GW – 001

RIVER TERRACE VOLUNTARY CORRECTIVE MEASURES

2017

Western Refining

WNR LISTED NYSE

February 27, 2018

John E. Kieling, Bureau Chief
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Santa Fe, NM 87505
Via Certified Mail
Return Receipt # 70141820000050040884

Carl Chavez
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505
Via Certified Mail
Return Receipt # 70141820000050040891

Re: River Terrace Voluntary Corrective Measures
Bioventing / Air Sparging System Annual Report
January 2017 through December 2017

Dear Mr. Kieling and Mr. Chavez,

Western Refining Southwest, Inc. - Bloomfield Terminal submits the River Terrace Voluntary Corrective Measures Bioventing System Annual Report pursuant to Section V.B.1. of the July 2007 Consent Order. This report summarizes monitoring activities and data gathered at the River Terrace throughout 2017.

If you have questions or would like to discuss any aspect of the report, please contact me at (915) 534-1483.

Sincerely,

ALLEN S. HAINS
Manager Remediation Projects
Western Refining Southwest, Inc.

MAR 01 2018 PM03:02

RIVER TERRACE ANNUAL REPORT
Voluntary Bioventing / Air Sparging System

January – December 2017

Bloomfield Terminal
(Former Bloomfield Refinery)

Western Refining Southwest, Inc.
#50 Rd 4990
Bloomfield, New Mexico 87413

Submitted: March 2018

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List of Acronyms

benzene, toluene, ethylbenzene, and total xylene (BTEX)

below grade surface (bgs)

biovent well (BV)

carbon dioxide (CO_2)

central federal register (CFR)

cubic feet per second (cfs)

dewatering well (DW)

diesel range organics (DRO)

dissolved oxygen (DO)

feet (ft)

degrees Fahrenheit (°F)

gasoline range organics (GRO)

granulated activated carbon (GAC)

investigation derived waste (IDW)

liters (L)

liquid petroleum gas (LPG)

maximum contaminant level (MCL)

methyl tert-butyl ether (MTBE)

micrograms per liter (ug/L)

micro mhos per centimeter (umhos/cm)

milligrams per liter (mg/L)

millivolts (mV)

monitoring well (MW)

motor oil range organics (MRO)

New Mexico Administrative Code (NMAC)

No Product Present (NPP)

New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB)

Oxidation reduction potential (ORP)

parts per million (ppm)

photoionization detector (PID)

polyvinyl chloride (PVC)

pounds per square inch (psi)

Resource Conservation and Recovery Act (RCRA)

separate phase hydrocarbon (SPH)

Solid Waste Management Units (SWMUs)

Temperature (TEMP)

Temporary piezometer (TP)

top of casing (TOC)

total petroleum hydrocarbon (TPH)

United States Environmental Protection Agency (USEPA)

Water Quality Control Commission (WQCC)

Executive Summary

This Report is a summary of monitoring activities conducted in 2017 at the River Terrace Bioventing / Air Sparging System located at the Bloomfield Terminal (Former Bloomfield Refinery). The following is a synopsis of activities performed at the River Terrace in 2017.

Groundwater Monitoring

Groundwater samples were collected at specific wells and analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), Total Petroleum Hydrocarbons (TPH) Diesel Range Organics (DRO), TPH Gasoline Range Organics (GRO), TPH Motor Oil Range Organics (MRO), and total lead. The analytical results for samples collected in 2017 during San Juan River low flow conditions were below their respective screening levels with the following exceptions:

- Xylenes were detected at concentrations above the respective WQCC screening level of 0.62 mg/L at one location (TP-5). The concentration of xylene detected was 3.100 mg/L.
- Lead was detected at concentrations above the respective MCL (0.0150 mg/l) at TP-5, TP-6, TP-7, TP-8, TP-9, and MW-49. The detected concentrations ranged between 0.0068 mg/l and 0.068 mg/l, with the highest concentration detected at TP-5.
- In addition, TPH-DRO was detected above the NMED screening level (0.039 mg/l) at TP-5, TP-6, and TP-8. The detected concentrations ranged between 1.3 mg/l and 1.7 mg/l, with the highest concentration detected at TP-6. TPH-GRO was detected above the respective laboratory reporting limit at TP-5, TP-6, TP-7, TP-8, and DW-3. The detected concentrations ranged between 0.099 mg/l and 13 mg/l, with the highest concentration detected at TP-5.

Pursuant to comments received from NMED (dated August 18, 2017) on the previous three River Terrace Annual Monitoring Reports, Western undertook collection of additional groundwater samples from the groundwater collection gallery and wells DW-2 and DW-3. These are the three locations where groundwater is being recovered. The screening level for TPH-DRO was exceeded at DW-2 (reported concentration of 0.4 mg/l) and the lead screening level was exceeded in the groundwater sample collected at the collection galley (reported concentration of 0.11 mg/l).

Soil Vapor Monitoring

Soil gas monitoring is no longer conducted at the River Terrace. In a response letter dated June 15, 2015 NMED agreed soil gas analytical results do not provide any additional information regarding subsurface conditions at the River Terrace System.

Biovent / Air Sparging System Monitoring

The River Terrace System currently consists of the following:

- Five biovent wells (BV-1, BV-3, BV-4, BV-5, and BV-6);
- Ten temporary piezometers (TP-3, and TP-5 thru TP-13);
- Three dewatering wells (DW-1, DW-2, and DW-3);
- Two monitoring wells (MW-48, and MW-49);
- Two air sparging lines (Air Sparging Line A, and Air Sparging Line B); and
- One groundwater collection gallery.

The active dewatering system consists of two dewatering wells (DW-2 and DW-3) and a collection gallery, each equipped with variable-speed submersible pumps. Groundwater pumped by the dewatering system is pumped through two GAC filters operating in series before discharging into the facility raw water ponds. The purpose of the dewatering system is to enhance the effectiveness of the bioventing system by dewatering the influenced area, and also remove impacted groundwater for treatment. A total of 312,151 gallons of impacted groundwater was removed and treated through the GAC filters in 2017. Results from the analytical sampling of the GAC system show that the GAC filters continue to be effective in treating the extracted groundwater prior to discharging into the facility raw water ponds.

The air injection system ran consistently throughout 2017 and required no changes to the air distribution. Pressure readings collected at the BV wells and air sparging lines remain consistent at or near 2.0 psi when compared to readings collected in 2016. The discharge pressure reading at the main air blower was 2.8 psi. The consistent pressure affirms that there exists an even distribution of air throughout the biovent / air sparging area of influence. The small variance of pressure between the point directly downstream of the main air blower and at various points along the system shows that there is no evidence of large air losses within the air system.

Section 1
Introduction

1.1 Site Location and Description

Owner: San Juan Refining Company, a New Mexico Corporation
1250 Washington Street
Tempe, Arizona 85281

Operator: Western Refining Southwest, Inc.
(Formerly Giant Industries Arizona, Inc.), an Arizona Corporation
1250 Washington Street
Tempe, Arizona 85281

Facility: Bloomfield Terminal (Former Bloomfield Refinery) (physical address)
50 Road 4990
Bloomfield, New Mexico 87413

Western Refining Southwest, Inc. (postal address)
P.O. Box 159
Bloomfield, New Mexico 87413

US EPA ID: NMD089416416

SIC Code: 5171 (Previously Operated under 2911)

The former Bloomfield Refinery facility is currently owned by San Juan Refining Company, a New Mexico corporation, and operated by Western Refining Southwest, Inc. formerly known as Giant Industries Arizona, Inc., an Arizona corporation. The former Bloomfield Refinery had an approximate refining capacity of 18,000 barrels per day. Various process units operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, sulfur recovery, merox treater, catalytic polymerization, and diesel hydrotreating. Products produced at the refinery included gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and LPG.

The Facility is located on approximately 263 acres south of Bloomfield, New Mexico in San Juan County (Figure 1). The Facility complex is bisected by County Road 4990 (Sullivan Road), which runs east-west. The former process units, tank farm, wastewater treatment system, raw water ponds, and fire training area are located north of the county road. The crude oil and product unloading areas, loading racks, maintenance buildings/90-day storage area, pipeline

offices, transportation truck shop, and Class I injection well are located south of the country road (Figure 2).

The facility is located on a bluff 120 feet above the south side of the San Juan River. The top of the bluff is relatively flat and is at an elevation of 5,540 feet above sea level. Based on the available site-specific and regional subsurface information, the site is underlain by the Quaternary Jackson Lake terrace deposits, which unconformably overlie the tertiary Nacimiento Formation. The Jackson Lake deposits consist of fine grained sand, silt, and clay that grades to course sand, gravel and cobble size material closer to the contact with the Nacimiento Formation. The Jackson Lake Formation is over 40 feet thick near the southeast portion of the site and generally thins to the northwest toward the San Juan River. The Nacimiento Formation is primarily composed of fine grained materials (e.g., carbonaceous mudstone/claystone with interbedded sandstones) with a reported local thickness of approximately 570 feet (Groundwater Technology, 1994).

