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By OCD; Dr. Oberding at 7:42 am, May 18, 2016

**Byrd Pump Site  
Site Investigation / Quarterly  
Monitoring Report**

**REVIEWED**

By OCD; Dr. Oberding at 1:45 pm, Aug 02, 2016

Byrd Pump Site  
Monument, New Mexico  
OCD Case No: 1R0034

OCD- Permission to backfill with landfarm soils approved.  
08/02/2016



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May 17, 2016



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## 1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company (ARC), Stantec Consulting Services, Inc. (Stantec) is submitting this *Site Investigation / Quarterly Monitoring Report* (Report) for the Byrd Pump Site (Site) located 3 miles west of the town of Monument, New Mexico on Highway 322 and 2.5 miles south of the El Paso Natural Gas Monument Station (32.35.01N and 103.18.32W). The Site Location Map is presented as **Figure 1**. This Report presents the well installation, soil excavation stockpile sampling, and groundwater monitoring activities undertaken in January and March of 2016.

The field investigation conducted during January and March 2016 followed the scope of work outlined in the *Byrd Pump Site Sampling and Analysis Work Plan – Monument, New Mexico* submitted by Anderson Engineering Company Inc. to ARC on May 6, 2014. The work plan was based on the Work Plan for Excavation Backfilling and Quarterly Groundwater Monitoring, Byrd Pump Site – Monument, New Mexico submitted by URS on March 12, 2002 and approved by the New Mexico Oil Conservation Division (NMOCD) on October 11, 2002

### 1.1 SITE BACKGROUND

ARCO Pipe Line Company (APL) now BP Pipelines, Inc. formerly operated a 4-inch crude oil pipeline that runs east-west through Lea County, NM. Line pressure is increased by a booster pump located at the Site. In 1999, APL conducted a routine inspection of the pump area and observed stained soil around the pump apparently related to crude oil that had leaked from the booster pump. The following investigation activities have been completed to date:

- In April 1999, APL contracted CJR Contractors to remove stained soil from around the pump and pipeline and observed impacted soil extending to at least 2 feet below ground surface (ft bgs).
- In November 1999, URS Greniner Woodward Clyde (URS) conducted a soil and groundwater investigation at the Site that included borehole sampling, and the installation of one groundwater monitoring well (MW-1). The investigation identified Total Petroleum Hydrocarbons (TPH) and benzene, toluene, ethyl benzene, and xylenes (BTEX) as the constituents of concern (COC). Soil impacts were observed as deep as 38 feet bgs and the groundwater sample collected showed constituents of concern above the New Mexico Water Quality Control Commission (WQCC) standards.
- In April 2000, APL began excavation activities following the re-routing of the pipeline and relocation of the pump. Stained soil had been observed on the ground surface around the pump for approximately 25 feet in all directions and at approximately 30 feet bgs. At 30 feet depth the impacted soil appeared to spread radially on the water table. Due to groundwater fluctuations, an 8 foot thick section of soil, 200 feet in diameter, was impacted

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between 30 – 38 feet bgs. Approximately 30,600 cubic yards of clean soil and approximately 8,000 cubic yards of impacted soils were excavated from the Site. Impacted soils were excavated and landfarmed on the Site through spreading, drying, and mixing of the soils. The clean soils that were excavated in order to reach areas of impacted soils were stockpiled in a separate area on the Site. The excavated area, clean stockpile, and land farm stockpile are presented in **Figure 2**.

- In October 2000, the NMOCD accepted the Soil Remediation Report for the Site requiring the excavated area to be backfilled and groundwater quality monitoring to be conducted for 4 consecutive quarters before final closure could be obtained (Anderson, April 2014).

### **1.2 GENERAL SITE GEOLOGY**

The Site is located in the Southern High Plains of eastern New Mexico, the southernmost part of what is known as the Great Plains. The area is generally flat with few areas of mildly undulating topography (Cronin, 1969). At the site, the outcropping geology consists of Holocene to middle Pleistocene eolian (sand) and piedmont alluvial (alluvium) deposits (Scholle, 2003). The sand deposits range in thickness from 0 to 30 ft and is generally underlain by the alluvium which can range in thickness from 0 to 400 ft (Nicholson, et al., 1961). The Ogallala Formation underlies the sand and alluvium and can range from 0 to 350 ft in thickness (Tillery, 2008). Underlying the Ogallala Formation are older sequences that include Permian and older Paleozoic formations that yield saline water, oil and gas. Oil and gas have historically and are presently being extracted from the subsurface throughout the general area (Cronin, 1969).

The Site's general subsurface geology has been characterized through the installation and logging of monitoring wells MW-PS1 through MW-PS4 on January 11 through January 12, 2016. A generalized subsurface lithology may be divided into three stratigraphic layers which include:

- 0 ft bgs to about 8 ft bgs – Unconsolidated sands and clayey sands;
- 8 ft bgs to 16 ft bgs – hard, dry Caliche with occasional sand layers; and
- 16 ft bgs to 45 ft bgs – consolidated to unconsolidated sands, clayey sands and silty sands.

Boring logs, well construction details and the well permitting package for MW-PS1 through MW-PS4 are included in **Appendix A**.

### **1.3 GENERAL SITE HYDROGEOLOGY**

The Ogallala Formation was deposited during the Pliocene age and contains the principle aquifer in the eastern New Mexico and western Texas (Cronin, 1969). The Ogallala Formation consists of mostly unconsolidated clay, silt, fine- to coarse-grained sand, gravel, and caliche. The Ogallala Aquifer is unconfined and generally underlain by impermeable clays and shales. Saturation thickness within the aquifer was found to range from 0 feet to 200 feet in 2007 and depth to water ranges from 25 feet to greater than 300 feet. The general groundwater flow

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gradient observed in Lea County is towards the southeast (Tillery, 2008). Several hydraulic conductivity estimates have been observed in Lea County, New Mexico and range from 2 to 48 feet/day (ft/d) (Musharrafieh, et. al., 1999).

## **2.0 MONITORING WELL INSTALLATION**

On January 11 and January 12, 2016 four monitoring wells (MW-PS1 through MW-PS4) were installed at the site to facilitate compliance with NMOCD directives in order to achieve Site closure. The monitoring wells were installed to further delineate groundwater quality data and groundwater flow direction. One monitoring well (MW-PS1) was installed up-gradient of the release and 3 monitoring wells (MW-PS2 through MW-PS4) were installed cross-gradient and down-gradient to delineate groundwater in the vicinity of the release site. The monitoring wells locations are illustrated on **Figure 3**.

The following procedures were followed during the monitoring well installation:

- Public utility locate and private utility locate were conducted prior to ground disturbance;
- Monitoring wells were installed using air rotary technology;
- The first 6.5 ft of MW-PS2, MW-PS3 and MW-PS4 were cleared using an air-knife excavation. MW-PS1, air-knife excavation was refused at 2.5 ft bgs so a hand auger was used to clear the borehole until refusal occurred at 4 ft bgs. Soil samples were collected with a hand auger in 1 ft intervals prior to air-knife excavation for field screening using a Photoionization Detector (PID) equipped with a 10.6 eV lamp;
- An Atlas Copco TH60 air-rotary drilling rig operated by Harrison & Cooper, Inc. was used to advance borings from a depth of 6.5 ft bgs or 4 ft bgs to their terminus;
- Each monitoring well was constructed following the *New Mexico Department Ground Water Quality Bureau Monitoring Well Construction and Abandonment Guidelines: Revision 1.1, March 2011* guideline:
  - 2-inch diameter schedule 40 PVC well casing and 20 feet of 0.01-inch slotted screen;
  - Each well screen was installed with at least 5 ft of screen above the water table;
  - 20/40 silica sand filter pack from the bottom of the well to 2-feet above the screened interval;
  - A seal of hydrated bentonite from the top of the filter pack up to 2 ft bgs;
  - Cement grout from 2 ft bgs to 0 ft bgs;
  - Stick-up with steel shroud well cove and bollards; and
  - A concrete pad (2 ft x 2 ft x 4 inches thick).
- Soil was continuously logged and prescreened for total Volatile Organic Compounds (VOCs) using a PID in the field;
- Soil samples were collected at each well using a 2-ft split spoon sampler, at approximately 29 ft bgs; and
- Soil cuttings generated during the drilling activities were screened with a PID and based on the PID measurement (less than 100 parts per million (PPM)) the soils were placed on the clean stockpile. All soils measured during the drilling activities were below the 100 ppm TPH criteria.

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## **2.1 MONITORING WELL INSTALLATION FIELD SCREENING**

Continuous soil logging was performed using a 2-ft split-spoon sampler. Each 2-ft interval was field screened for the presence of VOCs using a PID equipped with a 10.6 eV lamp. The PID readings were collected according to the following procedures:

- New disposable nitrile gloves were used to collect the sample;
- A quart-sized plastic bag was filled approximately half full and sealed;
- The bag was allowed to equilibrate and develop headspace vapors over approximately 5 to 10 minutes (bag was shaken about 1 minute during this period);
- The PID probe was inserted into the bag which was re-sealed around the probe; and
- The highest headspace measurement observed was recorded.

Field screening results for monitoring well installation soil samples are included in the bore logs in **Appendix A**.

## **2.2 WELL INSTALLATION SOIL SAMPLING RESULTS**

Soil samples were collected from each monitoring well location during installation at subsurface locations above first encountered groundwater. A soil sample for Total TPH Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) was collected from a split spoon sampler using a decontaminated 4-inch stainless steel scraper and then packed into a laboratory provided 4-ounce glass sampling jar, using new disposable gloves for each sample collected. A separate soil sample was collected from each location for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by SW-846 Method 5035. The soil sample was field screened using a PID and based on the field screening (>100 ppm) the sample would be analyzed for BTEX constituents. The sample was submitted to the laboratory and placed on hold pending the TPH results. All soil samples collected were maintained on ice post collection and submitted to Pace Analytical Services, Inc. (Pace) in Lenexa, Kansas an US EPA NELAC accredited laboratory.

The soil samples collected during monitoring well installation were analyzed for TPH GRO and DRCO using US EPA SW-846 method 8015B. The following summarizes soil sample results from monitoring well installation:

- TPH GRO laboratory results were below reporting limits (non-detected concentrations) for all soil samples collected;
- TPH DRO was detected in one sample taken at 29 ft bgs in MW-PS2 with a concentration of 6.6 milligrams per kilogram (mg/kg), but was flagged as an estimated concentration above the adjusted method detection limit and below the adjusted reporting limit; and
- Both TPH GRO and DRO results are below NMOCD Remedial Action Level of 100 mg/kg (NMED, July 2015).

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- Based on the results of the TPH analysis, BTEX was not analyzed.

Soil analytical results are summarized in **Table 1**. The laboratory reports are included in **Appendix B**.

## **2.3 WELL DEVELOPMENT**

The purpose of well development is to improve hydraulic communication between the well screen and the surrounded saturated horizon. After installation, the monitoring wells were allowed to stabilize for greater than 12-hours before development was initiated. Monitoring well MW-PS2 was developed on January 12, 2016 and Monitoring wells MW-PS1, MW-PS3 and MW-PS4 were developed on January 13, 2016. The monitoring wells were developed by pumping groundwater out of the well with a submersible Proactive™ Monsoon stainless steel pump. Groundwater was pumped out of each well until the water flowed freely through the well screen and the water was no longer turbid. The following summarizes development details for each well:

- MW-PS1: Volume of groundwater removed during development = 7.2 gallons (approximately four well volumes purged).
- MW-PS2: Volume of groundwater removed during development = 15.3 gallons (approximately seven well volumes purged).
- MW-PS3: Volume of groundwater removed during development = 17.1 gallons (approximately seven well volumes purged).
- MW-PS4: Volume of groundwater removed during development = 15.7 gallons (approximately seven well volumes purged).

The pump used to purge each well was decontaminated between each well. Purged groundwater was contained in one labeled 55-gallon drum per well and each remains at the Site pending appropriate disposal.

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## **3.0 STOCKPILE SOIL CHARACTERIZATION SAMPLING**

The NMOCD correspondence dated December 10, 2001 requested further soil excavation stockpile characterization to determine if the soils stockpiled on Site could be used as backfill for the excavation pit. On January 12 and January 13, 2016 discrete soil samples were collected from existing excavation stockpiles for chemical analysis to characterize the soil quality. Two soil excavation stockpiles are located on the Site and are identified as the Clean Stockpile (CS) and Landfarm Stockpile (LFS) (Refer to Figure 2).

### **3.1 STOCKPILE SAMPLING**

The NMOCD requires soil used for backfill meet specific TPH requirements of less than 100 ppm for this area. On October 11, 2002, the NMOCD issued an approval letter (NMOCD, 2002) for the March, 2002 Work Plan for Excavation and Backfilling and Quarterly Groundwater Monitoring. On October 15, 2002 ARC documented a telephone conversation with the NMOCD, clarifying requirements found in the NMOCD approval letter. The following action items were approved:

- LFS samples will be analyzed for TPH (GRO and DRO) and from light fraction hydrocarbons (i.e., BTEX) if an in-field PID reading for Total VOC concentration in soil gas is greater than 100 ppm;
- In the LFS treatment area one soil sample will be collected for every 500 cubic yards of soil to confirm compliance of 100 ppm or less for TPH concentrations in soil; and
- The CS, one soil sample will to be collected from every 5,000 cubic yards to confirm compliance of 100 ppm or less of TPH concentrations in soil.

The stockpile soil sample locations were predetermined prior to mobilizing to the field. Once on Site the locations were verified using a Trimble® GeoXT Handheld Global Positioning System (GPS) receiver. The field GPS coordinates were documented and the sample locations were clearly marked on the surface of the stockpiles using a florescent colored spray paint. Soil sample locations on the CS and LFS are presented on **Figure 4**.

The following is a summary of the stockpile sampling conducted on January 12 and January 13, 2016:

- Six sample locations (Sample-1 through Sample-6) were identified for soil sample collection on the CS.
  - Four individual soil samples were collected at each sample location at descending depths (approximately 0-2', 4-6', 7-9', and 10-12').
- Fifteen sample locations (Sample-7 through Sample-21) were identified for composite soil sampling on the LFS:

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- Four individual soil samples were collected at each sample location. First interval was 0-2' and then at equally spaced depending on the height of the stockpile.
- All soil samples were field-screened using a PID with a 10.6 eV lamp (refer to Section 3.2 for field screening procedure).
- One geotechnical sample was collected from the Sample-2 location on the CS. Soil was collected from 0-14 ft bgs and consolidated into a clean 5-gallon plastic bucket.

The soil samples were collected using a backhoe excavator and a clean shovel. The following procedures were followed for each soil sample location on the CS and LFS:

- Soil samples were collected using a backhoe excavator and a clean stainless steel shovel;
- The backhoe was positioned in a safe location to conduct excavation;
- The operator excavated the first sample interval and shut down backhoe excavator to allow soil sample to be collected from the backhoe's bucket using a decontaminated stainless steel shovel. The geologist collected soil for the sample that had not been in contact with the backhoe bucket or stainless steel shovel and placed the soil in a laboratory provided 4 ounce glass jar;
- Excavation and sample collection continued at the designated sample location as above with three subsequent soil samples collected at increasing depths and approximately equal intervals beneath the subsurface;
- Soil Samples jars were labeled and placed into a cooler with ice;
  - Samples were identified by the location number (i.e., SS-1), followed by a letter indicating relative depth. A represents the surface sample and D represents the sample taken from the greatest depth in the stockpile (i.e. Sample-1 consists of SS-1A, SS-1B, SS-1C and SS-1D).
- At each sample interval, soil was placed into a plastic bag and subsequently screened with a PID sensor as described in Section 3.2;
- Operator placed excavated soil back into the excavated column at the designated sample location;
- Operator moved backhoe to the next sample location, repeating the noted procedures until stockpile sampling was complete; and
  - All excavated sample locations were backfilled with their original soil material and compacted to reduce unconsolidated ground or open holes.
  - Decontamination water was staged in a labeled 55-gallon drum for off-site disposal.
  - Soil samples were maintained on ice post collection and submitted to Pace in Lenexa, Kansas for TPH DRO and GRO analysis DRO by US EPA SW-846 method 8015B.
  - The geotechnical soil sample was submitted to the Stantec Geotechnical Laboratory (AASHTO accreditation) in Lexington, Kentucky.

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Field notes are included in **Appendix C**.

## **3.2 STOCKPILE SOIL SAMPLE FIELD SCREENING**

The soil samples collected were field screened for the presence of VOCs using a PID equipped with a 10.6 eV lamp. The PID readings were collected according to the following procedures:

- New disposable nitrile gloves were used to collect the soil;
- A quart-sized plastic bag was filled approximately half full and sealed;
- The bag was allowed to equilibrate and develop headspace vapors over approximately 5 to 10 minutes (bag was shaken about 1 minute during this period);
- The PID probe was inserted into the bag which was re-sealed around the probe; and
- The highest headspace measurement observed was recorded.

No additional soil samples were collected for laboratory analysis because PID readings observed in the field did not exceed the 100 ppm threshold. Field screening results for CS and LFS sampling are summarized in **Table 2** and **Table 3**, respectively.

## **3.3 STOCKPILE SOIL SAMPLING RESULTS**

The following Sections discuss the results of the stockpile sampling. One geotechnical soil sample was collected at Sample-2 and analyzed for Standard Proctor by ASTM D698, Gradation by ASTM D422, and Liquid and Plastic Limits by ASTM D4318 by Stantec's Lexington, Kentucky laboratory to better characterize the physical properties of soil in the CS. CS and LFS sample locations are presented on **Figure 3** and **Figure 4**, respectively.

### Clean Stockpile Soil Sampling Results

A total of 24 samples were collected from the 6 locations. The following summarizes soil sampling results collected from the CS:

- TPH GRO was not detected in any of the analyzed soil samples collected.
- TPH DRO concentrations were detected at Sample-1, Sample-4, Sample-5 and Sample-6:
  - TPH DRO was detected in the following individual samples below the NMOCD guidance criteria of 100 mg/kg:
    - SS-1B, SS-4B, SS-4C, SS-5A through SS-5D, SS-6A and SS-6B.
  - TPH DRO was detected in sample SS-4A and SS-6B slightly above the than the NMOCD's guidance criteria of 100mg/kg at 107 mg/kg and 121 mg/kg, respectively. However, the average concentration of samples collected at these locations was well below the guidance criteria of 64.6 mg/kg at Sample-4 and 53 mg/kg at Sample-6.

Geotechnical soil data collected at Sample-2 is summarized below:



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- Standard Procter by ASTM D698:
  - Maximum Dry Density is 113 pound per cubic foot (lb/ft<sup>3</sup>);
  - Optimum Moisture Content is 14.3%; and
  - Over Size Correction is 21.1%.
- Gradation by ASTM D422:
  - Soil consists of 40.5% fine sand, 27% gravel, 10.4% coarse sand, 9.2% Clay, 6.8% silt, and 6.1% medium sand.
- Liquid and Plastic Limits by ASTM D4318:
  - Liquid Limit is 36;
  - Plastic Limit is 13;
  - Plasticity Index is 23; and
  - Activity Index is 2.88.
- The estimated specific gravity at 20° Celsius is 2.70.
- The Unified Soil Classified System (USCS) group name is clayey sand with gravel (SC).

The CS sampling results are summarized in **Table 2** and further discussed in Section 5.0. The laboratory analytical reports for CS samples and the geotechnical sample from Pace and Stantec are included in **Appendix B**.

Landfarm Stockpile Soil Sampling Results

LFS soil samples were collected on January 13, 2016 and sent to Pace for laboratory analysis. A total of 60 samples were collected from the LFS at Sample-7 through Sample-21: 4 samples were collected per location and are subsequently identified by their location number followed by a letter indicating relative depth where A represents the surface sample and D represents the sample taken from the greatest depth in the stockpile (i.e. Sample-6 consists of SS-6A, SS-6B, SS-6C and SS-6D).

The following summarizes soil sampling results collected from the LFS:

- TPH GRO was detected in one sample at Sample-8, SS-8D with a concentration of 13.6 mg/kg. All other samples collected at Sample-7 through Sample-21 did not have detectable concentrations of TPH GRO.
- TPH DRO as detected at all sample locations, Sample-7 through Sample-21. The highest concentration of TPH DRO detected was at Sample-19, SS-19B with a concentration of 48.1 mg/kg.
- All sample locations with detectable concentrations for TPH GRO and/or DRO have concentrations well under the NMOCD Remediation Action Level of 100 mg/kg.

The LFS sampling results are summarized in **Table 3**. The laboratory analytical reports are included in **Appendix B**.

## **4.0 GROUNDWATER MONITORING**

The following sections will detail the activities and summarize groundwater monitoring results conducted on January 14, 2016 and March 3, 2016.

### **4.1 GROUNDWATER ELEVATION ANALYSIS**

On March 3, 2016 the groundwater water monitoring wells were surveyed by a licensed New Mexico surveyor. The survey measured the top-of-casing (TOC), ground surface elevation, and the X, Y coordinates. Groundwater levels were measured at MW-PS1 through MW-PS4 with an accuracy of  $\pm 0.01$  feet using an electronic water level indicator. Depth to water was measured from the surveyed point on the TOC. The depth to groundwater measurements are summarized in **Table 4**.

Groundwater elevations ranged from 3523.06 ft above mean sea level (amsl) to 3522.68 ft amsl across the Site. A potentiometric surface was created using the groundwater elevation data collected and is presented in **Figure 5**. The potentiometric surface and groundwater elevations indicate groundwater flow is towards the southeast. The hydraulic gradient at the Site is approximately 0.0011 ft/ft towards the southeast.

### **4.2 GROUNDWATER SAMPLING**

Groundwater sampling was conducted on January 14, 2016 and March 3, 2016 at monitoring wells MW-PS1 through MW-PS4. The following procedures describe how the groundwater samples were collected:

- The water level and total depth at each well were measured and recorded.
- Wells were purged using a decontaminated submersible pump connected to the new polyethylene tubing for each well.
- Groundwater quality measurements were collected during purging using a Horiba U-22 water quality meter equipped with a flow cell. The following groundwater quality parameters were measured s every 3 minutes:
  - Temperature;
  - pH;
  - Specific conductance;
  - Dissolved oxygen (DO);
  - Reduction-oxidation potential (ORP); and
  - Turbidity.
- Purging was continued at a rate of approximately 100 to 500 milliliter per minute (ml/min) until water quality parameters were stable or 3 well volumes had been extracted from the well (whichever was reached first).

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- Once parameter stabilization was reached, the tubing was disconnected from the flow cell and groundwater samples were collected directly from the discharging tube into laboratory supplied containers. Groundwater samples were collected for:
  - TPH GRO and DRO by US EPA SW-846 method 8015B;
  - BTEX by US EPA SW-846 method 8260C;
  - Polynuclear Aromatic Hydrocarbons (PAHs) by US EPA SW-846 method 8270C SIM;
  - Resource Conservation and Recovery Act (RCRA) metals (total) by US EP SW-846 method 6010C and 7470;
  - Anions: Bromide, Chloride, Fluoride, Sulfate – US EPA SW-846 method 300.0 IC
  - Cations: Calcium, Magnesium, Potassium, Sodium – US EPA SW-846 method 6010
  - Nitrate / Nitrite – US EPA SW-846 method 353.2
  - Total Dissolved Solids (TDS)– SM 2540C
- Sample containers were sealed, labeled, and placed in a cooler with ice for transport to Pace in Lenexa, Kansas.
- Once samples had been collected and stored, all equipment used was decontaminated accordingly before continuing to sample the next well.
- Purge water and decontamination water were disposed in a labeled 55-gallon drum that will remain on the Site pending appropriate disposal.

Groundwater quality parameters and purging details for January and March 2016 were recorded on Stantec's *ESPA-305 Groundwater Development, Monitoring & Sampling Form* and are included in **Appendix D**. The groundwater quality parameters are summarized in **Table 5**.

### **4.3 GROUNDWATER SAMPLING RESULTS**

On January 14, 2016 and March 3, 2016, groundwater sampling was conducted at the Site. The groundwater analytical results are discussed below and presented in Tables 6 through 9.

- TPH GROs were not detected in the groundwater samples.
- TPH DROs were detected in the groundwater at all wells with the highest concentration at MW-PS4 with a concentration of 0.61 milligrams per liter (mg/l).
- Benzene was the only BTEX constituent detected in the groundwater samples. Benzene was reported at estimated concentrations by the laboratory in the MW-PS2, MW-PS3, and MW-PS4 sample. The highest concentration was measured at MW-PS1 with a concentration of 0.001 mg/l. This measurement is an order of magnitude lower than the NMWQCC Human Health Standard of 0.01 mg/l.
- PAHs were not detected in any wells with the exception of naphthalene and phenanthrene. These constituents were reported by the laboratory at estimated concentrations and below the NMWQCC Human Health Standards for Naphthalene. The NMWQCC currently does not have a human health standard for phenanthrene.
- The following is a summary RCRA metals of the results:
  - Lead, Selenium, Silver and Mercury were not detected at any well.

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- Arsenic concentrations ranged from 0.0081 mg/l in MW-PS1 to 0.0134 mg/l in MW-PS3, below the NMWQCC Human Health Standard of 0.1 mg/l.
- Barium concentrations ranged from 0.154 mg/l in MW-PS3 to 0.255 mg/l MW-PS1, below the NMWQCC Human Health Standard of 1.0 mg/l.
- Detectable concentrations of cadmium were reported by the laboratory in three of the four samples (MW-PS1, MW-PS3 and MW-PS4 duplicate). The highest concentration reported was 0.00092 mg/l in MW-PS4 duplicate sample. All detected concentrations are below the NMWQCC Human Health Standard of 0.01 mg/l.
- Chromium concentrations were reported by the laboratory in the following groundwater samples MW-PS1, MW-PS2 and MW-PS3 with the highest concentration at MW-PS3 measuring 0.0018 mg/l. The detected concentrations were reported as estimated by the laboratory and are below the NMWQCC Human Health Standard of 0.05 mg/l.
- Anions, Cations and TDS were detected in all wells and are summarized in **Table 9** and below:
  - Anions bromide, chloride, fluoride and sulfate were detected at all wells.
    - Chloride, fluoride and sulfate concentrations were reported above the NMWQCC Human Health Standards. The highest concentrations were measured at MW-PS4 for chloride, fluoride and sulfate with concentrations of 5,330 mg/l, 4.0 mg/l and 613 mg/l, respectively. All fluoride concentrations are estimated concentrations above the adjusted method detection limit and below the laboratory reporting limit.
  - Nitrate and Nitrite were not detected at any well.
  - Cations were detected at all wells; however, there are no NMWQCC Human Health Standards for cations.
  - TDS was detected above the NMWQCC Human Health Standard of 10,000 mg/l at all wells. The highest concentration of TDS was measured in MW-PS3 with a concentration of 19,000 mg/l.

The laboratory analytical reports are included in **Appendix B**.

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## 5.0 CONCLUSIONS

Monitoring well installation, stockpile soil sampling, and groundwater sampling were completed by Stantec in January and March 2016 at the Site.

Field activities conducted included:

- Installation of four monitoring wells: one up-gradient and three cross-gradient or down-gradient of the 1999 release location;
- Soil samples were collected from each monitoring well during installation;
- Twenty-four discrete characterization soil samples were collected from six sample locations on the CS;
- Sixty discrete characterization soil samples were collected from fifteen sample locations on the LFS;
- All groundwater monitoring wells were surveyed by a licensed State of New Mexico surveyor; and
- Groundwater monitoring was conducted on January 14, 2015 and March 3, 2016.

### Soil Sampling Summary

The following summarizes soil sampling results during the investigation:

- All field screened soils during monitoring well installation and stockpile soil sampling were below NMOCD guidance criteria of 100 ppm;
- Monitoring well installation soil samples collected from MW-PS1 through MW-PS4 did not have any concentrations exceeding the NMOCD guidance criteria (100 mg/kg) for TPH DRO or GRO;
- CS soil samples collected did not have any detected concentrations of TPH GRO. TPH DRO was detected slightly above the NMOCD Remedial guidance level (100 mg/kg) in two individual samples SS-4A (Sample-4) and SS-6B (Sample-6) with concentrations of 107 mg/kg and 121 mg/kg, respectively. However, the average concentration at the sample location was well below the NMOCD guidance criteria of 64.6 mg/kg at Sample-4 and 53 mg/kg at Sample-6; and
- LFS soil samples collected did not exceed the NMOCD guidance criteria (100 mg/kg) at any sample location for both TPH GRO and TPH DRO.

### Groundwater Sampling Summary

The following summarizes groundwater sampling results collected at the Site on January 14, 2016 and March 3, 2016:

- TPH DRO and GRO results do not exceed NM WQCC Human Health Standards at any well;

**BYRD PUMP SITE  
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- BTEX concentrations do not exceed NM WQCC Human Health Standards at any well;
- PAH concentrations do not exceed NM WQCC Human Health Standards at any well;
- RCRA metals do not exceed NM WQCC Human Health Standards at any well;
- Anion Chloride and Fluoride concentrations exceed NM WQCC Human Health Standards (250 mg/l and 1.6 mg/l, respectively) at all wells. Sulfate concentrations exceed the NM WQCC Human Health Standard (600 mg/l) at MW-PS4;
- Nitrate and Nitrite concentrations were not detected at any well;
- Cations do not exceed NM WQCC Human Health Standards at any well; and
- TDS concentrations exceed the NM WQCC Human Health Standard (10,000 mg/kg) at all wells.

Conclusions

Soil and groundwater quality at the Site has been further delineated through the installation of 4 groundwater monitoring wells, characteristic soil samples collected during monitoring well installation, from on-site stockpiles, and groundwater sampling. Using data collected during January and March 2016 field activities, the following conclusions were developed:

- The monitoring well soil sample results and the PID headspace readings do not exceed NMOCD guidance criteria indicating impacts from the booster pump leak of crude oil are not observed in the outer boundaries of the excavation pit. This suggests impacted soil was removed during historical excavation efforts.
- Stockpile soil sample results and PID headspace readings do not exceed the NMOCD guidance criteria with the exception of 2 samples taken in the CS. These two samples (SS-4A and SS-6B) slightly exceed the guidance criteria for TPH DRO. However, the average concentration at these sample location was well below the NMOCD guidance criteria of 64.6 mg/kg at Sample-4 and 53 mg/kg at Sample-6. The bulk of the results collected indicate both CS and LFS have reduced contaminant concentrations likely resulting from a combination of natural degradation and exposure to the area's elements (i.e. wind and precipitation) over time. No further evaluation of TPH related to the stock piles is proposed.
- Groundwater monitoring results indicate minimal to no groundwater impacts related to the crude oil that was released in 1999. The COCs (TPH DRO, GRO, BTEX, and PAHs) were either detected at low concentrations or were not present in the groundwater sampled at the Site. The detectable concentrations of the COCs did not exceed NMWQCC Human Health Standards. Based on these results the monitoring wells installed delineate the groundwater associated with the 1999 crude oil release.
- The anions and TDS groundwater results indicate concentrations of chloride and fluoride in the groundwater at the Site that exceed their respective NM WQCC Human Health Standard. Chloride concentrations ranged from 3,720 mg/l to 5,330 mg/l above the NMWQCC Human Health Standard of 250 mg/l. The area is known to have high chloride and TDS concentrations in the groundwater. The Site is located within a major petroleum-producing region that has been active since the early 1900s. Large quantities of saline water

**BYRD PUMP SITE**  
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(commonly extracted alongside petroleum) were extracted and the resulting brine was discharged back into the ground prior to 1960 (McQuillen and Keller, 1987). The Site is located within a regional chloride plume and down-gradient (approximately 2,800 feet) of an area of the chloride plume with concentrations that can exceed 6,000 mg/kg (Rice Operating Company, 2012 and Geo Monitoring Services, 2012). Additionally, the chloride concentrations in groundwater collected from MW-01 (former Site monitoring well) on November 11, 1999 and from the excavation pit on September 21, 2000 were 300 and 3,300 mg/l, respectively. Indicating that up-gradient sources have migrated to the Site since 1999 and 2000 resulting in higher chloride and TDS. Therefore, high concentrations of anions, cations and TDS observed at the Site are attributed to regional chloride plume and other up-gradient sources rather than the booster pump of crude oil leak. Based on the foregoing, no further evaluation of chlorides and TDS are proposed.

As requested by the NMOCD, groundwater monitoring will be conducted during three more quarterly events in 2016 to better establish groundwater conditions at the Site and meet the NMOCD's site closure directives. The COCs in soil and ground water along with PID readings and field observations at the Site during January and March 2016 indicate crude oil impacts from the booster pump leak have been minimized through historical site activities and natural attenuation of chemicals in the subsurface, CS and LFS stockpile soil, or groundwater. As a result, it can be inferred that historical excavation efforts were successful in isolating the impacted soil resulting in minimal residual contamination that is below New Mexico health standards.

Statement of Limitations  
May 17, 2016

## **6.0 STATEMENT OF LIMITATIONS**

This report was prepared in accordance with the scope of work outlined in the Stantec Consulting Services Inc. (Stantec) contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the Site. It was prepared for the exclusive use of Atlantic Richfield Company. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Stantec. To the extent that this report is based on information provided to Stantec by third parties, Stantec may have made efforts to verify this third party information, but Stantec cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the Site existing at the time of the field investigation. No other warranties, expressed or implied are made by Stantec.

