

**SECOND QUARTER 2008
NPDES SELF MONITORING REPORT**

**PACKAGED GROUNDWATER TREATMENT PLANT AT IR SITE 3
CALIFORNIA NPDES PERMIT #CAG912002, ORDER #R2-2006-0075**

**NAVAL FUEL DEPOT POINT MOLATE
RICHMOND, CALIFORNIA**

**Naval Facilities Engineering Command Southwest
1220 Pacific Highway
San Diego, CA 92132**

Contract No. N62473-07-D-3214, D.O. No. 0003

July 28, 2008



**RORE, Inc.
5151 Shoreham Place, Suite 260
San Diego, CA 92122**

**SECOND QUARTER 2008 NATIONAL POLLUTANT DISCHARGE ELIMINATION
SYSTEM SELF-MONITORING REPORT
FOR
THE PACKAGED GROUNDWATER TREATMENT PLANT
Order No. R2-2006-0075, NPDES PERMIT No. CAG912002
NAVAL FUEL DEPOT POINT MOLATE
RICHMOND, CALIFORNIA**

1.0 COMPLIANCE OVERVIEW

The Packaged Groundwater Treatment Plant (PGWTP) is operated normally during the months of April through June of 2008. The influent and effluent samples were collected and analyzed in accordance with the National Pollutant Discharge Elimination System (NPDES) permit No. CAG912002, Order No. R2-2006-0075, which is effective until January 12, 2012. Per permit requirements, this quarterly report was prepared to summarize the second quarter self monitoring samples and includes tabular summary of the monitoring data that were obtained throughout the quarter. In addition, a comprehensive discussion of the compliance record is contained in this report.

This report will be submitted in electronic data format for the PGWTP via the Internet to the State Water Resources Control Board GeoTracker System. This submission will be in a searchable, linked "pdf" format and will include all tables and attachments.

2.0 ANALYTICAL PROGRAM

The PGWTP samples were numbered according to the following format:

3214-003-XXX,

Where, 3214 is the four-digit Fixed Price Remediation Action Contract number, 003 is the three-digit Contract Task Order number, and XXX is a sequential number for this project. The sample numbers were recorded at the time of sample collection, in the field logbook and on the Chain-of-Custody (COC) form. A complete description of the sample and sampling circumstances was recorded in the field logbook and referenced using the unique sample identification numbers. Analytical data summary tables, including the analytical methods for the reporting period, are included in Attachment 1.

As a quality control and assurance measure, the laboratory is required to perform method blanks, laboratory control samples, and initial/continuing calibration (depending on method). The laboratory is also required to perform an analyst review, peer review, technical review, and management review on 100 percent of the data provided, and a quality assurance review on 10 percent of the reports by analytical method. In the field, a trip blank is required for every set of samples that require volatile organic compound analyses. A matrix spike/matrix spike duplicate is performed once on every 20

samples. Upon receipt of the data, the project chemist conducts data evaluation to ensure compliance with all quality control and assurance procedures.

2.1 Additional Samples

In order to monitor and to optimize the plant operation, sampling of intermediate treatment locations is conducted as determined necessary and as part of the Self-Monitoring Program. Also, if analytical results exceed any instantaneous maximum limit, a confirmation sample is collected within 24 hours and analyzed within 24 hours of sampling.

Three additional samples were collected during the second quarter of 2008:

- 1) Sample No. 3214-003-031: Intermediate sample, collected between the lead and lag granular activated carbon (GAC) vessels, analyzed for TPH
- 2) Sample No. 3214-003-039: Intermediate sample, collected between the lead and lag GAC vessels, analyzed for TPH
- 3) Sample No. 3214-003-045: Intermediate sample, collected between the lead and lag GAC vessels, analyzed for TPH

The samples were collected to evaluate the performance of the GAC vessels.

