12/15/14	1
2-Methylnaphthalene	U	0.0000090	0.0000090	0.00025	mg/l		8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	111.				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	110.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	116.				% Rec.		8270C-S	12/15/14	1

U = ND (Not Detected) = Less than SDL
Note:
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REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-02

Date Received : December 11, 2014
Description : Jal 4 Project

Site ID :

Sample ID : MW-4

Project # : 1510

Collected By : Kate Magee
Collection Date : 12/10/14 11:26

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	U	0.00019	0.00019	0.00050	mg/l		8021B	12/16/14	1
Toluene	0.00020	0.00018	0.00018	0.0050	mg/l	J	8021B	12/16/14	1
Ethylbenzene	U	0.00016	0.00016	0.00050	mg/l		8021B	12/16/14	1
Total Xylene	U	0.00051	0.00051	0.0015	mg/l		8021B	12/16/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	101.				% Rec.		8021B	12/16/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	0.0000019	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	U	0.0000085	0.0000085	0.000050	mg/l		8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	U	0.000020	0.000020	0.00025	mg/l		8270C-S	12/15/14	1
Phenanthrene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	U	0.0000082	0.0000082	0.00025	mg/l		8270C-S	12/15/14	1
2-Methylnaphthalene	U	0.0000090	0.0000090	0.00025	mg/l		8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	108.				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	109.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	80.8				% Rec.		8270C-S	12/15/14	1

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Note:
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REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-03

Site ID :

Project # : 1510

Date Received : December 11, 2014
Description : Jal 4 Project

Sample ID : MW-2

Collected By : Kate Magee
Collection Date : 12/10/14 12:18

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	U	0.00019	0.00019	0.00050	mg/l		8021B	12/16/14	1
Toluene	U	0.00018	0.00018	0.0050	mg/l		8021B	12/16/14	1
Ethylbenzene	U	0.00016	0.00016	0.00050	mg/l		8021B	12/16/14	1
Total Xylene	U	0.00051	0.00051	0.0015	mg/l		8021B	12/16/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	100.				% Rec.		8021B	12/16/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	0.0000014	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	U	0.0000085	0.0000085	0.000050	mg/l		8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	U	0.000020	0.000020	0.00025	mg/l		8270C-S	12/15/14	1
Phenanthrene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	U	0.0000082	0.0000082	0.00025	mg/l		8270C-S	12/15/14	1
2-Methylnaphthalene	U	0.0000090	0.0000090	0.00025	mg/l		8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	105.				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	105.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	105.				% Rec.		8270C-S	12/15/14	1

U = ND (Not Detected) = Less than SDL
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 12/17/14 09:19 Printed: 12/17/14 09:20

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REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-04

Date Received : December 11, 2014
Description : Jal 4 Project

Site ID :

Sample ID : MW-3

Project # : 1510

Collected By : Kate Magee
Collection Date : 12/10/14 13:10

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	0.00066	0.00019	0.00019	0.00050	mg/l		8021B	12/16/14	1
Toluene	0.00035	0.00018	0.00018	0.0050	mg/l	J	8021B	12/16/14	1
Ethylbenzene	0.00018	0.00016	0.00016	0.00050	mg/l	J	8021B	12/16/14	1
Total Xylene	0.012	0.00051	0.00051	0.0015	mg/l		8021B	12/16/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	99.4				% Rec.		8021B	12/16/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	0.0000083	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	0.0000094	0.0000085	0.0000085	0.000050	mg/l	J	8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	U	0.000020	0.000020	0.00025	mg/l		8270C-S	12/15/14	1
Phenanthrene	0.000012	0.0000082	0.0000082	0.000050	mg/l	J	8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	0.0000088	0.0000082	0.0000082	0.00025	mg/l	J	8270C-S	12/15/14	1
2-Methylnaphthalene	U	0.0000090	0.0000090	0.00025	mg/l		8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	106.				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	105.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	103.				% Rec.		8270C-S	12/15/14	1