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**Reviewed by:**



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**Approved by:**



'G  
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**BYRD PUMP SITE**  
**OCD #1R0034**

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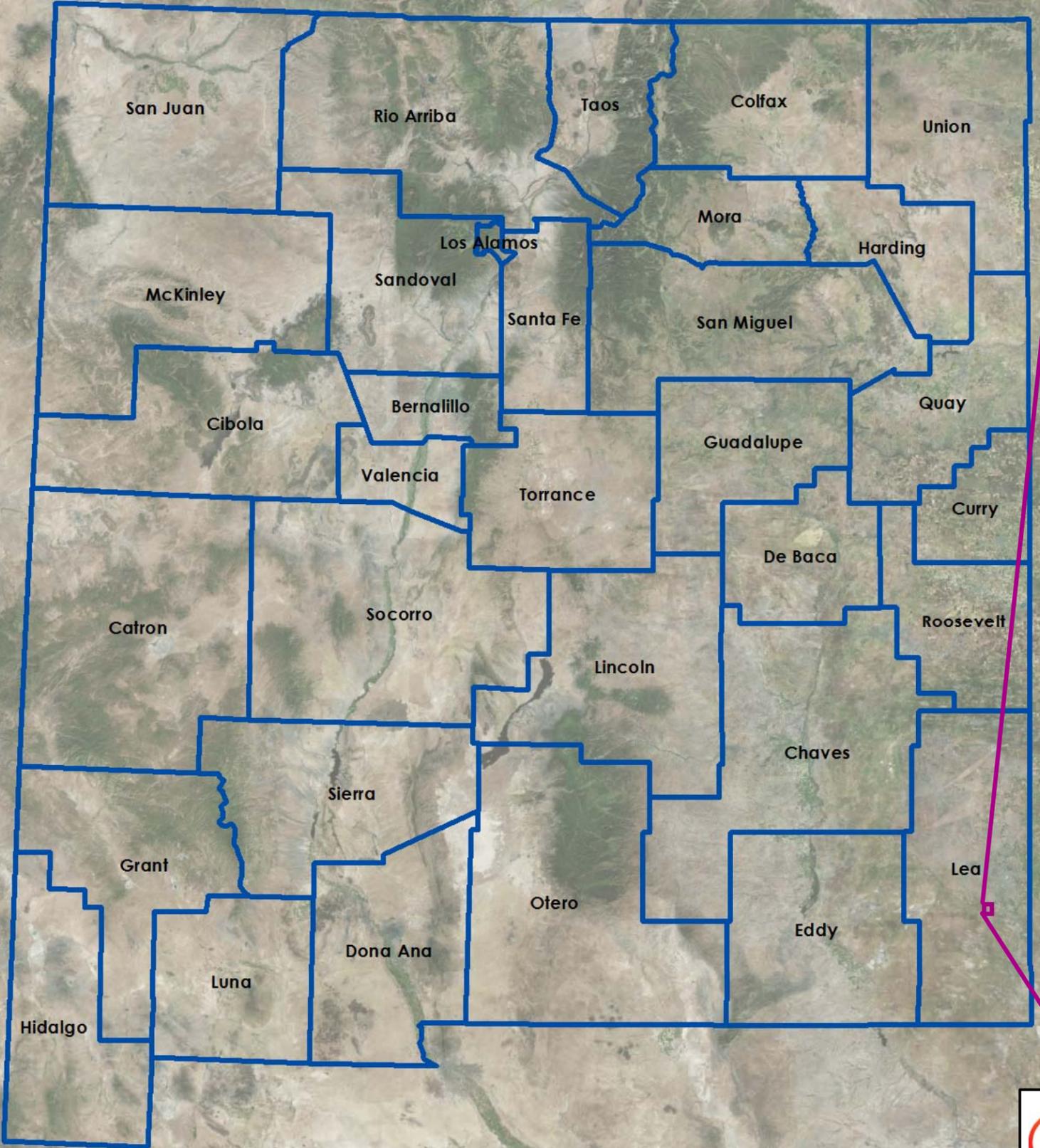
**BYRD PUMP SITE  
OCD #1R0034**

Figures  
May 17, 2016

**FIGURES**

C:\Users\steverson\Desktop\182630008 - Byrd Pump Site\GIS\2016\_03\Figure 1 (Site Map)\2016-04-20\1X17.mxd

# NEW MEXICO



# BYRD PUMP SITE VICINITY MAP

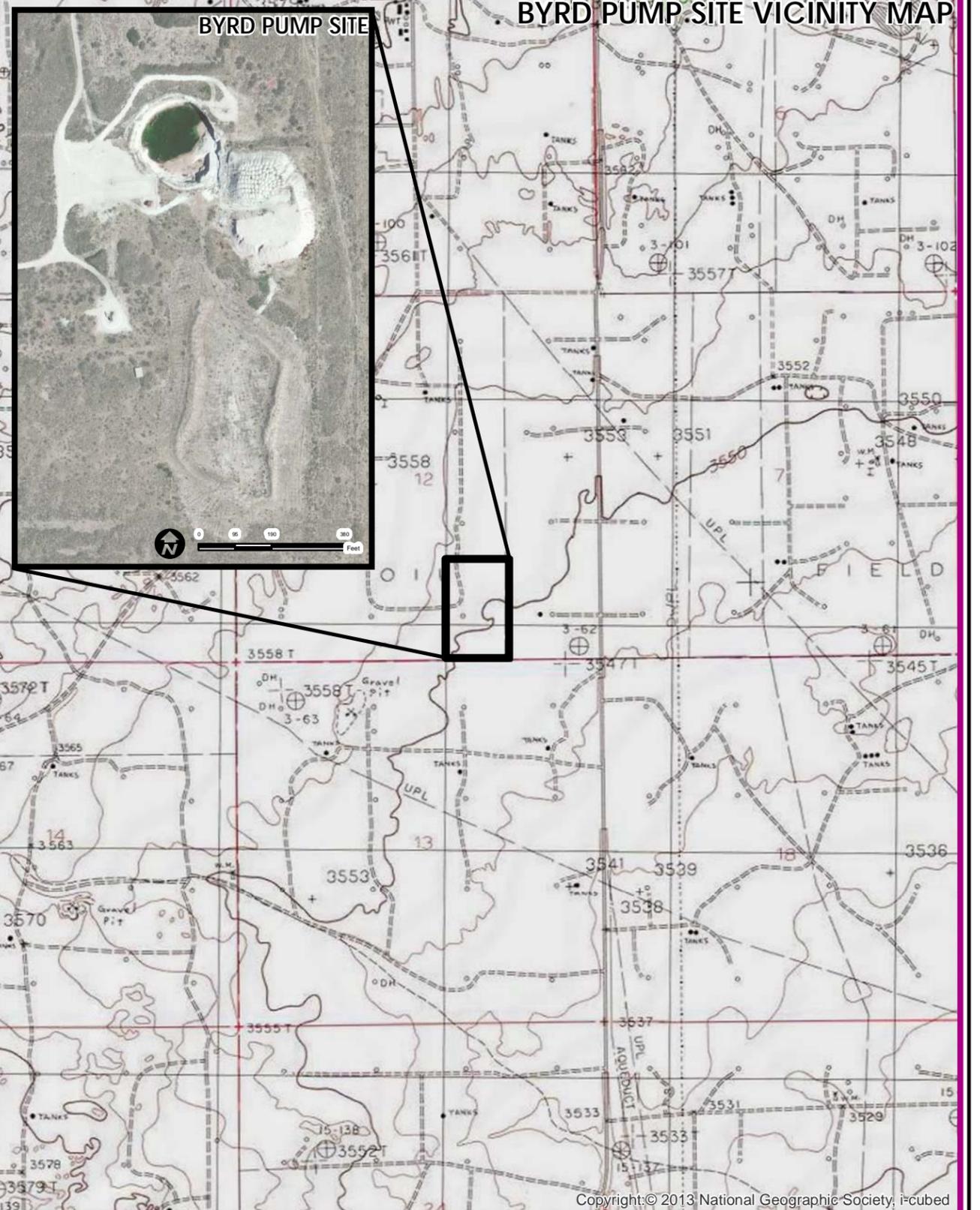


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FOR:  
BYRD PUMP SITE  
BYRD RANCH ON JOANNE LANE  
HOBBS, NEW MEXICO 88240

SITE LOCATION MAP

FIGURE:  
1

|                          |                 |                   |                    |                   |
|--------------------------|-----------------|-------------------|--------------------|-------------------|
| JOB NUMBER:<br>182630008 | DRAWN BY:<br>AH | CHECKED BY:<br>SH | APPROVED BY:<br>JM | DATE:<br>04/25/16 |
|--------------------------|-----------------|-------------------|--------------------|-------------------|

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- Legend**
- Active Gas Well (Apache BP)
  - Approximate Location of MW-1 (Abandoned April 2000)
  - Approximate Location of Former Booster Pump
  - 20-inch Natural Gas Line (Kinder Morgan)
  - Approximate Pipeline Location (Apache BP)
  - Approximate Location of Former Pipeline
  - Natural Gas Line (Targa)
  - Approximate Parcel Boundary



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FOR:  
**BYRD PUMP SITE  
BYRD RANCH ON JOANNE LANE  
HOBBS, NEW MEXICO 88240**

JOB NUMBER: 182630008    DRAWN BY: AH

**SITE LAYOUT MAP**

CHECKED BY: SH    APPROVED BY: JM

FIGURE:  
**2**

DATE: 04/25/16



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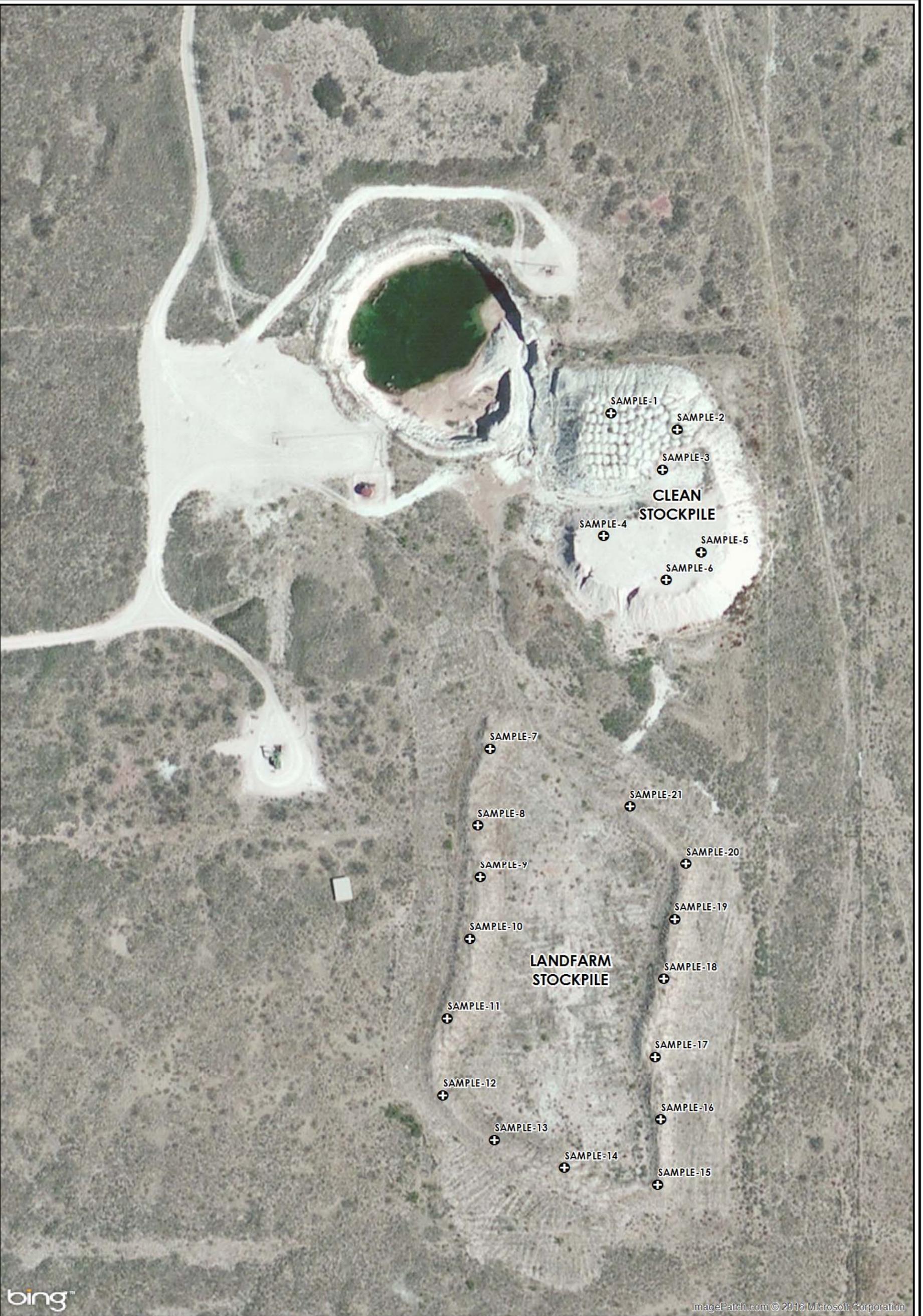
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**LEGEND**

◆ MONITORING WELL LOCATION



|   |  |                 |  |                    |                     |
|---|--|-----------------|--|--------------------|---------------------|
| <br>8770 GUION ROAD, SUITE B<br>INDIANAPOLIS, INDIANA 46268<br>PHONE: (317) 876-8375 FAX: (317) 876-8382 | FOR:<br>BYRD PUMP SITE<br>BYRD RANCH ON JOANNE LANE<br>HOBBS, NEW MEXICO 88240 |                 | <b>MONITORING WELL<br/>                 LOCATION MAP</b> |                    | FIGURE:<br><b>3</b> |
|   | JOB NUMBER:<br>182630008   | DRAWN BY:<br>AH | CHECKED BY:<br>SH  | APPROVED BY:<br>XX | DATE:<br>04/20/16   |



**LEGEND**  
 ⊕ STOCKPILE SOIL SAMPLE LOCATION



|   |  |                 |                                       |                    |                   |
|---|--|-----------------|---------------------------------------|--------------------|-------------------|
| <br>8770 GUION ROAD, SUITE B<br>INDIANAPOLIS, INDIANA 46268<br>PHONE: (317) 876-8375 FAX: (317) 876-8382 | FOR:<br>BYRD PUMP SITE<br>BYRD RANCH ON JOANNE LANE<br>HOBBS, NEW MEXICO 88240 |                 | STOCKPILE SOIL<br>SAMPLE LOCATION MAP |                    | FIGURE:<br>4      |
|   | JOB NUMBER:<br>182630008   | DRAWN BY:<br>AH | CHECKED BY:<br>SH                     | APPROVED BY:<br>JM | DATE:<br>04/20/16 |



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**LEGEND**

-  MONITORING WELL LOCATION
-  GROUNDWATER ELEVATION CONTOUR

**NOTE:**  
 1. CONTOUR INTERVAL = 0.05 FEET  
 2. GROUNDWATER FLOW GRADIENT IS 0.0011 FT/FT TOWARDS THE SOUTHEAST



|  |  |                 |   |                    |                     |
|--|--|-----------------|---|--------------------|---------------------|
|  <b>Stantec</b><br>8770 GUION ROAD, SUITE B<br>INDIANAPOLIS, INDIANA 46268<br>PHONE: (317) 876-8375 FAX: (317) 876-8382 | FOR:<br>BYRD PUMP SITE<br>BYRD RANCH ON JOANNE LANE<br>HOBBS, NEW MEXICO 88240 |                 | <b>MARCH 3, 2016</b><br><b>POTENTIOMETRIC SURFACE MAP</b> |                    | FIGURE:<br><b>5</b> |
|  | JOB NUMBER:<br>182630008   | DRAWN BY:<br>AH | CHECKED BY:<br>SH   | APPROVED BY:<br>JM | DATE:<br>04/20/16   |



| MW-PS1                |      |
|-----------------------|------|
| Benzene (ug/L)        | 1.0  |
| Ethylbenzene (ug/L)   | <1.0 |
| Toluene (ug/L)        | <1.0 |
| Xylene (Total) (ug/L) | <3.0 |
| TPH-GRO (mg/L)        | <0.5 |
| TPH-DRO (mg/L)        | 0.59 |

| MW-PS3                |        |
|-----------------------|--------|
| Benzene (ug/L)        | 0.71 J |
| Ethylbenzene (ug/L)   | <1.0   |
| Toluene (ug/L)        | <1.0   |
| Xylene (Total) (ug/L) | <3.0   |
| TPH-GRO (mg/L)        | <0.5   |
| TPH-DRO (mg/L)        | 0.42 J |

| MW-PS2                |        |
|-----------------------|--------|
| Benzene (ug/L)        | 0.29 J |
| Ethylbenzene (ug/L)   | <1.0   |
| Toluene (ug/L)        | <1.0   |
| Xylene (Total) (ug/L) | <3.0   |
| TPH-GRO (mg/L)        | <0.5   |
| TPH-DRO (mg/L)        | 0.60   |

| MW-PS4                |        |
|-----------------------|--------|
| Benzene (ug/L)        | 0.13 J |
| Ethylbenzene (ug/L)   | <1.0   |
| Toluene (ug/L)        | <1.0   |
| Xylene (Total) (ug/L) | <3.0   |
| TPH-GRO (mg/L)        | <0.5   |
| TPH-DRO (mg/L)        | 0.61   |

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**LEGEND**  
 MONITORING WELL LOCATION



**NOTE:**  
 1. SAMPLES COLLECTED ON  
 1/14/16 AND 3/3/16.

|   |  |                 |   |                    |                     |
|---|--|-----------------|---|--------------------|---------------------|
| <br>8770 GUION ROAD, SUITE B<br>INDIANAPOLIS, INDIANA 46268<br>PHONE: (317) 876-8375 FAX: (317) 876-8382 | FOR:<br>BYRD PUMP SITE<br>BYRD RANCH ON JOANNE LANE<br>HOBBS, NEW MEXICO 88240 |                 | <b>GROUNDWATER BTEX AND TPH<br/>                 ANALYTICAL RESULTS MAP</b> |                    | FIGURE:<br><b>6</b> |
|   | JOB NUMBER:<br>182630008   | DRAWN BY:<br>AH | CHECKED BY:<br>SH   | APPROVED BY:<br>JM | DATE:<br>04/20/16   |

**BYRD PUMP SITE  
OCD #1R0034**

Tables  
May 17, 2016

**TABLES**

**TABLE 1  
MONITORING WELL INSTALLATION SOIL ANALYTICAL RESULTS**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Analysis                                 | Date      | Depth | PID (ppm) | TPH 8015B |       |
|--|-----------|-------|-----------|-----------|-------|
|  |           |       |           | DRO       | GRO   |
| BPS-MWPS1-20160112-29'                   | 1/12/2016 | 29'   | 1.0       | <11.7     | <11.9 |
| BPS-MWPS1-20160112-29.5'                 | 1/12/2016 | 29.5' | 0.6       | <16.0     | <11.6 |
| BPS-MWPS2-20160111-29'                   | 1/11/2016 | 29'   | 1.0       | 6.6 J     | <16.7 |
| BPS-MWPS2-20160111-29.5'                 | 1/11/2016 | 29.5' | 0.2       | <11.2     | <10.4 |
| BPS-MWPS3-20160112-29'                   | 1/12/2016 | 29'   | 0.8       | <11.4     | <11.1 |
| BPS-MWPS3-20160112-29.5'                 | 1/12/2016 | 29.5' | 0.4       | <11.6     | <10.3 |
| BPS-MWPS4-20160112-29'                   | 1/12/2016 | 29'   | 0.4       | <12.3     | <36.9 |
| BPS-MWPS4-20160112-29.5'                 | 1/12/2016 | 29.5' | 0.0       | <11.4     | <10.9 |
| BPS-DUP1-20160112                        | 1/12/2016 |       | --        | <26.8     | <11.6 |
| New Mexico OCD Guidance Criteria (mg/kg) |           |       |           | 100       | 100   |

Notes:

New Mexico OCD = New Mexico Oil Conservation Division  
mg/kg = milligram/kilogram or ppm (parts per million)

J = Estimated concentration above the adjusted method detection limit and  
below the adjusted reporting limit

BPS-DUP1-20160112 = Field duplicate of BPS-MWPS4-20160112-29.5'

**TABLE 2  
SOIL ANALYTICAL RESULTS - CLEAN STOCKPILE**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Sample ID                                | Date      | Sample Label | PID | TPH 8015B  |       |
|--|-----------|--------------|-----|------------|-------|
|  |           |              |     | DRO        | GRO   |
| Sample -1                                | 1/13/2016 | SS-1A        | 0.0 | <12.3      | <12.6 |
|  |           | SS-1B        | 0.0 | 6.8 J      | <13.2 |
|  |           | SS-1C        | 0.6 | <13.5      | <13.6 |
|  |           | SS-1D        | 0.0 | <13.8      | <13.8 |
|  |           | Average      |     | 6.8        | 13.3  |
| Sample -2                                | 1/13/2016 | SS-2A        | 0.4 | <12.5      | <12.4 |
|  |           | SS-2B        | 0.0 | <12.5      | <12.7 |
|  |           | SS-2C        | 0.2 | <13.8      | <13.8 |
|  |           | SS-2D        | 0.0 | <12.3      | <12.5 |
|  |           | Average      |     | 12.8       | 12.9  |
| Sample -3                                | 1/12/2016 | SS-3A        | 2.3 | <13.7      | <13.6 |
|  |           | SS-3B        | 5.1 | <13.9      | <13.9 |
|  |           | SS-3C        | 4.7 | <12.2      | <12.2 |
|  |           | SS-3D        | 5.6 | <13.3      | <13.3 |
|  |           | Average      |     | 13.3       | 13.3  |
| Sample -4                                | 1/12/2016 | SS-4A        | 2.5 | <b>107</b> | <13.2 |
|  |           | SS-4B        | 1.2 | 77.9       | <14.3 |
|  |           | SS-4C        | 2.3 | 59.5       | <13.8 |
|  |           | SS-4D        | 2.5 | <14.0      | <14.1 |
|  |           | Average      |     | 64.6       | 13.9  |
| Sample -5                                | 1/12/2016 | SS-5A        | 0.0 | 68.9       | <13.3 |
|  |           | SS-5B        | 1.7 | 16.1       | <13.1 |
|  |           | SS-5C        | 1.4 | 12.2 J     | <13.2 |
|  |           | SS-5D        | 1.9 | 12.7 J     | <13.8 |
|  |           | Average      |     | 27.5       | 13.4  |
| Sample -6                                | 1/12/2016 | SS-6A        | 0.0 | 62.5       | <13.9 |
|  |           | SS-6B        | 1.2 | <b>121</b> | <14.3 |
|  |           | SS-6C        | 0.2 | <14.9      | <15.0 |
|  |           | SS-6D        | 0.0 | <13.6      | <13.7 |
|  |           | Average      |     | 53.0       | 14.2  |
| New Mexico OCD Guidance Criteria (mg/kg) |           |              |     | 100        | 100   |

Notes:

All results reported in mg/kg

New Mexico OCD = New Mexico Oil Conservation Division

mg/kg = milligram/kilogram or ppm (parts per million)

N/A = Not analyzed, field screening levels less than 100ppm

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Sample results detected below reporting limits were used in average calculations using the reporting limit concentration

**TABLE 3  
SOIL ANALYTICAL RESULTS - LANDFARM STOCKPILE**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Sample ID  | Date      | Sample Label | PID | TPH 8015B |       |
|------------|-----------|--------------|-----|-----------|-------|
|            |           |              |     | DRO       | GRO   |
| Sample -7  | 1/13/2016 | SS-7A        | 0.0 | 26.1      | <10.5 |
|            |           | SS-7B        | 0.2 | <11.7     | <12.1 |
|            |           | SS-7C        | 0.6 | 19.7      | <10.9 |
|            |           | SS-7D        | 0.2 | 35.1      | <10.3 |
|            |           | Average      |     |           | 23.2  |
| Sample -8  | 1/13/2016 | SS-8A        | 0.0 | 9.9 J     | <11.8 |
|            |           | SS-8B        | 0.4 | 17.5      | <11.6 |
|            |           | SS-8C        | 0.0 | 24.6      | <10.4 |
|            |           | SS-8D        | 0.0 | 33.7      | 13.6  |
|            |           | Average      |     |           | 21.4  |
| Sample -9  | 1/13/2016 | SS-9A        | 0.0 | 11.2      | <10.8 |
|            |           | SS-9B        | 0.2 | <11.7     | <12.0 |
|            |           | SS-9C        | 0.0 | 6.5 J     | <11.8 |
|            |           | SS-9D        | 0.4 | 27.2      | <10.5 |
|            |           | Average      |     |           | 14.2  |
| Sample -10 | 1/13/2016 | SS-10A       | 0.2 | 12.9      | <10.3 |
|            |           | SS-10B       | 0.0 | 17.9      | <10.3 |
|            |           | SS-10C       | 0.0 | 10.7 J    | <11.0 |
|            |           | SS-10D       | 0.2 | <12.3     | <12.8 |
|            |           | Average      |     |           | 13.5  |
| Sample -11 | 1/13/2016 | SS-11A       | 0.8 | <12.5     | <12.8 |
|            |           | SS-11B       | 0.8 | 30.6      | <10.3 |
|            |           | SS-11C       | 0.0 | 25.4      | <10.4 |
|            |           | SS-11D       | 0.0 | 27.3      | <10.5 |
|            |           | Average      |     |           | 24.0  |
| Sample -12 | 1/13/2016 | SS-12A       | 0.2 | <11.5     | <11.6 |
|            |           | SS-12B       | 0.6 | <12.8     | <13.1 |
|            |           | SS-12C       | 0.0 | 7.2 J     | <11.8 |
|            |           | SS-12D       | 0.0 | <11.8     | <12.2 |
|            |           | Average      |     |           | 10.8  |
| Sample -13 | 1/13/2016 | SS-13A       | 0.0 | 9.8 J     | <11.3 |
|            |           | SS-13B       | 0.0 | 23.1      | <10.3 |
|            |           | SS-13C       | 0.0 | 11.9      | <10.9 |
|            |           | SS-13D       | 0.0 | 8.1 J     | <12.1 |
|            |           | Average      |     |           | 13.2  |
| Sample -14 | 1/13/2016 | SS-14A       | 0.0 | 13        | <10.7 |
|            |           | SS-14B       | 0.0 | 11.4      | <11.2 |
|            |           | SS-14C       | 0.0 | <12.2     | <12.9 |
|            |           | SS-14D       | 0.0 | <11.8     | <11.8 |
|            |           | Average      |     |           | 12.1  |

**TABLE 3  
SOIL ANALYTICAL RESULTS - LANDFARM STOCKPILE**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Sample ID                                | Date      | Sample Label | PID | TPH 8015B |       |
|--|-----------|--------------|-----|-----------|-------|
|  |           |              |     | DRO       | GRO   |
| Sample -15                               | 1/13/2016 | SS-15A       | 0.0 | 10.9 J    | <12.3 |
|  |           | SS-15B       | 0.0 | <11.1     | <11.2 |
|  |           | SS-15C       | 0.0 | 27.2      | <10.2 |
|  |           | SS-15D       | 0.0 | 22.7      | <10.3 |
|  |           | Average      |     |           | 18.0  |
| Sample -16                               | 1/13/2016 | SS-16A       | 0.0 | 16.6      | <11.5 |
|  |           | SS-16B       | 0.0 | 17.7      | <10.5 |
|  |           | SS-16C       | 0.0 | 37.7      | <11.1 |
|  |           | SS-16D       | 0.0 | 12.0      | <10.4 |
|  |           | Average      |     |           | 21.0  |
| Sample -17                               | 1/13/2016 | SS-17A       | 0.0 | 6.0 J     | <11.6 |
|  |           | SS-17B       | 0.0 | 13        | <11.7 |
|  |           | SS-17C       | 0.2 | 11.8      | <10.5 |
|  |           | SS-17D       | 0.0 | 10.4 J    | <11.9 |
|  |           | Average      |     |           | 10.3  |
| Sample -18                               | 1/13/2016 | SS-18A       | 0.0 | 15.3      | <11.2 |
|  |           | SS-18B       | 0.2 | 6.0 J     | <11.9 |
|  |           | SS-18C       | 0.0 | 43.7      | <10.7 |
|  |           | SS-18D       | 0.0 | 16.1      | <12.0 |
|  |           | Average      |     |           | 20.3  |
| Sample -19                               | 1/13/2016 | SS-19A       | 0.0 | 13        | <11.5 |
|  |           | SS-19B       | 0.0 | 48.1      | <11.0 |
|  |           | SS-19C       | 0.0 | 22.7      | <11.4 |
|  |           | SS-19D       | 0.0 | 14.4      | <12.3 |
|  |           | Average      |     |           | 24.6  |
| Sample -20                               | 1/13/2016 | SS-20A       | 0.0 | 38.1      | <10.1 |
|  |           | SS-20B       | 0.0 | 10.2 J    | <11.9 |
|  |           | SS-20C       | 0.0 | 11.8      | <10.4 |
|  |           | SS-20D       | 0.0 | 10.2 J    | <11.9 |
|  |           | Average      |     |           | 17.6  |
| Sample -21                               | 1/13/2016 | SS-21A       | 0.0 | 8.7 J     | <11.6 |
|  |           | SS-21B       | 0.0 | 36.4      | <10.3 |
|  |           | SS-21C       | 0.0 | 16.3      | <10.8 |
|  |           | SS-21D       | 0.0 | 13.9      | <12.2 |
|  |           | Average      |     |           | 18.8  |
| New Mexico OCD Guidance Criteria (mg/kg) |           |              |     | 100       | 100   |

Notes:

All results are in mg/kg

New Mexico OCD = New Mexico Oil Conservation Division

mg/kg = milligram/kilogram or ppm (parts per million)

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Sample results detected below reporting limits were used in average calculations using the reporting limit concentration

**TABLE 4  
GROUNDWATER ELEVATION DATA  
March 3, 2016**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| <b>Well ID</b> | <b>Sample Date</b> | <b>Top of Casing Elevation (ft)</b> | <b>Depth to Water (ft)</b> | <b>GW Elevation (ft)</b> | <b>Measured Total Well Depth (from TOC)</b> | <b>Ground Elevation (ft)</b> | <b>Screen Elevation (ft)</b> |
|----------------|--------------------|-------------------------------------|----------------------------|--------------------------|---|------------------------------|------------------------------|
| MW-PS1         | 3/3/2016           | 3557.01                             | 33.95                      | 3523.06                  | 44.91                                       | 3554.09                      | 22 - 42                      |
| MW-PS2         | 3/3/2016           | 3557.60                             | 34.62                      | 3522.98                  | 48.20                                       | 3554.69                      | 25 - 45                      |
| MW-PS3         | 3/3/2016           | 3556.10                             | 33.30                      | 3522.80                  | 48.41                                       | 3553.43                      | 25 - 45                      |
| MW-PS4         | 3/3/2016           | 3554.63                             | 31.95                      | 3522.68                  | 46.13                                       | 3551.97                      | 23 - 43                      |

Notes:

ft = Feet

TOC = Top of Casing

**TABLE 5  
GROUNDWATER LOW-FLOW PARAMETERS AND GEOCHEMICAL RESULTS**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Well ID | Date      | Total Vol. (gal) | DTW (ft) | pH   | Conductivity (mS/cm) | Turbidity (NTU) | DO (mg/L) | Temperature (°C) | ORP (mg/L) | Color (visual)       |
|---------|-----------|------------------|----------|------|----------------------|-----------------|-----------|------------------|------------|----------------------|
| MW-PS1  | 1/14/2016 | 1.79             | 34.01    | 6.72 | 14.5                 | 63.1            | 6.61      | 16.85            | 83         | cloudy               |
| MW-PS2  | 1/14/2016 | 2.23             | 34.60    | 6.90 | 10.3                 | 0.0             | 8.05      | 19.06            | 56         | cloudy/reddish-brown |
| MW-PS3  | 1/14/2016 | 1.64             | 33.28    | 6.79 | 15.5                 | 153             | 6.41      | 18.78            | 65         | cloudy               |
| MW-PS4  | 1/14/2016 | 1.44             | 31.95    | 6.97 | 15.0                 | 49.2            | 10.31     | 18.64            | 62         | cloudy               |
| MW-PS1  | 3/3/2016  | 3.5              | 34.01    | 6.45 | 13.9                 | 139             | 2.94      | 20.27            | 474        | clear                |
| MW-PS2  | 3/3/2016  | 3.0              | 34.72    | 6.51 | 12.4                 | 16.8            | 2.17      | 19.47            | 383        | clear                |
| MW-PS3  | 3/3/2016  | 3.5              | 33.4     | 6.41 | 20.8                 | 20.9            | 4.77      | 20.80            | 455        | clear                |
| MW-PS4  | 3/3/2016  | 3.50             | 32.08    | 6.74 | 15.9                 | 13.8            | 6.13      | 19.79            | 457        | clear                |

Notes:

Vol. = volume

gal = gallons

ft = feet

mg/L = milligrams / liter

ORP = Oxidation Reduction Potential

**TABLE 6  
GROUNDWATER ANALYTICAL RESULTS - TPH/BTEX**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Analysis                              | Date      | TPH 8015B |       | BTEX 8260B |         |              |                |
|---------------------------------------|-----------|-----------|-------|------------|---------|--------------|----------------|
|                                       |           | DRO       | GRO   | Benzene    | Toluene | Ethylbenzene | Xylene (Total) |
| MW-PS1                                | 1/14/2016 | 0.59      | <0.50 | 0.001      | <0.0010 | <0.0010      | <0.0030        |
| MW-PS2                                | 1/14/2016 | 0.60      | <0.50 | 0.00029 J  | <0.0010 | <0.0010      | <0.0030        |
| MW-PS3                                | 1/14/2016 | 0.42 J    | <0.50 | 0.00071 J  | <0.0010 | <0.0010      | <0.0030        |
| MW-PS4                                | 1/14/2016 | 0.61      | <0.50 | 0.00013 J  | <0.0010 | <0.0010      | <0.0030        |
| DUP-1-GW                              | 1/14/2016 | 0.46      | <0.50 | 0.00012 J  | <0.0010 | <0.0010      | <0.0030        |
| NM WQCC Human Health Standards (mg/L) |           | --        | --    | 0.01       | 0.75    | 0.75         | 0.62           |

Notes:

NM WQCC = New Mexico Water Quality Control Commission

All results reported in mg/L

mg/L = milligram/Liter or ppm (parts per million)

DRO = Diesel Range Organics

GRO = Gasoline Range Organics

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

DUP-1-GW = Field Duplicate sample of MW-PS4

**TABLE 7  
GROUNDWATER ANALYTICAL RESULTS - PAHs**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Analysis                              | Date      | PAHs 8310    |                |            |                    |                |                      |                      |                      |           |                       |              |           |                        |             |              |           |
|---------------------------------------|-----------|--------------|----------------|------------|--------------------|----------------|----------------------|----------------------|----------------------|-----------|-----------------------|--------------|-----------|------------------------|-------------|--------------|-----------|
|                                       |           | Acenaphthene | Acenaphthylene | Anthracene | Benzo(a)anthracene | Benzo(a)pyrene | Benzo(b)fluoranthene | Benzo(g,h,i)perylene | Benzo(k)fluoranthene | Chrysene  | Dibenz(a,h)anthracene | Fluoranthene | Fluorene  | Indeno(1,2,3-cd)pyrene | Naphthalene | Phenanthrene | Pyrene    |
| MW-PS1                                | 1/14/2016 | <0.000091    | <0.000091      | <0.000091  | <0.000091          | <0.000091      | <0.000091            | <0.000091            | <0.000091            | <0.000091 | <0.000091             | <0.00045     | <0.000091 | <0.000091              | 0.00033 J   | 0.00012 J    | <0.000091 |
| MW-PS2                                | 1/14/2016 | <0.000091    | <0.000091      | <0.000091  | <0.000091          | <0.000091      | <0.000091            | <0.000091            | <0.000091            | <0.000091 | <0.000091             | <0.00045     | <0.000091 | <0.000091              | 0.000064 J  | 0.000047 J   | <0.000091 |
| MW-PS3                                | 1/14/2016 | <0.000091    | <0.000091      | <0.000091  | <0.000091          | <0.000091      | <0.000091            | <0.000091            | <0.000091            | <0.000091 | <0.000091             | <0.00045     | <0.000091 | <0.000091              | 0.00032 J   | <0.00045     | <0.000091 |
| MW-PS4                                | 1/14/2016 | <0.000091    | <0.000091      | <0.000091  | <0.000091          | <0.000091      | <0.000091            | <0.000091            | <0.000091            | <0.000091 | <0.000091             | <0.00045     | <0.000091 | <0.000091              | 0.00022 J   | 0.000062 J   | <0.000091 |
| DUP-1-GW                              | 1/14/2016 | <0.000091    | <0.000091      | <0.000091  | <0.000091          | <0.000091      | <0.000091            | <0.000091            | <0.000091            | <0.000091 | <0.000091             | <0.00045     | <0.000091 | <0.000091              | 0.00029 J   | 0.000053 J   | <0.000091 |
| NM WQCC Human Health Standards (mg/L) |           | --           | --             | --         | --                 | 0.00007        | --                   | --                   | --                   | --        | --                    | --           | --        | --                     | 0.03        | --           | --        |

Notes:

NM WQCC = New Mexico Water Quality Control Commission

All results reported in mg/L

PAHS = Polynuclear aromatic hydrocarbons

mg/L = milligram/Liter or ppm (parts per million)

DUP-1-GW = Field Duplicate sample of MW-PS4

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

**TABLE 8  
GROUNDWATER ANALYTICAL RESULTS - RCRA METALS**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Analysis                              | Date      | RCRA Metals 6010C/245.7 |        |           |          |         |          |         |          |
|---------------------------------------|-----------|-------------------------|--------|-----------|----------|---------|----------|---------|----------|
|                                       |           | Arsenic                 | Barium | Cadmium   | Chromium | Lead    | Selenium | Silver  | Mercury  |
| MW-PS1                                | 1/14/2016 | 0.0081 J                | 0.255  | 0.00076 J | 0.0017 J | <0.0050 | <0.0150  | <0.0070 | <0.00020 |
| MW-PS2                                | 1/14/2016 | 0.0097 J                | 0.212  | <0.0050   | 0.0013 J | <0.0050 | <0.0150  | <0.0070 | <0.00020 |
| MW-PS3                                | 1/14/2016 | 0.0134                  | 0.154  | 0.00075 J | 0.0018 J | <0.0050 | <0.0150  | <0.0070 | <0.00020 |
| MW-PS4                                | 1/14/2016 | 0.0118                  | 0.171  | <0.0050   | <0.0050  | <0.0050 | <0.0150  | <0.0070 | <0.00020 |
| DUP-1-GW                              | 1/14/2016 | 0.0124                  | 0.181  | 0.00092 J | <0.0050  | <0.0050 | <0.0150  | <0.0070 | <0.00020 |
| NM WQCC Human Health Standards (mg/L) |           | 0.1                     | 1.0    | 0.01      | 0.05     | 0.05    | 0.05     | 0.05    | 0.002    |

Notes:

NM WQCC = New Mexico Water Quality Control Commission

All results reported in mg/L

RCRA Metals = Resource Conservation and Recover Act Metals

mg/L = milligram/Liter or ppm (parts per million)

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

DUP-1-GW = Field Duplicate sample of MW-PS4

**TABLE 9  
GROUNDWATER ANALYTICAL RESULTS - ANIONS / CATIONS / TDS**

**Byrd Pump Site - Monument, NM  
OCD #1R0034**

| Analysis                              | Date      | Anions 300.0 |              |              |            | Nitrate/Nitrite 9056A |         | Cations 6010C |           |        |           | TDS           |
|---------------------------------------|-----------|--------------|--------------|--------------|------------|-----------------------|---------|---------------|-----------|--------|-----------|---------------|
|                                       |           | Bromide      | Chloride     | Fluoride     | Sulfate    | Nitrate               | Nitrite | Calcium       | Magnesium | Sodium | Potassium |               |
| MW-PS1                                | 1/14/2016 | 38.8         | <b>5,060</b> | <b>2.1 J</b> | 182        | <0.10                 | <0.10   | 1,100         | 468       | 980    | 11.1      | <b>11,100</b> |
| MW-PS2                                | 1/14/2016 | 25.7         | <b>3,720</b> | <b>1.9 J</b> | 193        | <0.10                 | <0.10   | 1,120         | 456       | 758    | 11.3      | <b>10,900</b> |
| MW-PS3                                | 1/14/2016 | 38.8         | <b>4,980</b> | <b>2.5 J</b> | 240        | <0.10                 | <0.10   | 1,670         | 828       | 1,880  | 17.4      | <b>19,000</b> |
| MW-PS4                                | 1/14/2016 | 106          | <b>5,270</b> | <b>3.9 J</b> | <b>603</b> | <0.10                 | <0.10   | 978           | 520       | 1,320  | 11.5      | <b>10,800</b> |
| DUP-1-GW                              | 1/14/2016 | 92.1         | <b>5,330</b> | <b>4.0 J</b> | <b>613</b> | --                    | --      | --            | --        | --     | --        | --            |
| NM WQCC Human Health Standards (mg/L) |           | --           | 250.0        | 1.6          | 600.0      | 10.0                  | --      | --            | --        | --     | --        | 10,000        |