The River Terrace Area is located north of the Hammond Ditch, approximately 120 feet lower in elevation than the former Refinery process and tank farm areas. Since 2006, Western has operated a bioventing system for the purpose of providing oxygen to the subsurface and supporting aerobic biodegradation of petroleum hydrocarbons that were identified in soil along the western portion of the River Terrace to a depth of approximately 8 feet below existing grade surface (bgs). Impacted groundwater was also recovered and treated using granular activated carbon (GAC).

In 2013, optimization activities to the biovent system were completed, which included removal of impacted soil, installation of an air sparging system, and installation of an additional dewatering well (DW-3). These enhancements allowed for the system to continue to target the subsurface soils, as well as enhance the groundwater remediation efforts through additional pumping and air sparging.

The River Terrace System currently consists of the following:

- Five biovent wells (BV-1, BV-3, BV-4, BV-5, and BV-6);
- Ten temporary piezometers (TP-3, and TP-5 thru TP-13);
- Three dewatering wells (DW-1, DW-2, and DW-3);
- Two monitoring wells (MW-48, and MW-49);
- Two air sparging lines (Air Sparging Line A, and Air Sparging Line B); and

- One groundwater collection gallery.

The active dewatering system consists of two dewatering wells (DW-2 and DW-3) and a collection gallery, each equipped with variable-speed submersible pumps. The collection gallery, consisting of a horizontal 4-inch perforated pipe with an 8-inch diameter vertical riser pipe and submersible pump, was installed and placed into operation by early October 2009. Dewatering well DW-3 was installed as part of the most recent optimization activities, and is constructed with a 4-inch machine slotted PVC well casing that is placed inside a 5.5-inch diameter steel pipe. The steel pipe is packed with pebbles, allowing for better groundwater pumping efficiency.

The dewatering wells operate off of independent level control systems. As each individual pump senses a low water column level, the pump will shut down for a period of time to allow the well to recover before resuming pumping. The cycle of operation frequency for the dewatering pumps is directly reflective of the operational level of the San Juan River. Groundwater pumped by the dewatering system is pumped through two GAC filters operating in series before discharging into the facility raw water ponds. The purpose of the dewatering system is used to enhance the effectiveness of the bioventing system by dewatering the influenced area and also remove impacted groundwater for treatment.

Installation of the air sparging component of the biovent system was completed in late 2012, and consists of two air sparging lines (Air Sparging Line A and Air Sparging Line B). Each air sparging line consists of air sparging tubes that extend down into the groundwater (Western Refining, 2013). Air from the biovent main air blower is pushed into each sparging tube, causing a bubbling effect in the groundwater while also oxygenating the surrounding subsurface.

The biovent portion of the system continues to remain active, although the majority of the impacted soils within the subsurface were removed as part of the completed optimization activities. The main air blower injects air into the subsurface (vadose and phreatic zones) through the BV wells. The air supply promotes aerobic biodegradation within the subsurface.

Section 2
Background

This section presents a summary of the events and activities conducted at the River Terrace Area since 1999.

1999

- Installation of a bentonite slurry and sheet pile barrier wall adjacent to the San Juan River was completed. The barrier extends approximately 35 feet below the ground surface, and extends around the perimeter of the riverbank from the bluff opposite the west end of the process area to the river inlet station. The bentonite slurry and sheet pile barrier wall was installed to prevent hydrocarbons from migrating into the San Juan River.

2004

- Two groundwater monitoring wells (MW-48 and MW-49) were installed in October 2004 to replace two piezometers (P-4 and P-5). Additionally in October 2004, eight temporary piezometers were installed (TP-1 through TP-8). The purpose of installing the monitoring wells and piezometers was to determine the extent of hydrocarbon impacts in soil on the refinery side of the bentonite slurry wall and sheet pile barrier.

2005

- Bloomfield Refinery initiated construction of the River Terrace Bioventing Project to provide oxygen to the subsurface and support aerobic biodegradation of petroleum hydrocarbons existing in the soil and groundwater at the River Terrace. Construction activities included the following:
    - Installation of five additional piezometers (TP-9 through TP-13) within the eastern portion of the River Terrace area in April 2005.
    - Construction of an aeration system designed to increase bioremediation in the subsurface. The aeration system included installation of 13 bioventing wells (BV-1 through BV-13), all located within the western portion of the River Terrace area. The bioventing wells were installed in August 2005.
    - Construction of a dewatering system designed to expand the bio-remedial vadose zone. The dewatering system included installation of two dewatering wells (DW-1 and DW-2). The dewatering wells were installed in August 2005.

2006

- Operation of the Bioventing System commenced in January 2006. System monitoring activities were conducted in compliance with the approved River Terrace Voluntary

Corrective Measures Monitoring Plan (Revised) dated October 28, 2005 (Malcolm Pirnie, 2005).

- An In-Situ Respiration Test was conducted in May 2006. The results of the In-Situ Test were used to evaluate progress of the bio-remedial activity.
- Quarterly performance monitoring was conducted in March, June, September, and December of 2006.

2007

- Quarterly performance monitoring of the Bioventing System was conducted in February, June, August, and October 207.
- An In-Situ Respiration Test was conducted in September 2007. The results of the In-Situ Test were used to evaluate progress of the bio-remedial activity.
- The dewatering pumps were replaced in February 2007.
- Breakthrough in the lead GAC (V-612) was detected in April 2007. Upon confirmation of breakthrough, GAC filter V-611 became the lead GAC filter. V-612 was replaced and placed back in service in June as the lag filter.

2008

- Quarterly performance monitoring activities for the Bioventing System were conducted in March, May, July, and November 2008.
- The aeration system blower bearings were replaced in February 2008.
- The monitoring well MW-48 dewatering pump was replaced in August 2008.
- Blower piping was upgraded in October 2008.

2009

- Quarterly performance monitoring for the Bioventing System was conducted in March, April, September, and October 2009.
- An In-Situ Respiration Test was conducted during the week of October 26, 2009.
- In order to improve and optimize the dewatering system, a collection gallery, pump, and piping system were installed in the southwest portion of the River Terrace and put in service October 13, 2009.

2010

- Quarterly performance monitoring for the Bioventing System was conducted in March, April, July, and October of 2010.

- Following suspension of refining operations on November 23, 2009, operation of the River Pump station decreased, thus impacting the frequency of the River Terrace dewatering system. Although the aeration system continued to operate consistently, operation of the dewatering system has become infrequent due to the decreased demand for fresh water to support current facility operations.

2011

- In March 2011, Western received approval from NMED-HWB to modify the piping of the River Terrace dewatering system. Piping modifications included installation of a 3,000-gallon surge tank and booster pump, which allows the treated water from the River Terrace dewatering system to discharge directly into the Refinery's fresh water ponds. Piping modifications were completed in April 2011.

- Approved modifications to on-going monitoring at the River Terrace (NMED, 2011) were implemented as part of the 2011 sampling program for the River Terrace. The approved sampling modifications included the following:

    - Soil gas sampling to be conducted annually at all TP wells, DW-1, and MW-49. The sampling is to be performed during San Juan River low flow conditions;

    - Soil gas monitoring (O_2, CO_2, and PID readings) for TP-1, TP-2, DW-1, MW-49, and TP-5 through TP-9 is to be performed semi-annually. The monitoring is to be performed during San Juan River high and low flow conditions;

    - Groundwater monitoring of TP-3, -7, -9, -10, -11, -12, -13, and DW-1 is to be conducted biennially (beginning 2011). Samples are to be collected during low flow conditions of the San Juan River;

    - Groundwater monitoring of TP-1, -2, -5, -6, -8, and MW-49 is to be conducted semi-annually. The monitoring is to be performed during San Juan River high and low flow conditions;

    - Discontinue analysis of barium and chromium analysis for all TP wells, MW-49, and DW-1; and

    - Samples at the GAC in-let, outlet of lead vessel, and outlet of lag vessel are to be collected quarterly.

- High and low flow monitoring events were conducted in June 2011 and July 2011, respectively.

- Quarterly performance monitoring of the Biovent System GAC filters inlet and outlet occurred in March, May, July, and October of 2011.

- Additional samples outside of what was required were collected at the discharge of the lead GAC filter on a monthly basis, with the exception that a sample was not collected in April 2011 due to the dewatering system being off-line.

2012

- In June 2012, the lead GAC filter was exchanged for a new filter. The biovent dewatering system consists of two GAC filters that operate in series. The new filter was placed in the lag position, and the previous lag filter was placed in the lead position.

- In October 2012, Western submitted a Work Plan that summarized proposed activities to optimize the remediation progress at the River Terrace. Approval of the Work Plan was issued by NMED-HWB on October 12, 2012. Field activities commenced on October 20, 2012 and included the following activities:

    - Removal of impacted clay soil at the River Terrace;

    - Installation of a sparging piping to target areas of the river terrace where groundwater is impacted;

    - Decommissioning of TP-1, TP-2, BV-2, and BV-7 through BV-13 in association with the excavation activities; and

    - Air Sparging Line A and Air Sparging Line B were added to system.

