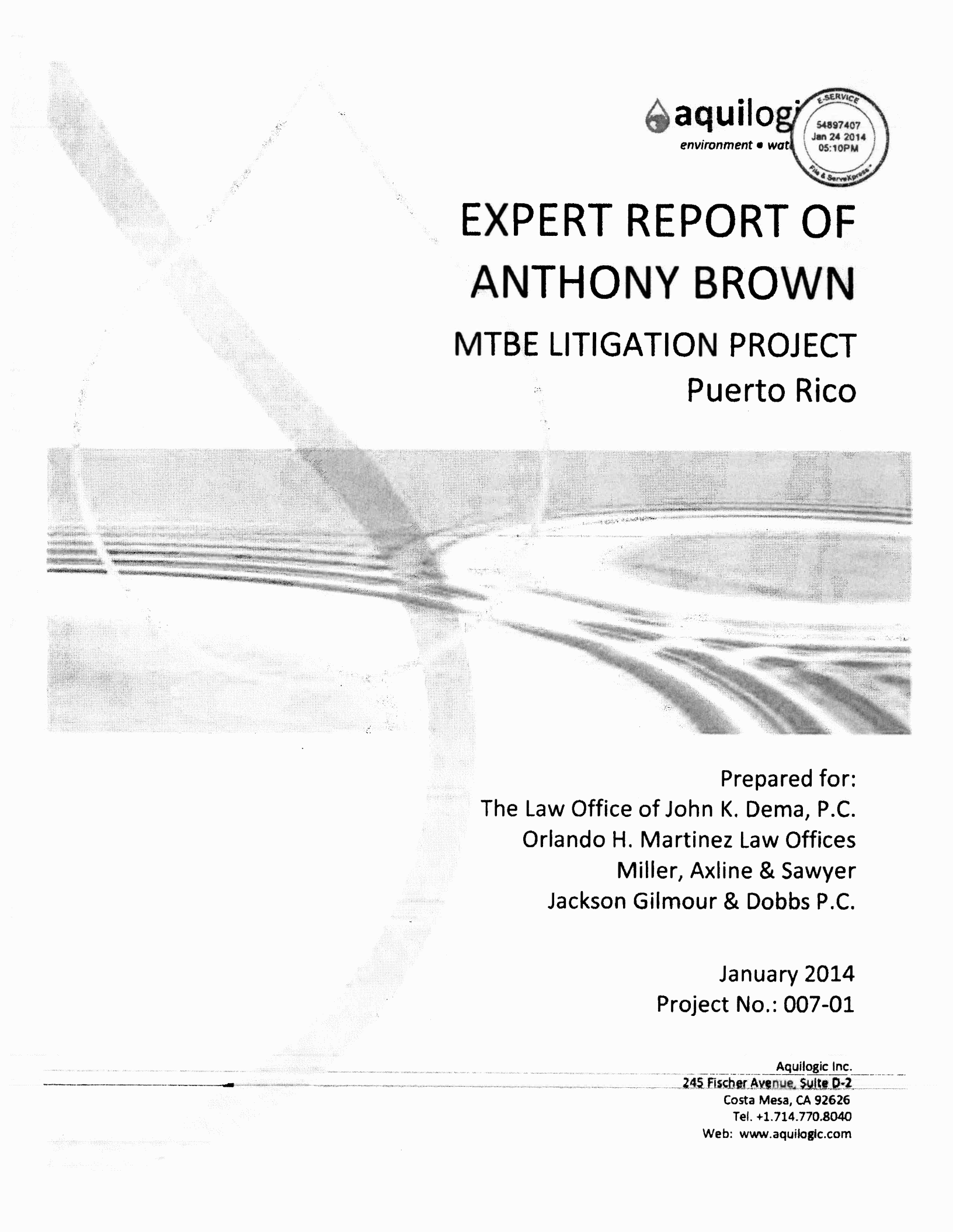


## EXHIBIT B

# EXPERT REPORT OF ANTHONY BROWN

## MTBE LITIGATION PROJECT Puerto Rico



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## 7.0 POZO CLUB DE LEONES

The Pozo Club de Leones Site consists of a groundwater contaminant plume with no confirmed source(s) of contamination (USEPA 2011). Detections of MTBE in groundwater samples collected from the Pozo Club de Leones well in 2006, 2007, and 2013 ranged in concentration from 0.94 ug/l (2006) to 1.66 ug/l (2013).