Notes:

NM WQCC = New Mexico Water Quality Control Commission

All results reported in mg/L

mg/L = milligram/Liter or ppm (parts per million)

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

**Bold - above NM WQCC Human Health Standard**

DUP-1-GW = Field Duplicate sample of MW-PS4

TDS = Total Dissolved Solids

**BYRD PUMP SITE  
OCD #1R0034**

Appendix A Boring logs and Well Installation Details  
May 17, 2016

**Appendix A BORING LOGS AND WELL INSTALLATION  
DETAILS**

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 1 OF 2

**MW-PS1**

DRILLING: STARTED **1/11/15** COMPLETED: **1/12/15**  
 INSTALLATION: STARTED **1/12/15** COMPLETED: **1/12/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **42**  
 STATIC DTW (ft): **31.05** WELL DEPTH (ft): **42**  
 WELL CASING DIA. (in): **2** BOREHOLE DIA.(in): **6 1/8**  
 LOGGED BY: **A. Harkins** CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description  | Sample | Time Sample ID | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction   |
|---------------------|-------------|------|--|--------|----------------|------------------------|------------|-----------------------|--------------|---------------------|
|                     |             |      | Air-knife Excavation to 2.5' then Hand Auger to 4'   |        |                |                        |            |                       |              | Cement Surface Seal |
|                     |             |      | Refusal at 4'.   |        |                |                        |            |                       |              |                     |
| 5                   |             |      | <b>SAND</b> ; 10YR 7/3 very pale brown; very fine to fine-grained; dry   |        |                |                        |            |                       |              |                     |
|                     |             |      | <b>SAND</b> ; 7.5YR 7/4 pink; medium to coarse-grained; loose<br><b>SILT</b> ; 2.5Y 9/2 very pale yellow; hard; moist; friable (Caliche) |        |                | 2/2                    |            | 0.8                   |              |                     |
| 10                  |             |      | Dry to moist; friable; as above  |        |                |                        |            |                       |              | Bentonite           |
|                     |             |      | <b>CALICHE</b> ; 2.5Y 9/2 very pale yellow; hard; moist  |        |                |                        |            |                       |              |                     |
| 15                  |             |      | Less than 0.5' Recovered; Caliche cuttings collected; as above   |        |                | 0.5/2                  |            | 0.8                   |              |                     |
|                     |             |      | <b>SAND</b> ; 7.5YR 8/3 pink; fine-grained; loose; moist   |        |                |                        |            |                       |              |                     |
|                     |             |      | <b>SAND</b> ; 7.5YR 6/4 light brown; fine-grained; moist; some Caliche in cuttings (cobbled)   |        |                |                        |            |                       |              |                     |
| 20                  |             |      |  |        |                |                        |            |                       |              |                     |
|                     |             |      | As above   |        |                |                        |            |                       |              |                     |

GEO FORM 304 20160112\_BORING\_LOGS\_MMWPS1-MMWPS4.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 4/6/16

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 2 OF 2

**MW-PS1**

DRILLING: STARTED **1/11/15** COMPLETED: **1/12/15**  
 INSTALLATION: STARTED **1/12/15** COMPLETED: **1/12/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft):  
 LATITUDE:  
 GROUND ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered**  
 STATIC DTW (ft): **31.05**  
 WELL CASING DIA. (in): **2**  
 LOGGED BY: **A. Harkins**  
 EASTING (ft):  
 LONGITUDE:  
 TOC ELEV (ft):  
 BOREHOLE DEPTH (ft): **42**  
 WELL DEPTH (ft): **42**  
 BOREHOLE DIA.(in): **6 1/8**  
 CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description   | Sample | Time Sample ID               | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|------------------------------|------------------------|------------|-----------------------|--------------|-------------------|
| 30                  |             |      | <b>SAND TRACE CLAY</b> ; 5YR 8/4 pink; fine-grained; loose; dry                                       | X      | BPS-MWPS1-20160112-29'0950   | 2/2                    |            | 1.0                   | 30           |                   |
| 30                  |             |      | <b>CLAYEY SAND</b> ; 5YR 6/6 reddish brown; hard; moist to wet; few large cobbles of Caliche present. | X      | BPS-MWPS1-20160112-29.5'0955 |                        |            | 0.6                   | 30           |                   |
| 35                  |             |      | No Recovery   |        |                              |                        |            |                       | 35           |                   |
| 42                  |             |      | Borehole terminated at 42 feet.   |        |                              |                        |            |                       | 42           |                   |

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 1 OF 2

**MW-PS2**

DRILLING: STARTED **1/11/15** COMPLETED: **1/11/15**  
 INSTALLATION: STARTED **1/11/15** COMPLETED: **1/11/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft):  
 EASTING (ft):  
 LATITUDE:  
 LONGITUDE:  
 GROUND ELEV (ft):  
 TOC ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45**  
 STATIC DTW (ft): **31.61** WELL DEPTH (ft): **45**  
 WELL CASING DIA. (in): **2** BOREHOLE DIA.(in): **6 1/8**  
 LOGGED BY: **A. Harkins** CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description  | Sample | Time Sample ID | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction   |
|---------------------|-------------|------|--|--------|----------------|------------------------|------------|-----------------------|--------------|---------------------|
| 0                   |             |      |  |        |                |                        |            |                       | 0            | Cement Surface Seal |
| 5                   |             |      |  |        |                |                        |            |                       | 5            |                     |
| 7.5                 |             |      | <b>SAND</b> ; 2.5YR 7/3 light reddish brown; fine-grained; moist   |        |                |                        |            |                       |              |                     |
| 8.5                 |             |      | <b>SAND TRACE CLAY</b> ; 10YR 5/4 yellowish brown; medium to coarse-grained; loose; moist; subangular to rounded |        |                | 2/2                    |            | 0.2                   |              |                     |
| 9.5                 |             |      | <b>CALICHE</b> ; 2.5Y 9/2 very pale yellow; fine-grained; hard; dry; highly consolidated; friable                |        |                |                        |            | 0.0                   | 10           |                     |
| 12.5                |             |      | <b>SAND</b> ; 10YR 7/2 light gray; fine-grained; loose; dry  |        |                |                        |            | 1.2                   |              | Bentonite           |
| 14.5                |             |      | <b>SILTY SAND</b> ; medium to coarse-grained; dry to slightly moist  |        |                |                        |            |                       |              |                     |
| 15.5                |             |      | <b>CALICHE</b> ; 2.5Y 9/2 very pale yellow; fine-grained; hard; dry; consolidated; friable                       |        |                | 2/2                    |            | 0.4                   | 15           |                     |
| 16.5                |             |      | <b>SILTY SAND</b> ; 5YR 7/3 pink; fine-grained; moist  |        |                |                        |            | 0.0                   |              |                     |
| 20                  |             |      | As above; trace hard consolidated gravel   |        |                |                        |            | 0.0                   | 20           |                     |
| 22                  |             |      | Increased gravel and grain size  |        |                |                        |            | 0.0                   |              |                     |
| 27.5                |             |      | 7.5YR 7/3 pink; medium to coarse-grained; moist; some gravel-sized caliche clasts                                |        |                |                        |            | 0.8                   |              |                     |

GEO FORM 304 20160112\_BORING\_LOGS\_MMWPS4.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 4/6/16

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 2 OF 2

**MW-PS2**

DRILLING: STARTED **1/11/15** COMPLETED: **1/11/15**  
 INSTALLATION: STARTED **1/11/15** COMPLETED: **1/11/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45**  
 STATIC DTW (ft): **31.61** WELL DEPTH (ft): **45**  
 WELL CASING DIA. (in): **2** BOREHOLE DIA.(in): **6 1/8**  
 LOGGED BY: **A. Harkins** CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description  | Sample | Time Sample ID                 | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction         |
|---------------------|-------------|------|--|--------|--------------------------------|------------------------|------------|-----------------------|--------------|---------------------------|
|                     |             |      | <b>SILTY SAND</b> ; 5YR 6/3 light reddish brown; fine-grained; moist; Caliche clasts present   |        |                                |                        |            | 0.4                   |              |                           |
|                     |             |      | <b>SAND TRACE CLAY</b> ; 5YR 6/6 reddish yellow; medium to coarse-grained; loose; moist  |        |                                |                        |            | 1.0                   |              |                           |
| 30                  |             |      | <b>SILTY SAND</b> ; 5YR 8/4 pink; fine-grained; hard; moist; consolidated<br>Note: Driller struggled with hole caving in, samples taken at 28' to 30' interval |        | BPS-MWPS2 -20160111-29' 1220   | 2/2                    |            | 0.2                   | 30           |                           |
|                     |             |      | <b>CALICHE WITH SOME SAND</b> ; 5YR 6/4 light reddish brown; fine to medium-grained; moist   |        | BPS-MWPS2 -20160111-29.5' 1225 |                        |            | 0.0                   |              |                           |
|                     |             |      | <b>SAND</b> ; 7.5YR 7/3 pink; fine-grained; moist; few caliche clasts  |        |                                |                        |            | 0.0                   |              |                           |
| 35                  |             |      |  |        |                                |                        |            | 0.0                   |              | Sand                      |
|                     |             |      | <b>SAND TRACE CLAY</b> ; 5YR 5/4 reddish brown; saturated  |        |                                |                        |            | 0.0                   |              | 0.010" Slotted PVC Screen |
| 40                  |             |      | No Recovery  |        |                                |                        |            |                       |              |                           |
| 45                  |             |      | Borehole terminated at 45 feet.  |        |                                |                        |            |                       |              |                           |

GEO FORM 304 20160112\_BORING\_LOGS\_MMWPS1-MMWPS4.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 4/6/16

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:

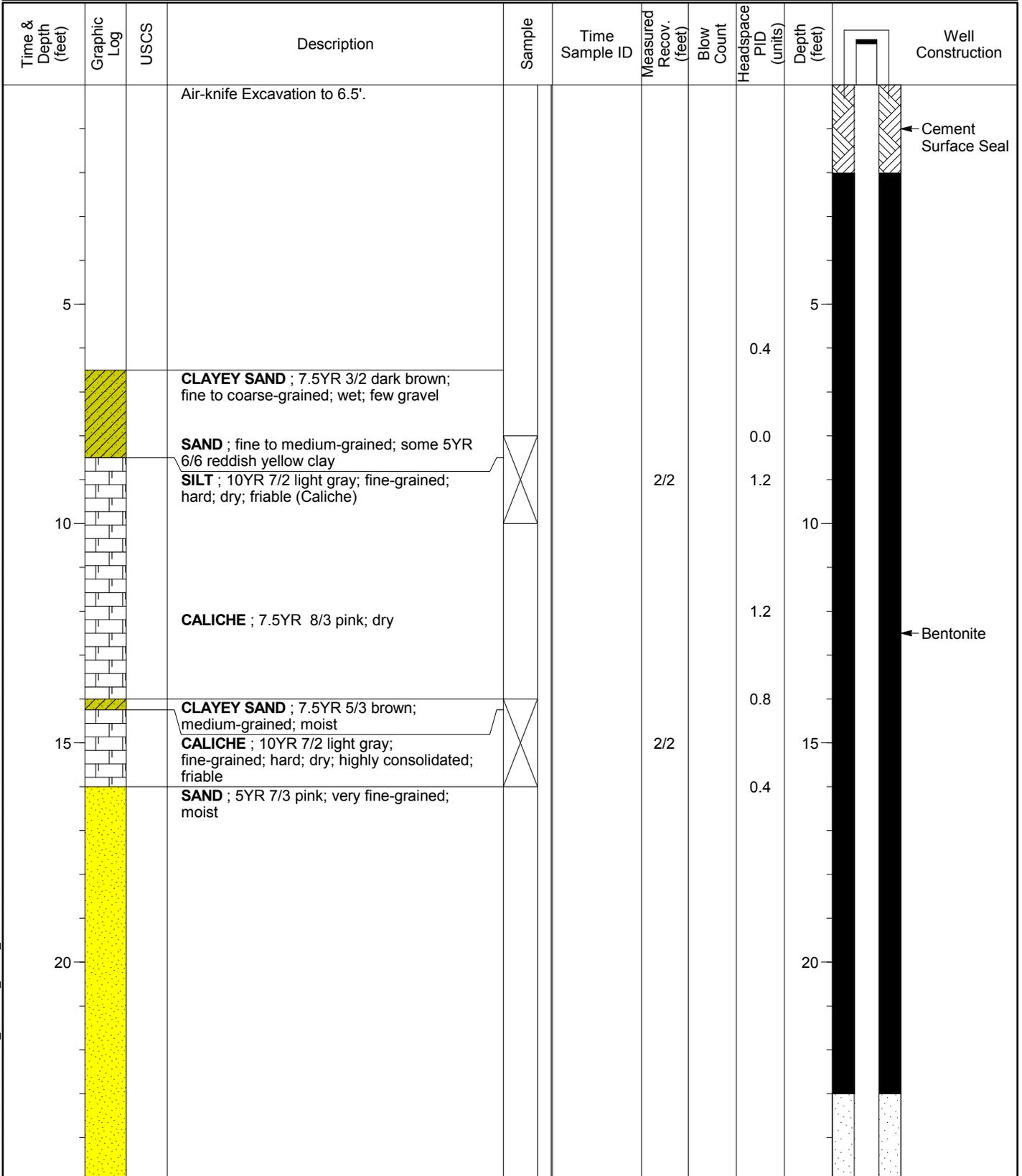


PAGE 1 OF 2

**MW-PS3**

DRILLING: STARTED **1/11/15** COMPLETED: **1/12/15**  
 INSTALLATION: STARTED **1/12/15** COMPLETED: **1/12/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft):  
 EASTING (ft):  
 LATITUDE:  
 LONGITUDE:  
 GROUND ELEV (ft):  
 TOC ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45**  
 STATIC DTW (ft): **30.07** WELL DEPTH (ft): **45**  
 WELL CASING DIA. (in): **2** BOREHOLE DIA.(in): **6 1/8**  
 LOGGED BY: **A. Harkins** CHECKED BY:



PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 2 OF 2

**MW-PS3**

DRILLING: STARTED **1/11/15** COMPLETED: **1/12/15**  
 INSTALLATION: STARTED **1/12/15** COMPLETED: **1/12/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45**  
 STATIC DTW (ft): **30.07** WELL DEPTH (ft): **45**  
 WELL CASING DIA. (in): **2** BOREHOLE DIA.(in): **6 1/8**  
 LOGGED BY: **A. Harkins** CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description   | Sample | Time Sample ID   | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|--|------------------------|------------|-----------------------|--------------|-------------------|
|                     |             |      | As above; moist; 7.5YR 7/3 pink   |        |  |                        |            | 0.8                   |              |                   |
| 30                  |             |      | <b>SAND</b> ; 7.5YR 7/4 pink; fine-grained; soft; moist<br><b>SAND</b> ; 7.5YR 8/3 pink; fine-grained; hard; dry; friable |        | BPS-MWPS3<br>-20160112-29'<br>0840<br>BPS-MWPS3<br>-20160112-29.5'<br>0845 | 2/2                    |            | 0.8<br>0.4            | 30           |                   |
| 35                  |             |      |   |        |  |                        |            |                       |              |                   |
| 40                  |             |      | <b>SAND TRACE CLAY</b> ; 2.5YR 5/4 reddish brown; fine to medium-grained; saturated                                       |        |  |                        |            | 0.6                   | 40           |                   |
| 45                  |             |      | Saturated; increased clay content<br>Borehole terminated at 45 feet.  |        |  |                        |            | 0.6                   | 45           |                   |

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 1 OF 2

**MW-PS4**

DRILLING: STARTED **1/11/15** COMPLETED: **1/12/15**  
 INSTALLATION: STARTED **1/12/15** COMPLETED: **1/12/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft):  
 LATITUDE:  
 GROUND ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered**  
 STATIC DTW (ft): **29.30**  
 WELL CASING DIA. (in): **2**  
 LOGGED BY: **A. Harkins**  
 EASTING (ft):  
 LONGITUDE:  
 TOC ELEV (ft):  
 BOREHOLE DEPTH (ft): **43**  
 WELL DEPTH (ft): **43**  
 BOREHOLE DIA.(in): **6 1/8**  
 CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description  | Sample | Time Sample ID | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction   |
|---------------------|-------------|------|--|--------|----------------|------------------------|------------|-----------------------|--------------|---------------------|
|                     |             |      | Air-knife Excavation to 6.5'.  |        |                |                        |            |                       |              | Cement Surface Seal |
| 5                   |             |      |  |        |                |                        |            | 0.0                   |              |                     |
|                     |             |      | <b>SAND</b> ; 7.5YR 7/2 pinkish gray; fine-grained; loose; moist                     |        |                |                        |            |                       |              |                     |
|                     |             |      | <b>SAND</b> ; 10YR 7/3 very pale brown; medium to coarse-grained; loose; dry         |        |                | 2/2                    |            | 0.8                   |              |                     |
| 10                  |             |      | <b>CALICHE</b> ; 10YR 9/2 pale orange yellow; hard; dry; friable                     |        |                |                        |            |                       |              |                     |
|                     |             |      | <b>SAND</b> ; 5YR 6/6 reddish yellow; very fine-grained; moist; trace Caliche gravel |        |                |                        |            | 0.4                   |              |                     |
| 15                  |             |      | As above   |        |                | 2/2                    |            | 1.0                   |              |                     |
|                     |             |      | <b>SAND</b> ; 5YR 7/3 pink; fine to coarse-grained; loose; moist                     |        |                |                        |            | 0.0                   |              |                     |
|                     |             |      | <b>SAND</b> ; 5YR 6/6 reddish yellow; very fine-grained; hard                        |        |                |                        |            |                       |              |                     |
| 20                  |             |      | As above   |        |                |                        |            | 0.0                   |              |                     |
|                     |             |      | Increasing grain size; increasing gravel   |        |                |                        |            | 0.0                   |              |                     |
|                     |             |      | As above   |        |                |                        |            | 0.0                   |              |                     |
|                     |             |      |  |        |                |                        |            |                       |              | Bentonite           |

GEO FORM 304 20160112\_BORING\_LOGS\_MMWPS4.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 4/6/16

PROJECT: **BP - Byrd Pump Site**  
 LOCATION: **Monument, New Mexico**  
 PROJECT NUMBER: **182630008**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 2 OF 2

**MW-PS4**

DRILLING: STARTED **1/11/15** COMPLETED: **1/12/15**  
 INSTALLATION: STARTED **1/12/15** COMPLETED: **1/12/15**  
 DRILLING COMPANY: **Harrison & Cooper**  
 DRILLING EQUIPMENT: **Altas Copco TH60**  
 DRILLING METHOD: **Air Rotary**  
 SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft): EASTING (ft):  
 LATITUDE: LONGITUDE:  
 GROUND ELEV (ft): TOC ELEV (ft):  
 INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **43**  
 STATIC DTW (ft): **29.30** WELL DEPTH (ft): **43**  
 WELL CASING DIA. (in): **2** BOREHOLE DIA.(in): **6 1/8**  
 LOGGED BY: **A. Harkins** CHECKED BY:

| Time & Depth (feet) | Graphic Log | USCS | Description   | Sample | Time Sample ID   | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction           |
|---------------------|-------------|------|---|--------|--|------------------------|------------|-----------------------|--------------|-----------------------------|
|                     |             |      | As above; trace Caliche cobbles   |        |  |                        |            | 0.2                   |              |                             |
| 30                  |             |      | <b>SAND</b> ; 5YR 5/6 yellowish red; fine-grained; hard; moist; broken up chert pieces<br>Large Chert piece at 29.3'<br><b>SILTY SAND</b> ; 7.5YR 8/3 pink; fine-grained; hard; friable |        | BPS-MWPS4<br>-20160112-29'<br>1200<br>BPS-MWPS4<br>-20160112-29.5'<br>1205 | 2/2                    |            | 0.4                   | 30           |                             |
|                     |             |      | Moist   |        |  |                        |            | 0.0                   |              | ← Sand                      |
|                     |             |      | Very fine-grained; trace clay   |        |  |                        |            | 0.0                   |              | ← 0.010" Slotted PVC Screen |
| 35                  |             |      | As above  |        |  |                        |            | 0.0                   |              |                             |
| 40                  |             |      | Saturated; trace clay   |        |  |                        |            | 0.0                   |              |                             |
|                     |             |      | Borehole terminated at 43 feet.   |        |  |                        |            | 0.2                   |              |                             |
| 45                  |             |      |   |        |  |                        |            |                       |              |                             |

Tom Blaine, P.E.  
State Engineer



Roswell Office  
1900 WEST SECOND STREET  
ROSWELL, NM 88201

**STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 579275  
File Nbr: L 14054

Nov. 24, 2015

SUSAN HALL  
STANTEC CONSULTING INC  
8770 GUION ROAD  
SUITE B  
INDIANAPOLIS, IN 46268

Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 11/22/2016, unless a permit to use the water is acquired from this office.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but no later than 11/22/2016.

Appropriate forms can be downloaded from the OSE website [www.ose.state.nm.us](http://www.ose.state.nm.us) or will be mailed upon request.

Sincerely,

A handwritten signature in cursive script, appearing to read "Andrew Dennis".

Andrew Dennis  
(575) 622-6521

Enclosure

explore

File No. L 13752

# NEW MEXICO OFFICE OF THE STATE ENGINEER



## APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER



(check applicable box):

For fees, see State Engineer website: <http://www.ose.state.nm.us/>

2-36537

|  |  |  |
|--|--|--|
| Purpose:   | <input type="checkbox"/> Pollution Control And / Or Recovery | <input type="checkbox"/> Geo-Thermal       |
| <input type="checkbox"/> Exploratory   | <input type="checkbox"/> Construction Site De-Watering       | <input type="checkbox"/> Other (Describe): |
| <input checked="" type="checkbox"/> Monitoring   | <input type="checkbox"/> Mineral De-Watering                 |  |
| A separate permit will be required to apply water to beneficial use.                                       |  |  |
| <input type="checkbox"/> Temporary Request - Requested Start Date:   | Requested End Date:  |  |
| Plugging Plan of Operations Submitted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |  |  |

STATE ENGINEER OFFICE  
SHELBY, NEW MEXICO  
2015 NOV 10 PM 2:00

### 1. APPLICANT(S)

|  |  |
|--|--|
| Name: Stantec Consulting Inc.  | Name: BP Products North America  |
| Contact or Agent: <input type="checkbox"/> check here if Agent   | Contact or Agent: <input type="checkbox"/> check here if Agent                                   |
| Contact  | Contact  |
| Mailing Address: 8770 Guion Road, Suite B  | Mailing Address: 4 Centerpointe Drive, Suite 200   |
| City: Indianapolis   | City: La Palma,  |
| State: IN Zip Code: 46268  | State: CA Zip Code: 90623  |
| Phone: <input type="checkbox"/> Home <input type="checkbox"/> Cell<br>Phone (Work): 317-876-8375 ext 227 | Phone: <input type="checkbox"/> Home <input type="checkbox"/> Cell<br>Phone (Work): 657-529-4506 |
| E-mail (optional): Susan.Hall@stantec.com  | E-mail (optional): sergio.morescalchi@bp.com   |

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 4/12/12

|                               |                    |
|-------------------------------|--------------------|
| File Number: L-13752          | Trn Number: 579275 |
| Trans Description (optional): |                    |
| Sub-Basin:                    |                    |
| PCW/LOG Due Date:             |                    |

2. WELL(S) Describe the well(s) applicable to this application.

**Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84). District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.**

NM State Plane (NAD83) (Feet)     
  UTM (NAD83) (Meters)     
  Lat/Long (WGS84) (to the nearest 1/10<sup>th</sup> of second)

NM West Zone     
  Zone 12N     
  Zone 13N

NM East Zone

NM Central Zone

| Well Number (if known): | X or Easting or Longitude: | Y or Northing or Latitude: | Provide if known:<br>-Public Land Survey System (PLSS) (Quarters or Halves, Section, Township, Range) OR<br>- Hydrographic Survey Map & Tract; OR<br>- Lot, Block & Subdivision; OR<br>- Land Grant Name |
|-------------------------|----------------------------|----------------------------|--|
| L      POD1             | 103, 18, 19.6              | 32, 35, 1.9                | NW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E  |
| L      POD2             | 103, 18, 16.7              | 32, 35, 0.8                | NW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E  |
| L      POD3             | 103, 18, 17.9              | 32, 34, 59.3               | NW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E  |
| L      POD4             | 103, 18, 14.2              | 32, 34, 57.9               | NW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E  |

**NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)**

Additional well descriptions are attached:  Yes  No      If yes, how many \_\_\_\_\_

Other description relating well to common landmarks, streets, or other: The Byrd Ranch Property is located off of Maddox Road, 3 miles southwest of the town of Monument, NM.

Well is on land owned by: J.R. Byrd

**Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached?**  Yes  No  
If yes, how many \_\_\_\_\_

Approximate depth of well (feet): 50.00      Outside diameter of well casing (inches): 6

Driller Name: HCI      Driller License Number: 1670 & 1731

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

Request for extension to permit L 13752 for the installation of four groundwater monitoring wells that were not installed and therefore not sampled in 2014 / 2015.

**4. SPECIFIC REQUIREMENTS:** The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

|  |   |  |  |
|--|---|--|--|
| <p><b>Exploratory:</b><br/> <input type="checkbox"/> Include a description of any proposed pump test, if applicable.</p>   | <p><b>Pollution Control and/or Recovery:</b><br/> <input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br/> <input type="checkbox"/> A description of the need for the pollution control or recovery operation.<br/> <input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br/> <input type="checkbox"/> The annual diversion amount.<br/> <input type="checkbox"/> The annual consumptive use amount.<br/> <input type="checkbox"/> The maximum amount of water to be diverted and injected for the duration of the operation.<br/> <input type="checkbox"/> The method and place of discharge.<br/> <input type="checkbox"/> The method of measurement of water produced and discharged.<br/> <input type="checkbox"/> The source of water to be injected.<br/> <input type="checkbox"/> The method of measurement of water injected.<br/> <input type="checkbox"/> The characteristics of the aquifer.<br/> <input type="checkbox"/> The method of determining the resulting annual consumptive use of water and depletion from any related stream system.<br/> <input type="checkbox"/> Proof of any permit required from the New Mexico Environment Department.<br/> <input type="checkbox"/> An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.</p> | <p><b>Construction De-Watering:</b><br/> <input type="checkbox"/> Include a description of the proposed dewatering operation,<br/> <input type="checkbox"/> The estimated duration of the operation,<br/> <input type="checkbox"/> The maximum amount of water to be diverted,<br/> <input type="checkbox"/> A description of the need for the dewatering operation, and,<br/> <input type="checkbox"/> A description of how the diverted water will be disposed of.</p>   | <p><b>Mine De-Watering:</b><br/> <input type="checkbox"/> Include a plan for pollution control/recovery, that includes the following:<br/> <input type="checkbox"/> A description of the need for mine dewatering.<br/> <input type="checkbox"/> The estimated maximum period of time for completion of the operation.<br/> <input type="checkbox"/> The source(s) of the water to be diverted.<br/> <input type="checkbox"/> The geohydrologic characteristics of the aquifer(s).<br/> <input type="checkbox"/> The maximum amount of water to be diverted per annum.<br/> <input type="checkbox"/> The maximum amount of water to be diverted for the duration of the operation.<br/> <input type="checkbox"/> The quality of the water.<br/> <input type="checkbox"/> The method of measurement of water diverted.<br/> <input type="checkbox"/> The recharge of water to the aquifer.<br/> <input type="checkbox"/> Description of the estimated area of hydrologic effect of the project.<br/> <input type="checkbox"/> The method and place of discharge.<br/> <input type="checkbox"/> An estimation of the effects on surface water rights and underground water rights from the mine dewatering project.<br/> <input type="checkbox"/> A description of the methods employed to estimate effects on surface water rights and underground water rights.<br/> <input type="checkbox"/> Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.</p> |
| <p><b>Monitoring:</b><br/> <input checked="" type="checkbox"/> Include the reason for the monitoring well, and,<br/> <input checked="" type="checkbox"/> The duration of the planned monitoring.</p> |   | <p><b>Geo-Thermal:</b><br/> <input type="checkbox"/> Include a description of the geothermal heat exchange project,<br/> <input type="checkbox"/> The amount of water to be diverted and re-injected for the project,<br/> <input type="checkbox"/> The time frame for constructing the geothermal heat exchange project, and,<br/> <input type="checkbox"/> The duration of the project.<br/> <input type="checkbox"/> Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.</p> |  |

**ACKNOWLEDGEMENT**

I, We (name of applicant(s)), Susan. M. Hall

Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

*Susan M. Hall*  
 Applicant Signature

*[Signature]*  
 Applicant Signature

STATE ENGINEER OFFICE  
 POST OFFICE BOX 100  
 SANTA FE, NEW MEXICO 87503  
 2015 NOV 10 PM 2:00

**ACTION OF THE STATE ENGINEER**

This application is:

approved       partially approved       denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 23 day of November 20 15, for

Tom Blaine, P.E., State Engineer



By: *[Signature]*  
 Signature

Print

Title: Juan Hernandez, Engineering Specialist Supervisor

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: L-13752      Trn Number: 579275

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL**

- 1B Depth of the well shall not exceed the thickness of the Ogallala formation.
- 4 No water shall be appropriated and beneficially used under this permit.
- 6 The well shall be plugged upon completion of the permitted use, and a plugging report shall be filed with the State Engineer within 10 days.
- 7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.
- B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with Section 72-12-12 New Mexico Statutes Annotated.
- C Driller's well record must be filed with the State Engineer within 20 days after the well is drilled or driven. Well record forms will be provided by the State Engineer upon request.
- C2 No water shall be diverted from this well except for testing purposes which shall not exceed ten (10) cumulative days, and well shall be plugged or capped on or before , unless a permit to use water from this well is acquired from the Office of the State Engineer.
- P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between geologic zones.

**NEW MEXICO STATE ENGINEER OFFICE  
PERMIT TO EXPLORE**

**SPECIFIC CONDITIONS OF APPROVAL (Continued)**

- LOG The Point of Diversion L 14054 POD1 must be completed and the Well Log filed on or before 11/22/2016.
- LOG The Point of Diversion L 14054 POD2 must be completed and the Well Log filed on or before 11/22/2016.
- LOG The Point of Diversion L 14054 POD3 must be completed and the Well Log filed on or before 11/22/2016.
- LOG The Point of Diversion L 14054 POD4 must be completed and the Well Log filed on or before 11/22/2016.

**ACTION OF STATE ENGINEER**

|                                     |                          |
|-------------------------------------|--------------------------|
| Notice of Intention Rcvd:           | Date Rcvd. Corrected:    |
| Formal Application Rcvd: 11/10/2015 | Pub. of Notice Ordered:  |
| Date Returned - Correction:         | Affidavit of Pub. Filed: |

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 23 day of Nov A.D., 2015

Tom Blaine, State Engineer

By: Juan H. Ramirez





STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO  
2015 NOV 10 PM 2:00

October 28, 2015  
File: L 13752

Office of the State Engineer  
District II – Roswell  
1900 West Second Street  
Roswell, NM 88201

To Whom it May Concern,

**Reference: Byrd Ranch Monitoring Well Permit**

Stantec Consulting Services, Inc (Stantec) on behalf of our client BP Products North is submitting an application to install four monitoring wells at the Byrd Pump Site for the following reason:

During a routine inspection of the Byrd Pump site booster pump, personnel noted that soil around the pump had been stained by crude oil due to historical operations at the pump. In April 1999 contractors removed stained soil from around the pump and line. Approximately 72,000 cubic yards of soil were excavated. The New Mexico Oil Conservancy District approved a Sampling and Analysis Work Plan that included one year of quarterly groundwater monitoring in order to characterize and demonstrate that groundwater at the site has not been impacted as a result of the original leak.

Monitoring well MW-PS1 will be installed up-gradient of the groundwater flow through the Byrd Pump site and will serve as the background well. Three down-gradient wells, MW-PS2, MW-PS3, and MW-PS4, are proposed for installation adjacent to the south, southeast, and east boundaries of the excavation to characterize groundwater down-gradient from the Byrd booster pump.

If you have any questions regarding this request or require additional information, please do not hesitate to contact Susan Hall at (317) 876-8375 ext. 227.