2.2 Laboratory Results

Analytical results confirmed that the effluent met all discharge limits specified in the NPDES permit during the second quarter of 2008. Analytical results for polycyclic aromatic hydrocarbons and TPH for the second quarter are listed in Table 2-1. Per the permit, receiving water was also collected and analyzed for hardness. The result indicates 5,810 milligrams per liter (mg/L) for hardness as calcium carbonate (CaCO_3); this value is a decrease from the first quarter of 2008 (6,570 mg/L).

Table 2-1
2nd Quarter 2008
PGWTP Sample Results

| 2 nd Quarter 2008 | | | |
|------------------------------|----------------------|------------------------|----------------|
| Sample | TPH-Diesel (µg/L) | TPH-Bunker C (µg/L) | PAHs (µg/L) |
| Maximum daily limit | 50 | 300 | 0.2 |
| April Influent (SGCU) | 50 U | 300 U | |
| April Effluent (SGCU) | 50 U | 300 U | |
| May Influent (SGCU) | 50 U | 300 U | |
| May Effluent (SGCU) | 50 U | 300 U | |
| June Influent (SGCU) | 50 U | 300 U | 0.2 U |
| June Effluent (SGCU) | 50 U | 300 U | 0.2 U |

Notes:

µg/L denotes micrograms per liter
 TPH denotes total petroleum hydrocarbons
 PAH denotes polycyclic aromatic hydrocarbons
 SGCU denotes silica gel cleanup
 U denotes not detected at or above the reporting limit

3.0 OPERATION SUMMARY AND MASS REMOVAL

The PGWTP operated normally during the second quarter of 2008. There was a decrease in flow rate from March to April due to decreased precipitation. For several weeks during April, the influent to the system from the extraction well was shut off for 48 hours at a time to allow the groundwater level to recharge. While the influent to the system was shutdown, the blowers to the bioreactor continued operation in order to maintain a constant air supply to the biomass. Once groundwater levels recharged, the flow rate was increased slightly during May and June to maintain static water levels.

Table 3-1 below provides the volume of groundwater that was treated and discharged, and the TPH mass that was removed during the second quarter. Values for mass that was removed were estimated using the TPH concentrations in the influent and the effluent from the silica gel cleanup analytical method. During the second quarter, the total groundwater that was treated and discharged is estimated at 223,930 gallons, and the TPH mass that was removed is estimated at zero pounds.

Table 3-1
2nd Quarter 2008

PGWTP Volume And Mass Process Data

| Week | Weekly Flow (gallons) | TPH Mass Removed (pounds) |
|----------------------------|----------------------------------|--------------------------------------|
| Week of 4/7/08 | 26,760 | 0.00 |
| Week of 4/14/08 | 5,524 | 0.00 |
| Week of 4/21/08 | 2,856 | 0.00 |
| Week of 4/30/08 | 31,354 | 0.00 |
| Total (April, 2008) | 66,494 | 0.00 |
| Week of 5/7/08 | 18,801 | 0.00 |
| Week of 5/14/08 | 18,779 | 0.00 |
| Week of 5/21/08 | 17,912 | 0.00 |
| Week of 5/31/08 | 26,835 | 0.00 |
| Total (May, 2008) | 82,327 | 0.00 |
| Week of 6/7/08 | 17,002 | 0.00 |
| Week of 6/14/08 | 17,655 | 0.00 |
| Week of 6/21/08 | 17,223 | 0.00 |
| Week of 6/30/08 | 23,229 | 0.00 |
| Total (June, 2008) | 75,109 | 0.00 |
| Total Quarterly | 223,930 | 0.00 |
| Cumulative Flow | 47,423,600 | |

Notes:

The weeks of 4/30/08, 5/31/08, and 6/30/08 include 9, 10, and 9 days, respectively.

Cumulative flow is the total flow registered in the effluent totalizer and indicates the volume of water treated and discharged to the San Francisco Bay since the system startup.