U = ND (Not Detected) = Less than SDL
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-05

Date Received : December 11, 2014
Description : Jal 4 Project

Site ID :

Sample ID : DMW-3

Project # : 1510

Collected By : Kate Magee
Collection Date : 12/10/14 13:12

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	0.00068	0.00019	0.00019	0.00050	mg/l		8021B	12/16/14	1
Toluene	0.00027	0.00018	0.00018	0.0050	mg/l	J	8021B	12/16/14	1
Ethylbenzene	0.00018	0.00016	0.00016	0.00050	mg/l	J	8021B	12/16/14	1
Total Xylene	0.013	0.00051	0.00051	0.0015	mg/l		8021B	12/16/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	99.9				% Rec.		8021B	12/16/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	0.0000087	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	0.0000095	0.0000085	0.0000085	0.000050	mg/l	J	8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	U	0.000020	0.000020	0.00025	mg/l		8270C-S	12/15/14	1
Phenanthrene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	0.0000083	0.0000082	0.0000082	0.00025	mg/l	J	8270C-S	12/15/14	1
2-Methylnaphthalene	U	0.0000090	0.0000090	0.00025	mg/l		8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	100.				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	112.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	117.				% Rec.		8270C-S	12/15/14	1

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REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-06

Date Received : December 11, 2014
Description : Jal 4 Project

Site ID :

Sample ID : MW-6

Project # : 1510

Collected By : Kate Magee
Collection Date : 12/10/14 14:05

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	U	0.00019	0.00019	0.00050	mg/l		8021B	12/17/14	1
Toluene	0.00020	0.00018	0.00018	0.0050	mg/l	J	8021B	12/17/14	1
Ethylbenzene	U	0.00016	0.00016	0.00050	mg/l		8021B	12/17/14	1
Total Xylene	U	0.00051	0.00051	0.0015	mg/l		8021B	12/17/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	99.6				% Rec.		8021B	12/17/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	0.0000021	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	U	0.0000085	0.0000085	0.000050	mg/l		8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	0.000030	0.000020	0.000020	0.00025	mg/l	J	8270C-S	12/15/14	1
Phenanthrene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	U	0.0000082	0.0000082	0.00025	mg/l		8270C-S	12/15/14	1
2-Methylnaphthalene	U	0.0000090	0.0000090	0.00025	mg/l		8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	112.				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	106.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	111.				% Rec.		8270C-S	12/15/14	1

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REPORT OF ANALYSIS

Kate Magee
C-K Associates, LLC - Houston, TX
616 FM 1960 West, Ste 575
Houston, TX 77090

December 17, 2014

ESC Sample # : L738331-07

Date Received : December 11, 2014
Description : Jal 4 Project

Site ID :