Regards,

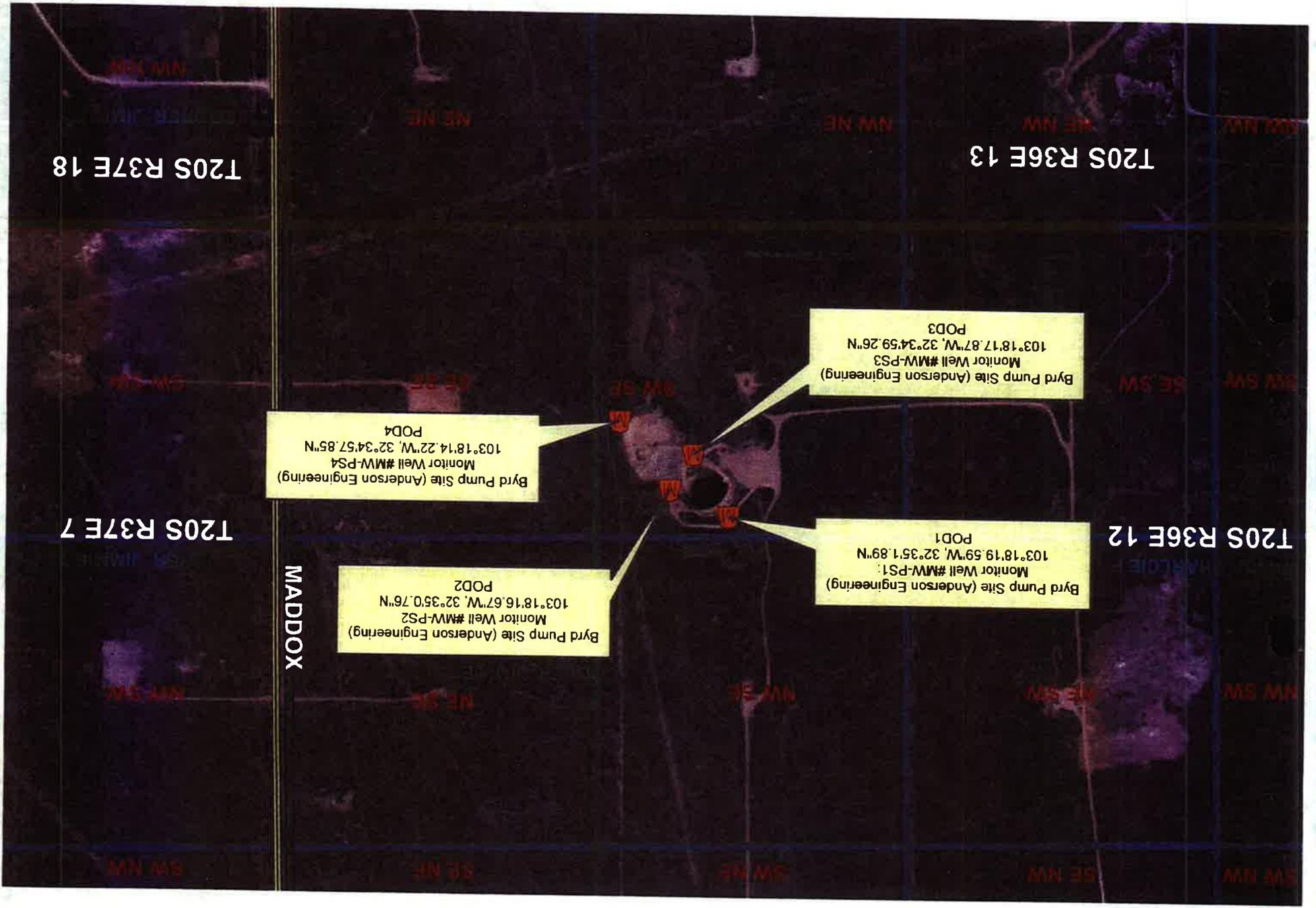
**Stantec Consulting Services Inc.**

Susan M. Hall  
Project Manager  
Phone: (317) 876-8375  
Susan.hall@stantec.com

Attachment: Permit Application and Access Agreement

cc. Sergio Morescalchi, Atlantic Richfield Company

Design with community in mind



T20S R36E 13

T20S R36E 12

T20S R37E 18

T20S R37E 7

MADDOX

Byrd Pump Site (Anderson Engineering)  
Monitor Well #MMW-PS3  
103°18'17.87\"W, 32°34'59.26\"N  
POD3

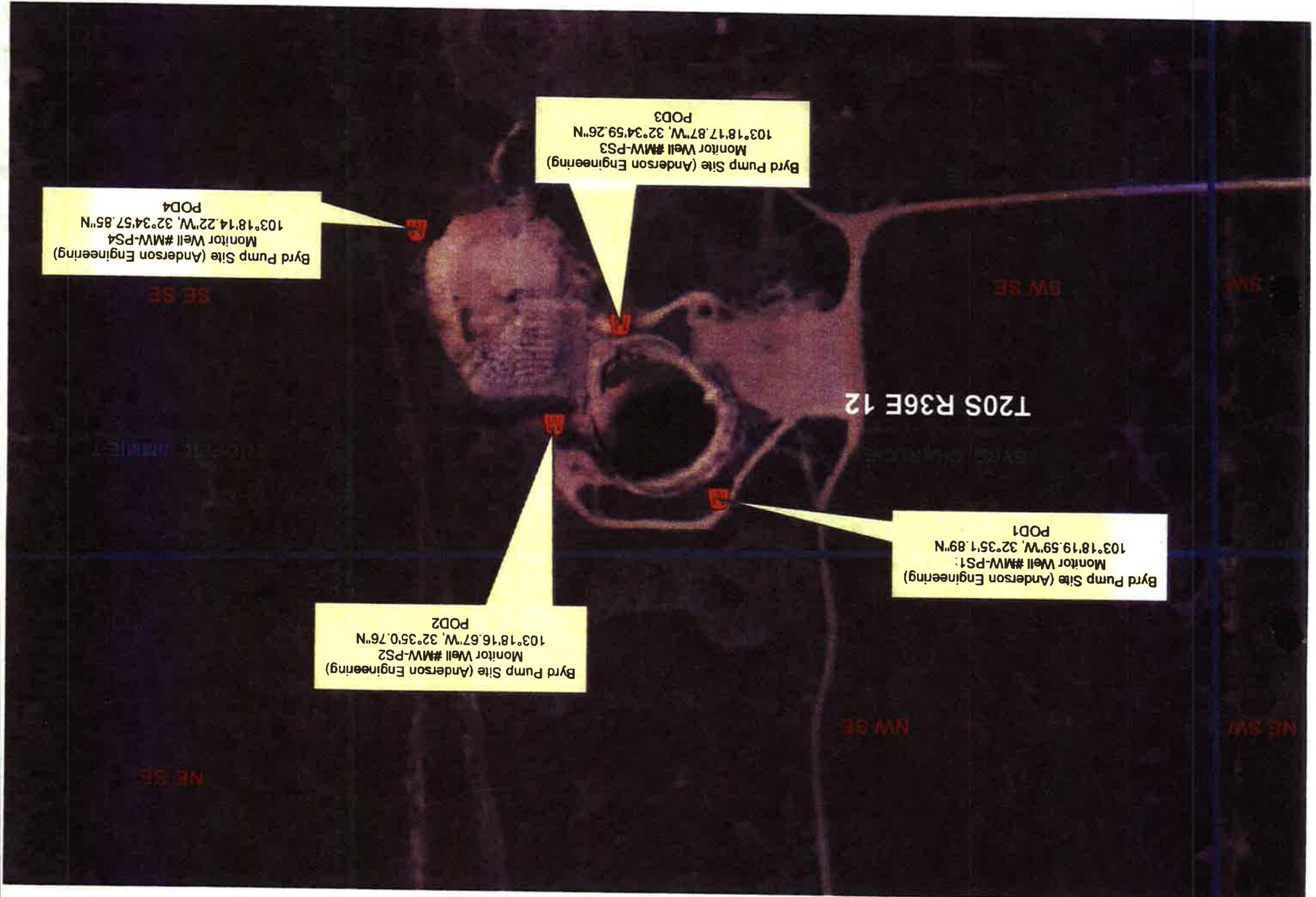
Byrd Pump Site (Anderson Engineering)  
Monitor Well #MMW-PS4  
103°18'14.22\"W, 32°34'57.85\"N  
POD4

Byrd Pump Site (Anderson Engineering)  
Monitor Well #MMW-PS1  
103°18'19.59\"W, 32°35'1.89\"N  
POD1

Byrd Pump Site (Anderson Engineering)  
Monitor Well #MMW-PS2  
103°18'16.67\"W, 32°35'0.76\"N  
POD2

STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO

2015 NOV 10 PM 2: 00



Byrd Pump Site (Anderson Engineering)  
Monitor Well #MW-PS1:  
POD1  
103°18'19.59"W, 32°35'1.89"N

Byrd Pump Site (Anderson Engineering)  
Monitor Well #MW-PS2  
POD2  
103°18'16.67"W, 32°35'0.76"N

Byrd Pump Site (Anderson Engineering)  
Monitor Well #MW-PS3  
POD3  
103°18'17.87"W, 32°34'59.26"N

Byrd Pump Site (Anderson Engineering)  
Monitor Well #MW-PS4  
POD4  
103°18'14.22"W, 32°34'57.85"N

T20S R36E 12

SW 36E

SW 36E

SE 36E

NW 36E

NE 36E

NE 36E

STATE ENGINEER OFFICE  
POSWELL, NEW MEXICO

2015 NOV 10 PM 2:01

# 2015 Access Agreement

STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO  
2015 NOV 10 PM 2:01

**ACCESS AGREEMENT**

This access agreement is entered into between BP Products North America Inc. (BP) and the undersigned Owner. Owner is the current owner of the referenced property (Property) located at: Byrd Ranch, Lea County, New Mexico, legally described as W/2, W/2 E/2 of Section 12, Township 20 South, Range 36 East, also known as Assessor's Parcel Number 4000402920003.

Grant of Access: For good and valuable consideration of \$500 per installation of each monitoring well and \$500 per year for damages for each monitoring well, Owner hereby agrees to grant BP and/or its environmental consultants and/or subcontractors access to the Property in order to perform certain environmental activities which BP at its sole discretion chooses to perform (Activities). Activities may include sampling, assessment, visual inspection, monitoring, installation of monitoring wells, soil sample collection, and remediation. Owner will provide BP information regarding the location of subsurface utilities in the area of the proposed Activities to the extent Owner is aware of such information.

BP will perform this work at no cost to Owner.

BP shall use reasonable efforts during its Activities to minimize interruption to the business or use of the Property. BP will repair any damage to the Property that may occur as a result of its Activities at the Property, including but not limited to restoration of the surface areas of the Property to their pre-drilling conditions, removal of equipment, and proper well closure.

BP will indemnify Owner from third party claims that arise out of BP's negligence associated with the Activities performed by BP on the Property.

It is hereby agreed that the neither this Access Agreement nor the Activities on the Property are an admission against BP's interests or an assumption of liability or waiver of any rights by BP.

Notification: Prior to first commencing Activities on the Property, BP and/or BP's environmental consultant will provide Owner with a Scope of Work developed in accordance with New Mexico Oil Conservation Division guidelines that describes the planned Activities. At least 48 hours prior to first commencing Activities on the Property, BP and/or BP's environmental consultant will notify Owner, either in writing or verbally, of the planned date and time of Activities commencement.

Reporting: BP agrees to provide the results of analytical testing performed by BP regarding its Activities at the Property and copies of all reports submitted to the appropriate State Agency. BP shall provide this information as a courtesy only. Use of any of the information contained in these documents is at Owner's sole risk. BP shall not be deemed to have made any representation or warranty, expressed or implied, as to the condition of the Property or the accuracy of the documents.

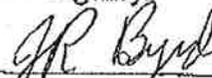
Termination: This Access Agreement will terminate when mutually agreed upon by the parties or once BP removes all of its soil borings and monitoring wells located on the Property and receives a No Further Action letter or similar Closure Letter from the appropriate State Agency.

Douglas Birkbeck



Signature

Liability Business Manager



Property Owner Signature / Title

J. R. BYRD

Printed Name of Owner

10/5/2015

Date of Authorization

STATE ENGINEER OFFICE  
ROSEWELL, NEW MEXICO  
2015 NOV 10 PM 2:01

## Locator Tool Report

### General Information:

Application ID:29                      Date: 11-20-2015                      Time: 11:46:08

WR File Number: **L-1405480D1**  
Purpose: POINT OF DIVERSION

Applicant First Name: STANTEC CONSULTING INC.  
Applicant Last Name: BP PRODUCTS NORTH AMERICA

GW Basin: LEA COUNTY  
County: LEA

Critical Management Area Name(s): NONE  
Special Condition Area Name(s): NONE  
Land Grant Name: NON GRANT

### PLSS Description (New Mexico Principal Meridian):

NW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E.

### Coordinate System Details:

#### Geographic Coordinates:

Latitude:        32 Degrees 35 Minutes 1.9 Seconds N  
Longitude:      103 Degrees 18 Minutes 19.6 Seconds W

#### Universal Transverse Mercator Zone: 13N

|                            |               |              |
|----------------------------|---------------|--------------|
| NAD 1983(92) (Meters)      | N: 3,606,422  | E: 659,047   |
| NAD 1983(92) (Survey Feet) | N: 11,832,070 | E: 2,162,224 |
| NAD 1927 (Meters)          | N: 3,606,220  | E: 659,096   |
| NAD 1927 (Survey Feet)     | N: 11,831,405 | E: 2,162,383 |

#### State Plane Coordinate System Zone: New Mexico East

|                            |            |            |
|----------------------------|------------|------------|
| NAD 1983(92) (Meters)      | N: 176,074 | E: 261,501 |
| NAD 1983(92) (Survey Feet) | N: 577,669 | E: 857,942 |
| NAD 1927 (Meters)          | N: 176,055 | E: 248,949 |
| NAD 1927 (Survey Feet)     | N: 577,607 | E: 816,760 |



## Locator Tool Report

### General Information:

Application ID:29                      Date: 11-20-2015                      Time: 13:29:23

WR File Number: L-14054 POD1

Purpose: POINT OF DIVERSION

Applicant First Name: STANTEC CONSULTING INC.

Applicant Last Name: BP PRODUCTS NORTH AMERICA

GW Basin: LEA COUNTY

County: LEA

Critical Management Area Name(s): NONE

Special Condition Area Name(s): NONE

Land Grant Name: NON GRANT

### PLSS Description (New Mexico Principal Meridian):

NW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E.

### Coordinate System Details:

#### Geographic Coordinates:

Latitude:        32 Degrees 35 Minutes 0.8 Seconds N  
Longitude:      103 Degrees 18 Minutes 16.7 Seconds W

#### Universal Transverse Mercator Zone: 13N

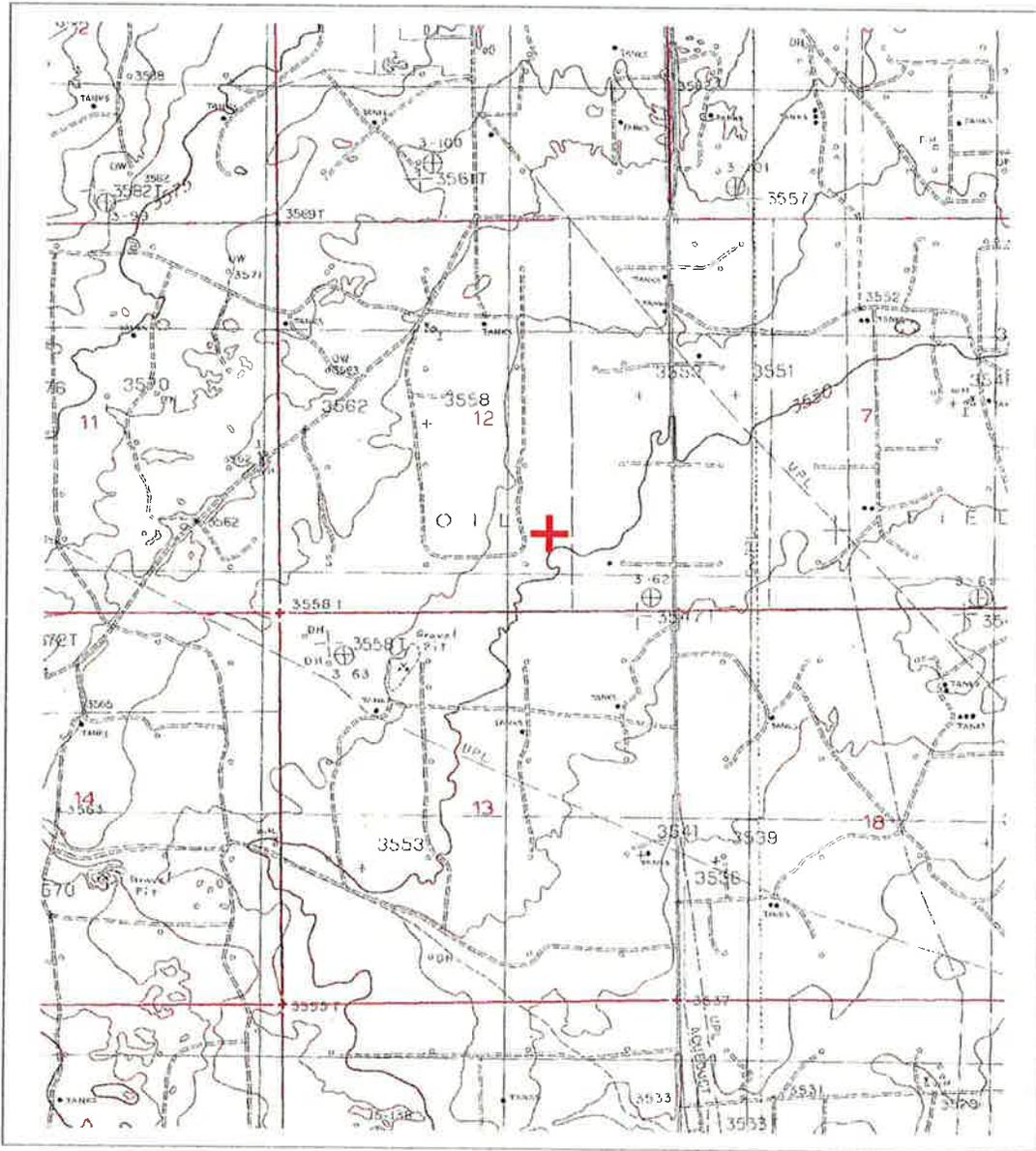
|                            |               |              |
|----------------------------|---------------|--------------|
| NAD 1983(92) (Meters)      | N: 3,606,389  | E: 659,123   |
| NAD 1983(92) (Survey Feet) | N: 11,831,963 | E: 2,162,473 |
| NAD 1927 (Meters)          | N: 3,606,187  | E: 659,172   |
| NAD 1927 (Survey Feet)     | N: 11,831,298 | E: 2,162,633 |

#### State Plane Coordinate System Zone: New Mexico East

|                            |            |            |
|----------------------------|------------|------------|
| NAD 1983(92) (Meters)      | N: 176,041 | E: 261,577 |
| NAD 1983(92) (Survey Feet) | N: 577,560 | E: 858,192 |
| NAD 1927 (Meters)          | N: 176,022 | E: 249,025 |
| NAD 1927 (Survey Feet)     | N: 577,498 | E: 817,009 |

**NEW MEXICO OFFICE OF STATE ENGINEER**

**Locator Tool Report**



WR File Number: L-13752-POD2 Scale: 1:29,931

Northing/Easting: UTM83(92) (Meter): N: 3,606,389 E: 659,123

Northing/Easting: SPCS83(92) (Feet): N: 577,560 E: 858,192

GW Basin: Lea County

## Locator Tool Report

### General Information:

Application ID:29                      Date: 11-20-2015                      Time: 13:33:13

WR File Number: L-14054 POD3  
Purpose: POINT OF DIVERSION

Applicant First Name: STANTEC CONSULTING INC.  
Applicant Last Name: BP PRODUCTS NORTH AMERICA

GW Basin: LEA COUNTY  
County: LEA

Critical Management Area Name(s): NONE  
Special Condition Area Name(s): NONE  
Land Grant Name: NON GRANT

### PLSS Description (New Mexico Principal Meridian):

SW 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E.

### Coordinate System Details:

#### Geographic Coordinates:

Latitude:        32 Degrees 34 Minutes 59.3 Seconds N  
Longitude:      103 Degrees 18 Minutes 17.9 Seconds W

#### Universal Transverse Mercator Zone: 13N

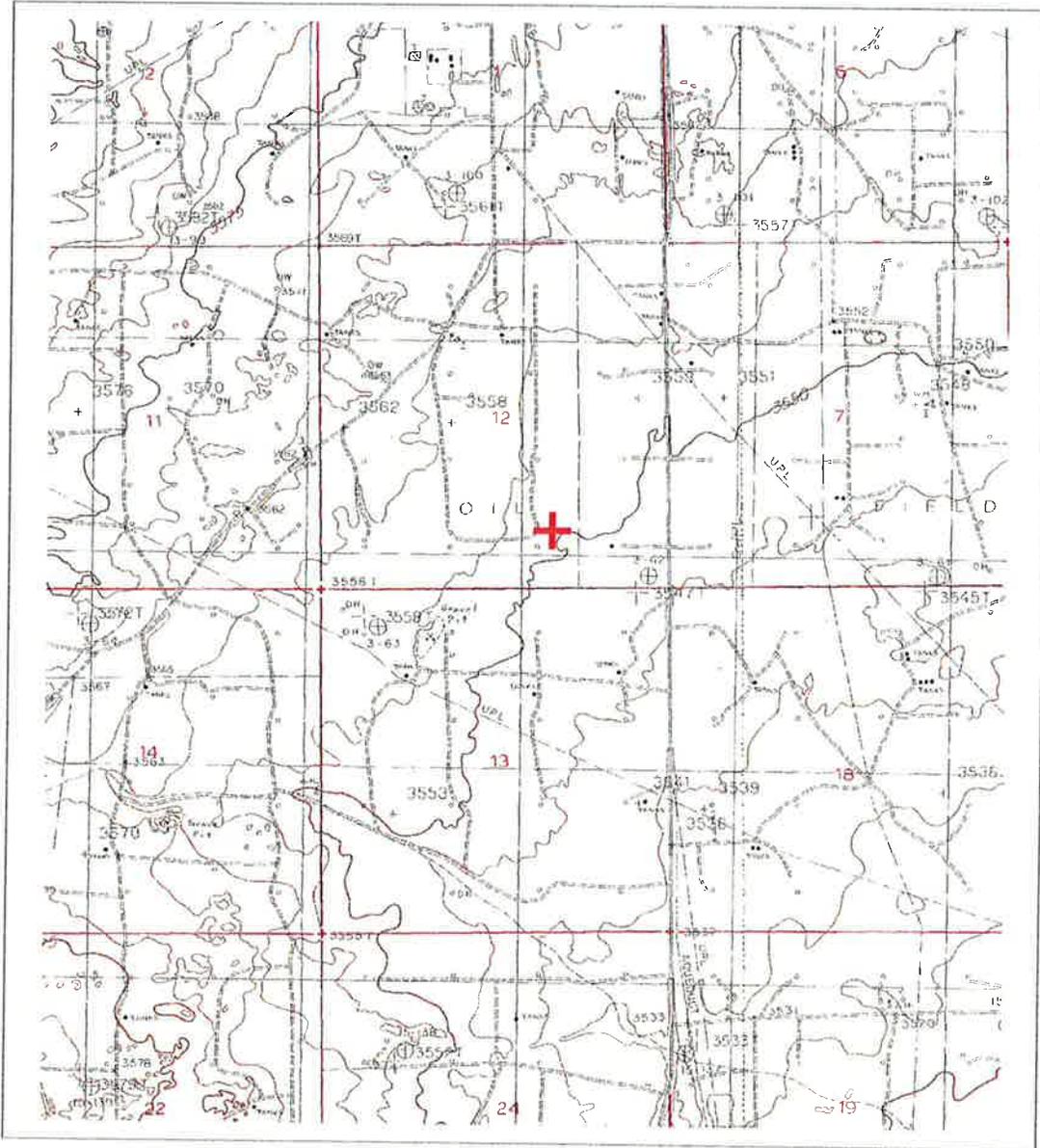
|                            |               |              |
|----------------------------|---------------|--------------|
| NAD 1983(92) (Meters)      | N: 3,606,343  | E: 659,093   |
| NAD 1983(92) (Survey Feet) | N: 11,831,809 | E: 2,162,373 |
| NAD 1927 (Meters)          | N: 3,606,140  | E: 659,141   |
| NAD 1927 (Survey Feet)     | N: 11,831,145 | E: 2,162,533 |

#### State Plane Coordinate System Zone: New Mexico East

|                            |            |            |
|----------------------------|------------|------------|
| NAD 1983(92) (Meters)      | N: 175,994 | E: 261,546 |
| NAD 1983(92) (Survey Feet) | N: 577,408 | E: 858,090 |
| NAD 1927 (Meters)          | N: 175,975 | E: 248,994 |
| NAD 1927 (Survey Feet)     | N: 577,345 | E: 816,908 |

**NEW MEXICO OFFICE OF STATE ENGINEER**

**Locator Tool Report**



WR File Number: L-13752-POD3 Scale: 1:33,848

Northing/Easting: UTM83(92) (Meter): N: 3,606,343 E: 659,093

Northing/Easting: SPCS83(92) (Feet): N: 577,408 E: 858,090

GW Basin: Lea County

## Locator Tool Report

### General Information:

Application ID:29                      Date: 11-20-2015                      Time: 13:35:31

WR File Number: L-14054 POD 4

Purpose: POINT OF DIVERSION

Applicant First Name: STANTEC CONSULTING INC.

Applicant Last Name: BP PRODUCTS NORTH AMERICA

GW Basin: LEA COUNTY

County: LEA

Critical Management Area Name(s): NONE

Special Condition Area Name(s): NONE

Land Grant Name: NON GRANT

### PLSS Description (New Mexico Principal Meridian):

SE 1/4 of NE 1/4 of SW 1/4 of SE 1/4 of Section 12, Township 20S, Range 36E.

### Coordinate System Details:

#### Geographic Coordinates:

Latitude:        32 Degrees 34 Minutes 57.9 Seconds N  
Longitude:      103 Degrees 18 Minutes 14.2 Seconds W

#### Universal Transverse Mercator Zone: 13N

|                            |               |              |
|----------------------------|---------------|--------------|
| NAD 1983(92) (Meters)      | N: 3,606,301  | E: 659,190   |
| NAD 1983(92) (Survey Feet) | N: 11,831,673 | E: 2,162,692 |
| NAD 1927 (Meters)          | N: 3,606,099  | E: 659,239   |
| NAD 1927 (Survey Feet)     | N: 11,831,009 | E: 2,162,852 |

#### State Plane Coordinate System Zone: New Mexico East

|                            |            |            |
|----------------------------|------------|------------|
| NAD 1983(92) (Meters)      | N: 175,952 | E: 261,643 |
| NAD 1983(92) (Survey Feet) | N: 577,269 | E: 858,408 |
| NAD 1927 (Meters)          | N: 175,933 | E: 249,091 |
| NAD 1927 (Survey Feet)     | N: 577,207 | E: 817,226 |



**BYRD PUMP SITE**  
**OCD #1R0034**

Appendix B Laboratory Analytical Results  
May 17, 2016

## **Appendix B   LABORATORY ANALYTICAL RESULTS**

January 25, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: BYRD PUMP SITE INVESTIGATION  
Pace Project No.: 60211093

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on January 13, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

---

### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

---

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

| Lab ID      | Sample ID                | Matrix | Date Collected | Date Received  |
|-------------|--------------------------|--------|----------------|----------------|
| 60211093001 | BPS-MWPS2-20160111-29'   | Solid  | 01/11/16 14:20 | 01/13/16 08:55 |
| 60211093002 | BPS-MWPS2-20160111-29.5' | Solid  | 01/11/16 14:25 | 01/13/16 08:55 |
| 60211093003 | BPS-MWPS3-20160112-29'   | Solid  | 01/12/16 08:40 | 01/13/16 08:55 |
| 60211093004 | BPS-MWPS3-20160112-29.5' | Solid  | 01/12/16 08:45 | 01/13/16 08:55 |
| 60211093005 | BPS-MWPS1-20160112-29'   | Solid  | 01/12/16 09:50 | 01/13/16 08:55 |
| 60211093006 | BPS-MWPS1-20160112-29.5' | Solid  | 01/12/16 09:55 | 01/13/16 08:55 |
| 60211093007 | BPS-MWPS4-20160112-29'   | Solid  | 01/12/16 12:00 | 01/13/16 08:55 |
| 60211093008 | BPS-MWPS4-20160112-29.5' | Solid  | 01/12/16 12:05 | 01/13/16 08:55 |
| 60211093009 | BPS-DUP1-20160112        | Solid  | 01/12/16 08:00 | 01/13/16 08:55 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

| Lab ID      | Sample ID                | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|--------------------------|------------|----------|-------------------|------------|
| 60211093001 | BPS-MWPS2-20160111-29'   | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093002 | BPS-MWPS2-20160111-29.5' | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093003 | BPS-MWPS3-20160112-29'   | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093004 | BPS-MWPS3-20160112-29.5' | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093005 | BPS-MWPS1-20160112-29'   | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093006 | BPS-MWPS1-20160112-29.5' | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093007 | BPS-MWPS4-20160112-29'   | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093008 | BPS-MWPS4-20160112-29.5' | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211093009 | BPS-DUP1-20160112        | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |                          | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |                          | ASTM D2974 | DWC      | 1                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

---

**Method:** EPA 8015B

**Description:** 8015B Diesel Range Organics

**Client:** BP Stantec TX

**Date:** January 25, 2016

**General Information:**

9 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

---

**Method:** EPA 8015B

**Description:** Gasoline Range Organics

**Client:** BP Stantec TX

**Date:** January 25, 2016

**General Information:**

9 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample: BPS-MWPS2-20160111-29' Lab ID: 60211093001** Collected: 01/11/16 14:20 Received: 01/13/16 08:55 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters   | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|--|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                               |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO  | <b>6.6J</b> | mg/kg | 11.5            | 5.7  | 1  | 01/20/16 00:00 | 01/24/16 14:17 |          |      |
| <b>Surrogates</b>  |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)  | 66          | %     | 18-139          |      | 1  | 01/20/16 00:00 | 01/24/16 14:17 | 646-31-1 |      |
| p-Terphenyl (S)  | 54          | %     | 51-120          |      | 1  | 01/20/16 00:00 | 01/24/16 14:17 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO  | ND          | mg/kg | 16.7            | 8.4  | 1  | 01/21/16 00:00 | 01/21/16 17:47 |          |      |
| <b>Surrogates</b>  |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)   | 91          | %     | 68-144          |      | 1  | 01/21/16 00:00 | 01/21/16 17:47 | 460-00-4 |      |
| <b>Percent Moisture</b>  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                    |             |       |                 |      |    |                |                |          |      |
| Percent Moisture   | <b>13.7</b> | %     | 0.50            | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample:** BPS-MWPS2-20160111-29.5'      **Lab ID:** 60211093002      Collected: 01/11/16 14:25      Received: 01/13/16 08:55      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units  | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|--|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg  | 11.2         | 5.6  | 1  | 01/20/16 00:00 | 01/24/16 14:25 |          |      |
| <b>Surrogates</b>                  |             |  |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 64          | %  | 18-139       |      | 1  | 01/20/16 00:00 | 01/24/16 14:25 | 646-31-1 |      |
| p-Terphenyl (S)                    | 53          | %  | 51-120       |      | 1  | 01/20/16 00:00 | 01/24/16 14:25 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg  | 10.4         | 5.2  | 1  | 01/21/16 00:00 | 01/21/16 18:04 |          |      |
| <b>Surrogates</b>                  |             |  |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 88          | %  | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 18:04 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                    |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>13.3</b> | %  | 0.50         | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample: BPS-MWPS3-20160112-29' Lab ID: 60211093003** Collected: 01/12/16 08:40 Received: 01/13/16 08:55 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units  | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|--|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg  | 11.4            | 5.7  | 1  | 01/20/16 00:00 | 01/24/16 14:33 |          |      |
| <b>Surrogates</b>                  |             |  |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 66          | %  | 18-139          |      | 1  | 01/20/16 00:00 | 01/24/16 14:33 | 646-31-1 |      |
| p-Terphenyl (S)                    | 55          | %  | 51-120          |      | 1  | 01/20/16 00:00 | 01/24/16 14:33 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg  | 11.1            | 5.5  | 1  | 01/21/16 00:00 | 01/21/16 18:56 |          |      |
| <b>Surrogates</b>                  |             |  |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 90          | %  | 68-144          |      | 1  | 01/21/16 00:00 | 01/21/16 18:56 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                    |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>13.8</b> | %  | 0.50            | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample:** BPS-MWPS3-20160112-29.5'    **Lab ID:** 60211093004    Collected: 01/12/16 08:45    Received: 01/13/16 08:55    Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 11.6         | 5.8  | 1  | 01/20/16 00:00 | 01/24/16 14:40 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 65          | %   | 18-139       |      | 1  | 01/20/16 00:00 | 01/24/16 14:40 | 646-31-1 |      |
| p-Terphenyl (S)                    | 55          | %   | 51-120       |      | 1  | 01/20/16 00:00 | 01/24/16 14:40 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 10.3         | 5.1  | 1  | 01/21/16 00:00 | 01/21/16 19:14 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 88          | %   | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 19:14 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>14.1</b> | %   | 0.50         | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample: BPS-MWPS1-20160112-29' Lab ID: 60211093005** Collected: 01/12/16 09:50 Received: 01/13/16 08:55 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters   | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|--|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                               |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO  | ND          | mg/kg | 11.7         | 5.8  | 1  | 01/20/16 00:00 | 01/24/16 14:48 |          |      |
| <b>Surrogates</b>  |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)  | 66          | %     | 18-139       |      | 1  | 01/20/16 00:00 | 01/24/16 14:48 | 646-31-1 |      |
| p-Terphenyl (S)  | 56          | %     | 51-120       |      | 1  | 01/20/16 00:00 | 01/24/16 14:48 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                   |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO  | ND          | mg/kg | 11.9         | 5.9  | 1  | 01/21/16 00:00 | 01/21/16 19:31 |          |      |
| <b>Surrogates</b>  |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)   | 91          | %     | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 19:31 | 460-00-4 |      |
| <b>Percent Moisture</b>  |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                    |             |       |              |      |    |                |                |          |      |
| Percent Moisture   | <b>16.2</b> | %     | 0.50         | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample:** BPS-MWPS1-20160112-29.5'      **Lab ID:** 60211093006      Collected: 01/12/16 09:55      Received: 01/13/16 08:55      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 16.0         | 8.0  | 1  | 01/20/16 00:00 | 01/24/16 15:11 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 66          | %   | 18-139       |      | 1  | 01/20/16 00:00 | 01/24/16 15:11 | 646-31-1 |      |
| p-Terphenyl (S)                    | 56          | %   | 51-120       |      | 1  | 01/20/16 00:00 | 01/24/16 15:11 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 11.6         | 5.8  | 1  | 01/21/16 00:00 | 01/21/16 19:49 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 94          | %   | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 19:49 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>14.7</b> | %   | 0.50         | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample: BPS-MWPS4-20160112-29' Lab ID: 60211093007** Collected: 01/12/16 12:00 Received: 01/13/16 08:55 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units  | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|--|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg  | 12.3         | 6.2  | 1  | 01/20/16 00:00 | 01/24/16 15:19 |          |      |
| <b>Surrogates</b>                  |             |  |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 68          | %  | 18-139       |      | 1  | 01/20/16 00:00 | 01/24/16 15:19 | 646-31-1 |      |
| p-Terphenyl (S)                    | 57          | %  | 51-120       |      | 1  | 01/20/16 00:00 | 01/24/16 15:19 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg  | 36.9         | 18.4 | 1  | 01/21/16 00:00 | 01/21/16 20:06 |          |      |
| <b>Surrogates</b>                  |             |  |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 85          | %  | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 20:06 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                    |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>22.9</b> | %  | 0.50         | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample:** BPS-MWPS4-20160112-29.5'      **Lab ID:** 60211093008      Collected: 01/12/16 12:05      Received: 01/13/16 08:55      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report |      |    | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------|------|----|----------------|----------------|----------|------|
|   |             |       | Limit  | MDL  | DF |                |                |          |      |
| <b>8015B Diesel Range Organics</b>                                  |             |       |        |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |        |      |    |                |                |          |      |
| TPH-DRO   | ND          | mg/kg | 11.4   | 5.7  | 1  | 01/20/16 00:00 | 01/24/16 15:27 |          |      |
| <b>Surrogates</b>   |             |       |        |      |    |                |                |          |      |
| n-Tetracosane (S)   | 61          | %     | 18-139 |      | 1  | 01/20/16 00:00 | 01/24/16 15:27 | 646-31-1 |      |
| p-Terphenyl (S)   | 51          | %     | 51-120 |      | 1  | 01/20/16 00:00 | 01/24/16 15:27 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |        |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |        |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.9   | 5.4  | 1  | 01/21/16 00:00 | 01/21/16 20:24 |          |      |
| <b>Surrogates</b>   |             |       |        |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 81          | %     | 68-144 |      | 1  | 01/21/16 00:00 | 01/21/16 20:24 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |        |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |        |      |    |                |                |          |      |
| Percent Moisture  | <b>16.0</b> | %     | 0.50   | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

**Sample: BPS-DUP1-20160112**      **Lab ID: 60211093009**      Collected: 01/12/16 08:00      Received: 01/13/16 08:55      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 26.8         | 13.4 | 1  | 01/20/16 00:00 | 01/24/16 15:34 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 68          | %   | 18-139       |      | 1  | 01/20/16 00:00 | 01/24/16 15:34 | 646-31-1 |      |
| p-Terphenyl (S)                    | 57          | %   | 51-120       |      | 1  | 01/20/16 00:00 | 01/24/16 15:34 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 11.6         | 5.8  | 1  | 01/21/16 00:00 | 01/21/16 20:41 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 85          | %   | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 20:41 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>13.5</b> | %   | 0.50         | 0.50 | 1  |                | 01/20/16 00:00 |          |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

QC Batch: GCV/5295 Analysis Method: EPA 8015B  
 QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
 Associated Lab Samples: 60211093001, 60211093002, 60211093003, 60211093004, 60211093005, 60211093006, 60211093007, 60211093008, 60211093009

METHOD BLANK: 1700508 Matrix: Solid  
 Associated Lab Samples: 60211093001, 60211093002, 60211093003, 60211093004, 60211093005, 60211093006, 60211093007, 60211093008, 60211093009

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/21/16 12:14 |            |
| 4-Bromofluorobenzene (S) | %     | 94           | 68-144          |     | 01/21/16 12:14 |            |

LABORATORY CONTROL SAMPLE: 1700509

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 54.5       | 109       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 97        | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700510 1700511

| Parameter                | Units | 60210930001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|--------------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| TPH-GRO                  | mg/kg | ND                 | 63.1           | 63.1            | 69.3      | 68.5       | 107      | 105       | 49-122       | 1   | 14      |      |
| 4-Bromofluorobenzene (S) | %     |                    |                |                 |           |            | 90       | 94        | 68-144       |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

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|                         |   |                       |                             |
|-------------------------|---|-----------------------|-----------------------------|
| QC Batch:               | PMST/11446  | Analysis Method:      | ASTM D2974                  |
| QC Batch Method:        | ASTM D2974  | Analysis Description: | Dry Weight/Percent Moisture |
| Associated Lab Samples: | 60211093001, 60211093002, 60211093003, 60211093004, 60211093005, 60211093006, 60211093007, 60211093008, 60211093009 |                       |                             |

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|                         |   |         |       |
|-------------------------|---|---------|-------|
| METHOD BLANK:           | 1699504   | Matrix: | Solid |
| Associated Lab Samples: | 60211093001, 60211093002, 60211093003, 60211093004, 60211093005, 60211093006, 60211093007, 60211093008, 60211093009 |         |       |

| Parameter        | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|------------------|-------|--------------|-----------------|------|----------------|------------|
| Percent Moisture | %     | ND           | 0.50            | 0.50 | 01/20/16 00:00 |            |

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SAMPLE DUPLICATE: 1699505

| Parameter        | Units | 60211089001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|------------------|-------|--------------------|------------|-----|---------|------------|
| Percent Moisture | %     | 59.6               | 59.2       | 1   | 20      |            |

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## QUALIFIERS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211093

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP SITE INVESTIGATION

Peace Project No.: 60211093

| Lab ID      | Sample ID                | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|--------------------------|-----------------|------------|-------------------|------------------|
| 60211093001 | BPS-MWPS2-20160111-29'   | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093002 | BPS-MWPS2-20160111-29.5' | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093003 | BPS-MWPS3-20160112-29'   | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093004 | BPS-MWPS3-20160112-29.5' | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093005 | BPS-MWPS1-20160112-29'   | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093006 | BPS-MWPS1-20160112-29.5' | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093007 | BPS-MWPS4-20160112-29'   | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093008 | BPS-MWPS4-20160112-29.5' | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093009 | BPS-DUP1-20160112        | EPA 3546        | OEXT/52809 | EPA 8015B         | GCSV/20390       |
| 60211093001 | BPS-MWPS2-20160111-29'   | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093002 | BPS-MWPS2-20160111-29.5' | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093003 | BPS-MWPS3-20160112-29'   | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093004 | BPS-MWPS3-20160112-29.5' | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093005 | BPS-MWPS1-20160112-29'   | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093006 | BPS-MWPS1-20160112-29.5' | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093007 | BPS-MWPS4-20160112-29'   | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093008 | BPS-MWPS4-20160112-29.5' | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093009 | BPS-DUP1-20160112        | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211093001 | BPS-MWPS2-20160111-29'   | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093002 | BPS-MWPS2-20160111-29.5' | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093003 | BPS-MWPS3-20160112-29'   | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093004 | BPS-MWPS3-20160112-29.5' | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093005 | BPS-MWPS1-20160112-29'   | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093006 | BPS-MWPS1-20160112-29.5' | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093007 | BPS-MWPS4-20160112-29'   | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093008 | BPS-MWPS4-20160112-29.5' | ASTM D2974      | PMST/11446 |                   |                  |
| 60211093009 | BPS-DUP1-20160112        | ASTM D2974      | PMST/11446 |                   |                  |

## REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt  
ESI Tech Spec Client

WO#: 60211093



60211093

Client Name: BP Stantec

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client

Tracking #: 6508 8163 4012 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 / T-262 Type of Ice: Wet Blue  None  Samples received on ice, cooling process has begun.