2013

- Western completed and put into service dewatering well DW-3 located within the southwest corner of the River Terrace. This new dewatering well adds additional value to the current dewatering system at the river terrace as historical analysis have shown this area to contain higher concentrations of impacted groundwater.

- The High Flow Monitoring Event did not take place in 2013. The one week spring peak release (5,000 cfs) did not take place because of the threat of a water shortage in the San Juan River Basin. San Juan County is experiencing a severe drought.

2014

- Quarterly performance monitoring of the GAC filters for the Bioventing System was conducted in March, April, July, and October of 2014.

- The High Flow Monitoring Event did not take place in 2014. The one week spring peak release (5,000 cfs) did not take place because of the threat of a water shortage in the San Juan River Basin. San Juan County was experiencing a severe drought.

2015

- Monthly and Quarterly performance monitoring of the GAC filters for the Bioventing System was conducted. Samples in addition to the required frequency were collected at the GAC filters to monitor their operations.

- The High Flow Monitoring Event did not take place in 2015. The one week spring peak release (5,000 cfs) did not take place because of the threat of a water shortage in the San Juan River Basin.

- General pump maintenance was performed on the recovered water transfer pump in March 2015.

- A section of the blower discharge piping was replaced due to a crack at a joint connection.

- Western received approval to discontinue sampling of groundwater at piezometers TP-3, TP-10, TP-11, TP-12, and TP-13; however groundwater elevation information will continue to be collected from these locations (NMED, 2015).

- Western received approval to discontinue soil gas monitoring at the River Terrace System (NMED, 2015).

- Western received approval not to replace TP-2 with an additional well until further notice (NMED, 2015).

2016

- Monthly and Quarterly performance monitoring of the GAC filters for the Bioventing System was conducted. Samples in addition to the required frequency were collected at the GAC filters to monitor their operations.

2017

- Quarterly performance monitoring of the GAC filters for the Bioventing System was conducted. In addition and beyond the required frequency, monthly samples were collected at the GAC inlet and GAC lead filter.

- The low-flow groundwater sampling event was conducted in April 2017. A special groundwater sampling event was conducted in December 2017 pursuant to recently received NMED comments on past monitoring reports.

Section 3
Performance Monitoring

Performance monitoring at the River Terrace area includes collecting groundwater samples for laboratory analysis, collecting field measurement and system readings, and evaluating system treatment performance by the GAC filter system. The location of the river terrace wells and aeration system is shown in Figure 3 and Figure 4. A summary of the field methods used to conduct performance monitoring at the River Terrace is provided in Appendix A. The following is a summary of monitoring activities conducted at the River Terrace area in 2017.

3.1 Groundwater Monitoring

Groundwater samples were collected in April 2017 during low flow operation of the San Juan River [i.e., with a river flow rate of approximately 500 cubic feet per second (cfs)] for all required wells except TP-7 and DW-1, which were inadvertently omitted as they are only sampled on a bi-annual basis. Groundwater samples were collected at TP-7 and DW-1 in December, 2017. Pursuant to comments received from NMED (dated August 18, 2017) on the previous three River Terrace Annual Monitoring Reports, in December 2017 additional groundwater samples were collected from the groundwater collection gallery and wells DW-2 and DW-3. The following is a summary of activities performed during the groundwater monitoring event conducted in 2017.

3.1.1 Groundwater Measurements

Depth-to-groundwater and depth-to-product measurements were collected from TP-3, TP-5 through TP-13, DW-1, DW-3, and MW-49. No product was detected in any of the wells. The measurements were collected prior to the collection of groundwater samples during the San Juan River low flow sampling events. The groundwater measurements are provided in Table 1.

3.1.2 Groundwater Field Parameters

Groundwater field parameters (temperature, pH, conductivity, DO, and ORP) were collected prior to collecting groundwater samples. Groundwater field parameters were collected from TP-5 thru TP-9, DW-1, DW-2, DW-3, MW-49, and the collection gallery. A summary of the groundwater field parameters collected during the sampling events are included in Table 1.

3.1.3 Groundwater Sampling

Groundwater samples were collected from TP-5, TP-6, TP-7, TP-8, TP-9, DW-1, DW-2, DW-3, MW-49, and the collection gallery. Groundwater samples were submitted to Hall Environmental Analytical Laboratory and analyzed for the following constituents:

- Volatile Organic Compounds – BTEX and MTBE by EPA Method 8260,
- TPH – GRO by EPA Modified Method 8015D,
- TPH – DRO by EPA Modified Method 8015D,
- TPH – MRO by EPA Modified Method 8015D, and
- Total lead by EPA Method 6010B.

A summary of the groundwater analyses is provided in Table 1 and the analytical reports are provided as Appendix B.

3.2 Soil Vapor Monitoring

Soil gas Monitoring is no longer conducted at the River Terrace. In a response letter dated June 15, 2015 NMED-HWB agreed soil gas analytical results do not provide any additional information regarding subsurface conditions at the River Terrace System.

3.3 Bioventing / Air Sparging System Performance Monitoring

3.3.1 GAC Sampling

Extracted groundwater from the active dewatering wells and collection gallery is treated prior to discharging to the raw water ponds, located within the east portion of the terminal. Extracted groundwater is pumped through two granular activated carbon (GAC) filters positioned in series for removal of dissolved-phase hydrocarbons.

GAC influent (GAC-Inlet) samples, lead GAC filter effluent samples (GAC-Lead) and GAC effluent samples (GAC-Lag) are required to be collected quarterly. Additional monthly samples were collected at the GAC Inlet and GAC lead filter to monitor system performance. Samples were submitted to Hall Environmental Analytical Laboratory and analyzed for the following parameters:

- Volatile Organic Compounds – BTEX and MTBE by EPA Method 8260
- Total Petroleum Hydrocarbons – TPH-GRO, TPH-DRO, and TPH-MRO by EPA Method 8015D

Detected concentrations of TPH, BTEX and MTBE at the inlet of the GAC filters were below the respective screening levels in 2017, with the exception of xylenes and TPH-DRO as shown in Table 2. The concentrations of xylenes decreased significantly during the year to well below the action level, while the concentrations of TPH-DRO also deceased but remained above the screening level. The analytical results for the lead GAC filter samples were mostly non-detect with all reported concentrations well below the screening levels. All sample results for the Lag GAC filter were non-detect.

The total amount of groundwater extracted and pumped through the GAC filter system is monitored via a downstream in-line totalizer meter prior to discharging into the facility raw water ponds. A total of 312,151 gallons of impacted groundwater was removed and treated through the GAC filters in 2017.

3.3.2 Aeration System Monitoring

The effectiveness of the air system was monitored using a portable pressure gauge at various points along the air injection piping system. Pressure measurements were collected at BV-1, BW-3, BV-4, BV-5, BV-6, Air Sparging Line A, Air Sparging Line B, and at the discharge of the main air blower. The readings are used to ensure a uniform distribution of air throughout the system and are summarized in Table 3. As the data for 2016 was not included in 2016 Annual Monitoring Report, it has been included with the 2017 data.

3.3.2 In-Situ Respiration Test

Western has conducted three separate in-situ respiration tests at the River Terrace area. The three tests were conducted in May 2006, September 2007, and October 2009. The suspension of refining operations causes the water-supply dewatering system to operate intermittently, which in turn affects exposure of the vadose zone thus affecting the accuracy of the in-situ respiration test. In a response letter from NMED dated November 23, 2010 (NMED, 2010), NMED-HWB granted approval to discontinue conducting the in-situ respiration tests. Therefore an in-situ respiration was not performed in 2017.

Section 4
Conclusions and Recommendations

This section summarizes and provides an evaluation of the results shown in field monitoring data and analytical data. The analytical reports for groundwater are provided in Appendix B

4.1 Conclusions

4.1.1 Groundwater Monitoring

Groundwater samples were collected at specific wells and analyzed for BTEX, MTBE, TPH-DRO, TPH-GRO, TPH-MRO, and total lead. The analytical results for samples collected in 2017 during San Juan River low flow conditions were below their respective screening levels with the exceptions discussed below.

Xylenes were detected at concentrations above the respective WQCC screening level of 0.62 mg/L at one location (TP-5). The concentration of xylene detected was 3.1 mg/L. The monitoring data presented in Table 1 was expanded for TP-5 to show all sample results since the temporary piezometer was installed in 2005. The concentration of xylenes decreased significantly from the initial sampling in 2005 from 21 mg/l down to approximately 0.5 mg/l with the concentration remaining relatively stable from April 2012 through April 2014. The concentrations have recently increased, starting in 2015.

Lead was detected at concentrations above the respective MCL (0.0150 mg/l) at routine monitoring locations TP-5, TP-6, TP-7, TP-8, TP-9, and MW-49. The detected concentrations ranged between 0.0068 mg/l and 0.068 mg/l, with the highest concentration detected at TP-59.

In addition, TPH-DRO was detected above the NMED screening level (0.039 mg/l) at TP-5, TP-6, and TP-8. The detected concentrations ranged between 1.3 mg/l and 1.74 mg/l, with the highest concentration detected at TP-6. TPH-GRO was detected above the respective laboratory reporting limit at TP-5, TP-6, TP-7, TP-8, and DW-3. The detected concentrations ranged between 0.099 mg/l and 13 mg/l, with the highest concentration detected at TP-5.

