APPENDIX E

Laboratory Data Validation Reports
Calscience Environmental Laboratories, Inc.

Laboratory Data Validation Report

Sixteen groundwater samples (including fourteen primary and two field duplicate samples) and two trip blank samples were collected on July 20-21 and August 3, 2009 for the Norwalk DFSP Groundwater Monitoring Project (Third Quarter 2009). Samples were submitted to Calscience Environmental Laboratories, Inc. in Garden Grove California for the following analyses:

(1) Volatile Organics (EPA8260B)
(2) TPH as Gasoline (modified EPA 8015B)
(3) TPH as JP5 (modified EPA 8015B).

Results for these samples are summarized in Calscience report numbers **09-07-1700**, **09-07-1701**, and **09-08-0127**. The validation process included review of the following data as provided by the laboratory:

- Holding Times,
- Method and Trip Blanks,
- System Monitoring Compounds: Surrogate compounds for organic tests by GC and GC/MS,
- Matrix Spike/Matrix Spike Duplicate,
- Reporting Limits,
- Duplicate Samples,
- Laboratory Control Samples,
- Data Anomalies, and
- Case Narrative: if necessary.

1.0 HOLDING TIMES

Holding times were met for all project samples. Sample cooler temperatures were measured between 1.1 and 2.7^{0}C upon receipt at the laboratory at or below the required 4±2 ^{0}C criteria. Samples received at 1.3^{0}C (09-07-1700) and 1.1 ^{0}C (09-07-1701) are below the acceptable temperature range; however, sample data will not be qualified based on this observation alone.

2.0 METHOD AND TRIP BLANKS

Target compounds were not detected in the trip blank or any method blanks associated with project samples.

3.0 SYSTEM MONITORING COMPOUNDS

Surrogate recoveries were within in-house generated acceptance limits for all designated analyses and associated QC samples with the following exception. High surrogate recovery was reported for TPH as gasoline analysis of samples GMW-60 (248%) resulting in qualification as an estimate ("J" flag) of the TPH as gasoline result reported for this sample.

4.0 MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD)

MS/MSD analyses were performed with each VOC and TPH as gasoline analytical batches and demonstrated acceptable method precision and accuracy with the following exceptions.

- High MS (127%) and MSD (125%) recoveries of di-isopropyl ether (DIPE) were reported for VOC batch 090722L01; however, MS/MSD analysis was performed on a non-project sample and data qualification is not required.

LCS/LCSD pairs were analyzed in lieu of MS/MSD pairs for TPH as JP5 analysis (results summarized in Section 7.0).

5.0 REPORTING LIMITS

Reporting limits (RLs) were generally acceptable based on suggested reporting limits from EPA protocols and SW-846 guidelines.

6.0 DUPLICATES SAMPLES

Two field duplicate samples were collected during this monitoring event from GMW-58 (Dup-GMW-58) and GMW-59 (Dup-GMW-59) demonstrating acceptable method precision.

7.0 LABORATORY CONTROL SAMPLES

LCS/LCSD pairs were analyzed with TPH as JP-5, as well as, VOC and TPH as gasoline analyses and demonstrated acceptable method precision and accuracy with the following exception.

- High LCS (125%) and LCSD (126%) recoveries of di-isopropyl ether (DIPE) were reported for VOC batch 090722L01; however, this compound was not detected in associated project samples and data qualification is not required.
- Low LCSD recovery (63%) of TPH as gasoline and a high RPD between LCS/LCSD recoveries was reported for batch 090724B01; however, the LCS recovery was within acceptable limits. Associated project samples with detections of TPH as gasoline will be qualified as estimates ("J" flag) which may be biased low. Impacted samples include: GMW-59 (6,700 µg/L); GMW-60 (3,200 µg/L) and GMW-61 (760 µg/L).

8.0 DATA ANOMALIES

The follow project samples were diluted for VOC (method 8260B) analysis resulting in reporting of several target compounds as non-detect at elevated reporting limits (lowest dilution in noted in parenthesis next to the sample name): GMW-59 (5x), Dup-GMW-59 (5x), GMW-60 (10x), GMW-61 (5x), and GMW-62 (5x).

The sample chromatographic pattern of TPH as gasoline for project sample GMW-59 does not match the chromatographic pattern of the gasoline standard. Quantification of the unknown hydrocarbons in GMW-59 was based on the gasoline standard.

9.0 CASE NARRATIVES: COMMENTS ON SPECIAL ISSUES

There were no comments on any special issues in these laboratory reports.

Laboratory Data Validation Report

Twenty-nine groundwater samples (including twenty-six primary and three field duplicate samples) and three trip blank samples were collected on October 19-21 and August 3, 2009 for the Norwalk DFSP Groundwater Monitoring Project (Fourth Quarter 2009). Samples were submitted to Calscience Environmental Laboratories, Inc. in Garden Grove California for the following analyses:

(1) Volatile Organics (EPA8260B)
(2) TPH as Gasoline (modified EPA 8015B)
(3) TPH as JP5 (modified EPA 8015B).