Cooler Temperature: 4.6

Date and initials of person examining contents: JK 1/13/16 950

Temperature should be above freezing to 6°C

|  |   |  |
|--|---|--|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 1.   |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 2.   |
| Chain of Custody relinquished:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 3.   |
| Sampler name & signature on COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 4.   |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 5.   |
| Short Hold Time analyses (<72hr):  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A            | 6.   |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A            | 7.   |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 8.   |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 9.   |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 9.   |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 10.  |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 11.  |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A            | 12.  |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            |  |
| Includes date/time/ID/analyses Matrix: <u>soils</u>  |   | 13.  |
| All containers needing preservation have been checked.                                     | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A            |  |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A            | 14.  |
| Exceptions: VOA, Coliform, O&G, WI-DRO (water)   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   | Initial when completed <u>JK</u> Lot # of added preservative |
| Trip Blank present:  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A            |  |
| Pace Trip Blank lot # (if purchased): <u>N/A</u>   |   | 15.  |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A            |  |
|  |   | 16.  |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 17. List State: <u>NM</u>                                    |
| Additional labels attached to 5035A vials in the field?                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.  |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: AAF Date: 01/13/16

|  |        |
|--|--------|
| Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>940</u>  | Start: |
| End: <u>950</u>  | End:   |
| Temp:  | Temp:  |



January 29, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: BYRD PUMP SITE INVESTIGATION  
Pace Project No.: 60211322

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on January 15, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

---

### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

| Lab ID      | Sample ID  | Matrix | Date Collected | Date Received  |
|-------------|------------|--------|----------------|----------------|
| 60211322001 | SS-9A      | Solid  | 01/13/16 10:43 | 01/15/16 08:50 |
| 60211322002 | SS-9B      | Solid  | 01/13/16 10:37 | 01/15/16 08:50 |
| 60211322003 | SS-9C      | Solid  | 01/13/16 10:44 | 01/15/16 08:50 |
| 60211322004 | SS-9D      | Solid  | 01/13/16 10:45 | 01/15/16 08:50 |
| 60211322005 | SS-7A      | Solid  | 01/13/16 09:50 | 01/15/16 08:50 |
| 60211322006 | SS-7B      | Solid  | 01/13/16 09:52 | 01/15/16 08:50 |
| 60211322007 | SS-7C      | Solid  | 01/13/16 09:54 | 01/15/16 08:50 |
| 60211322008 | SS-7D      | Solid  | 01/13/16 09:55 | 01/15/16 08:50 |
| 60211322009 | SS-8A      | Solid  | 01/13/16 10:18 | 01/15/16 08:50 |
| 60211322010 | SS-8B      | Solid  | 01/13/16 10:20 | 01/15/16 08:50 |
| 60211322011 | SS-8C      | Solid  | 01/13/16 10:22 | 01/15/16 08:50 |
| 60211322012 | SS-8D      | Solid  | 01/13/16 10:24 | 01/15/16 08:50 |
| 60211322013 | SS-10A     | Solid  | 01/13/16 11:06 | 01/15/16 08:50 |
| 60211322014 | SS-10B     | Solid  | 01/13/16 11:09 | 01/15/16 08:50 |
| 60211322015 | SS-10C     | Solid  | 01/13/16 11:12 | 01/15/16 08:50 |
| 60211322016 | SS-10D     | Solid  | 01/13/16 11:14 | 01/15/16 08:50 |
| 60211322017 | SS-11A     | Solid  | 01/13/16 11:32 | 01/15/16 08:50 |
| 60211322018 | SS-11B     | Solid  | 01/13/16 11:34 | 01/15/16 08:50 |
| 60211322019 | SS-11C     | Solid  | 01/13/16 11:37 | 01/15/16 08:50 |
| 60211322020 | SS-11D     | Solid  | 01/13/16 11:40 | 01/15/16 08:50 |
| 60211322021 | SS-12A     | Solid  | 01/13/16 11:55 | 01/15/16 08:50 |
| 60211322022 | SS-12B     | Solid  | 01/13/16 11:58 | 01/15/16 08:50 |
| 60211322023 | SS-12C     | Solid  | 01/13/16 11:59 | 01/15/16 08:50 |
| 60211322024 | SS-12D     | Solid  | 01/13/16 12:01 | 01/15/16 08:50 |
| 60211322025 | SS-13A     | Solid  | 01/13/16 12:25 | 01/15/16 08:50 |
| 60211322026 | SS-13B     | Solid  | 01/13/16 12:28 | 01/15/16 08:50 |
| 60211322027 | SS-13C     | Solid  | 01/13/16 12:31 | 01/15/16 08:50 |
| 60211322028 | SS-13D     | Solid  | 01/13/16 12:32 | 01/15/16 08:50 |
| 60211322029 | SS-14A     | Solid  | 01/13/16 12:44 | 01/15/16 08:50 |
| 60211322030 | SS-14B     | Solid  | 01/13/16 12:45 | 01/15/16 08:50 |
| 60211322031 | SS-14C     | Solid  | 01/13/16 12:49 | 01/15/16 08:50 |
| 60211322032 | SS-14D     | Solid  | 01/13/16 12:51 | 01/15/16 08:50 |
| 60211322033 | DUP2       | Solid  | 01/13/16 08:00 | 01/15/16 08:50 |
| 60211322034 | DUP3       | Solid  | 01/13/16 08:00 | 01/15/16 08:50 |
| 60211322035 | TRIP BLANK | Solid  | 01/13/16 08:00 | 01/15/16 08:50 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211322001 | SS-9A     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322002 | SS-9B     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322003 | SS-9C     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322004 | SS-9D     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322005 | SS-7A     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322006 | SS-7B     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322007 | SS-7C     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322008 | SS-7D     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322009 | SS-8A     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322010 | SS-8B     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322011 | SS-8C     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322012 | SS-8D     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211322013 | SS-10A    | EPA 8015B  | ACW      | 3                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION  
Pace Project No.: 60211322

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211322014 | SS-10B    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322015 | SS-10C    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322016 | SS-10D    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322017 | SS-11A    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322018 | SS-11B    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322019 | SS-11C    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322020 | SS-11D    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322021 | SS-12A    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322022 | SS-12B    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322023 | SS-12C    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322024 | SS-12D    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211322025 | SS-13A    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211322026 | SS-13B    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322027 | SS-13C    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322028 | SS-13D    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322029 | SS-14A    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322030 | SS-14B    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322031 | SS-14C    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322032 | SS-14D    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322033 | DUP2      | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211322034 | DUP3      | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

---

**Method:** EPA 8015B

**Description:** 8015B Diesel Range Organics

**Client:** BP Stantec TX

**Date:** January 29, 2016

**General Information:**

34 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

Analyte Comments:

QC Batch: OEXT/52849

1e: Surrogate recovery outside laboratory control limits. Verified by re-analysis. No further action taken due to holding time violations.

- SS-9C (Lab ID: 60211322003)
- p-Terphenyl (S)

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

---

**Method:** EPA 8015B

**Description:** Gasoline Range Organics

**Client:** BP Stantec TX

**Date:** January 29, 2016

**General Information:**

34 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-9A**      **Lab ID: 60211322001**      Collected: 01/13/16 10:43      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|---------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |         | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | 11.2    | mg/kg   | 10.6         | 5.3  | 1  | 01/25/16 00:00 | 01/27/16 22:16 |          |      |
| <b>Surrogates</b>                  |         |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 76      | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 22:16 | 646-31-1 |      |
| p-Terphenyl (S)                    | 64      | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 22:16 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |         | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND      | mg/kg   | 10.8         | 5.4  | 1  | 01/22/16 00:00 | 01/25/16 13:03 |          |      |
| <b>Surrogates</b>                  |         |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 98      | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/25/16 13:03 | 460-00-4 |      |
| <b>Percent Moisture</b>            |         | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | 7.3     | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-9B**      **Lab ID: 60211322002**      Collected: 01/13/16 10:37      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 11.7         | 5.8  | 1  | 01/25/16 00:00 | 01/27/16 22:24 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 56          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 22:24 | 646-31-1 |      |
| p-Terphenyl (S)                    | 52          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 22:24 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.0         | 6.0  | 1  | 01/22/16 00:00 | 01/25/16 13:21 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 99          | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/25/16 13:21 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>16.2</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-9C**      **Lab ID: 60211322003**      Collected: 01/13/16 10:44      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | <b>6.5J</b> | mg/kg   | 11.0         | 5.5  | 1  | 01/25/16 00:00 | 01/27/16 22:32 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 61          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 22:32 | 646-31-1 |      |
| p-Terphenyl (S)                    | 48          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 22:32 | 92-94-4  | 1e   |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 11.8         | 5.9  | 1  | 01/22/16 00:00 | 01/25/16 13:38 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 96          | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/25/16 13:38 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>14.9</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-9D**      **Lab ID: 60211322004**      Collected: 01/13/16 10:45      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>27.2</b> | mg/kg | 10.4            | 5.2  | 1  | 01/25/16 00:00 | 01/27/16 22:55 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 85          | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 22:55 | 646-31-1 |
| p-Terphenyl (S)   | 71          | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 22:55 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.5            | 5.3  | 1  | 01/22/16 00:00 | 01/25/16 13:56 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 94          | %     | 68-144          |      |    | 1              | 01/22/16 00:00 | 01/25/16 13:56 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>4.9</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-7A**      **Lab ID: 60211322005**      Collected: 01/13/16 09:50      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>26.1</b> | mg/kg | 10.3            | 5.2  | 1  | 01/25/16 00:00 | 01/27/16 23:03 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 87          | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 23:03 | 646-31-1 |
| p-Terphenyl (S)   | 72          | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 23:03 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.5            | 5.2  | 1  | 01/22/16 00:00 | 01/25/16 14:13 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 87          | %     | 68-144          |      |    | 1              | 01/22/16 00:00 | 01/25/16 14:13 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>3.8</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-7B**      **Lab ID: 60211322006**      Collected: 01/13/16 09:52      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 11.7            | 5.9  | 1  | 01/25/16 00:00 | 01/27/16 23:10 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 68          | %   | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 23:10 | 646-31-1 |      |
| p-Terphenyl (S)                    | 56          | %   | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 23:10 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.1            | 6.1  | 1  | 01/22/16 00:00 | 01/25/16 15:40 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 90          | %   | 68-144          |      | 1  | 01/22/16 00:00 | 01/25/16 15:40 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>17.1</b> | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-7C**      **Lab ID: 60211322007**      Collected: 01/13/16 09:54      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | <b>19.7</b> | mg/kg   | 10.5         | 5.3  | 1  | 01/25/16 00:00 | 01/27/16 23:18 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 75          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 23:18 | 646-31-1 |      |
| p-Terphenyl (S)                    | 61          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 23:18 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 10.9         | 5.4  | 1  | 01/22/16 00:00 | 01/25/16 15:58 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 89          | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/25/16 15:58 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>7.7</b>  | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-7D**      **Lab ID: 60211322008**      Collected: 01/13/16 09:55      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|---------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |         |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |         |       |              |      |    |                |                |          |      |
| TPH-DRO   | 35.1    | mg/kg | 10.1         | 5.1  | 1  | 01/25/16 00:00 | 01/27/16 23:26 |          |      |
| <b>Surrogates</b>   |         |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 92      | %     | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 23:26 | 646-31-1 |      |
| p-Terphenyl (S)   | 77      | %     | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 23:26 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |         |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |         |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND      | mg/kg | 10.3         | 5.1  | 1  | 01/22/16 00:00 | 01/25/16 16:15 |          |      |
| <b>Surrogates</b>   |         |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 88      | %     | 68-144       |      | 1  | 01/22/16 00:00 | 01/25/16 16:15 | 460-00-4 |      |
| <b>Percent Moisture</b>   |         |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |         |       |              |      |    |                |                |          |      |
| Percent Moisture  | 2.8     | %     | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-8A**      **Lab ID: 60211322009**      Collected: 01/13/16 10:18      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>9.9J</b> | mg/kg | 11.7            | 5.8  | 1  | 01/25/16 00:00 | 01/27/16 23:34 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 63          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 23:34 | 646-31-1 |      |
| p-Terphenyl (S)   | 53          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 23:34 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.8            | 5.9  | 1  | 01/22/16 00:00 | 01/25/16 16:32 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 84          | %     | 68-144          |      | 1  | 01/22/16 00:00 | 01/25/16 16:32 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>15.3</b> | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-8B**      **Lab ID: 60211322010**      Collected: 01/13/16 10:20      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO<br><b>Surrogates</b>       | <b>17.5</b> | mg/kg   | 11.5            | 5.8  | 1  | 01/25/16 00:00 | 01/27/16 23:41 |          |      |
| n-Tetracosane (S)                  | 71          | %   | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 23:41 | 646-31-1 |      |
| p-Terphenyl (S)                    | 60          | %   | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 23:41 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO<br><b>Surrogates</b>       | ND          | mg/kg   | 11.6            | 5.8  | 1  | 01/22/16 00:00 | 01/25/16 16:49 |          |      |
| 4-Bromofluorobenzene (S)           | 80          | %   | 68-144          |      | 1  | 01/22/16 00:00 | 01/25/16 16:49 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>14.2</b> | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-8C**      **Lab ID: 60211322011**      Collected: 01/13/16 10:22      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>24.6</b> | mg/kg | 10.3         | 5.1  | 1  | 01/25/16 00:00 | 01/27/16 23:49 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 80          | %     | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 23:49 | 646-31-1 |      |
| p-Terphenyl (S)   | 67          | %     | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 23:49 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.4         | 5.2  | 1  | 01/22/16 00:00 | 01/25/16 17:07 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 89          | %     | 68-144       |      | 1  | 01/22/16 00:00 | 01/25/16 17:07 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>4.0</b>  | %     | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-8D**      **Lab ID: 60211322012**      Collected: 01/13/16 10:24      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | <b>33.7</b> | mg/kg   | 10.4         | 5.2  | 1  | 01/25/16 00:00 | 01/27/16 23:57 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 83          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 23:57 | 646-31-1 |      |
| p-Terphenyl (S)                    | 66          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 23:57 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | <b>13.6</b> | mg/kg   | 11.0         | 5.5  | 1  | 01/25/16 00:00 | 01/26/16 16:19 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 99          | %   | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 16:19 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>8.9</b>  | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-10A**      **Lab ID: 60211322013**      Collected: 01/13/16 11:06      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>12.9</b> | mg/kg | 10.2         | 5.1  | 1  | 01/25/16 00:00 | 01/28/16 00:20 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 77          | %     | 18-139       |      | 1  | 01/25/16 00:00 | 01/28/16 00:20 | 646-31-1 |      |
| p-Terphenyl (S)   | 64          | %     | 51-120       |      | 1  | 01/25/16 00:00 | 01/28/16 00:20 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.3         | 5.2  | 1  | 01/25/16 00:00 | 01/26/16 17:11 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 99          | %     | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 17:11 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>3.3</b>  | %     | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-10B**      **Lab ID: 60211322014**      Collected: 01/13/16 11:09      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>17.9</b> | mg/kg | 10.1            | 5.0  | 1  | 01/25/16 00:00 | 01/28/16 00:27 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 79          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/28/16 00:27 | 646-31-1 |      |
| p-Terphenyl (S)   | 67          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/28/16 00:27 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.3            | 5.2  | 1  | 01/25/16 00:00 | 01/26/16 17:29 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 99          | %     | 68-144          |      | 1  | 01/25/16 00:00 | 01/26/16 17:29 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>4.2</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-10C**      **Lab ID: 60211322015**      Collected: 01/13/16 11:12      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results      | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|--------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |              | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO<br><b>Surrogates</b>       | <b>10.7J</b> | mg/kg   | 10.8            | 5.4  | 1  | 01/25/16 00:00 | 01/28/16 00:35 |          |      |
| n-Tetracosane (S)                  | 70           | %   | 18-139          |      | 1  | 01/25/16 00:00 | 01/28/16 00:35 | 646-31-1 |      |
| p-Terphenyl (S)                    | 58           | %   | 51-120          |      | 1  | 01/25/16 00:00 | 01/28/16 00:35 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |              | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO<br><b>Surrogates</b>       | ND           | mg/kg   | 11.0            | 5.5  | 1  | 01/25/16 00:00 | 01/26/16 17:46 |          |      |
| 4-Bromofluorobenzene (S)           | 92           | %   | 68-144          |      | 1  | 01/25/16 00:00 | 01/26/16 17:46 | 460-00-4 |      |
| <b>Percent Moisture</b>            |              | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>9.1</b>   | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-10D**      **Lab ID: 60211322016**      Collected: 01/13/16 11:14      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.3         | 6.1  | 1  | 01/25/16 00:00 | 01/28/16 00:43 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 67          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/28/16 00:43 | 646-31-1 |      |
| p-Terphenyl (S)                    | 55          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/28/16 00:43 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.8         | 6.4  | 1  | 01/25/16 00:00 | 01/26/16 18:04 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 86          | %   | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 18:04 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>22.3</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-11A**      **Lab ID: 60211322017**      Collected: 01/13/16 11:32      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.5         | 6.3  | 1  | 01/25/16 00:00 | 01/28/16 12:10 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 70          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/28/16 12:10 | 646-31-1 |      |
| p-Terphenyl (S)                    | 55          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/28/16 12:10 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.8         | 6.4  | 1  | 01/25/16 00:00 | 01/26/16 18:21 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 92          | %   | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 18:21 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>21.8</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-11B**      **Lab ID: 60211322018**      Collected: 01/13/16 11:34      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>30.6</b> | mg/kg | 10.2            | 5.1  | 1  | 01/25/16 00:00 | 01/28/16 00:58 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 84          | %     | 18-139          |      |    | 01/25/16 00:00 | 01/28/16 00:58 | 646-31-1 |      |
| p-Terphenyl (S)   | 70          | %     | 51-120          |      |    | 01/25/16 00:00 | 01/28/16 00:58 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.3            | 5.1  | 1  | 01/25/16 00:00 | 01/26/16 19:14 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 99          | %     | 68-144          |      |    | 01/25/16 00:00 | 01/26/16 19:14 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>2.6</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-11C**      **Lab ID: 60211322019**      Collected: 01/13/16 11:37      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>25.4</b> | mg/kg | 10.3            | 5.2  | 1  | 01/25/16 00:00 | 01/28/16 01:06 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 81          | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/28/16 01:06 | 646-31-1 |
| p-Terphenyl (S)   | 68          | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/28/16 01:06 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.4            | 5.2  | 1  | 01/25/16 00:00 | 01/26/16 19:31 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 98          | %     | 68-144          |      |    | 1              | 01/25/16 00:00 | 01/26/16 19:31 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>4.8</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-11D**      **Lab ID: 60211322020**      Collected: 01/13/16 11:40      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>27.3</b> | mg/kg | 10.1            | 5.1  | 1  | 01/25/16 00:00 | 01/28/16 01:13 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 88          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/28/16 01:13 | 646-31-1 |      |
| p-Terphenyl (S)   | 73          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/28/16 01:13 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.5            | 5.2  | 1  | 01/25/16 00:00 | 01/26/16 19:48 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93          | %     | 68-144          |      | 1  | 01/25/16 00:00 | 01/26/16 19:48 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>4.5</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-12A**      **Lab ID: 60211322021**      Collected: 01/13/16 11:55      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | ND          | mg/kg | 11.5            | 5.7  | 1  | 01/25/16 00:00 | 01/27/16 10:44 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 84          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 10:44 | 646-31-1 |      |
| p-Terphenyl (S)   | 83          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 10:44 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.6            | 5.8  | 1  | 01/25/16 00:00 | 01/26/16 20:05 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 95          | %     | 68-144          |      | 1  | 01/25/16 00:00 | 01/26/16 20:05 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>13.0</b> | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-12B**      **Lab ID: 60211322022**      Collected: 01/13/16 11:58      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.8            | 6.4  | 1  | 01/25/16 00:00 | 01/27/16 10:53 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 88          | %   | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 10:53 | 646-31-1 |      |
| p-Terphenyl (S)                    | 84          | %   | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 10:53 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.1            | 6.6  | 1  | 01/25/16 00:00 | 01/26/16 20:23 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 89          | %   | 68-144          |      | 1  | 01/25/16 00:00 | 01/26/16 20:23 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>23.4</b> | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-12C**      **Lab ID: 60211322023**      Collected: 01/13/16 11:59      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>7.2J</b> | mg/kg | 11.7         | 5.9  | 1  | 01/25/16 00:00 | 01/27/16 11:02 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 83          | %     | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 11:02 | 646-31-1 |      |
| p-Terphenyl (S)   | 77          | %     | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 11:02 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.8         | 5.9  | 1  | 01/25/16 00:00 | 01/26/16 20:40 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93          | %     | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 20:40 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>15.3</b> | %     | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-12D**      **Lab ID: 60211322024**      Collected: 01/13/16 12:01      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 11.8         | 5.9  | 1  | 01/25/16 00:00 | 01/27/16 11:12 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 92          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 11:12 | 646-31-1 |      |
| p-Terphenyl (S)                    | 87          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 11:12 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.2         | 6.1  | 1  | 01/25/16 00:00 | 01/26/16 20:58 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 93          | %   | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 20:58 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>18.6</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-13A**      **Lab ID: 60211322025**      Collected: 01/13/16 12:25      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>9.8J</b> | mg/kg | 11.1         | 5.6  | 1  | 01/25/16 00:00 | 01/27/16 11:21 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 95          | %     | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 11:21 | 646-31-1 |      |
| p-Terphenyl (S)   | 80          | %     | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 11:21 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.3         | 5.7  | 1  | 01/25/16 00:00 | 01/26/16 21:15 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 85          | %     | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 21:15 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>12.4</b> | %     | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-13B**      **Lab ID: 60211322026**      Collected: 01/13/16 12:28      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>23.1</b> | mg/kg | 10.0            | 5.0  | 1  | 01/25/16 00:00 | 01/27/16 11:49 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 133         | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 11:49 | 646-31-1 |
| p-Terphenyl (S)   | 116         | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 11:49 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.3            | 5.1  | 1  | 01/25/16 00:00 | 01/26/16 21:32 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 92          | %     | 68-144          |      |    | 1              | 01/25/16 00:00 | 01/26/16 21:32 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>3.3</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-13C**      **Lab ID: 60211322027**      Collected: 01/13/16 12:31      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>11.9</b> | mg/kg | 10.7            | 5.3  | 1  | 01/25/16 00:00 | 01/27/16 13:31 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 107         | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 13:31 | 646-31-1 |
| p-Terphenyl (S)   | 93          | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 13:31 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.9            | 5.4  | 1  | 01/25/16 00:00 | 01/26/16 21:50 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 90          | %     | 68-144          |      |    | 1              | 01/25/16 00:00 | 01/26/16 21:50 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>8.1</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-13D**      **Lab ID: 60211322028**      Collected: 01/13/16 12:32      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>8.1J</b> | mg/kg | 12.0            | 6.0  | 1  | 01/25/16 00:00 | 01/27/16 13:40 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 85          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 13:40 | 646-31-1 |      |
| p-Terphenyl (S)   | 83          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 13:40 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 12.1            | 6.0  | 1  | 01/25/16 00:00 | 01/26/16 22:41 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 92          | %     | 68-144          |      | 1  | 01/25/16 00:00 | 01/26/16 22:41 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>17.2</b> | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-14A**      **Lab ID: 60211322029**      Collected: 01/13/16 12:44      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |                |          |
| TPH-DRO                            | <b>13.0</b> | mg/kg   | 10.3            | 5.2  | 1  | 01/25/16 00:00 | 01/27/16 13:49 |                |          |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |                |          |
| n-Tetracosane (S)                  | 105         | %   | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 13:49 | 646-31-1 |
| p-Terphenyl (S)                    | 98          | %   | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 13:49 | 92-94-4  |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |                |          |
| TPH-GRO                            | ND          | mg/kg   | 10.7            | 5.4  | 1  | 01/25/16 00:00 | 01/26/16 22:59 |                |          |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)           | 99          | %   | 68-144          |      |    | 1              | 01/25/16 00:00 | 01/26/16 22:59 | 460-00-4 |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |                |          |
| Percent Moisture                   | <b>7.4</b>  | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-14B**      **Lab ID: 60211322030**      Collected: 01/13/16 12:45      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|---------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |         | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | 11.4    | mg/kg   | 10.9         | 5.5  | 1  | 01/25/16 00:00 | 01/27/16 13:59 |          |      |
| <b>Surrogates</b>                  |         |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 101     | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 13:59 | 646-31-1 |      |
| p-Terphenyl (S)                    | 86      | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 13:59 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |         | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND      | mg/kg   | 11.2         | 5.6  | 1  | 01/25/16 00:00 | 01/26/16 23:16 |          |      |
| <b>Surrogates</b>                  |         |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 87      | %   | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 23:16 | 460-00-4 |      |
| <b>Percent Moisture</b>            |         | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | 11.1    | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-14C**      **Lab ID: 60211322031**      Collected: 01/13/16 12:49      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.2         | 6.1  | 1  | 01/25/16 00:00 | 01/27/16 14:08 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 82          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 14:08 | 646-31-1 |      |
| p-Terphenyl (S)                    | 77          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 14:08 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.9         | 6.4  | 1  | 01/25/16 00:00 | 01/26/16 23:33 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 90          | %   | 68-144       |      | 1  | 01/25/16 00:00 | 01/26/16 23:33 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>22.6</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: SS-14D**      **Lab ID: 60211322032**      Collected: 01/13/16 12:51      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | ND          | mg/kg | 11.8            | 5.9  | 1  | 01/25/16 00:00 | 01/27/16 14:17 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 78          | %     | 18-139          |      |    | 01/25/16 00:00 | 01/27/16 14:17 | 646-31-1 |      |
| p-Terphenyl (S)   | 77          | %     | 51-120          |      |    | 01/25/16 00:00 | 01/27/16 14:17 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.8            | 5.9  | 1  | 01/26/16 00:00 | 01/27/16 00:25 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 96          | %     | 68-144          |      |    | 01/26/16 00:00 | 01/27/16 00:25 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>15.7</b> | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: DUP2**      **Lab ID: 60211322033**      Collected: 01/13/16 08:00      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 11.9            | 6.0  | 1  | 01/25/16 00:00 | 01/27/16 14:27 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 83          | %   | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 14:27 | 646-31-1 |      |
| p-Terphenyl (S)                    | 79          | %   | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 14:27 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.2            | 6.1  | 1  | 01/26/16 00:00 | 01/27/16 00:43 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 90          | %   | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 00:43 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>17.4</b> | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

**Sample: DUP3**      **Lab ID: 60211322034**      Collected: 01/13/16 08:00      Received: 01/15/16 08:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>22.1</b> | mg/kg | 10.1            | 5.1  | 1  | 01/25/16 00:00 | 01/27/16 14:36 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 112         | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 14:36 | 646-31-1 |
| p-Terphenyl (S)   | 105         | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 14:36 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.6            | 5.3  | 1  | 01/26/16 00:00 | 01/27/16 01:00 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 86          | %     | 68-144          |      |    | 1              | 01/26/16 00:00 | 01/27/16 01:00 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>5.6</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION  
Pace Project No.: 60211322

QC Batch: GCV/5299 Analysis Method: EPA 8015B  
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
Associated Lab Samples: 60211322001, 60211322002, 60211322003, 60211322004, 60211322005, 60211322006, 60211322007, 60211322008, 60211322009, 60211322010, 60211322011

METHOD BLANK: 1701578 Matrix: Solid  
Associated Lab Samples: 60211322001, 60211322002, 60211322003, 60211322004, 60211322005, 60211322006, 60211322007, 60211322008, 60211322009, 60211322010, 60211322011

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/25/16 11:28 |            |
| 4-Bromofluorobenzene (S) | %     | 97           | 68-144          |     | 01/25/16 11:28 |            |

LABORATORY CONTROL SAMPLE: 1701579

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 50.5       | 101       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 97        | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1701588 1701589

| Parameter                | Units | 60211322005 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|--------------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| TPH-GRO                  | mg/kg | ND                 | 52.4           | 52.4            | 54.5      | 52.1       | 103      | 98        | 49-122       | 5   | 14      |      |
| 4-Bromofluorobenzene (S) | %     |                    |                |                 |           |            | 88       | 81        | 68-144       |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

|                         |  |                       |                         |
|-------------------------|--|-----------------------|-------------------------|
| QC Batch:               | GCV/5300   | Analysis Method:      | EPA 8015B               |
| QC Batch Method:        | EPA 5035A/5030B  | Analysis Description: | Gasoline Range Organics |
| Associated Lab Samples: | 60211322012, 60211322013, 60211322014, 60211322015, 60211322016, 60211322017, 60211322018, 60211322019, 60211322020, 60211322021, 60211322022, 60211322023, 60211322024, 60211322025, 60211322026, 60211322027, 60211322028, 60211322029, 60211322030, 60211322031 |                       |                         |

|                         |  |         |       |
|-------------------------|--|---------|-------|
| METHOD BLANK:           | 1701613  | Matrix: | Solid |
| Associated Lab Samples: | 60211322012, 60211322013, 60211322014, 60211322015, 60211322016, 60211322017, 60211322018, 60211322019, 60211322020, 60211322021, 60211322022, 60211322023, 60211322024, 60211322025, 60211322026, 60211322027, 60211322028, 60211322029, 60211322030, 60211322031 |         |       |

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/26/16 14:58 |            |
| 4-Bromofluorobenzene (S) | %     | 97           | 68-144          |     | 01/26/16 14:58 |            |

| LABORATORY CONTROL SAMPLE: | 1701614 |             |            |           |              |            |
|----------------------------|---------|-------------|------------|-----------|--------------|------------|
| Parameter                  | Units   | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
| TPH-GRO                    | mg/kg   | 50          | 54.2       | 108       | 67-115       |            |
| 4-Bromofluorobenzene (S)   | %       |             |            | 92        | 68-144       |            |

| MATRIX SPIKE & MATRIX SPIKE DUPLICATE: | 1701615 |                    |                | 1701616         |           |            |          |           |              |     |         |      |
|--|---------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| Parameter                              | Units   | 60211322012 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
| TPH-GRO                                | mg/kg   | 13.6               | 55             | 55              | 52.2      | 51.5       | 70       | 69        | 49-122       | 1   | 14      |      |
| 4-Bromofluorobenzene (S)               | %       |                    |                |                 |           |            | 100      | 94        | 68-144       |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

QC Batch: GCV/5301 Analysis Method: EPA 8015B  
 QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
 Associated Lab Samples: 60211322032, 60211322033, 60211322034

METHOD BLANK: 1702190 Matrix: Solid

Associated Lab Samples: 60211322032, 60211322033, 60211322034

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/27/16 00:08 |            |
| 4-Bromofluorobenzene (S) | %     | 98           | 68-144          |     | 01/27/16 00:08 |            |

LABORATORY CONTROL SAMPLE: 1702191

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 50.8       | 102       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 94        | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702192 1702193

| Parameter                | Units | 60211323001 |                | 1702192         |           | 1702193    |          | % Rec Limits | RPD    | Max RPD | Qual |           |
|--------------------------|-------|-------------|----------------|-----------------|-----------|------------|----------|--------------|--------|---------|------|-----------|
|                          |       | MS Result   | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec |              |        |         |      | MSD % Rec |
| TPH-GRO                  | mg/kg | ND          | 61.5           | 61.5            | 63.0      | 60.6       | 102      | 98           | 49-122 | 4       | 14   |           |
| 4-Bromofluorobenzene (S) | %     |             |                |                 |           |            | 86       | 90           | 68-144 |         |      |           |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

QC Batch: OEXT/52849 Analysis Method: EPA 8015B  
 QC Batch Method: EPA 3546 Analysis Description: EPA 8015B  
 Associated Lab Samples: 60211322001, 60211322002, 60211322003, 60211322004, 60211322005, 60211322006, 60211322007, 60211322008, 60211322009, 60211322010, 60211322011, 60211322012, 60211322013, 60211322014, 60211322015, 60211322016, 60211322017, 60211322018, 60211322019, 60211322020

METHOD BLANK: 1701485 Matrix: Solid  
 Associated Lab Samples: 60211322001, 60211322002, 60211322003, 60211322004, 60211322005, 60211322006, 60211322007, 60211322008, 60211322009, 60211322010, 60211322011, 60211322012, 60211322013, 60211322014, 60211322015, 60211322016, 60211322017, 60211322018, 60211322019, 60211322020

| Parameter         | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-DRO           | mg/kg | ND           | 9.8             | 4.9 | 01/27/16 21:53 |            |
| n-Tetracosane (S) | %     | 73           | 18-139          |     | 01/27/16 21:53 |            |
| p-Terphenyl (S)   | %     | 64           | 51-120          |     | 01/27/16 21:53 |            |

LABORATORY CONTROL SAMPLE: 1701486

| Parameter         | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-DRO           | mg/kg | 78.2        | 77.4       | 99        | 76-115       |            |
| n-Tetracosane (S) | %     |             |            | 81        | 18-139       |            |
| p-Terphenyl (S)   | %     |             |            | 70        | 51-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1701487 1701488

| Parameter         | Units | 60211322005 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | Max RPD | Qual |
|-------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|---------|------|
| TPH-DRO           | mg/kg | 26.1               | 83.9           | 85.8            | 116       | 121        | 107      | 111       | 12-159       | 4       | 37   |
| n-Tetracosane (S) | %     |                    |                |                 |           |            | 100      | 101       | 18-139       |         |      |
| p-Terphenyl (S)   | %     |                    |                |                 |           |            | 85       | 85        | 51-120       |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

QC Batch: OEXT/52850 Analysis Method: EPA 8015B  
 QC Batch Method: EPA 3546 Analysis Description: EPA 8015B  
 Associated Lab Samples: 60211322021, 60211322022, 60211322023, 60211322024, 60211322025, 60211322026, 60211322027, 60211322028, 60211322029, 60211322030, 60211322031, 60211322032, 60211322033, 60211322034

METHOD BLANK: 1701492 Matrix: Solid  
 Associated Lab Samples: 60211322021, 60211322022, 60211322023, 60211322024, 60211322025, 60211322026, 60211322027, 60211322028, 60211322029, 60211322030, 60211322031, 60211322032, 60211322033, 60211322034

| Parameter         | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-DRO           | mg/kg | ND           | 9.5             | 4.7 | 01/27/16 10:06 |            |
| n-Tetracosane (S) | %     | 85           | 18-139          |     | 01/27/16 10:06 |            |
| p-Terphenyl (S)   | %     | 86           | 51-120          |     | 01/27/16 10:06 |            |

LABORATORY CONTROL SAMPLE: 1701493

| Parameter         | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-DRO           | mg/kg | 80.2        | 71.1       | 89        | 76-115       |            |
| n-Tetracosane (S) | %     |             |            | 98        | 18-139       |            |
| p-Terphenyl (S)   | %     |             |            | 103       | 51-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1701494 1701495

| Parameter         | Units | 60211322021 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|-------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| TPH-DRO           | mg/kg | ND                 | 94.3           | 94.1            | 79.9      | 76.7       | 83       | 80        | 12-159       | 4   | 37      |      |
| n-Tetracosane (S) | %     |                    |                |                 |           |            | 78       | 86        | 18-139       |     |         |      |
| p-Terphenyl (S)   | %     |                    |                |                 |           |            | 79       | 87        | 51-120       |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

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|                         |  |                       |                             |
|-------------------------|--|-----------------------|-----------------------------|
| QC Batch:               | PMST/11458   | Analysis Method:      | ASTM D2974                  |
| QC Batch Method:        | ASTM D2974   | Analysis Description: | Dry Weight/Percent Moisture |
| Associated Lab Samples: | 60211322021, 60211322022, 60211322023, 60211322024, 60211322025, 60211322026, 60211322027, 60211322028, 60211322029, 60211322030, 60211322031, 60211322032, 60211322033, 60211322034 |                       |                             |

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|                         |  |         |       |
|-------------------------|--|---------|-------|
| METHOD BLANK:           | 1701471  | Matrix: | Solid |
| Associated Lab Samples: | 60211322021, 60211322022, 60211322023, 60211322024, 60211322025, 60211322026, 60211322027, 60211322028, 60211322029, 60211322030, 60211322031, 60211322032, 60211322033, 60211322034 |         |       |

| Parameter        | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|------------------|-------|--------------|-----------------|------|----------------|------------|
| Percent Moisture | %     | ND           | 0.50            | 0.50 | 01/25/16 00:00 |            |

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SAMPLE DUPLICATE: 1701472

| Parameter        | Units | 60211322021 Result | Dup Result | RPD | Max RPD | Qualifiers |
|------------------|-------|--------------------|------------|-----|---------|------------|
| Percent Moisture | %     | 13.0               | 13.5       | 3   | 20      |            |

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## QUALIFIERS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

1e Surrogate recovery outside laboratory control limits. Verified by re-analysis. No further action taken due to holding time violations.