Pursuant to comments received from NMED on previous River Terrace Annual Monitoring Reports, additional groundwater samples were collected from the collection gallery and wells DW-2 and DW-3. These are the three locations where groundwater is being recovered. The screening level for TPH-DRO was exceeded at DW-2 (reported concentration of 0.4 mg/l) and

the lead screening level was exceeded in the groundwater sample collected at the collection galley (reported concentration of 0.11 mg/l).

Table 1 provides a summary of the analytical groundwater results. A concentration map showing the benzene, toluene, ethylbenzene, xylenes, and TPH-DRO concentrations for the River Terrace wells during low flow conditions is provided in Figure 5.

4.1.2 Soil Vapor Monitoring

Soil gas monitoring is no longer conducted at the River Terrace.

4.1.3 Bioventing / Air Sparging Performance Monitoring

Groundwater Treatment System

A total of 312,151 gallons of impacted groundwater was removed and treated through the GAC filters. The presence of constituents above the screening levels in the GAC inlet samples indicates the groundwater recovery system remains effective in capturing and removing contaminant mass. The decreasing concentrations in samples collected at the GAC inlet, as well as in individual wells, also shows the effectiveness of the system since installation.

Aeration System

The air injection system ran consistently throughout 2017 and required no changes to the air distribution. Pressure readings collected at the BV wells and air sparging lines remain generally consistent near or at 2.0 psi when compared to readings collected in 2016. The discharge pressure reading at the main air blower was 2.8 psi. The consistent pressure affirms that there exists an even distribution of air throughout the biovent / air sparging area of influence. The small variance of pressure between the point directly downstream of the main air blower and at various points along the system shows there is no evidence of large air losses within the air system.

4.2 Recommendations

Based on a review of the 2017 monitoring data, the following actions are recommended:

- An evaluation of the increasing xylenes concentrations in groundwater samples collected at TP-5 should be conducted;

- The detections of lead above the action level should be assessed. The groundwater samples are routinely collected with bailers and this may be causing sediment to be entrained in the samples analyzed for total metals.

Concentrations in the extracted groundwater and at the monitoring wells, with the exception of TP-5, remain relatively low. Western will continue to look for means of optimizing the air sparging system to increase remediation efficiency.

Section 5
References

Groundwater Technology Inc., 1994, RCRA Facility Investigation/Corrective Measures Study Report Bloomfield Refining Company #50 County Road 4990 Bloomfield, New Mexico, p.51.

Malcolm Pirnie, 2005, Giant Refining Company, Bloomfield Refinery, River Terrace Voluntary Corrective Measures – Revised Monitoring Plan, October 28, 2005.

NMED, 2007, River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006, Bloomfield Refinery, Bloomfield, New Mexico, April 18, 2007.

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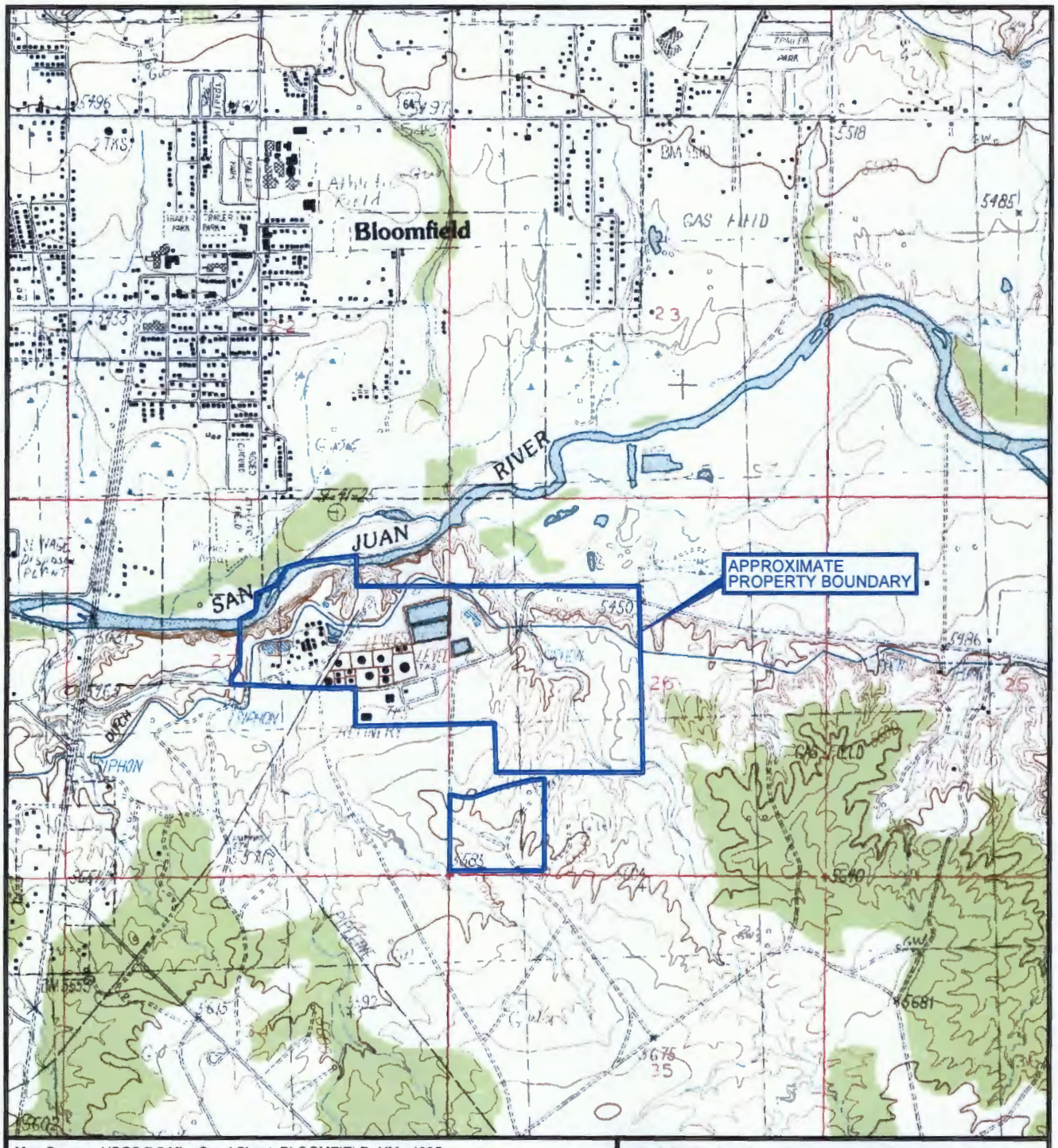
Western Refining, 2012, Group 7 – SWMU No. 17 River Terrace Area Remediation System Optimization Work Plan.

Western Refining, 2013 Group 7 – SWMU No. 17 River Terrace Area Remediation System Optimization Report, May 3, 2013.

NMED, 2015, Approval River Terrace Voluntary Corrective Measures Bioventing System Annual Report (January-December 2013), March 2014 Western Refining Southwest Inc., Bloomfield Refinery.

FIGURES 1 – 5



Map Source: USGS 7.5 Min. Quad Sheet BLOOMFIELD, NM., 1985.