Sample ID : MW-5

Project # : 1510

Collected By : Kate Magee
Collection Date : 12/10/14 14:42

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	0.016	0.00019	0.00019	0.00050	mg/l		8021B	12/17/14	1
Toluene	0.00019	0.00018	0.00018	0.0050	mg/l	J	8021B	12/17/14	1
Ethylbenzene	0.00020	0.00016	0.00016	0.00050	mg/l	J	8021B	12/17/14	1
Total Xylene	0.00086	0.00051	0.00051	0.0015	mg/l	J	8021B	12/17/14	1
Surrogate Recovery(%)									
a,a,a-Trifluorotoluene(PID)	99.3				% Rec.		8021B	12/17/14	1
Polynuclear Aromatic Hydrocarbons									
Anthracene	U	0.0000076	0.0000076	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Acenaphthylene	U	0.0000068	0.0000068	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)anthracene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(a)pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(b)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(g,h,i)perylene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Benzo(k)fluoranthene	U	0.000014	0.000014	0.000050	mg/l		8270C-S	12/15/14	1
Chrysene	U	0.000011	0.000011	0.000050	mg/l		8270C-S	12/15/14	1
Dibenz(a,h)anthracene	U	0.0000040	0.0000040	0.000050	mg/l		8270C-S	12/15/14	1
Dibenzofuran	U	0.0000011	0.0000010	0.000050	mg/l		8270C-S	12/15/14	1
Fluoranthene	U	0.000016	0.000016	0.000050	mg/l		8270C-S	12/15/14	1
Fluorene	U	0.0000085	0.0000085	0.000050	mg/l		8270C-S	12/15/14	1
Indeno(1,2,3-cd)pyrene	U	0.000015	0.000015	0.000050	mg/l		8270C-S	12/15/14	1
Naphthalene	0.000028	0.000020	0.000020	0.00025	mg/l	J	8270C-S	12/15/14	1
Phenanthrene	U	0.0000082	0.0000082	0.000050	mg/l		8270C-S	12/15/14	1
Pyrene	U	0.000012	0.000012	0.000050	mg/l		8270C-S	12/15/14	1
1-Methylnaphthalene	0.000010	0.0000082	0.0000082	0.00025	mg/l	J	8270C-S	12/15/14	1
2-Methylnaphthalene	0.000013	0.0000090	0.0000090	0.00025	mg/l	J	8270C-S	12/15/14	1
2-Chloronaphthalene	U	0.0000065	0.0000065	0.00025	mg/l		8270C-S	12/15/14	1
Surrogate Recovery									
Nitrobenzene-d5	98.7				% Rec.		8270C-S	12/15/14	1
2-Fluorobiphenyl	108.				% Rec.		8270C-S	12/15/14	1
p-Terphenyl-d14	112.				% Rec.		8270C-S	12/15/14	1

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Note:
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Reported: 12/17/14 09:19 Printed: 12/17/14 09:20

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L738331-01	WG759889	SAMP	Dibenzofuran	R3010174	J
L738331-02	WG759560	SAMP	Toluene	R3010351	J
	WG759889	SAMP	Dibenzofuran	R3010174	J
L738331-03	WG759889	SAMP	Dibenzofuran	R3010174	J
L738331-04	WG759560	SAMP	Toluene	R3010351	J
	WG759560	SAMP	Ethylbenzene	R3010351	J
	WG759889	SAMP	Dibenzofuran	R3010174	J
	WG759889	SAMP	Fluorene	R3010174	J
	WG759889	SAMP	Phenanthrene	R3010174	J
	WG759889	SAMP	1-Methylnaphthalene	R3010174	J
L738331-05	WG759560	SAMP	Toluene	R3010351	J
	WG759560	SAMP	Ethylbenzene	R3010351	J
	WG759889	SAMP	Dibenzofuran	R3010174	J
	WG759889	SAMP	Fluorene	R3010174	J
	WG759889	SAMP	1-Methylnaphthalene	R3010174	J
L738331-06	WG759560	SAMP	Toluene	R3010351	J
	WG759889	SAMP	Dibenzofuran	R3010174	J
	WG759889	SAMP	Naphthalene	R3010174	J
L738331-07	WG759560	SAMP	Toluene	R3010351	J
	WG759560	SAMP	Ethylbenzene	R3010351	J
	WG759560	SAMP	Total Xylene	R3010351	J
	WG759889	SAMP	Naphthalene	R3010174	J
	WG759889	SAMP	1-Methylnaphthalene	R3010174	J
	WG759889	SAMP	2-Methylnaphthalene	R3010174	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
12/17/14 at 09:20:54

TSR Signing Reports: 134
R5 - Desired TAT

Log for QCTX-S PO required

Sample: L738331-01 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19

Sample: L738331-02 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19

Sample: L738331-03 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19

Sample: L738331-04 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19

Sample: L738331-05 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19

Sample: L738331-06 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19

Sample: L738331-07 Account: CKHTX Received: 12/11/14 09:00 Due Date: 12/18/14 00:00 RPT Date: 12/17/14 09:19