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211322001 | SS-9A     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322002 | SS-9B     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322003 | SS-9C     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322004 | SS-9D     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322005 | SS-7A     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322006 | SS-7B     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322007 | SS-7C     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322008 | SS-7D     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322009 | SS-8A     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322010 | SS-8B     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322011 | SS-8C     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322012 | SS-8D     | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322013 | SS-10A    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322014 | SS-10B    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322015 | SS-10C    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322016 | SS-10D    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322017 | SS-11A    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322018 | SS-11B    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322019 | SS-11C    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322020 | SS-11D    | EPA 3546        | OEXT/52849 | EPA 8015B         | GCSV/20415       |
| 60211322021 | SS-12A    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322022 | SS-12B    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322023 | SS-12C    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322024 | SS-12D    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322025 | SS-13A    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322026 | SS-13B    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322027 | SS-13C    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322028 | SS-13D    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322029 | SS-14A    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322030 | SS-14B    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322031 | SS-14C    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322032 | SS-14D    | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322033 | DUP2      | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322034 | DUP3      | EPA 3546        | OEXT/52850 | EPA 8015B         | GCSV/20408       |
| 60211322001 | SS-9A     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322002 | SS-9B     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322003 | SS-9C     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322004 | SS-9D     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322005 | SS-7A     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322006 | SS-7B     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322007 | SS-7C     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322008 | SS-7D     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322009 | SS-8A     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322010 | SS-8B     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322011 | SS-8C     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211322012 | SS-8D     | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322013 | SS-10A    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211322014 | SS-10B    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322015 | SS-10C    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322016 | SS-10D    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322017 | SS-11A    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322018 | SS-11B    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322019 | SS-11C    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322020 | SS-11D    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322021 | SS-12A    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322022 | SS-12B    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322023 | SS-12C    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322024 | SS-12D    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322025 | SS-13A    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322026 | SS-13B    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322027 | SS-13C    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322028 | SS-13D    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322029 | SS-14A    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322030 | SS-14B    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322031 | SS-14C    | EPA 5035A/5030B | GCV/5300   | EPA 8015B         | GCV/5303         |
| 60211322032 | SS-14D    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211322033 | DUP2      | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211322034 | DUP3      | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211322001 | SS-9A     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322002 | SS-9B     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322003 | SS-9C     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322004 | SS-9D     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322005 | SS-7A     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322006 | SS-7B     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322007 | SS-7C     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322008 | SS-7D     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322009 | SS-8A     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322010 | SS-8B     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322011 | SS-8C     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322012 | SS-8D     | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322013 | SS-10A    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322014 | SS-10B    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322015 | SS-10C    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322016 | SS-10D    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322017 | SS-11A    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322018 | SS-11B    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322019 | SS-11C    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322020 | SS-11D    | ASTM D2974      | PMST/11457 |                   |                  |
| 60211322021 | SS-12A    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322022 | SS-12B    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322023 | SS-12C    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322024 | SS-12D    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322025 | SS-13A    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322026 | SS-13B    | ASTM D2974      | PMST/11458 |                   |                  |

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211322

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211322027 | SS-13C    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322028 | SS-13D    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322029 | SS-14A    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322030 | SS-14B    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322031 | SS-14C    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322032 | SS-14D    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322033 | DUP2      | ASTM D2974      | PMST/11458 |                   |                  |
| 60211322034 | DUP3      | ASTM D2974      | PMST/11458 |                   |                  |

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**Sample Condition Upon Receipt  
ESI Tech Spec Client**

**WO# : 60211322**  
  
 60211322

Client Name: BP Stantec

|                |
|----------------|
| Optional       |
| Proj Due Date: |
| Proj Name:     |

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client

Tracking #: 6508 8163 4620 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 <sup>CF +0.8</sup> T-262 <sup>CF +0.7</sup> Type of Ice: Wet Blue None  Samples received on ice, cooling process has begun.

Cooler Temperature: 3.0 (circle one)

Date and initials of person examining contents: JB 1/15

Temperature should be above freezing to 6°C

|  |  |   |
|--|--|---|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 1.  |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 2.  |
| Chain of Custody relinquished:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 3.  |
| Sampler name & signature on COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 4.  |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 5.  |
| Short Hold Time analyses (<72hr):  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 6.  |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 7.  |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 8. <u>No Volume received for SS-8C, SS-8D</u> |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.  |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 10.   |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 11.   |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 12.   |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 13.   |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 14.   |
| Includes date/time/ID/analyses Matrix: <u>SL</u>   |  | 15.   |
| All containers needing preservation have been checked.                                     | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 16.   |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 17.   |
| Exceptions: VOA, Coliform, O&G, WI-DRO (water)   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                              | 18.   |
| Trip Blank present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |   |
| Pace Trip Blank lot # (if purchased): <u>101215-3</u>                                      |  |   |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |   |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 17. List State: <u>MM</u>                     |
| Additional labels attached to 5035A vials in the field?                                    | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.   |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: AAF Date: 01/15/16

|   |        |
|---|--------|
| <b>Temp Log:</b> Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>1135</u>  | Start: |
| End: <u>1145</u>  | End:   |
| Temp:   | Temp:  |









January 29, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: BYRD PUMP SITE INVESTIGATION  
Pace Project No.: 60211323

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on January 15, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

| Lab ID      | Sample ID  | Matrix | Date Collected | Date Received  |
|-------------|------------|--------|----------------|----------------|
| 60211323001 | SS-15A     | Solid  | 01/13/16 13:02 | 01/15/16 09:50 |
| 60211323002 | SS-15B     | Solid  | 01/13/16 13:04 | 01/15/16 09:50 |
| 60211323003 | SS-15C     | Solid  | 01/13/16 13:08 | 01/15/16 09:50 |
| 60211323004 | SS-15D     | Solid  | 01/13/16 13:10 | 01/15/16 09:50 |
| 60211323005 | SS-16A     | Solid  | 01/13/16 13:20 | 01/15/16 09:50 |
| 60211323006 | SS-16B     | Solid  | 01/13/16 13:22 | 01/15/16 09:50 |
| 60211323007 | SS-16C     | Solid  | 01/13/16 13:28 | 01/15/16 09:50 |
| 60211323008 | SS-16D     | Solid  | 01/13/16 13:30 | 01/15/16 09:50 |
| 60211323009 | SS-17A     | Solid  | 01/13/16 13:38 | 01/15/16 09:50 |
| 60211323010 | SS-17B     | Solid  | 01/13/16 13:40 | 01/15/16 09:50 |
| 60211323011 | SS-17C     | Solid  | 01/13/16 13:46 | 01/15/16 09:50 |
| 60211323012 | SS-17D     | Solid  | 01/13/16 13:49 | 01/15/16 09:50 |
| 60211323013 | SS-18A     | Solid  | 01/13/16 13:58 | 01/15/16 09:50 |
| 60211323014 | SS-18B     | Solid  | 01/13/16 14:02 | 01/15/16 09:50 |
| 60211323015 | SS-18C     | Solid  | 01/13/16 14:06 | 01/15/16 09:50 |
| 60211323016 | SS-18D     | Solid  | 01/13/16 14:08 | 01/15/16 09:50 |
| 60211323017 | SS-19A     | Solid  | 01/13/16 14:18 | 01/15/16 09:50 |
| 60211323018 | SS-19B     | Solid  | 01/13/16 14:21 | 01/15/16 09:50 |
| 60211323019 | SS-19C     | Solid  | 01/13/16 14:26 | 01/15/16 09:50 |
| 60211323020 | SS-19D     | Solid  | 01/13/16 14:30 | 01/15/16 09:50 |
| 60211323021 | SS-20A     | Solid  | 01/13/16 14:44 | 01/15/16 09:50 |
| 60211323022 | SS-20B     | Solid  | 01/13/16 14:46 | 01/15/16 09:50 |
| 60211323023 | SS-20C     | Solid  | 01/13/16 14:48 | 01/15/16 09:50 |
| 60211323024 | SS-20D     | Solid  | 01/13/16 14:48 | 01/15/16 09:50 |
| 60211323025 | SS-21A     | Solid  | 01/13/16 15:08 | 01/15/16 09:50 |
| 60211323026 | SS-21B     | Solid  | 01/13/16 15:10 | 01/15/16 09:50 |
| 60211323027 | SS-21C     | Solid  | 01/13/16 15:17 | 01/15/16 09:50 |
| 60211323028 | SS-21D     | Solid  | 01/13/16 15:14 | 01/15/16 09:50 |
| 60211323029 | TRIP BLANK | Solid  | 01/13/16 15:14 | 01/15/16 09:50 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211323001 | SS-15A    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323002 | SS-15B    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323003 | SS-15C    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323004 | SS-15D    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323005 | SS-16A    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323006 | SS-16B    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323007 | SS-16C    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323008 | SS-16D    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323009 | SS-17A    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323010 | SS-17B    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323011 | SS-17C    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323012 | SS-17D    | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211323013 | SS-18A    | EPA 8015B  | ACW      | 3                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211323014 | SS-18B    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323015 | SS-18C    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323016 | SS-18D    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323017 | SS-19A    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323018 | SS-19B    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323019 | SS-19C    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323020 | SS-19D    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323021 | SS-20A    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323022 | SS-20B    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323023 | SS-20C    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323024 | SS-20D    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211323025 | SS-21A    | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211323026 | SS-21B    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211323027 | SS-21C    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
| 60211323028 | SS-21D    | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |           | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

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**Method:** EPA 8015B

**Description:** 8015B Diesel Range Organics

**Client:** BP Stantec TX

**Date:** January 29, 2016

**General Information:**

28 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/52872

S0: Surrogate recovery outside laboratory control limits.

- MSD (Lab ID: 1702280)
- p-Terphenyl (S)

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

Analyte Comments:

QC Batch: OEXT/52872

1e: Surrogate recovery outside laboratory control limits. Verified by re-analysis. No further action taken due to holding time violations.

- SS-17A (Lab ID: 60211323009)
- p-Terphenyl (S)

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

---

**Method:** EPA 8015B

**Description:** 8015B Diesel Range Organics

**Client:** BP Stantec TX

**Date:** January 29, 2016

Analyte Comments:

QC Batch: OEXT/52872

2e: Surrogate recovery outside laboratory control limits. Verified by re-analysis. No further action taken due to holding time violations.

- SS-15A (Lab ID: 60211323001)
- p-Terphenyl (S)

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

---

**Method:** EPA 8015B

**Description:** Gasoline Range Organics

**Client:** BP Stantec TX

**Date:** January 29, 2016

**General Information:**

28 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-15A**      **Lab ID: 60211323001**      Collected: 01/13/16 13:02      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results      | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|--------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |              |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>10.9J</b> | mg/kg | 12.1         | 6.1  | 1  | 01/27/16 00:00 | 01/28/16 10:21 |          |      |
| <b>Surrogates</b>   |              |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 60           | %     | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 10:21 | 646-31-1 |      |
| p-Terphenyl (S)   | 48           | %     | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 10:21 | 92-94-4  | 2e   |
| <b>Gasoline Range Organics</b>                                      |              |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND           | mg/kg | 12.3         | 6.2  | 1  | 01/26/16 00:00 | 01/27/16 01:17 |          |      |
| <b>Surrogates</b>   |              |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93           | %     | 68-144       |      | 1  | 01/26/16 00:00 | 01/27/16 01:17 | 460-00-4 |      |
| <b>Percent Moisture</b>   |              |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |              |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>18.1</b>  | %     | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-15B**      **Lab ID: 60211323002**      Collected: 01/13/16 13:04      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 11.1         | 5.5  | 1  | 01/27/16 00:00 | 01/28/16 10:29 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 68          | %   | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 10:29 | 646-31-1 |      |
| p-Terphenyl (S)                    | 57          | %   | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 10:29 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 11.2         | 5.6  | 1  | 01/26/16 00:00 | 01/27/16 02:44 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 94          | %   | 68-144       |      | 1  | 01/26/16 00:00 | 01/27/16 02:44 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>10.9</b> | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-15C**      **Lab ID: 60211323003**      Collected: 01/13/16 13:08      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>27.2</b> | mg/kg | 10.3            | 5.1  | 1  | 01/27/16 00:00 | 01/28/16 10:37 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 85          | %     | 18-139          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:37 | 646-31-1 |
| p-Terphenyl (S)   | 68          | %     | 51-120          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:37 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.2            | 5.1  | 1  | 01/26/16 00:00 | 01/27/16 03:01 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 86          | %     | 68-144          |      |    | 1              | 01/26/16 00:00 | 01/27/16 03:01 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>2.7</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |                |          |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-15D**      **Lab ID: 60211323004**      Collected: 01/13/16 13:10      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>22.7</b> | mg/kg | 10.2            | 5.1  | 1  | 01/27/16 00:00 | 01/28/16 10:45 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 76          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 10:45 | 646-31-1 |      |
| p-Terphenyl (S)   | 62          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 10:45 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.3            | 5.2  | 1  | 01/26/16 00:00 | 01/27/16 03:18 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 85          | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 03:18 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>2.9</b>  | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-16A**      **Lab ID: 60211323005**      Collected: 01/13/16 13:20      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>16.6</b> | mg/kg | 11.4            | 5.7  | 1  | 01/27/16 00:00 | 01/28/16 10:53 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 80          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 10:53 | 646-31-1 |      |
| p-Terphenyl (S)   | 66          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 10:53 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.5            | 5.8  | 1  | 01/26/16 00:00 | 01/27/16 03:35 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 90          | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 03:35 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>12.8</b> | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-16B**      **Lab ID: 60211323006**      Collected: 01/13/16 13:22      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|---------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |         |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |         |       |                 |      |    |                |                |          |      |
| TPH-DRO   | 17.7    | mg/kg | 10.5            | 5.2  | 1  | 01/27/16 00:00 | 01/28/16 11:16 |          |      |
| <b>Surrogates</b>   |         |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 77      | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 11:16 | 646-31-1 |      |
| p-Terphenyl (S)   | 64      | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 11:16 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |         |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |         |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND      | mg/kg | 10.5            | 5.3  | 1  | 01/26/16 00:00 | 01/27/16 03:53 |          |      |
| <b>Surrogates</b>   |         |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93      | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 03:53 | 460-00-4 |      |
| <b>Percent Moisture</b>   |         |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |         |       |                 |      |    |                |                |          |      |
| Percent Moisture  | 5.0     | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-16C**      **Lab ID: 60211323007**      Collected: 01/13/16 13:28      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>37.7</b> | mg/kg | 11.1            | 5.5  | 1  | 01/27/16 00:00 | 01/28/16 11:24 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 87          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 11:24 | 646-31-1 |      |
| p-Terphenyl (S)   | 71          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 11:24 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.1            | 5.6  | 1  | 01/26/16 00:00 | 01/27/16 04:10 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 94          | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 04:10 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>11.0</b> | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-16D**      **Lab ID: 60211323008**      Collected: 01/13/16 13:30      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>12.0</b> | mg/kg | 10.5            | 5.2  | 1  | 01/27/16 00:00 | 01/28/16 11:31 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 77          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 11:31 | 646-31-1 |      |
| p-Terphenyl (S)   | 65          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 11:31 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.4            | 5.2  | 1  | 01/26/16 00:00 | 01/27/16 04:27 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 94          | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 04:27 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>4.5</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-17A**      **Lab ID: 60211323009**      Collected: 01/13/16 13:38      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>6.0J</b> | mg/kg | 11.5         | 5.8  | 1  | 01/27/16 00:00 | 01/28/16 13:19 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 55          | %     | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 13:19 | 646-31-1 |      |
| p-Terphenyl (S)   | 44          | %     | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 13:19 | 92-94-4  | 1e   |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.6         | 5.8  | 1  | 01/26/16 00:00 | 01/27/16 04:44 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93          | %     | 68-144       |      | 1  | 01/26/16 00:00 | 01/27/16 04:44 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>14.1</b> | %     | 0.50         | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-17B**      **Lab ID: 60211323010**      Collected: 01/13/16 13:40      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>13.0</b> | mg/kg | 11.5         | 5.8  | 1  | 01/27/16 00:00 | 01/28/16 11:47 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 75          | %     | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 11:47 | 646-31-1 |      |
| p-Terphenyl (S)   | 58          | %     | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 11:47 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.7         | 5.8  | 1  | 01/26/16 00:00 | 01/27/16 13:29 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93          | %     | 68-144       |      | 1  | 01/26/16 00:00 | 01/27/16 13:29 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>14.0</b> | %     | 0.50         | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-17C**      **Lab ID: 60211323011**      Collected: 01/13/16 13:46      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | <b>11.8</b> | mg/kg   | 10.5         | 5.2  | 1  | 01/27/16 00:00 | 01/28/16 11:54 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 74          | %   | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 11:54 | 646-31-1 |      |
| p-Terphenyl (S)                    | 62          | %   | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 11:54 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 10.5         | 5.2  | 1  | 01/26/16 00:00 | 01/27/16 13:46 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 87          | %   | 68-144       |      | 1  | 01/26/16 00:00 | 01/27/16 13:46 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>4.8</b>  | %   | 0.50         | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-17D**      **Lab ID: 60211323012**      Collected: 01/13/16 13:49      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results      | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|--------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |              |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>10.4J</b> | mg/kg | 11.7            | 5.9  | 1  | 01/27/16 00:00 | 01/28/16 10:05 |          |      |
| <b>Surrogates</b>   |              |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 84           | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 10:05 | 646-31-1 |      |
| p-Terphenyl (S)   | 72           | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 10:05 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |              |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND           | mg/kg | 11.9            | 5.9  | 1  | 01/26/16 00:00 | 01/27/16 14:03 |          |      |
| <b>Surrogates</b>   |              |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 92           | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 14:03 | 460-00-4 |      |
| <b>Percent Moisture</b>   |              |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |              |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>15.5</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-18A**      **Lab ID: 60211323013**      Collected: 01/13/16 13:58      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>15.3</b> | mg/kg | 11.1            | 5.6  | 1  | 01/27/16 00:00 | 01/28/16 10:15 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 112         | %     | 18-139          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:15 | 646-31-1 |
| p-Terphenyl (S)   | 93          | %     | 51-120          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:15 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 11.2            | 5.6  | 1  | 01/26/16 00:00 | 01/27/16 14:21 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 92          | %     | 68-144          |      |    | 1              | 01/26/16 00:00 | 01/27/16 14:21 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>10.7</b> | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-18B**      **Lab ID: 60211323014**      Collected: 01/13/16 14:02      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>6.0J</b> | mg/kg | 11.8            | 5.9  | 1  | 01/27/16 00:00 | 01/28/16 10:24 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 67          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 10:24 | 646-31-1 |      |
| p-Terphenyl (S)   | 71          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 10:24 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.9            | 6.0  | 1  | 01/26/16 00:00 | 01/27/16 14:38 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 88          | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 14:38 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>16.2</b> | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-18C**      **Lab ID: 60211323015**      Collected: 01/13/16 14:06      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>43.7</b> | mg/kg | 10.6            | 5.3  | 1  | 01/27/16 00:00 | 01/28/16 10:33 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 86          | %     | 18-139          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:33 | 646-31-1 |
| p-Terphenyl (S)   | 89          | %     | 51-120          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:33 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 10.7            | 5.3  | 1  | 01/26/16 00:00 | 01/27/16 14:55 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 91          | %     | 68-144          |      |    | 1              | 01/26/16 00:00 | 01/27/16 14:55 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>6.1</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-18D**      **Lab ID: 60211323016**      Collected: 01/13/16 14:08      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>16.1</b> | mg/kg | 11.9            | 5.9  | 1  | 01/27/16 00:00 | 01/28/16 10:43 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 78          | %     | 18-139          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:43 | 646-31-1 |
| p-Terphenyl (S)   | 72          | %     | 51-120          |      |    | 1              | 01/27/16 00:00 | 01/28/16 10:43 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 12.0            | 6.0  | 1  | 01/26/16 00:00 | 01/27/16 15:13 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 91          | %     | 68-144          |      |    | 1              | 01/26/16 00:00 | 01/27/16 15:13 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>17.1</b> | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-19A**      **Lab ID: 60211323017**      Collected: 01/13/16 14:18      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>13.0</b> | mg/kg | 11.3            | 5.6  | 1  | 01/27/16 00:00 | 01/28/16 10:52 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 83          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 10:52 | 646-31-1 |      |
| p-Terphenyl (S)   | 81          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 10:52 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.5            | 5.7  | 1  | 01/26/16 00:00 | 01/27/16 15:30 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 87          | %     | 68-144          |      | 1  | 01/26/16 00:00 | 01/27/16 15:30 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>12.5</b> | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-19B**      **Lab ID: 60211323018**      Collected: 01/13/16 14:21      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared            | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|---------------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                     |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                     |                |          |      |
| TPH-DRO   | <b>48.1</b> | mg/kg | 10.9            | 5.5  | 1  | 01/27/16 00:00      | 01/28/16 11:01 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                     |                |          |      |
| n-Tetracosane (S)   | 81          | %     | 18-139          |      |    | 1    01/27/16 00:00 | 01/28/16 11:01 | 646-31-1 |      |
| p-Terphenyl (S)   | 80          | %     | 51-120          |      |    | 1    01/27/16 00:00 | 01/28/16 11:01 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                     |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                     |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.0            | 5.5  | 1  | 01/27/16 00:00      | 01/27/16 16:57 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                     |                |          |      |
| 4-Bromofluorobenzene (S)  | 85          | %     | 68-144          |      |    | 1    01/27/16 00:00 | 01/27/16 16:57 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                     |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                     |                |          |      |
| Percent Moisture  | <b>9.7</b>  | %     | 0.50            | 0.50 | 1  |                     | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-19C**      **Lab ID: 60211323019**      Collected: 01/13/16 14:26      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>22.7</b> | mg/kg | 11.2         | 5.6  | 1  | 01/27/16 00:00 | 01/28/16 11:11 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 113         | %     | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 11:11 | 646-31-1 |      |
| p-Terphenyl (S)   | 91          | %     | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 11:11 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.4         | 5.7  | 1  | 01/27/16 00:00 | 01/27/16 17:14 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 84          | %     | 68-144       |      | 1  | 01/27/16 00:00 | 01/27/16 17:14 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>11.3</b> | %     | 0.50         | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-19D**      **Lab ID: 60211323020**      Collected: 01/13/16 14:30      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>14.4</b> | mg/kg | 12.2            | 6.1  | 1  | 01/27/16 00:00 | 01/28/16 11:20 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 102         | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 11:20 | 646-31-1 |      |
| p-Terphenyl (S)   | 93          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 11:20 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 12.3            | 6.1  | 1  | 01/27/16 00:00 | 01/27/16 17:31 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 91          | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 17:31 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>18.3</b> | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-20A**      **Lab ID: 60211323021**      Collected: 01/13/16 14:44      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>38.1</b> | mg/kg | 10.2            | 5.1  | 1  | 01/27/16 00:00 | 01/28/16 13:12 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 110         | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 13:12 | 646-31-1 |      |
| p-Terphenyl (S)   | 94          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 13:12 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.1            | 5.1  | 1  | 01/27/16 00:00 | 01/27/16 17:49 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 93          | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 17:49 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>2.1</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-20B**      **Lab ID: 60211323022**      Collected: 01/13/16 14:46      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results      | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|--------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |              |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>10.2J</b> | mg/kg | 11.9            | 5.9  | 1  | 01/27/16 00:00 | 01/28/16 12:07 |          |      |
| <b>Surrogates</b>   |              |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 101          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 12:07 | 646-31-1 |      |
| p-Terphenyl (S)   | 90           | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 12:07 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |              |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND           | mg/kg | 11.9            | 6.0  | 1  | 01/27/16 00:00 | 01/27/16 18:06 |          |      |
| <b>Surrogates</b>   |              |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 85           | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 18:06 | 460-00-4 |      |
| <b>Percent Moisture</b>   |              |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |              |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>16.2</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-20C**      **Lab ID: 60211323023**      Collected: 01/13/16 14:48      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>11.8</b> | mg/kg | 10.3            | 5.2  | 1  | 01/27/16 00:00 | 01/28/16 12:16 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 110         | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 12:16 | 646-31-1 |      |
| p-Terphenyl (S)   | 100         | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 12:16 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 10.4            | 5.2  | 1  | 01/27/16 00:00 | 01/27/16 18:23 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 91          | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 18:23 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>4.2</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-20D**      **Lab ID: 60211323024**      Collected: 01/13/16 14:48      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results      | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|--------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |              |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>10.2J</b> | mg/kg | 11.8            | 5.9  | 1  | 01/27/16 00:00 | 01/28/16 12:25 |          |      |
| <b>Surrogates</b>   |              |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 83           | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 12:25 | 646-31-1 |      |
| p-Terphenyl (S)   | 83           | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 12:25 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |              |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND           | mg/kg | 11.9            | 6.0  | 1  | 01/27/16 00:00 | 01/27/16 18:41 |          |      |
| <b>Surrogates</b>   |              |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 92           | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 18:41 | 460-00-4 |      |
| <b>Percent Moisture</b>   |              |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |              |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>16.0</b>  | %     | 0.50            | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-21A**      **Lab ID: 60211323025**      Collected: 01/13/16 15:08      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>8.7J</b> | mg/kg | 11.5         | 5.7  | 1  | 01/27/16 00:00 | 01/28/16 14:28 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 82          | %     | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 14:28 | 646-31-1 |      |
| p-Terphenyl (S)   | 79          | %     | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 14:28 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 11.6         | 5.8  | 1  | 01/27/16 00:00 | 01/27/16 18:58 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 91          | %     | 68-144       |      | 1  | 01/27/16 00:00 | 01/27/16 18:58 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>13.1</b> | %     | 0.50         | 0.50 | 1  |                | 01/26/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-21B**      **Lab ID: 60211323026**      Collected: 01/13/16 15:10      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | <b>36.4</b> | mg/kg   | 10.2         | 5.1  | 1  | 01/27/16 00:00 | 01/28/16 12:35 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 89          | %   | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 12:35 | 646-31-1 |      |
| p-Terphenyl (S)                    | 86          | %   | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 12:35 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 10.3         | 5.1  | 1  | 01/27/16 00:00 | 01/27/16 20:25 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 93          | %   | 68-144       |      | 1  | 01/27/16 00:00 | 01/27/16 20:25 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>2.3</b>  | %   | 0.50         | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-21C**      **Lab ID: 60211323027**      Collected: 01/13/16 15:17      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO<br><b>Surrogates</b>       | <b>16.3</b> | mg/kg   | 10.7            | 5.3  | 1  | 01/27/16 00:00 | 01/28/16 12:44 |          |      |
| n-Tetracosane (S)                  | 117         | %   | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 12:44 | 646-31-1 |      |
| p-Terphenyl (S)                    | 101         | %   | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 12:44 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO<br><b>Surrogates</b>       | ND          | mg/kg   | 10.8            | 5.4  | 1  | 01/27/16 00:00 | 01/27/16 20:42 |          |      |
| 4-Bromofluorobenzene (S)           | 91          | %   | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 20:42 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>6.8</b>  | %   | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

**Sample: SS-21D**      **Lab ID: 60211323028**      Collected: 01/13/16 15:14      Received: 01/15/16 09:50      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>13.9</b> | mg/kg | 12.2            | 6.1  | 1  | 01/27/16 00:00 | 01/28/16 12:53 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 93          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 12:53 | 646-31-1 |      |
| p-Terphenyl (S)   | 89          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 12:53 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 12.2            | 6.1  | 1  | 01/27/16 00:00 | 01/27/16 20:59 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 86          | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 20:59 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>18.4</b> | %     | 0.50            | 0.50 | 1  |                | 01/25/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

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QC Batch: GCV/5306 Analysis Method: EPA 8015B  
 QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
 Associated Lab Samples: 60211323018, 60211323019, 60211323020, 60211323021, 60211323022, 60211323023, 60211323024,  
 60211323025, 60211323026, 60211323027, 60211323028

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METHOD BLANK: 1702552 Matrix: Solid  
 Associated Lab Samples: 60211323018, 60211323019, 60211323020, 60211323021, 60211323022, 60211323023, 60211323024,  
 60211323025, 60211323026, 60211323027, 60211323028

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/27/16 16:39 |            |
| 4-Bromofluorobenzene (S) | %     | 90           | 68-144          |     | 01/27/16 16:39 |            |

LABORATORY CONTROL SAMPLE: 1702553

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 54.8       | 110       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 103       | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702554 1702555

| Parameter                | Units | 60211323025 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|--------------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| TPH-GRO                  | mg/kg | ND                 | 57.9           | 57.9            | 61.1      | 59.0       | 105      | 101       | 49-122       | 4   | 14      |      |
| 4-Bromofluorobenzene (S) | %     |                    |                |                 |           |            | 94       | 96        | 68-144       |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

|                         |  |                       |           |
|-------------------------|--|-----------------------|-----------|
| QC Batch:               | OEXT/52872   | Analysis Method:      | EPA 8015B |
| QC Batch Method:        | EPA 3546   | Analysis Description: | EPA 8015B |
| Associated Lab Samples: | 60211323001, 60211323002, 60211323003, 60211323004, 60211323005, 60211323006, 60211323007, 60211323008, 60211323009, 60211323010, 60211323011, 60211323012, 60211323013, 60211323014, 60211323015, 60211323016, 60211323017, 60211323018, 60211323019, 60211323020 |                       |           |

|                         |  |         |       |
|-------------------------|--|---------|-------|
| METHOD BLANK:           | 1702277  | Matrix: | Solid |
| Associated Lab Samples: | 60211323001, 60211323002, 60211323003, 60211323004, 60211323005, 60211323006, 60211323007, 60211323008, 60211323009, 60211323010, 60211323011, 60211323012, 60211323013, 60211323014, 60211323015, 60211323016, 60211323017, 60211323018, 60211323019, 60211323020 |         |       |

| Parameter         | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-DRO           | mg/kg | ND           | 10              | 5.0 | 01/28/16 09:50 |            |
| n-Tetracosane (S) | %     | 69           | 18-139          |     | 01/28/16 09:50 |            |
| p-Terphenyl (S)   | %     | 59           | 51-120          |     | 01/28/16 09:50 |            |

| LABORATORY CONTROL SAMPLE: 1702278 |       |             |            |           |              |            |
|------------------------------------|-------|-------------|------------|-----------|--------------|------------|
| Parameter                          | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
| TPH-DRO                            | mg/kg | 83.2        | 78.9       | 95        | 76-115       |            |
| n-Tetracosane (S)                  | %     |             |            | 76        | 18-139       |            |
| p-Terphenyl (S)                    | %     |             |            | 65        | 51-120       |            |

| MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702279 |       |                    |                |                 |           |            |          |           |              |     | 1702280 |      |  |
|--|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|--|
| Parameter                                      | Units | 60211323001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |  |
| TPH-DRO  | mg/kg | 10.9J              | 101            | 101             | 107       | 101        | 95       | 89        | 12-159       | 6   | 37      |      |  |
| n-Tetracosane (S)                              | %     |                    |                |                 |           |            | 67       | 62        | 18-139       |     |         |      |  |
| p-Terphenyl (S)                                | %     |                    |                |                 |           |            | 53       | 49        | 51-120       |     |         | S0   |  |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

QC Batch: OEXT/52873 Analysis Method: EPA 8015B  
 QC Batch Method: EPA 3546 Analysis Description: EPA 8015B  
 Associated Lab Samples: 60211323021, 60211323022, 60211323023, 60211323024, 60211323025, 60211323026, 60211323027, 60211323028

METHOD BLANK: 1702281 Matrix: Solid  
 Associated Lab Samples: 60211323021, 60211323022, 60211323023, 60211323024, 60211323025, 60211323026, 60211323027, 60211323028

| Parameter         | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-DRO           | mg/kg | ND           | 9.9             | 5.0 | 01/28/16 12:33 |            |
| n-Tetracosane (S) | %     | 73           | 18-139          |     | 01/28/16 12:33 |            |
| p-Terphenyl (S)   | %     | 63           | 51-120          |     | 01/28/16 12:33 |            |

LABORATORY CONTROL SAMPLE: 1702282

| Parameter         | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-DRO           | mg/kg | 83.2        | 79.7       | 96        | 76-115       |            |
| n-Tetracosane (S) | %     |             |            | 78        | 18-139       |            |
| p-Terphenyl (S)   | %     |             |            | 69        | 51-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702283 1702284

| Parameter         | Units | 60211323025    |                 | 1702284   |            | MS % Rec | MSD % Rec | % Rec Limits | Max RPD | Qual  |
|-------------------|-------|----------------|-----------------|-----------|------------|----------|-----------|--------------|---------|-------|
|                   |       | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result |          |           |              |         |       |
| TPH-DRO           | mg/kg | 8.7J           | 95              | 94.5      | 83.0       | 99.6     | 78        | 96           | 12-159  | 18 37 |
| n-Tetracosane (S) | %     |                |                 |           |            |          | 96        | 94           | 18-139  |       |
| p-Terphenyl (S)   | %     |                |                 |           |            |          | 98        | 97           | 51-120  |       |

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### QUALITY CONTROL DATA

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

QC Batch: PMST/11460

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 60211323026, 60211323027, 60211323028

METHOD BLANK: 1701475

Matrix: Solid

Associated Lab Samples: 60211323026, 60211323027, 60211323028

| Parameter        | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|------------------|-------|--------------|-----------------|------|----------------|------------|
| Percent Moisture | %     | ND           | 0.50            | 0.50 | 01/25/16 00:00 |            |

SAMPLE DUPLICATE: 1701476

| Parameter        | Units | 60211323026 Result | Dup Result | RPD | Max RPD | Qualifiers |
|------------------|-------|--------------------|------------|-----|---------|------------|
| Percent Moisture | %     | 2.3                | 2.2        | 5   | 20      |            |

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## QUALIFIERS

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

1e Surrogate recovery outside laboratory control limits. Verified by re-analysis. No further action taken due to holding time violations.

2e Surrogate recovery outside laboratory control limits. Verified by re-analysis. No further action taken due to holding time violations.

S0 Surrogate recovery outside laboratory control limits.

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211323001 | SS-15A    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323002 | SS-15B    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323003 | SS-15C    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323004 | SS-15D    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323005 | SS-16A    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323006 | SS-16B    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323007 | SS-16C    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323008 | SS-16D    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323009 | SS-17A    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323010 | SS-17B    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323011 | SS-17C    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323012 | SS-17D    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323013 | SS-18A    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323014 | SS-18B    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323015 | SS-18C    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323016 | SS-18D    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323017 | SS-19A    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323018 | SS-19B    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323019 | SS-19C    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323020 | SS-19D    | EPA 3546        | OEXT/52872 | EPA 8015B         | GCSV/20417       |
| 60211323021 | SS-20A    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323022 | SS-20B    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323023 | SS-20C    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323024 | SS-20D    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323025 | SS-21A    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323026 | SS-21B    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323027 | SS-21C    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323028 | SS-21D    | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211323001 | SS-15A    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323002 | SS-15B    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323003 | SS-15C    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323004 | SS-15D    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323005 | SS-16A    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323006 | SS-16B    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323007 | SS-16C    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323008 | SS-16D    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323009 | SS-17A    | EPA 5035A/5030B | GCV/5301   | EPA 8015B         | GCV/5304         |
| 60211323010 | SS-17B    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323011 | SS-17C    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323012 | SS-17D    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323013 | SS-18A    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323014 | SS-18B    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323015 | SS-18C    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323016 | SS-18D    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323017 | SS-19A    | EPA 5035A/5030B | GCV/5305   | EPA 8015B         | GCV/5307         |
| 60211323018 | SS-19B    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323019 | SS-19C    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP SITE INVESTIGATION

Pace Project No.: 60211323

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211323020 | SS-19D    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323021 | SS-20A    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323022 | SS-20B    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323023 | SS-20C    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323024 | SS-20D    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323025 | SS-21A    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323026 | SS-21B    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323027 | SS-21C    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323028 | SS-21D    | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211323001 | SS-15A    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211323002 | SS-15B    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211323003 | SS-15C    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211323004 | SS-15D    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211323005 | SS-16A    | ASTM D2974      | PMST/11458 |                   |                  |
| 60211323006 | SS-16B    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323007 | SS-16C    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323008 | SS-16D    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323009 | SS-17A    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323010 | SS-17B    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323011 | SS-17C    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323012 | SS-17D    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323013 | SS-18A    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323014 | SS-18B    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323015 | SS-18C    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323016 | SS-18D    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323017 | SS-19A    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323018 | SS-19B    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323019 | SS-19C    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323020 | SS-19D    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323021 | SS-20A    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323022 | SS-20B    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323023 | SS-20C    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323024 | SS-20D    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323025 | SS-21A    | ASTM D2974      | PMST/11459 |                   |                  |
| 60211323026 | SS-21B    | ASTM D2974      | PMST/11460 |                   |                  |
| 60211323027 | SS-21C    | ASTM D2974      | PMST/11460 |                   |                  |
| 60211323028 | SS-21D    | ASTM D2974      | PMST/11460 |                   |                  |

## REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt  
ESI Tech Spec Client

WO#: 60211323  
60211323

Client Name: BP Stantec

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client   
Tracking #: 6508 8163 4641 Pace Shipping Label Used? Yes  No

|                |
|----------------|
| Optional       |
| Proj Due Date: |
| Proj Name:     |

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 <sup>CF +0.8</sup> T-262 <sup>CF +0.7</sup> Type of Ice: Wet Blue None  Samples received on ice, cooling process has begun.