0 2000
SCALE IN FEET

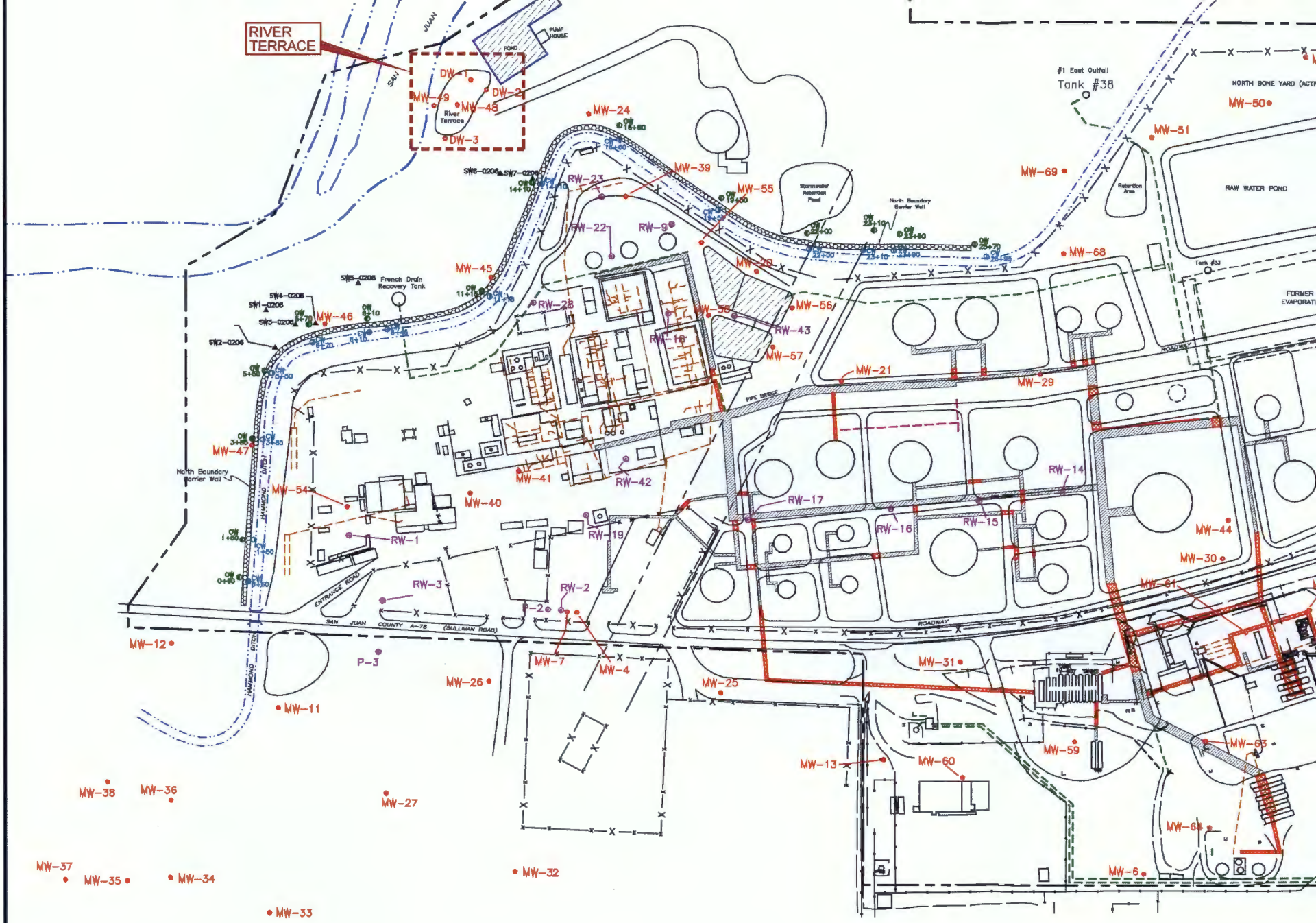
NEW MEXICO
QUADRANGLE LOCATION

Western Refining
WESTERN REFINING SOUTHWEST

PROJ. NO.:Western Refining	DATE:08/27/14	FILE: WestRef-dA01

FIGURE 1
SITE LOCATION MAP
BLOOMFIELD TERMINAL

DiSorbo
Environmental Consulting Firm
8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



LEGEND

- MW-1 ● MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
- RW-1 ⊕ RECOVERY WELL LOCATION AND IDENTIFICATION NUMBER
- OW 1+50 ◎ OBSERVATION WELL LOCATION AND IDENTIFICATION NUMBER
- CW 1+50 ◎ COLLECTION WELL LOCATION AND IDENTIFICATION NUMBER
- UNDER GROUND PIPING (HYDROCARBONS)
- ABOVE GROUND PIPE-WAY
- SLURRY BARRIER WALL
- FORMER TANK LOCATION

N

Map Source: Google Aerial, 03-15-2015.

LEGEND


SAN JUAN RIVER
TP-9
BV-1
TP-7
DW-1
BV-3
TP-5
DW-2
TP-6
TP-8
BV-4
BV-5
BIO-VENTING LINE
MW-48
MW-49
BV-6
SPARGING TUBES
AIR SPARGING LINE A
AIR SPARGING LINE B
GALLERY
DW-3

Map Source: Google Aerial, 03-15-2015.

LEGEND

B	BENZENE
T	TOLUENE
E	ETHYLBENZENE

TABLE 1

GROUNDWATER MONITORING DATA SUMMARY

											MCL	WQCC 20NMAC 6.2.3103	MCL
											0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenz (mg/L
TP-1	***Decommissioned November 2012	November 2012	***	***	***	***	***	***	***	***	***	***	***
TP-2	***Decommissioned November 2012	November 2012	***	***	***	***	***	***	***	***	***	***	***
TP-3 (Bi-Annual)	2017	04/28/17	7.16	NPP	12.35	Groundwater Sampling Discontinued (NME							
	2016	04/27/16	7.15	NPP	12.35	Groundwater Sampling Discontinued (NME							
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	7.53	NPP	12.35	891	2.56	29.3	7.69	54.7	<0.001	<0.001	<0.001
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	7.11	NPP	12.35	421	2.06	62	7.47	66.4	<0.001	<0.001	<0.001
TP-5	Low Flow 2017	Week of 04/26/17	4.91	NPP	8.84	1,165	2.37	-204	7.19	56.3	<0.010	<0.010	0.670
	Low Flow 2016	Week of 04/28/16	4.87	NPP	8.84	815	1.24	-279	7.03	56.2	<0.010	<0.010	0.300
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.13	NPP	8.84	828	2.28	-257	7.56	55.1	<0.010	<0.010	0.063
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	5.19	NPP	8.84	526	0.34	-251	7.30	53.7	<0.005	<0.005	0.027
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	4.95	NPP	8.84	431	2.55	-210	7.56	68.1	<0.010	<0.010	0.022
	High Flow 2012	Week of 05/29/12	3.42	NPP	8.84	470	1.48	-33	6.30	61.1	<0.005	<0.005	0.017
	Low Flow 2012	Week of 04/09/12	5.09	NPP	8.84	363	0.93	-266	6.80	50.9	<0.005	<0.005	0.020
	Low Flow 2011	Week of 07/26/11	5.69	NPP	8.84	932	1.78	192	6.70	68.5	<0.010	<0.01	0.051
	High Flow 2011	Week of 06/13/11	4.95	NPP	8.84	561	0.72	273	6.95	62.2	<0.010	<0.01	0.350
	4th Quarter 2010	Week of 10/18/10	5.65	NPP	8.84	632	2.06	71	7.01	68.2	<0.005	<0.01	0.830
	3rd Quarter 2010	Week of 07/20/10	5.11	NPP	8.84	707	1.11	84	6.79	65.8	<0.005	<0.01	0.310
	2nd Quarter 2010	Week of 04/19/10	5.98	NPP	8.84	590	0.58	121	7.02	54.1	<0.005	<0.010	1.600
	1st Quarter 2010	Week of 03/08/10	4.41	NPP	8.84	807	0.67	253	7.05	48.5	<0.005	0.0078	0.150
	4th Quarter 2009	Week of 10-05-09	4.57	NPP	8.84	759	4.57	212	6.76	67.4	<0.005	<0.01	1.900
	3rd Quarter 2009	Week of 09/10/09	4.54	NPP	8.84	794	1.12	152	7.04	72.6	<0.005	<0.01	1.300
	2nd Quarter 2009	Week of 04/20/09	4.96	NPP	8.84	1128	0.69	106	6.69	55.2	0.025	0.011	2.400
	1st Quarter 2009	Week of 03/02/09	4.86	NPP	8.84	1092	3.33	176	7.07	49.2	0.019	<0.01	1.800
	4th Quarter 2008	Week of 11/10/08	4.54	NPP	8.84	981	1.23	129	6.83	61.8	0.016	0.01	2.400
	3rd Quarter 2008	Week of	4.76	NPP	8.84	852	1.49	159	6.95	69.8	<0.02	<0.02	1.900

											MCL	WQCC 20NMAC 6.2.3103	MCL
											0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenz (mg/L
	2nd Quarter 2008	Week of 05/12/08	3.43	NPP	8.84	702	1.32	54	6.87	56.8	0.048	<0.02	1.100
	1st Quarter 2008	Week of 03/10/08	3.15	NPP	8.84	656	2.34	216	6.82	47.4	<0.020	<0.020	1.600
	4th Quarter 2007	Week of 10/29/07	4.78	NPP	8.84	857	0.23	229	7.04	66.5	<0.001	<0.001	2.600
	3rd Quarter 2007	Week of 08/20/07	6.97	NPP	8.84	911	0.17	129	6.88	69.8	0.300	<0.10	3.000
	2nd Quarter 2007	Week of 06/18/07	6.62	NPP	8.84	864	0.80	148	6.87	63.9	0.340	<0.10	3.500
	1st Quarter 2007	Week of 02/26/07	5.59	NPP	8.84	1027	0.79	219	6.87	49.6	<0.01	<0.01	1.300
	4th Quarter 2006	Week of 12/04/06	5.95	NPP	8.84	1377	1.36	229	6.99	56.0	0.069	<0.050	1.200
	3rd Quarter 2006	Week of 09/11/06	5.32	NPP	8.84	879	0.29	149	7.09	71.0	<0.01	<0.01	3.100
	2nd Quarter 2006	Week of 06/17/06	5.24	NPP	8.84	989	0.05	39	6.94	65.3	0.054	<0.001	1.600
	1st Quarter 2006	Week of 03/06/06	7.81	NPP	8.84	747	0.52	-51	7.03	54.1	0.200	<0.02	0.280
	Baseline	Week of 08/15/05	5.91	NPP	8.84	923	NR	NR	6.90	68.7	0.350	<0.005	3.500
TP-6	Low Flow 2017	Week of 04/26/17	5.71	NPP	9.94	999	2.45	-132	7.00	55.0	<0.001	<0.001	0.026
	Low Flow 2016	Week of 04/28/16	5.75	NPP	9.94	780	1.48	-231	8.04	55.9	<0.001	<0.001	0.068
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.00	NPP	9.94	800	1.77	-185	7.73	55.8	<0.001	<0.001	0.0087
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	6.11	NPP	9.94	552	4.25	-83	7.11	53.5	<0.001	<0.001	0.028
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.79	NPP	9.94	457	6.84	-7	7.71	70.2	<0.001	<0.001	<0.001
TP-7 (Bi-Annual)	Low Flow 2017	Week of 04/26/17****	5.86	NPP	9.71	978	5.25	163	7.78	49.5	<0.001	<0.001	<0.001
	2016	04/27/16	5.83	NPP	9.72								
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.05	NPP	9.72	773	3.09	-62.4	7.76	54.8	<0.002	<0.002	<0.002
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.59	NPP	9.72	704	5.67	-56	7.40	64.9	<0.010	<0.010	<0.010
TP-8	Low Flow 2017	Week of 04/26/17	5.66	NPP	9.72	1,571	2.80	-80	7.27	52.5	<0.005	<0.005	0.011
	Low Flow 2016	Week of 04/28/16	5.65	NPP	9.72	1084	2.57	-163	8.03	54.0	<0.005	<0.005	0.029
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	8.06	NPP	9.72	907	2.64	-93.6	7.76	54.0	<0.005	<0.005	0.0099
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
		Week of											