ATTACHMENT 1
Second Quarter 2008
Monthly Analytical Data Tables

**Point Molate Naval Fuel Depot
Packaged Groundwater Treatment Plant Analytical Data
April 2008**

U.S. Navy
Contract No. N62473-07-D-3214

| Sample ID | Sample Location | Sampling Date | DO | pH | Flow Rate | Temp | Conductivity | Salinity | MTBE+BTEX | TPH-Diesel | TPH-Bunker C |
|---------------------|-----------------------------------|---------------|------------|--------|-----------|------------|---------------|----------|------------|------------|--------------|
| EPA method Units | | | mg/L | | gpd | deg C | mS/cm | % | 8260B µg/L | 8015B µg/L | 8015B µg/L |
| Permit Requirements | Month Ave | | See Note 1 | 6 to 9 | | See Note 2 | | | See Note 3 | NE | NE |
| | Weekly Ave | | | 6 to 9 | | | | | | NE | NE |
| | Daily Max | | | 6 to 9 | | | | | | NE | NE |
| | Instantaneous | | | 6 to 9 | | | | | | NE | NE |
| | Daily Ave | | | >5.0 | | | | | | 50 | 300 |
| 3214-003-029 | Influent (SGCU) | 4/28/2008 | 6.21 | 7.45 | | 21.7 | 1.04 | 0.08 | NA | 50 U | 300 U |
| 3214-003-030 | Influent | 4/28/2008 | 6.21 | 7.45 | | 21.7 | 1.04 | 0.08 | 0.17J | NA | NA |
| 3214-003-031 | Intermediate | 4/28/2008 | | | | | | | NA | 50 U | 300 U |
| 3214-003-032 | Effluent (SGCU) | 4/28/2008 | 7.89 | 7.86 | | 13.2 | 1.73 | 0.08 | NA | 50 U | 300 U |
| 3214-003-033 | Effluent | 4/28/2008 | 7.89 | 7.86 | | 13.2 | 1.73 | 0.08 | 5 U | NA | NA |
| 3214-003-034 | Trip Blank | 4/28/2008 | | | | | | | 5 U | NA | NA |
| 3214-003-035 | Effluent FD (SGCU) | 4/28/2008 | 7.89 | 7.86 | | 13.2 | 1.73 | 0.08 | NA | 50 U | 300 U |
| 3214-003-036 | Effluent FD | 4/28/2008 | 7.89 | 7.86 | | 13.2 | 1.73 | 0.08 | 5 U | NA | NA |
| | Effluent | 4/1/2008 | | | | | 3909 | | | | |
| | Effluent | 4/2/2008 | | | | | 4075 | | | | |
| | Effluent | 4/3/2008 | | | | | 3246 | | | | |
| | Effluent | 4/4/2008 | | | | | 3883 | | | | |
| | Effluent | 4/5/2008 | | | | | 3883 | | | | |
| | Effluent | 4/6/2008 | | | | | 3883 | | | | |
| | Effluent | 4/7/2008 | | | | | 3883 | | | | |
| | Effluent | 4/8/2008 | | | | | 4382 | | | | |
| | Effluent | 4/9/2008 | | | | | 0 | | | | |
| | Effluent | 4/10/2008 | | | | | 0 | | | | |
| | Effluent | 4/11/2008 | | | | | 571 | | | | |
| | Effluent | 4/12/2008 | | | | | 0 | | | | |
| | Effluent | 4/13/2008 | | | | | 0 | | | | |
| | Effluent | 4/14/2008 | | | | | 571 | | | | |
| | Effluent | 4/15/2008 | | | | | 0 | | | | |
| | Effluent | 4/16/2008 | | | | | 0 | | | | |
| | Effluent | 4/17/2008 | | | | | 571 | | | | |
| | Effluent | 4/18/2008 | | | | | 571 | | | | |
| | Effluent | 4/19/2008 | | | | | 571 | | | | |
| | Effluent | 4/20/2008 | | | | | 571 | | | | |
| | Effluent | 4/21/2008 | | | | | 571 | | | | |
| | Effluent | 4/22/2008 | | | | | 571 | | | | |
| | Effluent | 4/23/2008 | | | | | 4139 | | | | |
| | Effluent | 4/24/2008 | | | | | 3540 | | | | |
| | Effluent | 4/25/2008 | | | | | 1362 | | | | |
| | Effluent | 4/26/2008 | | | | | 3930 | | | | |
| | Effluent | 4/27/2008 | | | | | 3930 | | | | |
| | Effluent | 4/28/2008 | | | | | 3928 | | | | |
| | Effluent | 4/29/2008 | | | | | 4979 | | | | |
| | Effluent | 4/30/2008 | | | | | 4975 | | | | |
| | Minimum | | | | | | 0 | | | | gpd |
| | Maximum | | | | | | 4,979 | | | | gpd |
| | Number of days discharging | | | | | | 24 | | | | days |
| | Total discharged | | | | | | 66,494 | | | | gal |
| | Average daily Flow | | | | | | 2,216 | | | | gpd |
| | Total TPH removed | | | | | | 0.00 | | | | lb |