Cooler Temperature: 2.4  
Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 1/15

|  |  |                           |                             |
|--|--|---------------------------|-----------------------------|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 1.                        |                             |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 2.                        |                             |
| Chain of Custody relinquished:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 3.                        |                             |
| Sampler name & signature on COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 4.                        |                             |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 5.                        |                             |
| Short Hold Time analyses (<72hr):  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 6.                        |                             |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 7.                        |                             |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 8.                        |                             |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                           |                             |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                        |                             |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 10.                       |                             |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 11.                       |                             |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 12.                       |                             |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                           |                             |
| Includes date/time/ID/analyses Matrix: <u>SL</u>   |  | 13.                       |                             |
| All containers needing preservation have been checked.                                     | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |                           |                             |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 14.                       |                             |
| Exceptions: VOA, Coliform, O&G, WI-DRO (water)   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                              | Initial when completed    | Lot # of added preservative |
| Trip Blank present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                           |                             |
| Pace Trip Blank lot # (if purchased): <u>101215-3</u>                                      |  | 15.                       |                             |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 16.                       |                             |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 17. List State: <u>MA</u> |                             |
| Additional labels attached to 5035A vials in the field?                                    | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.                       |                             |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: AAF Date: 01/15/16

|  |        |
|--|--------|
| Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>1225</u>   | Start: |
| End: <u>1231</u>   | End:   |
| Temp:  | Temp:  |



**Laboratory Management Program LaMP Chain of Custody Record**

Req Due Date (mm/dd/yy): Standard Rush TAT: Yes    , No X

Byrd Pump Site Investigation  
Byrd Pump Site

Lab Name: Pace Analytical Services, Inc.      Consultant/Contractor: Stantec Consulting  
 Lab Address: 9608 Loiret Blvd      Consultant/Contractor Project No: 182630008  
 Lab PM: Alice Flanagan      Address: 8770 Guion Rd. Ste B Indianapolis, IN 46268  
 Lab Phone: 916-563-1409      California Global ID No.: NA      Consultant/Contractor PM: Susan Hall  
 Lab Shipping Acct:      Enfors Proposal No: 009PD-002      Phone: 317-876-8375  
 Lab Bottle Order No:      Accounting Mode: Provision X OOC-BU      OOC-RM      Email EDD To: susn.hall@stantec.com  
 Other Info:      Stage: 4\_Execute      Activity: Project Spend      Invoice To: BP/ARC X      Contractor: \_\_\_\_\_

BP/ARC EBM: Sergio Morescalchi  
 EBM Phone: 925-487-0940  
 EBM Email: Sergio.Morescalchi@bp.com

| Lab No. | Sample Description | Date     | Time | Matrix       |                |             |                            |             |                                | No. Containers / Preservative |     |          |               |               |            | Requested Analyses |                           |                                   |                         |                               |  | Report Type & QC Level |
|---------|--------------------|----------|------|--------------|----------------|-------------|----------------------------|-------------|--------------------------------|-------------------------------|-----|----------|---------------|---------------|------------|--------------------|---------------------------|-----------------------------------|-------------------------|-------------------------------|--|------------------------|
|         |                    |          |      | Soil / Solid | Water / Liquid | Air / Vapor | Total Number of Containers | Unpreserved | H <sub>2</sub> SO <sub>4</sub> | HNO <sub>3</sub>              | HCl | Methanol | TPH-DRO 8015B | TPH-GRO 8015B | BTEX 8260B | PAH 8310           | RCRA METALS 6010C / 245.7 | Anions (Br, Cl, F, Sulfate) 300.0 | Nitrate / Nitrate 9056A | Cations - Ca, Mg, Na, K 6010C | TDS 160.1/SM 2540C   |                        |
| SS-17C  |                    | 11/13/10 | 1340 | X            |                |             | 1                          | X           |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               | Standard <u>X</u>  |                        |
| SS-17D  |                    |          | 1349 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               | Full Data Package  |                        |
| SS-18A  |                    |          | 1358 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               | Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.<br>Comments<br>VOPM<br>—————→<br>—————→<br>—————→<br>—————→<br>—————→<br>—————→<br>—————→<br>—————→ |                        |
| SS-18B  |                    |          | 1402 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |
| SS-18C  |                    |          | 1406 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |
| SS-18D  |                    |          | 1408 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |
| SS-19A  |                    |          | 1418 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |
| SS-19B  |                    |          | 1421 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |
| SS-19D  |                    |          | 1426 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |
| SS-19D  |                    |          | 1430 |              |                |             | 1                          |             |                                |                               |     |          |               |               |            |                    |                           |                                   |                         |                               |  |                        |

Relinquished By / Affiliation: A. Jenkins      Date: 11/10/10      Time: 1730  
 Relinquished By / Affiliation: Standard      Date: 11/15      Time: 0850

Sampler's Name: A. Jenkins  
 Sampler's Company: Stantec Consulting  
 Shipment Method: Standard      Ship Date: \_\_\_\_\_  
 Shipment Tracking No: \_\_\_\_\_

Special Instructions: \_\_\_\_\_

Temp Blank: Yes     / No X      Cooler Temp on Receipt: 24 °F/C      Trip Blank: Yes     / No X      MS/MSD Sample Submitted: Yes     / No X



February 03, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: Byrd Pump Site Investigation  
Pace Project No.: 60211423

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Emily Webb for  
Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

| Lab ID      | Sample ID  | Matrix | Date Collected | Date Received  |
|-------------|------------|--------|----------------|----------------|
| 60211423001 | SS-3A      | Solid  | 01/12/16 15:40 | 01/19/16 08:15 |
| 60211423002 | SS-3B      | Solid  | 01/12/16 15:42 | 01/19/16 08:15 |
| 60211423003 | SS-3C      | Solid  | 01/12/16 15:45 | 01/19/16 08:15 |
| 60211423004 | SS-3D      | Solid  | 01/12/16 15:48 | 01/19/16 08:15 |
| 60211423005 | SS-4A      | Solid  | 01/12/16 15:22 | 01/19/16 08:15 |
| 60211423006 | SS-4B      | Solid  | 01/12/16 15:25 | 01/19/16 08:15 |
| 60211423007 | SS-4C      | Solid  | 01/12/16 15:27 | 01/19/16 08:15 |
| 60211423008 | SS-4D      | Solid  | 01/12/16 15:30 | 01/19/16 08:15 |
| 60211423009 | SS-5A      | Solid  | 01/12/16 15:08 | 01/19/16 08:15 |
| 60211423010 | SS-5B      | Solid  | 01/12/16 15:09 | 01/19/16 08:15 |
| 60211423011 | SS-5C      | Solid  | 01/12/16 15:11 | 01/19/16 08:15 |
| 60211423012 | SS-5D      | Solid  | 01/12/16 15:13 | 01/19/16 08:15 |
| 60211423013 | SS-6A      | Solid  | 01/12/16 14:55 | 01/19/16 08:15 |
| 60211423014 | SS-6B      | Solid  | 01/12/16 14:56 | 01/19/16 08:15 |
| 60211423015 | SS-6C      | Solid  | 01/12/16 14:57 | 01/19/16 08:15 |
| 60211423016 | SS-6D      | Solid  | 01/12/16 15:00 | 01/19/16 08:15 |
| 60211423017 | SS-1A      | Solid  | 01/13/16 09:19 | 01/19/16 08:15 |
| 60211423018 | SS-1B      | Solid  | 01/13/16 09:22 | 01/19/16 08:15 |
| 60211423019 | SS-1C      | Solid  | 01/13/16 09:23 | 01/19/16 08:15 |
| 60211423020 | SS-1D      | Solid  | 01/13/16 09:28 | 01/19/16 08:15 |
| 60211423021 | SS-2A      | Solid  | 01/13/16 08:57 | 01/19/16 08:15 |
| 60211423022 | SS-2B      | Solid  | 01/13/16 08:59 | 01/19/16 08:15 |
| 60211423023 | SS-2C      | Solid  | 01/13/16 09:01 | 01/19/16 08:15 |
| 60211423024 | SS-2D      | Solid  | 01/13/16 09:03 | 01/19/16 08:15 |
| 60211423025 | TRIP BLANK | Solid  | 01/13/16 08:00 | 01/19/16 08:15 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Byrd Pump Site Investigation  
Pace Project No.: 60211423

| Lab ID      | Sample ID | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------|----------|-------------------|------------|
| 60211423001 | SS-3A     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423002 | SS-3B     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423003 | SS-3C     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423004 | SS-3D     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423005 | SS-4A     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423006 | SS-4B     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423007 | SS-4C     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423008 | SS-4D     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423009 | SS-5A     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423010 | SS-5B     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423011 | SS-5C     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423012 | SS-5D     | EPA 8015B  | ACW      | 3                 | PASI-K     |
|             |           | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |           | ASTM D2974 | DWC      | 1                 | PASI-K     |
| 60211423013 | SS-6A     | EPA 8015B  | ACW      | 3                 | PASI-K     |

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### SAMPLE ANALYTE COUNT

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

| Lab ID      | Sample ID  | Method     | Analysts | Analytes Reported | Laboratory |
|-------------|------------|------------|----------|-------------------|------------|
| 60211423014 | SS-6B      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423015 | SS-6C      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423016 | SS-6D      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423017 | SS-1A      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423018 | SS-1B      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423019 | SS-1C      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423020 | SS-1D      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423021 | SS-2A      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423022 | SS-2B      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423023 | SS-2C      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423024 | SS-2D      | EPA 8015B  | JTK      | 2                 | PASI-K     |
|             |            | ASTM D2974 | DWC      | 1                 | PASI-K     |
|             |            | EPA 8015B  | ACW      | 3                 | PASI-K     |
| 60211423025 | TRIP BLANK | EPA 8015B  | JTK      | 2                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

---

**Method:** EPA 8015B

**Description:** 8015B Diesel Range Organics

**Client:** BP Stantec TX

**Date:** February 03, 2016

**General Information:**

24 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/52860

S0: Surrogate recovery outside laboratory control limits.

- MS (Lab ID: 1701689)
- p-Terphenyl (S)

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

---

**Method:** EPA 8015B

**Description:** Gasoline Range Organics

**Client:** BP Stantec TX

**Date:** February 03, 2016

**General Information:**

25 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.

- TRIP BLANK (Lab ID: 60211423025)

**Sample Preparation:**

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCV/5296

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-3A**      **Lab ID: 60211423001**      Collected: 01/12/16 15:40      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.7            | 6.9  | 1  | 01/25/16 00:00 | 01/27/16 19:11 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 64          | %   | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 19:11 | 646-31-1 |      |
| p-Terphenyl (S)                    | 53          | %   | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 19:11 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.6            | 6.8  | 1  | 01/21/16 00:00 | 01/21/16 20:58 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 86          | %   | 68-144          |      | 1  | 01/21/16 00:00 | 01/21/16 20:58 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>27.3</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-3B**      **Lab ID: 60211423002**      Collected: 01/12/16 15:42      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.9         | 6.9  | 1  | 01/25/16 00:00 | 02/01/16 12:29 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 76          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 02/01/16 12:29 | 646-31-1 |      |
| p-Terphenyl (S)                    | 73          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 02/01/16 12:29 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.9         | 6.9  | 1  | 01/21/16 00:00 | 01/21/16 21:16 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 93          | %   | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 21:16 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>28.7</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-3C**      **Lab ID: 60211423003**      Collected: 01/12/16 15:45      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.2         | 6.1  | 1  | 01/25/16 00:00 | 02/01/16 12:38 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 78          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 02/01/16 12:38 | 646-31-1 |      |
| p-Terphenyl (S)                    | 76          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 02/01/16 12:38 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.2         | 6.1  | 1  | 01/21/16 00:00 | 01/21/16 21:33 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 87          | %   | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 21:33 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>18.0</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-3D**      **Lab ID: 60211423004**      Collected: 01/12/16 15:48      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.3         | 6.6  | 1  | 01/25/16 00:00 | 02/01/16 12:48 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 73          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 02/01/16 12:48 | 646-31-1 |      |
| p-Terphenyl (S)                    | 71          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 02/01/16 12:48 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.3         | 6.6  | 1  | 01/21/16 00:00 | 01/21/16 22:25 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 88          | %   | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 22:25 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>24.8</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-4A**      **Lab ID: 60211423005**      Collected: 01/12/16 15:22      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>107</b>  | mg/kg | 13.2         | 6.6  | 1  | 01/25/16 00:00 | 01/27/16 19:42 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 99          | %     | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 19:42 | 646-31-1 |      |
| p-Terphenyl (S)   | 80          | %     | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 19:42 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 13.2         | 6.6  | 1  | 01/21/16 00:00 | 01/21/16 22:43 |          |      |
| <b>Surrogates</b>   |             |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 87          | %     | 68-144       |      | 1  | 01/21/16 00:00 | 01/21/16 22:43 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>24.6</b> | %     | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-4B**      **Lab ID: 60211423006**      Collected: 01/12/16 15:25      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>77.9</b> | mg/kg | 14.1            | 7.1  | 1  | 01/25/16 00:00 | 01/27/16 20:05 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 88          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 20:05 | 646-31-1 |      |
| p-Terphenyl (S)   | 71          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 20:05 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 14.3            | 7.1  | 1  | 01/21/16 00:00 | 01/21/16 23:00 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 82          | %     | 68-144          |      | 1  | 01/21/16 00:00 | 01/21/16 23:00 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>30.3</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-4C**      **Lab ID: 60211423007**      Collected: 01/12/16 15:27      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>59.5</b> | mg/kg | 13.8            | 6.9  | 1  | 01/25/16 00:00 | 01/27/16 20:13 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 76          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 20:13 | 646-31-1 |      |
| p-Terphenyl (S)   | 58          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 20:13 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 13.8            | 6.9  | 1  | 01/21/16 00:00 | 01/21/16 23:17 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 92          | %     | 68-144          |      | 1  | 01/21/16 00:00 | 01/21/16 23:17 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>27.8</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-4D**      **Lab ID: 60211423008**      Collected: 01/12/16 15:30      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 14.0         | 7.0  | 1  | 01/25/16 00:00 | 02/01/16 12:57 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 80          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 02/01/16 12:57 | 646-31-1 |      |
| p-Terphenyl (S)                    | 76          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 02/01/16 12:57 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 14.1         | 7.0  | 1  | 01/22/16 00:00 | 01/22/16 17:39 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 93          | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/22/16 17:39 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>29.0</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-5A**      **Lab ID: 60211423009**      Collected: 01/12/16 15:08      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>68.9</b> | mg/kg | 13.4            | 6.7  | 1  | 01/25/16 00:00 | 01/27/16 20:29 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 86          | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 20:29 | 646-31-1 |
| p-Terphenyl (S)   | 66          | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 20:29 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 13.3            | 6.6  | 1  | 01/22/16 00:00 | 01/22/16 17:57 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 98          | %     | 68-144          |      |    | 1              | 01/22/16 00:00 | 01/22/16 17:57 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>25.4</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-5B**      **Lab ID: 60211423010**      Collected: 01/12/16 15:09      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>16.1</b> | mg/kg | 13.0            | 6.5  | 1  | 01/25/16 00:00 | 01/27/16 20:36 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 68          | %     | 18-139          |      | 1  | 01/25/16 00:00 | 01/27/16 20:36 | 646-31-1 |      |
| p-Terphenyl (S)   | 54          | %     | 51-120          |      | 1  | 01/25/16 00:00 | 01/27/16 20:36 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 13.1            | 6.6  | 1  | 01/22/16 00:00 | 01/22/16 18:14 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 96          | %     | 68-144          |      | 1  | 01/22/16 00:00 | 01/22/16 18:14 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>23.3</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-5C**      **Lab ID: 60211423011**      Collected: 01/12/16 15:11      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results      | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|--------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |              |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>12.2J</b> | mg/kg | 13.0         | 6.5  | 1  | 01/25/16 00:00 | 02/01/16 13:06 |          |      |
| <b>Surrogates</b>   |              |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 83           | %     | 18-139       |      | 1  | 01/25/16 00:00 | 02/01/16 13:06 | 646-31-1 |      |
| p-Terphenyl (S)   | 78           | %     | 51-120       |      | 1  | 01/25/16 00:00 | 02/01/16 13:06 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |              |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND           | mg/kg | 13.2         | 6.6  | 1  | 01/22/16 00:00 | 01/22/16 18:31 |          |      |
| <b>Surrogates</b>   |              |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 95           | %     | 68-144       |      | 1  | 01/22/16 00:00 | 01/22/16 18:31 | 460-00-4 |      |
| <b>Percent Moisture</b>   |              |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |              |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>23.9</b>  | %     | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-5D**      **Lab ID: 60211423012**      Collected: 01/12/16 15:13      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results      | Units | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|--------------|-------|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |              |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |       |              |      |    |                |                |          |      |
| TPH-DRO   | <b>12.7J</b> | mg/kg | 13.7         | 6.8  | 1  | 01/25/16 00:00 | 02/01/16 13:15 |          |      |
| <b>Surrogates</b>   |              |       |              |      |    |                |                |          |      |
| n-Tetracosane (S)   | 85           | %     | 18-139       |      | 1  | 01/25/16 00:00 | 02/01/16 13:15 | 646-31-1 |      |
| p-Terphenyl (S)   | 80           | %     | 51-120       |      | 1  | 01/25/16 00:00 | 02/01/16 13:15 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |              |       |              |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |       |              |      |    |                |                |          |      |
| TPH-GRO   | ND           | mg/kg | 13.8         | 6.9  | 1  | 01/22/16 00:00 | 01/22/16 18:49 |          |      |
| <b>Surrogates</b>   |              |       |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 95           | %     | 68-144       |      | 1  | 01/22/16 00:00 | 01/22/16 18:49 | 460-00-4 |      |
| <b>Percent Moisture</b>   |              |       |              |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |              |       |              |      |    |                |                |          |      |
| Percent Moisture  | <b>27.3</b>  | %     | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-6A**      **Lab ID: 60211423013**      Collected: 01/12/16 14:55      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.        | Qual     |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------------|----------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |                |          |
| TPH-DRO   | <b>62.5</b> | mg/kg | 14.0            | 7.0  | 1  | 01/25/16 00:00 | 01/27/16 20:59 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| n-Tetracosane (S)   | 85          | %     | 18-139          |      |    | 1              | 01/25/16 00:00 | 01/27/16 20:59 | 646-31-1 |
| p-Terphenyl (S)   | 66          | %     | 51-120          |      |    | 1              | 01/25/16 00:00 | 01/27/16 20:59 | 92-94-4  |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |                |          |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |                |          |
| TPH-GRO   | ND          | mg/kg | 13.9            | 6.9  | 1  | 01/22/16 00:00 | 01/22/16 19:06 |                |          |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |                |          |
| 4-Bromofluorobenzene (S)  | 94          | %     | 68-144          |      |    | 1              | 01/22/16 00:00 | 01/22/16 19:06 | 460-00-4 |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |                |          |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |                |          |
| Percent Moisture  | <b>28.4</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |                |          |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-6B**      **Lab ID: 60211423014**      Collected: 01/12/16 14:56      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | <b>121</b>  | mg/kg   | 14.3         | 7.2  | 1  | 01/25/16 00:00 | 01/27/16 21:07 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 104         | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 21:07 | 646-31-1 |      |
| p-Terphenyl (S)                    | 83          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 21:07 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 14.3         | 7.1  | 1  | 01/22/16 00:00 | 01/22/16 19:24 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 95          | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/22/16 19:24 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>30.3</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-6C**      **Lab ID: 60211423015**      Collected: 01/12/16 14:57      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 14.9         | 7.4  | 1  | 01/25/16 00:00 | 01/27/16 21:30 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 79          | %   | 18-139       |      | 1  | 01/25/16 00:00 | 01/27/16 21:30 | 646-31-1 |      |
| p-Terphenyl (S)                    | 64          | %   | 51-120       |      | 1  | 01/25/16 00:00 | 01/27/16 21:30 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 15.0         | 7.5  | 1  | 01/22/16 00:00 | 01/22/16 19:41 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 90          | %   | 68-144       |      | 1  | 01/22/16 00:00 | 01/22/16 19:41 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>33.1</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-6D**      **Lab ID: 60211423016**      Collected: 01/12/16 15:00      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.6            | 6.8  | 1  | 01/25/16 00:00 | 02/01/16 13:43 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 76          | %   | 18-139          |      | 1  | 01/25/16 00:00 | 02/01/16 13:43 | 646-31-1 |      |
| p-Terphenyl (S)                    | 73          | %   | 51-120          |      | 1  | 01/25/16 00:00 | 02/01/16 13:43 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.7            | 6.9  | 1  | 01/22/16 00:00 | 01/25/16 12:46 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 111         | %   | 68-144          |      | 1  | 01/22/16 00:00 | 01/25/16 12:46 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>27.3</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-1A**      **Lab ID: 60211423017**      Collected: 01/13/16 09:19      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.3            | 6.2  | 1  | 01/27/16 00:00 | 01/28/16 13:51 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 64          | %   | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 13:51 | 646-31-1 |      |
| p-Terphenyl (S)                    | 56          | %   | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 13:51 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.6            | 6.3  | 1  | 01/27/16 00:00 | 01/27/16 21:17 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 89          | %   | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 21:17 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>20.1</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-1B**      **Lab ID: 60211423018**      Collected: 01/13/16 09:22      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | <b>6.8J</b> | mg/kg | 13.1            | 6.5  | 1  | 01/27/16 00:00 | 01/28/16 14:59 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 81          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 14:59 | 646-31-1 |      |
| p-Terphenyl (S)   | 81          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 14:59 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 13.2            | 6.6  | 1  | 01/27/16 00:00 | 01/27/16 21:34 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 94          | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 21:34 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>24.0</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-1C**      **Lab ID: 60211423019**      Collected: 01/13/16 09:23      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|--------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |              |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.5         | 6.7  | 1  | 01/27/16 00:00 | 01/28/16 14:06 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 66          | %   | 18-139       |      | 1  | 01/27/16 00:00 | 01/28/16 14:06 | 646-31-1 |      |
| p-Terphenyl (S)                    | 57          | %   | 51-120       |      | 1  | 01/27/16 00:00 | 01/28/16 14:06 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |              |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.6         | 6.8  | 1  | 01/27/16 00:00 | 01/27/16 21:52 |          |      |
| <b>Surrogates</b>                  |             |   |              |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 96          | %   | 68-144       |      | 1  | 01/27/16 00:00 | 01/27/16 21:52 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |              |      |    |                |                |          |      |
| Percent Moisture                   | <b>26.9</b> | %   | 0.50         | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-1D**      **Lab ID: 60211423020**      Collected: 01/13/16 09:28      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.8            | 6.9  | 1  | 01/27/16 00:00 | 01/28/16 14:14 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 63          | %   | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 14:14 | 646-31-1 |      |
| p-Terphenyl (S)                    | 54          | %   | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 14:14 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.8            | 6.9  | 1  | 01/27/16 00:00 | 01/27/16 22:09 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 95          | %   | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 22:09 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>27.5</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-2A**      **Lab ID: 60211423021**      Collected: 01/13/16 08:57      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters  | Results     | Units | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|---|-------------|-------|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b>                                  |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |             |       |                 |      |    |                |                |          |      |
| TPH-DRO   | ND          | mg/kg | 12.5            | 6.3  | 1  | 01/27/16 00:00 | 01/28/16 14:22 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| n-Tetracosane (S)   | 66          | %     | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 14:22 | 646-31-1 |      |
| p-Terphenyl (S)   | 58          | %     | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 14:22 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>                                      |             |       |                 |      |    |                |                |          |      |
| Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |             |       |                 |      |    |                |                |          |      |
| TPH-GRO   | ND          | mg/kg | 12.4            | 6.2  | 1  | 01/27/16 00:00 | 01/27/16 22:26 |          |      |
| <b>Surrogates</b>   |             |       |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)  | 95          | %     | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 22:26 | 460-00-4 |      |
| <b>Percent Moisture</b>   |             |       |                 |      |    |                |                |          |      |
| Analytical Method: ASTM D2974                                       |             |       |                 |      |    |                |                |          |      |
| Percent Moisture  | <b>20.4</b> | %     | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-2B**      **Lab ID: 60211423022**      Collected: 01/13/16 08:59      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.5            | 6.2  | 1  | 01/27/16 00:00 | 01/28/16 15:08 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 84          | %   | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 15:08 | 646-31-1 |      |
| p-Terphenyl (S)                    | 85          | %   | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 15:08 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.7            | 6.3  | 1  | 01/27/16 00:00 | 01/27/16 23:18 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 88          | %   | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 23:18 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>20.4</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-2C**      **Lab ID: 60211423023**      Collected: 01/13/16 09:01      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 13.8            | 6.9  | 1  | 01/27/16 00:00 | 01/28/16 14:37 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 62          | %   | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 14:37 | 646-31-1 |      |
| p-Terphenyl (S)                    | 52          | %   | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 14:37 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 13.8            | 6.9  | 1  | 01/27/16 00:00 | 01/27/16 23:36 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 93          | %   | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 23:36 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>27.9</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

**Sample: SS-2D**      **Lab ID: 60211423024**      Collected: 01/13/16 09:03      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

| Parameters                         | Results     | Units   | Report<br>Limit | MDL  | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|------------------------------------|-------------|---|-----------------|------|----|----------------|----------------|----------|------|
| <b>8015B Diesel Range Organics</b> |             | Analytical Method: EPA 8015B    Preparation Method: EPA 3546        |                 |      |    |                |                |          |      |
| TPH-DRO                            | ND          | mg/kg   | 12.3            | 6.1  | 1  | 01/27/16 00:00 | 01/28/16 14:45 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| n-Tetracosane (S)                  | 61          | %   | 18-139          |      | 1  | 01/27/16 00:00 | 01/28/16 14:45 | 646-31-1 |      |
| p-Terphenyl (S)                    | 57          | %   | 51-120          |      | 1  | 01/27/16 00:00 | 01/28/16 14:45 | 92-94-4  |      |
| <b>Gasoline Range Organics</b>     |             | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |      |    |                |                |          |      |
| TPH-GRO                            | ND          | mg/kg   | 12.5            | 6.2  | 1  | 01/27/16 00:00 | 01/27/16 23:53 |          |      |
| <b>Surrogates</b>                  |             |   |                 |      |    |                |                |          |      |
| 4-Bromofluorobenzene (S)           | 90          | %   | 68-144          |      | 1  | 01/27/16 00:00 | 01/27/16 23:53 | 460-00-4 |      |
| <b>Percent Moisture</b>            |             | Analytical Method: ASTM D2974                                       |                 |      |    |                |                |          |      |
| Percent Moisture                   | <b>19.4</b> | %   | 0.50            | 0.50 | 1  |                | 01/29/16 00:00 |          |      |

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## ANALYTICAL RESULTS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

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**Sample: TRIP BLANK**      **Lab ID: 60211423025**      Collected: 01/13/16 08:00      Received: 01/19/16 08:15      Matrix: Solid

*Results reported on a "wet-weight" basis*

| Parameters                     | Results | Units   | Report<br>Limit | MDL | DF | Prepared       | Analyzed       | CAS No.  | Qual |
|--------------------------------|---------|---|-----------------|-----|----|----------------|----------------|----------|------|
| <b>Gasoline Range Organics</b> |         | Analytical Method: EPA 8015B    Preparation Method: EPA 5035A/5030B |                 |     |    |                |                |          |      |
| TPH-GRO                        | ND      | mg/kg   | 10.0            | 5.0 | 1  | 01/27/16 00:00 | 01/28/16 00:10 |          | H1   |
| <b>Surrogates</b>              |         |   |                 |     |    |                |                |          |      |
| 4-Bromofluorobenzene (S)       | 92      | %   | 68-144          |     | 1  | 01/27/16 00:00 | 01/28/16 00:10 | 460-00-4 |      |

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### QUALITY CONTROL DATA

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

QC Batch: GCV/5295

Analysis Method: EPA 8015B

QC Batch Method: EPA 5035A/5030B

Analysis Description: Gasoline Range Organics

Associated Lab Samples: 60211423001, 60211423002, 60211423003, 60211423004, 60211423005, 60211423006, 60211423007

METHOD BLANK: 1700508

Matrix: Solid

Associated Lab Samples: 60211423001, 60211423002, 60211423003, 60211423004, 60211423005, 60211423006, 60211423007

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/21/16 12:14 |            |
| 4-Bromofluorobenzene (S) | %     | 94           | 68-144          |     | 01/21/16 12:14 |            |

LABORATORY CONTROL SAMPLE: 1700509

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 54.5       | 109       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 97        | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700510 1700511

| Parameter                | Units | 60210930001 |             | MSD         |        | MS     |       | MSD   |        | % Rec Limits | RPD | Max RPD | Qual |
|--------------------------|-------|-------------|-------------|-------------|--------|--------|-------|-------|--------|--------------|-----|---------|------|
|                          |       | Result      | Spike Conc. | Spike Conc. | Result | Result | % Rec | % Rec |        |              |     |         |      |
| TPH-GRO                  | mg/kg | ND          | 63.1        | 63.1        | 69.3   | 68.5   | 107   | 105   | 49-122 | 1            | 14  |         |      |
| 4-Bromofluorobenzene (S) | %     |             |             |             |        |        | 90    | 94    | 68-144 |              |     |         |      |

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### QUALITY CONTROL DATA

Project: Byrd Pump Site Investigation  
Pace Project No.: 60211423

QC Batch: GCV/5299 Analysis Method: EPA 8015B  
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
Associated Lab Samples: 60211423016

METHOD BLANK: 1701578 Matrix: Solid  
Associated Lab Samples: 60211423016

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/25/16 11:28 |            |
| 4-Bromofluorobenzene (S) | %     | 97           | 68-144          |     | 01/25/16 11:28 |            |

LABORATORY CONTROL SAMPLE: 1701579

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 50.5       | 101       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 97        | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1701588 1701589

| Parameter                | Units | 60211322005 |             | MS          |           | MSD        |       | % Rec |        | Limits | RPD | Max RPD | Qual |
|--------------------------|-------|-------------|-------------|-------------|-----------|------------|-------|-------|--------|--------|-----|---------|------|
|                          |       | Result      | Spike Conc. | Spike Conc. | MS Result | MSD Result | % Rec | % Rec |        |        |     |         |      |
| TPH-GRO                  | mg/kg | ND          | 52.4        | 52.4        | 54.5      | 52.1       | 103   | 98    | 49-122 | 5      | 14  |         |      |
| 4-Bromofluorobenzene (S) | %     |             |             |             |           |            | 88    | 81    | 68-144 |        |     |         |      |

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### QUALITY CONTROL DATA

Project: Byrd Pump Site Investigation  
Pace Project No.: 60211423

QC Batch: GCV/5306 Analysis Method: EPA 8015B  
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
Associated Lab Samples: 60211423017, 60211423018, 60211423019, 60211423020, 60211423021, 60211423022, 60211423023, 60211423024, 60211423025

METHOD BLANK: 1702552 Matrix: Solid  
Associated Lab Samples: 60211423017, 60211423018, 60211423019, 60211423020, 60211423021, 60211423022, 60211423023, 60211423024, 60211423025

| Parameter                | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-GRO                  | mg/kg | ND           | 10.0            | 5.0 | 01/27/16 16:39 |            |
| 4-Bromofluorobenzene (S) | %     | 90           | 68-144          |     | 01/27/16 16:39 |            |

LABORATORY CONTROL SAMPLE: 1702553

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/kg | 50          | 54.8       | 110       | 67-115       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 103       | 68-144       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702554 1702555

| Parameter                | Units | 60211323025 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|--------------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| TPH-GRO                  | mg/kg | ND                 | 57.9           | 57.9            | 61.1      | 59.0       | 105      | 101       | 49-122       | 4   | 14      |      |
| 4-Bromofluorobenzene (S) | %     |                    |                |                 |           |            | 94       | 96        | 68-144       |     |         |      |

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### QUALITY CONTROL DATA

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

|                         |  |                       |           |
|-------------------------|--|-----------------------|-----------|
| QC Batch:               | OEXT/52860   | Analysis Method:      | EPA 8015B |
| QC Batch Method:        | EPA 3546   | Analysis Description: | EPA 8015B |
| Associated Lab Samples: | 60211423001, 60211423002, 60211423003, 60211423004, 60211423005, 60211423006, 60211423007, 60211423008, 60211423009, 60211423010, 60211423011, 60211423012, 60211423013, 60211423014, 60211423015, 60211423016 |                       |           |

|                         |  |         |       |
|-------------------------|--|---------|-------|
| METHOD BLANK:           | 1701687  | Matrix: | Solid |
| Associated Lab Samples: | 60211423001, 60211423002, 60211423003, 60211423004, 60211423005, 60211423006, 60211423007, 60211423008, 60211423009, 60211423010, 60211423011, 60211423012, 60211423013, 60211423014, 60211423015, 60211423016 |         |       |

| Parameter         | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-DRO           | mg/kg | ND           | 9.9             | 5.0 | 01/27/16 18:40 |            |
| n-Tetracosane (S) | %     | 72           | 18-139          |     | 01/27/16 18:40 |            |
| p-Terphenyl (S)   | %     | 61           | 51-120          |     | 01/27/16 18:40 |            |

| LABORATORY CONTROL SAMPLE: | 1701688 |             |            |           |              |            |
|----------------------------|---------|-------------|------------|-----------|--------------|------------|
| Parameter                  | Units   | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
| TPH-DRO                    | mg/kg   | 82.5        | 88.0       | 107       | 76-115       |            |
| n-Tetracosane (S)          | %       |             |            | 88        | 18-139       |            |
| p-Terphenyl (S)            | %       |             |            | 77        | 51-120       |            |

| MATRIX SPIKE & MATRIX SPIKE DUPLICATE: | 1701689 |                    |                |                 |           |            |          |           |              |     |         |      |  |
|--|---------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|--|
|  |         |                    |                | 1701690         |           |            |          |           |              |     |         |      |  |
| Parameter                              | Units   | 60211423001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |  |
| TPH-DRO                                | mg/kg   | ND                 | 113            | 115             | 94.1      | 103        | 83       | 90        | 12-159       | 9   | 37      |      |  |
| n-Tetracosane (S)                      | %       |                    |                |                 |           |            | 48       | 65        | 18-139       |     |         |      |  |
| p-Terphenyl (S)                        | %       |                    |                |                 |           |            | 39       | 54        | 51-120       |     |         | S0   |  |

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### QUALITY CONTROL DATA

Project: Byrd Pump Site Investigation  
Pace Project No.: 60211423

QC Batch: OEXT/52873 Analysis Method: EPA 8015B  
QC Batch Method: EPA 3546 Analysis Description: EPA 8015B  
Associated Lab Samples: 60211423017, 60211423018, 60211423019, 60211423020, 60211423021, 60211423022, 60211423023, 60211423024

METHOD BLANK: 1702281 Matrix: Solid  
Associated Lab Samples: 60211423017, 60211423018, 60211423019, 60211423020, 60211423021, 60211423022, 60211423023, 60211423024

| Parameter         | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-----|----------------|------------|
| TPH-DRO           | mg/kg | ND           | 9.9             | 5.0 | 01/28/16 12:33 |            |
| n-Tetracosane (S) | %     | 73           | 18-139          |     | 01/28/16 12:33 |            |
| p-Terphenyl (S)   | %     | 63           | 51-120          |     | 01/28/16 12:33 |            |

LABORATORY CONTROL SAMPLE: 1702282

| Parameter         | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-DRO           | mg/kg | 83.2        | 79.7       | 96        | 76-115       |            |
| n-Tetracosane (S) | %     |             |            | 78        | 18-139       |            |
| p-Terphenyl (S)   | %     |             |            | 69        | 51-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702283 1702284

| Parameter         | Units | 60211323025    |                 | 1702284   |            | MS % Rec | MSD % Rec | % Rec Limits | Max RPD | Qual  |
|-------------------|-------|----------------|-----------------|-----------|------------|----------|-----------|--------------|---------|-------|
|                   |       | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result |          |           |              |         |       |
| TPH-DRO           | mg/kg | 8.7J           | 95              | 94.5      | 83.0       | 99.6     | 78        | 96           | 12-159  | 18 37 |
| n-Tetracosane (S) | %     |                |                 |           |            |          | 96        | 94           | 18-139  |       |
| p-Terphenyl (S)   | %     |                |                 |           |            |          | 98        | 97           | 51-120  |       |

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### QUALITY CONTROL DATA

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

QC Batch: PMST/11467

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 60211423021, 60211423022, 60211423023, 60211423024

METHOD BLANK: 1703499

Matrix: Solid

Associated Lab Samples: 60211423021, 60211423022, 60211423023, 60211423024

| Parameter        | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|------------------|-------|--------------|-----------------|------|----------------|------------|
| Percent Moisture | %     | ND           | 0.50            | 0.50 | 01/29/16 00:00 |            |

SAMPLE DUPLICATE: 1703500

| Parameter        | Units | 60211423021 Result | Dup Result | RPD | Max RPD | Qualifiers |
|------------------|-------|--------------------|------------|-----|---------|------------|
| Percent Moisture | %     | 20.4               | 21.1       | 3   | 20      |            |

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## QUALIFIERS

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### BATCH QUALIFIERS

Batch: GCV/5298

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

### ANALYTE QUALIFIERS

H1 Analysis conducted outside the EPA method holding time.