											MCL	WQCC 20NMAC 6.2.3103	MCL
											0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenz (mg/l
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	6.29	NPP	9.72	995	1.71	-179	7.40	68.0	<0.005	<0.005	0.014
TP-9	Low Flow 2017	Week of 04/26/17	5.81	NPP	10.97	1674	2.23	-83	7.33	50.9	<0.001	<0.001	<0.00
	Low Flow 2016	Week of 04/28/16	5.69	NPP	10.97	1715	2.00	-123	7.19	52.6	<0.001	<0.001	<0.00
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.93	NPP	10.97	1833	3.38	-104	7.35	51.9	<0.001	<0.001	<0.00
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	6.98	NPP	10.97	1410	5.09	-54	7.05	50.8	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.23	NPP	10.97	1330	4.80	65	7.00	65.5	<0.001	<0.001	<0.00
TP-10	2017	04/28/17	5.11	NPP	9.95	Groundwater Sampling Discontinued (NME							
	2016	04/27/16	5.12	NPP	9.95	Groundwater Sampling Discontinued (NME							
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.50	NPP	9.95	695	1.78	46.3	7.60	50.7	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	4.99	NPP	9.95	340	2.01	60	7.50	63.1	<0.001	<0.001	<0.00
TP-11	2017	04/28/17	5.56	NPP	9.98	Groundwater Sampling Discontinued (NME							
	2016	04/27/16	5.58	NPP	9.98	Groundwater Sampling Discontinued (NME							
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.84	NPP	9.98	797	2.06	34.4	7.67	51.9	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.45	NPP	9.98	500	1.92	-28	7.40	62.4	<0.001	<0.001	<0.00
TP-12	2017	04/28/17	7.32	NPP	11.79	Groundwater Sampling Discontinued (NME							
	2016	04/27/16	7.36	NPP	11.79	Groundwater Sampling Discontinued (NME							
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 07/11/15	7.57	NPP	11.79	1064	2.51	-33.9	7.55	51.0	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	7.10	NPP	11.79	561	2.61	-32	7.60	56.6	<0.001	<0.001	<0.00
P-13 (Bi-Annual)	2017	04/28/17	6.18	NPP	12.73	Groundwater Sampling Discontinued (NME							
	2016	04/27/16	6.25	NPP	16.09	Groundwater Sampling Discontinued (NME							
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.45	NPP	16.09	600	5.66	-15.7	7.83	50.5	<0.002	<0.002	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
		Week of											

												MCL	WQCC 20NMAC 6.2.3103	MCL
												0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylben (mg/
DW-1 (Bi-Annual)	Low Flow 2017	Week of 04/26/17****	6.16	NPP	15.62	981	2.79	144	7.91	55.4	<0.001	<0.001	<0.00
	2016	04/27/16	6.15	NPP	15.62								
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.30	NPP	15.62	2053	2.13	-114	7.26	53.5	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	9.64	NPP	15.62	1936	2.43	-93	7.00	68.8	<0.001	<0.001	<0.00
DW-2	Special Event	12/29/2017	NM	NM	NM	1426	2.22	-29	7.79	60.2	<0.001	<0.001	0.003
DW-3	Special Event	12/29/2017	NM	NM	NM	1654	0.68	41	7.78	70.1	<0.001	<0.001	0.004
	Low Flow 2017	Week of 04/26/17	7.61	NPP	14.64	1975	1.45	-162	7.26	70.9	<0.001	<0.001	0.003
	Low Flow 2016	Week of 04/28/16	7.59	NPP	14.64	1448	2.59	-269	7.60	52.6	0.0049	<0.001	0.034
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	11.23	NPP	14.64	1507	6.74	-243	7.58	57.4	0.082	<0.010	0.400
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	6.92	NPP	14.64	1048	0.68	-266	7.36	54.6	0.067	<0.010	0.720
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	10.86	NPP	14.64	945	1.15	-265	7.55	67.1	0.098	<0.010	1.700
MW-49	Low Flow 2017	Week of 04/26/17	9.65	NPP	16.48	1202.00	3.73	-85	7.18	52.3	<0.001	<0.001	<0.00
	Low Flow 2016	Week of 04/28/16	9.31	NPP	16.48	942.00	3.63	-125.13	7.95	51.7	<0.001	<0.001	<0.00
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	9.65	NPP	16.48	936.00	1.94	-140.80	7.65	52.90	<0.001	<0.001	<0.00
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	10.08	NPP	16.48	1255	4.84	-111.2	7.45	51.08	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	9.17	NPP	16.48	749	1.67	-105	7.35	63.4	<0.001	<0.001	<0.00
Gallery	Special Event	12/29/2017	NM	NM	NM	1552	1.85	-75	6.91	51.2	<0.001	<0.001	<0.00

Notes: NR = Not Required (Voluntary Corrective Measures - Revised Monitoring Plan - October 2005)
NR[1]= Not Required (Approval With Direction - June 2009)
NR[2]= Not Required (Approval With Direction - May 2011)
NS = Not Sampled NM = Not measured
NPP = No Product Present
DO = Dissolved Oxygen
ORP = Oxidation Reduction Potential
** Due to drought, river conditions never met high flow requirements.
*** Well Decommissioned November 2012 as part of biovent system enhancements.

												MCL	WQCC 20NMAC 6.2.3103	MCL
												0.005	0.75	0.70
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)		Benzene (mg/L)	Toluene (mg/L)	Ethylben (mg/

Per NMED letter "Approval with Modifications Facility-Wide Groundwater Monitoring plan - June 2014" dated June 15, 2015, groundwater sampling discontinued.

1. Per NMED letter "Approval with Modifications Facility-Wide Groundwater Monitoring plan - June 2014" dated June 15, 2015, high flow sampling is no longer required at the River Terrace.