µg/L denotes microgram per liter
 BTEX denotes Benzene, Toluene, Ethylbenzene, and Xylenes
 deg C denotes degrees Celsius
 DO denotes dissolved oxygen
 EPA denotes U.S. Environmental Protection Agency
 gpd denotes gallons per day
 lb denotes pound
 mg/L denotes milligram per liter
 MTBE denotes Methyl Tertiary Butyl Ether
 mS/cm denotes millisiemens per centimeter
 FD denotes field duplicate sample

NA denotes not analyzed
 NE denotes not established
 PAH denotes polynuclear aromatic hydrocarbon
 SGCU denotes silica gel cleanup
 SIM denotes selective ion monitoring
 TEMP denotes temperature
 TPH denotes total petroleum hydrocarbons
 U denotes not detected at or above the indicated reporting limit
 Ave denotes average
 gal denotes gallons
 J denotes estimated value

Note 1: There is no limit for dissolved oxygen at the PGWTP discharge pipe. The permit requires the dissolved oxygen concentration to be > 5.0 mg/L within 1 foot of the receiving water surface. The permit requires daily receiving water sampling only when bypassing occurs from any of the treatment units in the treatment facilities for more than 24 hours, and when the bypass results in violation of any effluent limitation

Note 2: There is no permit level for temperature at the PGWTP discharge pipe. The permit requires that the discharge shall not alter the temperature of the receiving water beyond natural background levels. The permit requires daily receiving water sampling only when bypassing occurs from any of the treatment facilities for more than 24 hours, and when the bypass results in violation of any effluent limitation.

Note 3: Permit requirements for individual analytes can be found in the permit. (Permit No. CAG912002, Order No. R2-2006-0075).