Results for these samples are summarized in Calscience report numbers **09-10-1602**, **09-07-1666**, **09-10-1789**, and **09-08-0127**. The validation process included review of the following data as provided by the laboratory:

- Holding Times,
- Method and Trip Blanks,
- System Monitoring Compounds: Surrogate compounds for organic tests by GC and GC/MS,
- Matrix Spike/Matrix Spike Duplicate,
- Reporting Limits,
- Duplicate Samples,
- Laboratory Control Samples,
- Data Anomalies, and
- Case Narrative: if necessary.

1.0 HOLDING TIMES

Holding times were met for all project samples. Sample cooler temperatures were measured between 3.1 and 3.4^0C upon receipt at the laboratory at or below the required 4 ± 2 ^{0}C criteria. Samples received at 1.3^0C (09-07-1700) and 1.1 ^{0}C (09-07-1701) are below the acceptable temperature range; however, sample data will not be qualified based on this observation alone.

2.0 METHOD AND TRIP BLANKS

Target compounds were not detected in the trip blank or any method blanks associated with project samples.

3.0 SYSTEM MONITORING COMPOUNDS

Surrogate recoveries were within in-house generated acceptance limits for all designated analyses and associated QC samples with the following exceptions. High surrogate recovery was reported for TPH as gasoline analysis of samples GMW-60 (192%) and GMW-61 (132%) resulting in qualification as an estimate ("J" flag) of the TPH as gasoline result reported for this sample.

4.0 MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD)

MS/MSD analyses were performed with each VOC and TPH as gasoline analytical batches and demonstrated acceptable method precision and accuracy with the following exceptions.

- Low MSD recovery (66%) and a high RPD between MS/MSD recoveries of 1,2-dichlorobezene were reported for VOC batch 091022L01; however, MS/MSD analysis was performed on a non-project sample and data qualification is not required.
- Low MS (71%) recovery and a high RPD between MS/MSD recoveries of TBA were reported for VOC batch 091022L01; however, MS/MSD analysis was performed on a non-project sample and data qualification is not required.

LCS/LCSD pairs were analyzed in lieu of MS/MSD pairs for TPH as JP5 analysis (results summarized in Section 7.0).

5.0 REPORTING LIMITS

Reporting limits (RLs) were generally acceptable based on suggested reporting limits from EPA protocols and SW-846 guidelines.

6.0 DUPLICATES SAMPLES

One field duplicate samples were collected during this monitoring event from GMW-17 (Dup in SDG 09-10-1666), GMW-58 (Dup in SDG 09-10-1602) and GMW-59 (Dup-GMW-59) demonstrating acceptable method precision for all analyses with the following exception. A high RPD was calculated between TPH-JP5 results reported for GMW-58 and corresponding field duplicate Dup resulting in qualification of these TPH-JP5 results as estimates (“J” flag).

7.0 LABORATORY CONTROL SAMPLES

LCS/LCSD pairs were analyzed with TPH as JP-5, as well as, VOC and TPH as gasoline analyses and demonstrated acceptable method precision and accuracy with the following exception.

- High RPD (24%) was calculated between LCS/LCSD recoveries of ethyl tert-butyl ether (ETBE) were reported for VOC batch 091021L01; however, this compound was not detected in associated project samples and data qualification is not required.
- Low LCSD recovery (63%) of TPH as gasoline and a high RPD between LCS/LCSD recoveries was reported for batch 090724B01; however, the LCS recovery was within acceptable limits. Associated project samples with detections of TPH as gasoline will be qualified as estimates (“J” flag) which may be biased low. Impacted samples include: GMW-59 (6,700 µg/L); GMW-60 (3,200 µg/L) and GMW-61 (760 µg/L).

8.0 DATA ANOMALIES

The follow project samples were diluted for VOC (method 8260B) analysis resulting in reporting

of several target compounds as non-detect at elevated reporting limits (lowest dilution in noted in parenthesis next to the sample name): GMW-59 (5x), Dup-GMW-59 (5x), GMW-60 (10x), GMW-61 (5x), and GMW-62 (5x).

The sample chromatographic pattern of TPH as gasoline for project samples GMW-60 and GMW-61 does not match the chromatographic pattern of the gasoline standard. Quantification of the unknown hydrocarbons in GMW-60 and GMW-61 was based on the gasoline standard.

The sample chromatographic pattern of TPH as JP-5 for project samples GMW-6, GMW-12, GMW-15, and GMW-32 does not match the chromatographic pattern of the JP-5 standard. Quantification of the unknown hydrocarbons in GMW-6, GMW-12, GMW-15, and GMW-32 was based on the JP-5 standard.

9.0 CASE NARRATIVES: COMMENTS ON SPECIAL ISSUES

There were no comments on any special issues in these laboratory reports.