0.670 Constituent detected at concentration above method detection limit

3.100 Constituent detected at concentration above screening level

											MCL	WQCC 20NMAC 6.2.3103	MCL
											0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenz (mg/L
TP-1	***Decommissioned November 2012	November 2012	***	***	***	***	***	***	***	***	***	***	***
TP-2	***Decommissioned November 2012	November 2012	***	***	***	***	***	***	***	***	***	***	***
TP-3 (Bi-Annual)	2017	04/26/17	7.16	NPP	12.35	Groundwater Sampling Discontinued (NME							
	2016	04/27/16	7.15	NPP	12.35	Groundwater Sampling Discontinued (NME							
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	7.53	NPP	12.35	891	2.56	29.3	7.69	54.7	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	7.11	NPP	12.35	421	2.06	62	7.47	66.4	<0.001	<0.001	<0.00
TP-5	Low Flow 2017	Week of 04/26/17	4.91	NPP	8.84	1,165	2.37	-204	7.19	56.3	<0.010	<0.010	0.670
	Low Flow 2016	Week of 04/28/16	4.87	NPP	8.84	815	1.24	-279	7.03	56.2	<0.010	<0.010	0.300
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.13	NPP	8.84	828	2.28	-257	7.56	55.1	<0.010	<0.010	0.063
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	5.19	NPP	8.84	526	0.34	-251	7.30	53.7	<0.005	<0.005	0.027
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	4.95	NPP	8.84	431	2.55	-210	7.56	68.1	<0.010	<0.010	0.022
	High Flow 2012	Week of 05/29/12	3.42	NPP	8.84	470	1.48	-33	6.30	61.1	<0.005	<0.005	0.017
	Low Flow 2012	Week of 04/09/12	5.09	NPP	8.84	363	0.93	-266	6.80	50.9	<0.005	<0.005	0.020
	Low Flow 2011	Week of 07/26/11	5.69	NPP	8.84	932	1.78	192	6.70	68.5	<0.010	<0.01	0.051
	High Flow 2011	Week of 06/13/11	4.95	NPP	8.84	561	0.72	273	6.95	62.2	<0.010	<0.01	0.350
	4th Quarter 2010	Week of 10/18/10	5.65	NPP	8.84	632	2.06	71	7.01	68.2	<0.005	<0.01	0.830
	3rd Quarter 2010	Week of 07/20/10	5.11	NPP	8.84	707	1.11	84	6.79	65.8	<0.005	<0.01	0.310
	2nd Quarter 2010	Week of 04/19/10	5.98	NPP	8.84	590	0.58	121	7.02	54.1	<0.005	<0.010	1.600
	1st Quarter 2010	Week of 03/08/10	4.41	NPP	8.84	807	0.67	253	7.05	48.5	<0.005	0.0078	0.150
	4th Quarter 2009	Week of 10-05-09	4.57	NPP	8.84	759	4.57	212	6.76	67.4	<0.005	<0.01	1.900
	3rd Quarter 2009	Week of 09/10/09	4.54	NPP	8.84	794	1.12	152	7.04	72.6	<0.005	<0.01	1.300
	2nd Quarter 2009	Week of 04/20/09	4.96	NPP	8.84	1128	0.69	106	6.69	55.2	0.025	0.011	2.400
	1st Quarter 2009	Week of 03/02/09	4.86	NPP	8.84	1092	3.33	176	7.07	49.2	0.019	<0.01	1.800
	4th Quarter 2008	Week of 11/10/08	4.54	NPP	8.84	981	1.23	129	6.83	61.8	0.016	0.01	2.400
	3rd Quarter 2008	Week of 07/14/08	4.76	NPP	8.84	852	1.49	159	6.95	69.8	<0.02	<0.02	1.900

											MCL	WQCC 20NMAC 6.2.3103	MCL
											0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenz (mg/L
	2nd Quarter 2008	Week of 05/12/08	3.43	NPP	8.84	702	1.32	54	6.87	56.8	0.048	<0.02	1.100
	1st Quarter 2008	Week of 03/10/08	3.15	NPP	8.84	656	2.34	216	6.82	47.4	<0.020	<0.020	1.600
	4th Quarter 2007	Week of 10/29/07	4.78	NPP	8.84	857	0.23	229	7.04	66.5	<0.001	<0.001	2.600
	3rd Quarter 2007	Week of 08/20/07	6.97	NPP	8.84	911	0.17	129	6.88	69.8	0.300	<0.10	3.000
	2nd Quarter 2007	Week of 06/18/07	6.62	NPP	8.84	884	0.80	148	6.87	63.9	0.340	<0.10	3.500
	1st Quarter 2007	Week of 02/26/07	5.59	NPP	8.84	1027	0.79	219	6.87	49.6	<0.01	<0.01	1.300
	4th Quarter 2006	Week of 12/04/06	5.95	NPP	8.84	1377	1.36	229	6.99	56.0	0.069	<0.050	1.200
	3rd Quarter 2006	Week of 09/11/06	5.32	NPP	8.84	879	0.29	149	7.09	71.0	<0.01	<0.01	3.100
	2nd Quarter 2006	Week of 06/17/06	5.24	NPP	8.84	989	0.05	39	6.94	65.3	0.054	<0.001	1.600
	1st Quarter 2006	Week of 03/06/06	7.81	NPP	8.84	747	0.52	-51	7.03	54.1	0.200	<0.02	0.280
	Baseline	Week of 08/15/05	5.91	NPP	8.84	923	NR	NR	6.90	68.7	0.350	<0.005	3.500
TP-6	Low Flow 2017	Week of 04/26/17	5.71	NPP	9.94	999	2.45	-132	7.00	55.0	<0.001	<0.001	0.026
	Low Flow 2016	Week of 04/28/16	5.75	NPP	9.94	780	1.48	-231	8.04	55.9	<0.001	<0.001	0.068
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.00	NPP	9.94	800	1.77	-185	7.73	55.8	<0.001	<0.001	0.008
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	6.11	NPP	9.94	552	4.25	-83	7.11	53.5	<0.001	<0.001	0.028
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.79	NPP	9.94	457	6.84	-7	7.71	70.2	<0.001	<0.001	<0.00
TP-7 (Bi-Annual)	Low Flow 2017	Week of 04/26/17****	5.86	NPP	9.71	978	5.25	163	7.78	49.5	<0.001	<0.001	<0.00
	2016	04/27/16	5.83	NPP	9.72								
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.05	NPP	9.72	773	3.09	-62.4	7.76	54.8	<0.002	<0.002	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.59	NPP	9.72	704	5.67	-56	7.40	64.9	<0.010	<0.010	<0.01
TP-8	Low Flow 2017	Week of 04/26/17	5.66	NPP	9.72	1,571	2.80	-80	7.27	52.5	<0.005	<0.005	0.011
	Low Flow 2016	Week of 04/28/16	5.65	NPP	9.72	1084	2.57	-163	8.03	54.0	<0.005	<0.005	0.029
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	8.06	NPP	9.72	907	2.64	-93.6	7.76	54.0	<0.005	<0.005	0.009
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
		Week of											

											MCL	WQCC 20NMAC 6.2.3103	MCL
											0.005	0.75	0.700
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Conductivity (umhos/cm)	DO (mg/L)	ORP (mV)	pH	TEMP (°F)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenz (mg/
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	6.29	NPP	9.72	995	1.71	-179	7.40	68.0	<0.005	<0.005	0.014
TP-9	Low Flow 2017	Week of 04/26/17	5.81	NPP	10.97	1674	2.23	-83	7.33	50.9	<0.001	<0.001	<0.00
	Low Flow 2016	Week of 04/28/16	5.69	NPP	10.97	1715	2.00	-123	7.19	52.6	<0.001	<0.001	<0.00
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.93	NPP	10.97	1833	3.38	-104	7.35	51.9	<0.001	<0.001	<0.00
	High Flow 2014 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	6.98	NPP	10.97	1410	5.09	-54	7.05	50.8	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.23	NPP	10.97	1330	4.80	65	7.00	65.5	<0.001	<0.001	<0.00
TP-10	2017	04/28/17	5.11	NPP	9.95						Groundwater Sampling Discontinued (NME		
	2016	04/27/16	5.12	NPP	9.95						Groundwater Sampling Discontinued (NME		
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.50	NPP	9.95	695	1.78	46.3	7.60	50.7	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	4.99	NPP	9.95	340	2.01	60	7.50	63.1	<0.001	<0.001	<0.00
TP-11	2017	04/28/17	5.56	NPP	9.98						Groundwater Sampling Discontinued (NME		
	2016	04/27/16	5.58	NPP	9.98						Groundwater Sampling Discontinued (NME		
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	5.84	NPP	9.98	797	2.06	34.4	7.67	51.9	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	5.45	NPP	9.98	500	1.92	-28	7.40	62.4	<0.001	<0.001	<0.00
TP-12	2017	04/28/17	7.32	NPP	11.79						Groundwater Sampling Discontinued (NME		
	2016	04/27/16	7.36	NPP	11.79						Groundwater Sampling Discontinued (NME		
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 07/11/15	7.57	NPP	11.79	1064	2.51	-33.9	7.55	51.0	<0.001	<0.001	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	7.10	NPP	11.79	561	2.61	-32	7.60	56.6	<0.001	<0.001	<0.00
TP-13 (Bi-Annual)	2017	04/28/17	6.18	NPP	12.73						Groundwater Sampling Discontinued (NME		
	2016	04/27/16	6.25	NPP	16.09						Groundwater Sampling Discontinued (NME		
	High Flow 2015	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.45	NPP	16.09	600	5.66	-15.7	7.83	50.5	<0.002	<0.002	<0.00
	High Flow 2013 **	No High Flow	**	**	**	**	**	**	**	**	**	**	**
	Low Flow 2013	Week of	5.88	NPP	16.09	365	3.23	54	7.50	60.7	<0.001	<0.001	<0.00