**Point Molate Naval Fuel Depot
Packaged Groundwater Treatment Plant Analytical Data
May 2008**

U.S. Navy
Contract No. N62473-07-D-3214

| Sample ID | Sample Location | Sampling Date | DO | pH | Flow Rate | Temp | Conductivity | Salinity | MTBE+BTEX | TPH-Diesel | TPH-Bunker C |
|---------------------|-----------------------------------|---------------|------------|--------|-----------|---------------|--------------|----------|------------|------------|--------------|
| EPA method Units | | | mg/L | | gpd | deg C | mS/cm | % | 8260B µg/L | 8015B µg/L | 8015B µg/L |
| Permit Requirements | Month Ave | | See Note 1 | 6 to 9 | | See Note 2 | | | See Note 3 | NE | NE |
| | Weekly Ave | | | 6 to 9 | | | | | | NE | NE |
| | Daily Max | | | 6 to 9 | | | | | | NE | NE |
| | Instantaneous | | | 6 to 9 | | | | | | NE | NE |
| | Daily Ave | | | >5.0 | | | | | | 50 | 300 |
| 3214-003-037 | Influent (SGCU) | 5/27/2008 | 5.07 | 6.58 | | 18.6 | 3.91 | NA | NA | 50 U | 300 U |
| 3214-003-038 | Influent | 5/27/2008 | 5.07 | 6.58 | | 18.6 | 3.91 | NA | 5 U | NA | NA |
| 3214-003-039 | Intermediate | 5/27/2008 | 13.86 | 8.22 | | 17.4 | 3.90 | NA | NA | 50 U | 300 U |
| 3214-003-040 | Effluent (SGCU) | 5/27/2008 | 7.96 | 7.72 | | 17.0 | 3.91 | 0.19 | NA | 50 U | 300 U |
| 3214-003-041 | Effluent | 5/27/2008 | 7.96 | 7.72 | | 17.0 | 3.91 | 0.19 | 5 U | NA | NA |
| 3214-003-042 | Trip Blank | 5/27/2008 | NA | NA | | NA | NA | NA | 5 U | NA | NA |
| | Effluent | 5/1/2008 | | | | 3073 | | | | | |
| | Effluent | 5/2/2008 | | | | 2664 | | | | | |
| | Effluent | 5/3/2008 | | | | 2664 | | | | | |
| | Effluent | 5/4/2008 | | | | 2664 | | | | | |
| | Effluent | 5/5/2008 | | | | 2664 | | | | | |
| | Effluent | 5/6/2008 | | | | 2393 | | | | | |
| | Effluent | 5/7/2008 | | | | 2677 | | | | | |
| | Effluent | 5/8/2008 | | | | 2938 | | | | | |
| | Effluent | 5/9/2008 | | | | 2732 | | | | | |
| | Effluent | 5/10/2008 | | | | 2732 | | | | | |
| | Effluent | 5/11/2008 | | | | 2732 | | | | | |
| | Effluent | 5/12/2008 | | | | 2543 | | | | | |
| | Effluent | 5/13/2008 | | | | 2568 | | | | | |
| | Effluent | 5/14/2008 | | | | 2534 | | | | | |
| | Effluent | 5/15/2008 | | | | 2369 | | | | | |
| | Effluent | 5/16/2008 | | | | 2759 | | | | | |
| | Effluent | 5/17/2008 | | | | 2759 | | | | | |
| | Effluent | 5/18/2008 | | | | 2759 | | | | | |
| | Effluent | 5/19/2008 | | | | 2759 | | | | | |
| | Effluent | 5/20/2008 | | | | 2531 | | | | | |
| | Effluent | 5/21/2008 | | | | 1977 | | | | | |
| | Effluent | 5/22/2008 | | | | 2823 | | | | | |
| | Effluent | 5/23/2008 | | | | 2823 | | | | | |
| | Effluent | 5/24/2008 | | | | 2718 | | | | | |
| | Effluent | 5/25/2008 | | | | 2718 | | | | | |
| | Effluent | 5/26/2008 | | | | 2718 | | | | | |
| | Effluent | 5/27/2008 | | | | 2718 | | | | | |
| | Effluent | 5/28/2008 | | | | 2612 | | | | | |
| | Effluent | 5/29/2008 | | | | 2618 | | | | | |
| | Effluent | 5/30/2008 | | | | 2544 | | | | | |
| | Effluent | 5/31/2008 | | | | 2544 | | | | | |
| | Minimum | | | | | 1,977 | gpd | | | | |
| | Maximum | | | | | 3,073 | gpd | | | | |
| | Number of days discharging | | | | | 31 | days | | | | |
| | Total discharged | | | | | 82,327 | gal | | | | |
| | Average daily Flow | | | | | 2,656 | gpd | | | | |
| | Total TPH removed | | | | | 0.00 | lb | | | | |

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