### 7.1 Site Background

The Pozo Club de Leones Site consists of a groundwater contaminant plume with no confirmed source(s) of contamination (USEPA 2011). The Site encompasses much of the municipality of Cabo Rojo, in southwestern Puerto Rico (Figure 7.1). The two contaminated water supply wells that constitute the Site, and represent the minimum dimensions of the plume extent, are the Ana Maria well and Pozo Club de Leones. The Ana Maria well is located approximately 500 feet northwest of the intersection of Calle Barbosa and Calle de Diego at 18.09073 degrees latitude and -67.14832 degrees longitude. Pozo Club de Leones well is located just north of the intersection of PR-103 and Callejon Los Pozes at 18.09399 degrees latitude and 67.13328 degrees longitude (USEPA 2010) (Figure 7.3).

The Cabo Rojo Urbano public water system consists of seven supply wells (Hacienda la Margarita, Cabo Rojo 1, Cabo Rojo 2, Cabo Rojo 3, Pozo Club de Leones, Ana Maria, and El Remanso) and one surface water source, which serve an estimated population of 46,911 (Figure 7.3). All of the supply wells are connected to a distribution system except the El Remanso well, which appears to be an independent system (PR-AAA\_005521). The Ana Maria well may also act as an independent system which serves approximately 1,856 people; the other components are blended to serve approximately 45,055 people (USEPA 2010).

VOCs were detected in groundwater samples collected from the Ana Maria, Pozo Club de Leones, and Hacienda wells by the Puerto Rico Aqueduct and Sewer Authority (PRASA) from 2002 to 2006. The VOCs included: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), and MTBE. Groundwater samples collected by the USEPA in July 2006 and September 2009 confirmed the presence of PCE and TCE in the Ana Maria well. Recent data submitted by PRASA shows that the contamination still exists in these wells, but below the respective USEPA MCLs (USEPA, 2012).

In an effort to identify the source(s) of contamination, from November 2006 through June 2007, the USEPA conducted Site reconnaissance activities at 68 facilities, and collected 61 surface soil samples, 66 subsurface soil samples, and 28 groundwater samples from 13 facilities. Although the USEPA did not confirm the source of groundwater contamination in the public supply wells, chlorinated solvents were detected at three facilities: D'Elegant Fantastic Dry Cleaners, Extasy Q

Prints, and Cabo Rojo Professional Dry Cleaners (USEPA 2011). The Site was subsequently added to the National Priorities List (NPL) on March 10, 2011 (USEPA\_CABO\_ROJO\_003903).

Soil gas data collected on June 14 to 18, 2011, confirmed the presence of subsurface contamination at the three facilities previously listed (USEPA\_CABO\_ROJO\_003903). However, the soil gas data also indicated that two additional sites may also be sources of contamination – PRIDCO Industrial Park and Serrano Dry Cleaners II (USEPA\_CABO\_ROJO\_003903).

Concentrations of MTBE in groundwater samples collected from Pozo Club de Leones in 2006, 2007, and 2013 ranged from 0.94 ug/l (PR-MTBE-248793) (2006) to 1.66 ug/l (2013) (Figure 7.4; Appendix 7.B). According to available databases (PRASA, 2007; USGS, 2011), six water supply wells were identified within a half-mile radius of the Club de Leones Well (Figure 7.3). Three of the supply wells were identified as public supply wells and three of the supply wells were identified as unused. Two additional wells were also identified; however, they are of unknown well type. During the November and December 2013 supply well sampling event, four of these wells were sampled including the Club de Leones Well. However, MTBE was only detected in the Club de Leones Well as discussed previously (Figure 7.4).

Of the 68 sites identified by the USEPA, MTBE was detected in shallow soil at the closest Site to Pozo Club de Leones – Future Blinds. Future Blinds is located approximately 600 feet north-northeast of Pozo Club de Leones. MTBE was detected in a soil sample collected in June 2007 at a concentration of 0.0075 mg/kg (SS04, 3.5 to 4.5 feet bgs) (USEPA\_CABO\_ROJO\_002707). A UST site, classified by the EQB as a gas station owned by Alfredo Carder Lugo, was located at the same address as Future Blinds, L&R Auto, and Junker Kenny (Road 103, km 4.0) (SOL\_ESI 18036). The UST at this location was located in the rear yard of a gasoline station, and was noted to have a capacity of 4,000 gallons.