				NMED Soil Screening Guidance Table 6-4			40 CFR 141.62 (MCL)	
				0.04		0.04	0.0150	0.002
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	TPH-DRO (mg/L)	TPH-GRO (mg/L)	TPH-MRO (mg/L)	Lead (mg/L)	Mercury (mg/L)
DW-1 (Bi-Annual)	Low Flow 2017	Week of 04/26/17****	6.16	<0.20	<0.050	< 25	**0.0068**	NR[2]
	2016	04/27/16	6.15					
	High Flow 2015	No High Flow	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	6.30	<0.20	<0.050	< 25	****	<0.0002
	High Flow 2013 **	No High Flow	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	9.64	<0.20	<0.050	< 2.5	**0.0014**	<0.0002
DW-2	Special Event	12/29/2017	NM	**0.4**	**1**	< 2.5	**0.0041**	NR
DW-3	Special Event	12/29/2017	NM	<0.2	**0.23**	< 2.5	**0.00083**	NR
	Low Flow 2017	Week of 04/26/17	7.61	<0.20	**0.099**	< 2.5	**0.0110**	NR[2]
	Low Flow 2016	Week of 04/28/16	7.59	**0.35**	**0.33**	< 2.5	**0.014**	NR[2]
	High Flow 2015	No High Flow	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	11.23	**0.76**	**2.1**	<2.5	<0.0050	NR[2]
	High Flow 2014 **	No High Flow	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	6.92	**1.7**	**8.8**	<2.5	<0.0050	NR[2]
	High Flow 2013 **	No High Flow	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	10.86	**3.30**	**23**	< 2.5	**0.0055**	NR[2]
MW-49	Low Flow 2017	Week of 04/26/17	9.65	<0.20	<0.050	< 2.5	**0.029**	NR[2]
	Low Flow 2016	Week of 04/28/16	9.31	<0.20	<0.050	< 2.5	**0.040**	NR[2]
	High Flow 2015	No High Flow	**	**	**	**	**	**
	Low Flow 2015	Week of 04/28/15	9.65	<0.20	<0.050	< 2.5	<0.0050	NR[2]
	High Flow 2014 **	No High Flow	**	**	**	**	**	**
	Low Flow 2014	Week of 04/22/14	10.08	<0.20	<0.050	< 2.5	**0.0064**	NR[2]
	High Flow 2013 **	No High Flow	**	**	**	**	**	**
	Low Flow 2013	Week of 07/11/13	9.17	<0.20	<0.050	< 2.5	**0.0013**	NR[2]
Gallery	Special Event	12/29/2017	NM	<0.20	0.11	< 2.5	**0.11**	NR

Notes:

NR = Not Required (Voluntary Corrective Measures - Revised Monit
NR[1]= Not Required (Approval With Direction - June 2009)
NR[2]= Not Required (Approval With Direction - May 2011)
NS = Not Sampled NM = Not measured
NPP = No Product Present
DO = Dissolved Oxygen
ORP = Oxidation Reduction Potential
** Due to drought, river conditions never met high flow requirement
*** Well Decommissioned November 2012 as part of biovent systen

				NMED Soil Screening Guidance Table 6-4			40 CFR 141.62 (MCL)	
				0.04		0.04	0.0150	0.002
Sample Location	Sampling Event	DATE	Depth to Water (ft below TOC)	TPH-DRO (mg/L)	TPH-GRO (mg/L)	TPH-MRO (mg/L)	Lead (mg/L)	Mercury (mg/L)

Per NMED letter "Approval with Mod

1. Per NMED letter "Approval with Modifications Facility-Wide Gr

0.670 Constituent detected at concentra

3.100 Constituent detected at concentra

TABLE 2

GAC FILTER MONITORING 2017

2017 River Terrace Annual Report GAC Filter Monitoring

Sample Location	Sampling Event	Date	MCL	WQCC 20NMAC 6.2.3103	MCL	WQCC 20NMAC 6.2.3103	NMED
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	TPH-D (mg/
			0.005	0.750	0.700	0.620	0.0
GAC-INLET	4th Quarter	12/15/17	<0.001	<0.001	0.0013	0.0016	0.3
		11/22/17	<0.001	<0.001	<0.001	<0.0015	0.2
		10/31/17	<0.001	<0.001	0.0015	<0.0015	0.3
	3rd Quarter	09/20/17	<0.001	0.000092J	0.0019	0.0025	0.2
		08/02/17	<0.001	<0.001	0.042	0.024	0.5
		07/12/17	<0.001	<0.001	0.020	0.026	0.8
	2nd Quarter	06/14/17	<0.001	<0.001	0.003	0.014	0.3
		05/24/17	<0.001	<0.001	0.001	0.035	<0.2
		04/12/17	<0.001	<0.001	0.160	0.720	0.6
	1st Quarter	03/08/17	<0.001	<0.001	0.080	0.230	0.6
		02/15/17	<0.005	<0.005	0.180	0.700	1.1
		01/04/17	<0.001	<0.001	0.170	0.680	0.8
GAC-LEAD	4th Quarter	12/15/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		01/22/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		10/31/17	<0.001	<0.001	<0.001	<0.0015	<0.2
	3rd Quarter	09/20/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		08/02/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		07/12/17	<0.001	<0.001	<0.001	<0.0015	<0.2
	2nd Quarter	06/14/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		05/24/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		04/12/17	<0.001	<0.001	<0.001	<0.0015	<0.2
	1st Quarter	03/08/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		02/15/17	<0.001	<0.001	<0.001	<0.0015	<0.2
		01/04/17	<0.001	<0.001	<0.001	<0.0015	<0.2
GAC-LAG	4th Quarter	12/13/17	<0.001	<0.001	<0.001	<0.0015	<0.2
	3rd Quarter	09/20/17	<0.001	<0.001	<0.001	<0.0015	<0.2
	2nd Quarter	06/14/17	<0.001	<0.001	<0.001	<0.0015	<0.2
	1st Quarter	03/08/17	<0.001	<0.001	<0.001	<0.0015	<0.2

Notes:

= Analytical result exceeds the respective screening level.

--- = Not analyzed

J = estimated concentration r

MTBE = Methyl tert-butyl ether

WQCC = Water Quality Control Co

MCL = Maximum Contaminant Level

TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organcis Comission

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

TPH-MRO = Total Petroleum Hydrocarbons - Motor Oil Range Organics

MCL	WQCC 20NMAC 6.2.3103	NMED Soil Screening Guidance Table 6-4			NMED Soil Screening Guidance
Ethylbenzene (mg/L)	Xylene (mg/L)	TPH-DRO (mg/L)	TPH-GRO (mg/L)	TPH-MRO (mg/L)	MTBE (mg/L)
0.700	0.620	0.04		0.04	0.014
0.0013	0.0016	0.31	0.78	<2.5	<0.001
<0.001	<0.0015	0.26	0.37	<2.5	<0.001
0.0015	<0.0015	0.30	0.37	<2.5	<0.001
0.0019	0.0025	0.21	0.53	<2.5	<0.001
0.042	0.024	0.59	1.7	<2.5	<0.001
0.020	0.026	0.89	1.8	<2.5	<0.001
0.003	0.014	0.32	0.57	<2.5	<0.001
0.001	0.035	<0.20	0.55	<2.5	<0.001
0.160	0.720	0.64	3.90	<2.5	<0.001
0.080	0.230	0.67	2.6	<2.5	<0.001
0.180	0.700	1.10	3.90	<2.5	<0.005
0.170	0.680	0.84	2.8	<2.5	<0.001
<0.001	<0.0015	<0.20	0.000034J	<2.5	0.00032J
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	0.00054J
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	0.0011
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	0.026J	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001
<0.001	<0.0015	<0.20	<0.050	<2.5	<0.001

l.

J = estimated concentration reported below quantitation limit

WQCC = Water Quality Control Commission

is Comission

nics

nics

Sample Location	Sampling	NMED Soil Screening Guidance
		MTBE (mg/L)
		0.014
GAC-INLET	4th Qu	<0.001
		<0.001
		<0.001
	3rd Qu	<0.001
		<0.001
		<0.001
	2nd Qu	<0.001
		<0.001
		<0.001
	1st Qu	<0.001
		<0.005
		<0.001
		0.00032J
GAC-LEAD	4th Qu	<0.001
		<0.001
	3rd Qu	0.00054J
		<0.001
		<0.001
	2nd Qu	<0.001
		<0.001
		<0.001
	1st Qu	0.0011
		<0.001
		<0.001
GAC-LAG	4th Qu	<0.001
	3rd Qu	<0.001
	2nd Qu	<0.001
	1st Qu	<0.001

Notes:

TF
TF
TF

TABLE 3

AIR PRESSURE READINGS

Table 3
2016 and 2017 Biovent Wells Field Readings Summary

Sample Location	Sampling Event	Sample Date	Pressure (psi)
BV - 1	Low Flow	4/26/2017	2.0
BV - 3	Low Flow	4/26/2017	2.0
BV - 4	Low Flow	4/26/2017	1.9
BV - 5	Low Flow	4/26/2017	1.5
BV - 6	Low Flow	4/26/2017	1.9
Air Sparging Line A	Low Flow	4/26/2017	2.0
Air Sparging Line B	Low Flow	4/26/2017	1.7
Main Blower	Low Flow	4/26/2017	2.8

Sample Location	Sampling Event	Sample Date	Pressure (psi)
BV - 1	Low Flow	5/2/2016	2.0
BV - 3	Low Flow	5/2/2016	2.0
BV - 4	Low Flow	5/2/2016	2
BV - 5	Low Flow	5/2/2016	2
BV - 6	Low Flow	5/2/2016	2
Air Sparging Line A	Low Flow	5/2/2016	2.0
Air Sparging Line B	Low Flow	5/2/2016	2
Main Blower	Low Flow	5/2/2016	2.7