Of the original 68 potential source sites listed by the USEPA, the following eight service stations, located within a two-mile radius of the Site, were identified as being potential sources of the MTBE contamination detected in Pozo Club de Leones:

- Shell Service Station #804231, located at Carbonell Corner Rd. 311;
- Shell Service Station #001937, located at Rd. 103, km 5.5;
- CITGO Service Station, located at Salvador Brau #65;
- Luis G. Fernandez #696, located at Rd. 100, km 6.4, Bo. Miradero;
- Shell Service Station #003689/Saul Comas #204104, located at Rd. 103, km 5.1;
- All Star (Ex Texaco #667), located at Rd. 102, km 23.9, Monte Grande;
- Cabo Rojo Service Station #646/Texaco #646, located at Rd. 103 and 102; and
- Georgina Feliciano #647, located at Rd. 103, km 6.9.

system ahead of time will allow for a more rapid response when such increasing concentrations are detected at the well.

In an effort to determine the source of the MTBE contamination, eight service stations were identified by USEPA within a two-mile radius of the Pozo Club de Leones well. Investigations will be needed at each of these sites to characterize hydrogeologic conditions, identify possible groundwater contamination, delineate the extent of possible groundwater contamination, assess contaminant fate and transport and threats to nearby receptors, and provide data to assist in the design of possible Site remediation and regional aquifer restoration programs. These investigations will include, at a minimum, installation of at least three groundwater monitoring wells at each site. In addition, a regional investigation will be required to characterize hydrogeologic and groundwater flow conditions, the extent of contamination, contaminant migration pathways, assess the risk posed to receptors, and provide data to assist in the design of a regional aquifer restoration program.

## 7.5 Key Opinions

The following summarizes the key findings of the investigative and remedial activities conducted to date, and our opinions based on the data reviewed:

1. Releases of gasoline containing MTBE have occurred in the vicinity of the Site.
2. MTBE has impacted soil and groundwater in the vicinity of the Site.
3. TBA may have impacted soil and groundwater in the vicinity of the Site.
4. MTBE has migrated from facilities in the vicinity of the Site.
5. TBA may have migrated from facilities in the vicinity of the Site.
6. Groundwater contamination associated with releases from several nearby facilities may have co-mingled.
7. There has been no investigation of potential groundwater contamination in the vicinity of the Site; thus, investigations have not delineated the extent of MTBE contamination in groundwater laterally.
8. There has been no investigation of potential groundwater contamination in the vicinity of the Site; thus, investigations have not delineated MTBE contamination in groundwater vertically.
9. There has been no investigation of potential groundwater contamination in the vicinity of the Site; thus, investigations have not delineated the extent of TBA contamination in groundwater laterally.
10. There has been no investigation of potential groundwater contamination in the vicinity of the Site; thus, investigations have not delineated TBA contamination in groundwater vertically.
11. MTBE contamination in groundwater exists beyond the current monitoring network.

## 9.5 Key Opinions

The following summarizes the key findings of the investigative and remedial activities conducted to date, and our opinions based on the data reviewed:

1. Releases of gasoline containing MTBE have occurred at the Site.
2. MTBE has impacted soil and possibly groundwater beneath the Site.
3. TBA may have impacted soil and groundwater beneath the Site.
4. MTBE may have migrated off-site beyond the Site boundaries.
5. TBA may have migrated off-site beyond the Site boundaries.
6. If it exists, groundwater contamination may have co-mingled with releases from nearby facilities.
7. There has been no investigation of potential groundwater contamination beneath the Site; thus, investigations have not delineated the extent of possible MTBE contamination in groundwater laterally.
8. There has been no investigation of potential groundwater contamination beneath the Site; thus, investigations have not delineated possible MTBE contamination in groundwater vertically.
9. There has been no investigation of potential groundwater contamination beneath the Site; thus, investigations have not delineated the extent of possible TBA contamination in groundwater laterally.
10. There has been no investigation of potential groundwater contamination beneath the Site; thus, investigations have not delineated possible TBA contamination in groundwater vertically.
11. There are no groundwater monitoring wells at the Site, and any possible MTBE contamination in groundwater would exist beyond the current monitoring network.
12. There are no groundwater monitoring wells at the Site, and any possible TBA contamination in groundwater would exist beyond the current monitoring network.
13. No remediation has been performed at the Site, to date; thus, remediation has not effectively addressed possible on-site MTBE/TBA groundwater contamination.
14. No remediation has been performed at the Site, to date; thus, remediation has not effectively controlled the off-site migration of possible MTBE/TBA groundwater contamination.
15. Off-site groundwater contamination may exist.
16. Additional Site investigation is required.
17. Investigation of deeper groundwater zones may be required.
18. Additional on-site remediation of groundwater may be required.
19. Additional off-site remediation of groundwater may be required.
20. Releases may pose a threat to deeper aquifers.