S0 Surrogate recovery outside laboratory control limits.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211423001 | SS-3A     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423002 | SS-3B     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423003 | SS-3C     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423004 | SS-3D     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423005 | SS-4A     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423006 | SS-4B     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423007 | SS-4C     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423008 | SS-4D     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423009 | SS-5A     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423010 | SS-5B     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423011 | SS-5C     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423012 | SS-5D     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423013 | SS-6A     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423014 | SS-6B     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423015 | SS-6C     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423016 | SS-6D     | EPA 3546        | OEXT/52860 | EPA 8015B         | GCSV/20414       |
| 60211423017 | SS-1A     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423018 | SS-1B     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423019 | SS-1C     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423020 | SS-1D     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423021 | SS-2A     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423022 | SS-2B     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423023 | SS-2C     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423024 | SS-2D     | EPA 3546        | OEXT/52873 | EPA 8015B         | GCSV/20421       |
| 60211423001 | SS-3A     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423002 | SS-3B     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423003 | SS-3C     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423004 | SS-3D     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423005 | SS-4A     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423006 | SS-4B     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423007 | SS-4C     | EPA 5035A/5030B | GCV/5295   | EPA 8015B         | GCV/5297         |
| 60211423008 | SS-4D     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423009 | SS-5A     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423010 | SS-5B     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423011 | SS-5C     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423012 | SS-5D     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423013 | SS-6A     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423014 | SS-6B     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423015 | SS-6C     | EPA 5035A/5030B | GCV/5296   | EPA 8015B         | GCV/5298         |
| 60211423016 | SS-6D     | EPA 5035A/5030B | GCV/5299   | EPA 8015B         | GCV/5302         |
| 60211423017 | SS-1A     | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423018 | SS-1B     | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423019 | SS-1C     | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423020 | SS-1D     | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423021 | SS-2A     | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423022 | SS-2B     | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Byrd Pump Site Investigation

Pace Project No.: 60211423

| Lab ID      | Sample ID  | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|------------|-----------------|------------|-------------------|------------------|
| 60211423023 | SS-2C      | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423024 | SS-2D      | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423025 | TRIP BLANK | EPA 5035A/5030B | GCV/5306   | EPA 8015B         | GCV/5308         |
| 60211423001 | SS-3A      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423002 | SS-3B      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423003 | SS-3C      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423004 | SS-3D      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423005 | SS-4A      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423006 | SS-4B      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423007 | SS-4C      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423008 | SS-4D      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423009 | SS-5A      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423010 | SS-5B      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423011 | SS-5C      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423012 | SS-5D      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423013 | SS-6A      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423014 | SS-6B      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423015 | SS-6C      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423016 | SS-6D      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423017 | SS-1A      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423018 | SS-1B      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423019 | SS-1C      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423020 | SS-1D      | ASTM D2974      | PMST/11466 |                   |                  |
| 60211423021 | SS-2A      | ASTM D2974      | PMST/11467 |                   |                  |
| 60211423022 | SS-2B      | ASTM D2974      | PMST/11467 |                   |                  |
| 60211423023 | SS-2C      | ASTM D2974      | PMST/11467 |                   |                  |
| 60211423024 | SS-2D      | ASTM D2974      | PMST/11467 |                   |                  |

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt  
ESI Tech Spec Client

WO#: 60211423



Client Name: BP Stanlec

|                |
|----------------|
| Optional       |
| Proj Due Date: |
| Proj Name:     |

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client

Tracking #: 782188138018 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 / T-262 Type of Ice: Wet Blue  None  Samples received on ice, cooling process has begun.

Cooler Temperature: 5-8

Date and initials of person examining contents: 2/11/16

Temperature should be above freezing to 6°C

|  |  |                             |
|--|--|-----------------------------|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 1.                          |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 2.                          |
| Chain of Custody relinquished:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 3.                          |
| Sampler name & signature on COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 4.                          |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 5.                          |
| Short Hold Time analyses (<72hr):  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 6.                          |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 7.                          |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 8.                          |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 10.                         |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 11.                         |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 12.                         |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                             |
| Includes date/time/ID/analyses Matrix: <u>SL</u>   |  | 13.                         |
| All containers needing preservation have been checked.                                     | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |                             |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 14.                         |
| Exceptions: VOA, Coliform, O&G, WI-DRO (water)   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                              | Initial when completed      |
| Trip Blank present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Lot # of added preservative |
| Pace Trip Blank lot # (if purchased): <u>101215-3</u>                                      | <u>pull 1/16</u>   | 15.                         |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 16.                         |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 17. List State:             |
| Additional labels attached to 5035A vials in the field?                                    | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.                         |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_

|  |        |
|--|--------|
| Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>0905</u>   | Start: |
| End: <u>0915</u>   | End:   |
| Temp:  | Temp:  |

Project Manager Review: AAF Date: 01/19/16



**Laboratory Management Program LaMP Chain of Custody Record**

BP/ARC Project Name: Byrd Pump Site Investigation  
BP/ARC Facility No.: Byrd Pump Site

Req Due Date (mm/dd/yy): Standard  
Rush TAT: Yes No  
Lab Work Order Number: \_\_\_\_\_

Lab Name: Pace Analytical Services, Inc.  
Lab Address: 9608 Loiret Blvd  
Lab PM: Alice Flanagan  
Lab Phone: 916-563-1409  
Lab Shipping Acct: \_\_\_\_\_  
Lab Bottle Order No.: \_\_\_\_\_  
Other Info: \_\_\_\_\_

BP/ARC Facility Address: 15 Joanne Lane  
City, State, ZIP Code: Monument, NM  
Lead Regulatory Agency: NM OCD  
California Global ID No.: NA  
Enfos Proposal No.: 009PD-002  
Accounting Mode: Provision X OOC-BU \_\_\_ OOC-RM \_\_\_  
Stage: 4\_Execute Activity: Project Spend

Consultant/Contractor: Stantec Consulting  
Contractor Project No.: 182630008  
Address: 8770 Guion Rd. Ste B Indianapolis, IN 46268  
Consultant/Contractor PM: Susan Hall  
Phone: 317-876-8375  
Email EDD To: susan.hall@stantec.com  
Invoice To: BP/ARC X Contractor \_\_\_

| Lab No. | Sample Description | Date    | Time | Requested Analyses |                               |               |               |            |          |                           | Report Type & QC Level |                                   |                         |   |
|---------|--------------------|---------|------|--------------------|-------------------------------|---------------|---------------|------------|----------|---------------------------|------------------------|-----------------------------------|-------------------------|---|
|         |                    |         |      | Matrix             | No. Containers / Preservative | TPH-DRO 8015B | TPH-GRO 8015B | BTEX 8260B | PAH 8310 | RCRA METALS 6010C / 245.7 |                        | Anions (Br, Cl, F, Sulfate) 300.0 | Nitrate / Nitrate 9056A | Cations - Ca, Mg, Na, K 6010C   |
| 011     | SS-5C              | 1/12/10 | 1511 | X                  |                               |               |               |            |          |                           |                        |                                   |                         | Standard <u>X</u><br>Full Data Package <u>___</u>   |
| 012     | SS-5D              |         | 1513 |                    |                               |               |               |            |          |                           |                        |                                   |                         | Comments<br>Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.<br><br>60211 423<br><br>166FEU |
| 013     | SS-6A              |         | 1455 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 014     | SS-6B              |         | 1456 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 015     | SS-6C              |         | 1457 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 016     | SS-6D              |         | 1500 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 017     | SS-1A              | 1/13/10 | 0919 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 018     | SS-1B              |         | 0922 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 019     | SS-1C              |         | 0923 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |
| 020     | SS-1D              |         | 0928 |                    |                               |               |               |            |          |                           |                        |                                   |                         |   |

Relinquished By / Affiliation: Duysa Hall / Stantec  
Date: 1/14/10 1730  
Accepted By / Affiliation: Chirpitz  
Date: 1/19/10 0815

Sampler's Name: A. Hawkins  
Sampler's Company: Stantec Consulting  
Shipper's Method: Standard  
Ship Date: \_\_\_\_\_

Temp Blank (Yes / No) (Yes) Cooler Temp on Receipt: 5-8 °F/C  
Trip Blank (Yes / No) (Yes) MS/MSD Sample Submitted: Yes (No)

Special Instructions: \_\_\_\_\_





Density, Relative Density and Absorption  
of Coarse Aggregate  
ASTM C 127

Project BP - Byrd Pump Site Project No. 182630008  
Source Sample 2, 0.0'-14.0' Lab ID 1  
Material Gravel, white  
Retained Particle Size + 3/8" Nominal Maximum Particle Size 3"

Preparation Method: Tested at as received moisture content. Preparation Date 01-29-2016

|  |               |           |                   |
|--|---------------|-----------|-------------------|
| Water Temperature (°C)                         | <u>21.2</u>   | Test Date | <u>01-29-2016</u> |
| Tare Mass (g)                                  | <u>1356.7</u> |           |                   |
| Saturated Surface Dry Sample + Tare Mass (g)   | <u>3120.9</u> |           |                   |
| Basket Mass in Water (g)                       | <u>1734.8</u> |           |                   |
| Sample + Mass Basket in Water (g)              | <u>2700.2</u> |           |                   |
| Oven Dry Sample Mass (g)                       | <u>1592.7</u> |           |                   |
| SSD Sample Mass (g)                            | <u>1764.2</u> |           |                   |
| Sample Mass in Water (g)                       | <u>965.4</u>  |           |                   |
| Relative Density (OD)                          | <u>1.99</u>   |           |                   |
| Relative Density (SSD)                         | <u>2.21</u>   |           |                   |
| Apparent Relative Density                      | <u>2.54</u>   |           |                   |
| Absorption (%)                                 | <u>10.8</u>   |           |                   |
| Density (OD), kg/m <sup>3</sup> , @ 23 °C      | <u>1990</u>   |           |                   |
| Density (OD), lb/ft <sup>3</sup> , @ 23 °C     | <u>124</u>    |           |                   |
| Density (SSD), kg/m <sup>3</sup> , @ 23 °C     | <u>2200</u>   |           |                   |
| Density (SSD), lb/ft <sup>3</sup> , @ 23 °C    | <u>137.5</u>  |           |                   |
| Apparent Density, kg/m <sup>3</sup> , @ 23 °C  | <u>2530</u>   |           |                   |
| Apparent Density, lb/ft <sup>3</sup> , @ 23 °C | <u>158.0</u>  |           |                   |

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reviewed By RJ



## Compaction Characteristics of Soil Using Standard Effort

ASTM D 698 - Method B

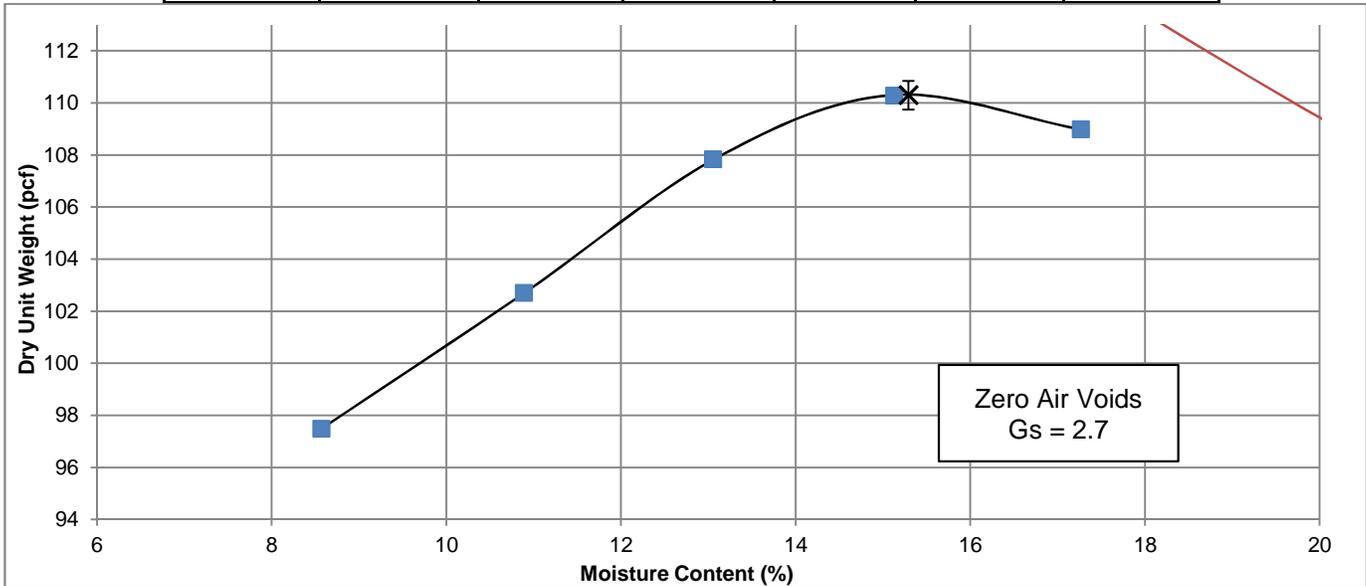
Project BP - Byrd Pump Site  
 Source Sample 2, 0.0'-14.0'  
 Description Clayey Sand with Gravel (SC), white  
 Visual Notes \_\_\_\_\_

Project No. 182630008  
 Sample ID 1  
 Date Received 01/27/2016  
 Date Tested 02/01/2016

Test Fraction (%) 78.9                      Oversized Fraction (%) 21.1  
 Gs of Test Fraction 2.7 Assumed              Gs of Oversized Fraction 2.0  
 Oversized Fraction Sieve 3/8"              MC of Oversized Fraction (%) 10.8

Mold Weight (g) 4250.9              Preparation Method Moist              Rammer Type Manual

| Wet Soil & Mold Weight (g) | Wet Soil Weight (g) | Moisture Content Determination |                     |          |      | Water Content (%) | Dry Unit Weight (pcf) |
|----------------------------|---------------------|--------------------------------|---------------------|----------|------|-------------------|-----------------------|
|                            |                     | Wet Soil & Tare (g)            | Dry Soil & Tare (g) | Tare (g) |      |                   |                       |
| 5845                       | 1594                | 527.39                         | 491.69              | 75.03    | 8.6  | 97.5              |                       |
| 5966                       | 1715                | 521.67                         | 477.56              | 72.50    | 10.9 | 102.7             |                       |
| 6087                       | 1836                | 560.37                         | 504.29              | 74.72    | 13.1 | 107.8             |                       |
| 6163                       | 1912                | 563.86                         | 499.44              | 73.67    | 15.1 | 110.3             |                       |
| 6176                       | 1925                | 479.90                         | 420.45              | 76.11    | 17.3 | 109.0             |                       |
|                            |                     |                                |                     |          |      |                   |                       |
|                            |                     |                                |                     |          |      |                   |                       |



**Maximum Dry Unit Weight (pcf)** 110.3  
**Optimum Moisture Content (%)** 15.3

**Corrected Maximum Dry Unit Weight (pcf)** 113.0  
**Corrected Optimum Moisture Content (%)** 14.3

Reviewed By RJ

Comments \_\_\_\_\_



## Summary of Soil Tests

Project Name BP - Byrd Pump Site Project Number 182630008  
 Source Sample 2, 0.0'-14.0' Lab ID 1  
 Sample Type BUCKET Date Received 1-27-16  
 Date Reported 2-3-16

### Test Results

**Natural Moisture Content**  
 Test Not Performed  
 Moisture Content (%): N/A

**Atterberg Limits**  
 Test Method: ASTM D 4318 Method A  
 Prepared: Dry  
 Liquid Limit: 36  
 Plastic Limit: 13  
 Plasticity Index: 23  
 Activity Index: 2.88

**Particle Size Analysis**  
 Preparation Method: ASTM D 421  
 Gradation Method: ASTM D 422  
 Hydrometer Method: ASTM D 422

| Particle Size |       | %       |
|---------------|-------|---------|
| Sieve Size    | (mm)  |         |
|               | N/A   | Passing |
|               | N/A   |         |
| 1 1/2"        | 37.5  | 100.0   |
| 1"            | 25    | 91.3    |
| 3/4"          | 19    | 82.6    |
| 3/8"          | 9.5   | 78.9    |
| No. 4         | 4.75  | 73.0    |
| No. 10        | 2     | 62.6    |
| No. 40        | 0.425 | 56.5    |
| No. 200       | 0.075 | 16.0    |
|               | 0.02  | 10.4    |
|               | 0.005 | 9.2     |
|               | 0.002 | 7.5     |
| estimated     | 0.001 | 6.0     |

**Moisture-Density Relationship**  
 ASTM D 698 - Method B  
 Maximum Dry Density (lb/ft<sup>3</sup>): 113.0  
 Maximum Dry Density (kg/m<sup>3</sup>): 1810  
 Optimum Moisture Content (%): 14.3  
 Over Size Correction %: 21.1

Plus 3 in. material, not included: 0 (%)

| Range       | ASTM (%) | AASHTO (%) |
|-------------|----------|------------|
| Gravel      | 27.0     | 37.4       |
| Coarse Sand | 10.4     | 6.1        |
| Medium Sand | 6.1      | ---        |
| Fine Sand   | 40.5     | 40.5       |
| Silt        | 6.8      | 8.5        |
| Clay        | 9.2      | 7.5        |

**California Bearing Ratio**  
 Test Not Performed  
 Bearing Ratio (%): N/A  
 Compacted Dry Density (lb/ft<sup>3</sup>): N/A  
 Compacted Moisture Content (%): N/A

**Specific Gravity**  
 Estimated  
 Particle Size: No. 10  
 Specific Gravity at 20° Celsius: 2.70

**Classification**  
 Unified Group Symbol: SC  
 Group Name: Clayey sand with gravel  
 AASHTO Classification: A-2-6 (0)

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reviewed By RJ



**Particle-Size Analysis of Soils**  
ASTM D 422

Project Name BP - Byrd Pump Site  
Source Sample 2, 0.0'-14.0'

Project Number 182630008  
Lab ID 1

**Sieve analysis for the Portion Coarser than the No. 10 Sieve**

Test Method ASTM D 422  
Prepared using ASTM D 421

Particle Shape Angular  
Particle Hardness: Weathered and Friable

Tested By SKS  
Test Date 01-28-2016  
Date Received 01-27-2016

| Sieve Size | % Passing |
|------------|-----------|
|            |           |
|            |           |
|            |           |
|            |           |
|            |           |
| 1 1/2"     | 100.0     |
| 1"         | 91.3      |
| 3/4"       | 82.6      |
| 3/8"       | 78.9      |
| No. 4      | 73.0      |
| No. 10     | 62.6      |

Maximum Particle size: 1 1/2" Sieve

**Analysis for the portion Finer than the No. 10 Sieve**

Analysis Based on -3 inch fraction only

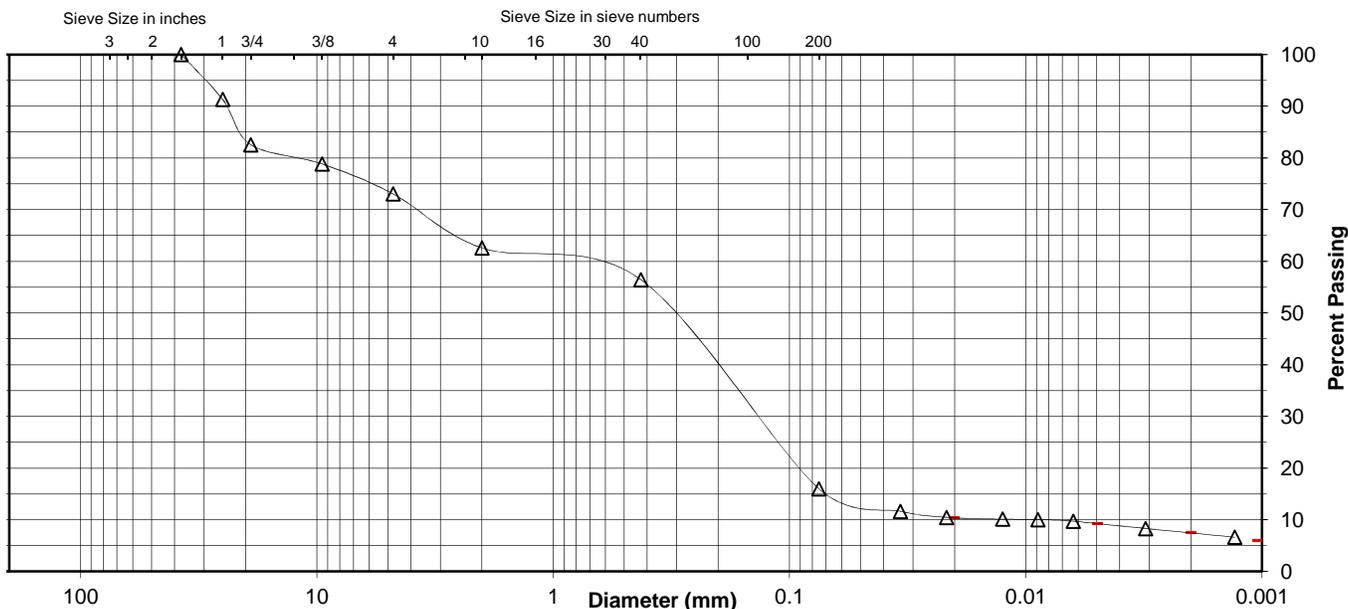
Specific Gravity 2.7

Dispersed using Apparatus A - Mechanical, for 1 minute

|          |      |
|----------|------|
| No. 40   | 56.5 |
| No. 200  | 16.0 |
| 0.02 mm  | 10.4 |
| 0.005 mm | 9.2  |
| 0.002 mm | 7.5  |
| 0.001 mm | 6.0  |

**Particle Size Distribution**

| ASTM   | Coarse Gravel | Fine Gravel | C. Sand     | Medium Sand | Fine Sand | Silt | Clay |
|--------|---------------|-------------|-------------|-------------|-----------|------|------|
|        | 17.4          | 9.6         | 10.4        | 6.1         | 40.5      | 6.8  | 9.2  |
| AASHTO | Gravel        |             | Coarse Sand |             | Fine Sand | Silt | Clay |
|        | 37.4          |             | 6.1         |             | 40.5      | 8.5  | 7.5  |



Comments \_\_\_\_\_

Reviewed By RJ

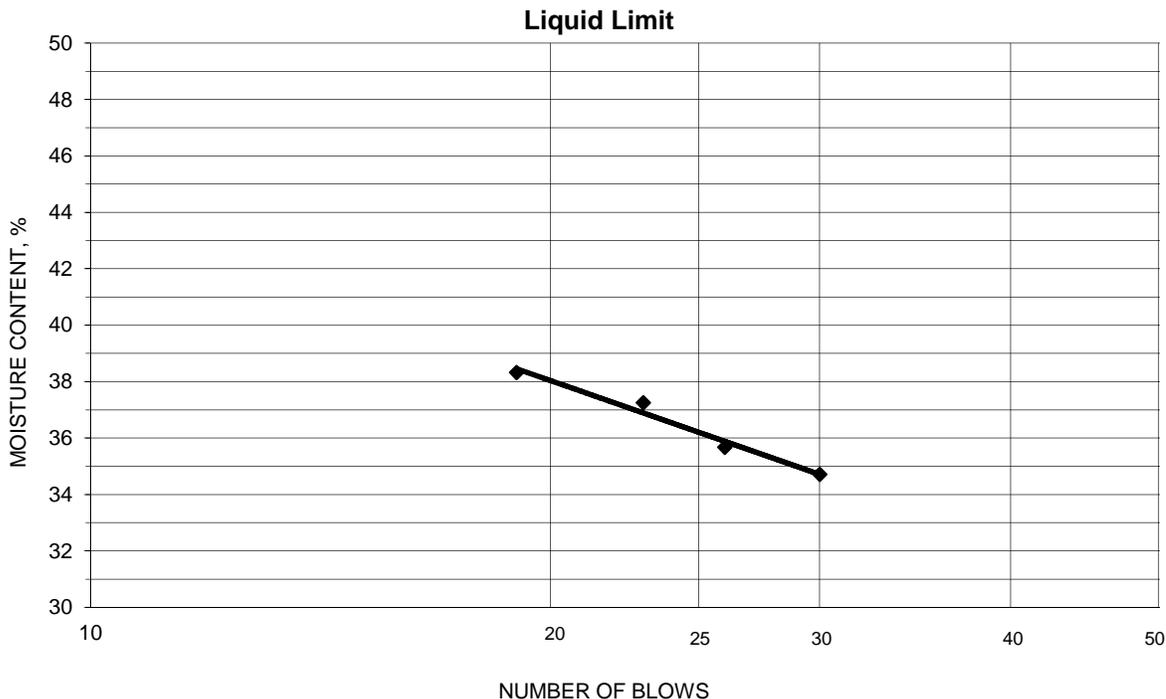


**ATTERBERG LIMITS**

Project BP - Byrd Pump Site  
 Source Sample 2, 0.0'-14.0'  
 Tested By KG Test Method ASTM D 4318 Method A  
 Test Date 02-01-2016 Prepared Dry

Project No. 182630008  
 Lab ID 1  
 % + No. 40 44  
 Date Received 01-27-2016

| Wet Soil and Tare Mass (g) | Dry Soil and Tare Mass (g) | Tare Mass (g) | Number of Blows | Water Content (%) | Liquid Limit |
|----------------------------|----------------------------|---------------|-----------------|-------------------|--------------|
| 22.53                      | 20.01                      | 12.75         | 30              | 34.7              | 36           |
| 22.56                      | 19.96                      | 12.67         | 26              | 35.7              |              |
| 22.72                      | 19.96                      | 12.55         | 23              | 37.2              |              |
| 21.00                      | 18.36                      | 11.47         | 19              | 38.3              |              |
|                            |                            |               |                 |                   |              |



**PLASTIC LIMIT AND PLASTICITY INDEX**

| Wet Soil and Tare Mass (g) | Dry Soil and Tare Mass (g) | Tare Mass (g) | Water Content (%) | Plastic Limit | Plasticity Index |
|----------------------------|----------------------------|---------------|-------------------|---------------|------------------|
| 18.63                      | 17.79                      | 11.34         | 13.0              | 13            | 23               |
| 18.85                      | 18.00                      | 11.45         | 13.0              |               |                  |

Remarks: \_\_\_\_\_

Reviewed By RJ

January 27, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: BYRD PUMP INVESTIGATION  
Pace Project No.: 60211350

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on January 15, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: BYRD PUMP INVESTIGATION  
Pace Project No.: 60211350

| Lab ID      | Sample ID  | Matrix | Date Collected | Date Received  |
|-------------|------------|--------|----------------|----------------|
| 60211350001 | MW-PS1     | Water  | 01/14/16 10:00 | 01/15/16 08:50 |
| 60211350002 | MW-PS3     | Water  | 01/14/16 11:45 | 01/15/16 08:50 |
| 60211350003 | TRIP BLANK | Water  | 01/14/16 08:00 | 01/15/16 08:50 |

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Lab ID      | Sample ID | Method           | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------------|----------|-------------------|------------|
| 60211350001 | MW-PS1    | EPA 5030B/8015B  | JTK      | 3                 | PASI-K     |
|             |           | EPA 6010         | ZBM      | 7                 | PASI-K     |
|             |           | EPA 7470         | TDS      | 1                 | PASI-K     |
|             |           | EPA 8270C by SIM | NAW      | 18                | PASI-K     |
|             |           | EPA 8260/OA1     | JDH      | 8                 | PASI-K     |
|             |           | EPA 300.0        | RAB      | 4                 | PASI-K     |
| 60211350002 | MW-PS3    | EPA 5030B/8015B  | JTK      | 3                 | PASI-K     |
|             |           | EPA 6010         | ZBM      | 7                 | PASI-K     |
|             |           | EPA 7470         | TDS      | 1                 | PASI-K     |
|             |           | EPA 8270C by SIM | NAW      | 18                | PASI-K     |
|             |           | EPA 8260/OA1     | JDH      | 8                 | PASI-K     |
|             |           | EPA 300.0        | RAB      | 4                 | PASI-K     |

### REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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**Method:** EPA 5030B/8015B

**Description:** Gasoline Range Organics

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

2 samples were analyzed for EPA 5030B/8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCV/5293

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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**Method:** EPA 6010

**Description:** 6010 MET ICP

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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**Method:** EPA 7470

**Description:** 7470 Mercury

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

2 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MERP/10270

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60211350001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1699794)
  - Mercury
- MSD (Lab ID: 1699795)
  - Mercury

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

---

**Method:** EPA 8270C by SIM

**Description:** 8270 MSSV PAH by SIM

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

2 samples were analyzed for EPA 8270C by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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**Method:** EPA 8260/OA1

**Description:** 8260/OA1 UST, Water

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

2 samples were analyzed for EPA 8260/OA1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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**Method:** EPA 300.0

**Description:** 300.0 IC Anions 28 Days

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

Analyte Comments:

QC Batch: WETA/37799

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MW-PS1 (Lab ID: 60211350001)
  - Fluoride
- MW-PS3 (Lab ID: 60211350002)
  - Fluoride

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Sample: MW-PS1                 |         | Lab ID: 60211350001   |              | Collected: 01/14/16 10:00 | Received: 01/15/16 08:50 | Matrix: Water  |                |           |      |  |
|--------------------------------|---------|---|--------------|---------------------------|--------------------------|----------------|----------------|-----------|------|--|
| Parameters                     | Results | Units   | Report Limit | MDL                       | DF                       | Prepared       | Analyzed       | CAS No.   | Qual |  |
| <b>Gasoline Range Organics</b> |         | Analytical Method: EPA 5030B/8015B                                |              |                           |                          |                |                |           |      |  |
| TPH-GRO                        | ND      | mg/L  | 0.50         | 0.024                     | 1                        |                | 01/19/16 13:08 |           |      |  |
| <b>Surrogates</b>              |         |   |              |                           |                          |                |                |           |      |  |
| 4-Bromofluorobenzene (S)       | 95      | %   | 82-114       |                           | 1                        |                | 01/19/16 13:08 | 460-00-4  |      |  |
| Preservation pH                | 1.0     |   | 0.10         |                           | 1                        |                | 01/19/16 13:08 |           |      |  |
| <b>6010 MET ICP</b>            |         | Analytical Method: EPA 6010 Preparation Method: EPA 3010          |              |                           |                          |                |                |           |      |  |
| Arsenic                        | 8.1J    | ug/L  | 10.0         | 4.5                       | 1                        | 01/19/16 09:00 | 01/25/16 12:01 | 7440-38-2 |      |  |
| Barium                         | 255     | ug/L  | 10.0         | 0.52                      | 1                        | 01/19/16 09:00 | 01/25/16 12:01 | 7440-39-3 |      |  |
| Cadmium                        | 0.76J   | ug/L  | 5.0          | 0.56                      | 1                        | 01/19/16 09:00 | 01/25/16 12:01 | 7440-43-9 |      |  |
| Chromium                       | 1.7J    | ug/L  | 5.0          | 0.96                      | 1                        | 01/19/16 09:00 | 01/25/16 12:01 | 7440-47-3 |      |  |
| Lead                           | ND      | ug/L  | 5.0          | 1.9                       | 1                        | 01/19/16 09:00 | 01/25/16 16:31 | 7439-92-1 |      |  |
| Selenium                       | ND      | ug/L  | 15.0         | 5.8                       | 1                        | 01/19/16 09:00 | 01/25/16 12:01 | 7782-49-2 |      |  |
| Silver                         | ND      | ug/L  | 7.0          | 1.1                       | 1                        | 01/19/16 09:00 | 01/25/16 12:01 | 7440-22-4 |      |  |
| <b>7470 Mercury</b>            |         | Analytical Method: EPA 7470 Preparation Method: EPA 7470          |              |                           |                          |                |                |           |      |  |
| Mercury                        | ND      | ug/L  | 0.20         | 0.012                     | 1                        | 01/20/16 01:30 | 01/21/16 10:11 | 7439-97-6 | M1   |  |
| <b>8270 MSSV PAH by SIM</b>    |         | Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C |              |                           |                          |                |                |           |      |  |
| Acenaphthene                   | ND      | ug/L  | 0.091        | 0.013                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 83-32-9   |      |  |
| Acenaphthylene                 | ND      | ug/L  | 0.091        | 0.015                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 208-96-8  |      |  |
| Anthracene                     | ND      | ug/L  | 0.091        | 0.013                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 120-12-7  |      |  |
| Benzo(a)anthracene             | ND      | ug/L  | 0.091        | 0.012                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 56-55-3   |      |  |
| Benzo(a)pyrene                 | ND      | ug/L  | 0.091        | 0.010                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 50-32-8   |      |  |
| Benzo(b)fluoranthene           | ND      | ug/L  | 0.091        | 0.011                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 205-99-2  |      |  |
| Benzo(g,h,i)perylene           | ND      | ug/L  | 0.091        | 0.010                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 191-24-2  |      |  |
| Benzo(k)fluoranthene           | ND      | ug/L  | 0.091        | 0.012                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 207-08-9  |      |  |
| Chrysene                       | ND      | ug/L  | 0.091        | 0.010                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 218-01-9  |      |  |
| Dibenz(a,h)anthracene          | ND      | ug/L  | 0.091        | 0.015                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 53-70-3   |      |  |
| Fluoranthene                   | ND      | ug/L  | 0.45         | 0.017                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 206-44-0  |      |  |
| Fluorene                       | ND      | ug/L  | 0.091        | 0.012                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 86-73-7   |      |  |
| Indeno(1,2,3-cd)pyrene         | ND      | ug/L  | 0.091        | 0.014                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 193-39-5  |      |  |
| Naphthalene                    | 0.33J   | ug/L  | 0.45         | 0.042                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 91-20-3   |      |  |
| Phenanthrene                   | 0.12J   | ug/L  | 0.45         | 0.022                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 85-01-8   |      |  |
| Pyrene                         | ND      | ug/L  | 0.091        | 0.027                     | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 129-00-0  |      |  |
| <b>Surrogates</b>              |         |   |              |                           |                          |                |                |           |      |  |
| 2-Fluorobiphenyl (S)           | 49      | %   | 39-85        |                           | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 321-60-8  |      |  |
| Terphenyl-d14 (S)              | 73      | %   | 48-95        |                           | 1                        | 01/20/16 00:00 | 01/22/16 18:26 | 1718-51-0 |      |  |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1                                   |              |                           |                          |                |                |           |      |  |
| Benzene                        | 1.0     | ug/L  | 1.0          | 0.060                     | 1                        |                | 01/21/16 16:13 | 71-43-2   |      |  |
| Toluene                        | ND      | ug/L  | 1.0          | 0.17                      | 1                        |                | 01/21/16 16:13 | 108-88-3  |      |  |
| Ethylbenzene                   | ND      | ug/L  | 1.0          | 0.18                      | 1                        |                | 01/21/16 16:13 | 100-41-4  |      |  |
| Xylene (Total)                 | ND      | ug/L  | 3.0          | 0.42                      | 1                        |                | 01/21/16 16:13 | 1330-20-7 |      |  |
| <b>Surrogates</b>              |         |   |              |                           |                          |                |                |           |      |  |
| Toluene-d8 (S)                 | 101     | %   | 80-120       |                           | 1                        |                | 01/21/16 16:13 | 2037-26-5 |      |  |
| 4-Bromofluorobenzene (S)       | 99      | %   | 77-130       |                           | 1                        |                | 01/21/16 16:13 | 460-00-4  |      |  |

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Sample: MW-PS1                 |         | Lab ID: 60211350001             |              | Collected: 01/14/16 10:00 | Received: 01/15/16 08:50 | Matrix: Water |                |            |      |
|--------------------------------|---------|---------------------------------|--------------|---------------------------|--------------------------|---------------|----------------|------------|------|
| Parameters                     | Results | Units                           | Report Limit | MDL                       | DF                       | Prepared      | Analyzed       | CAS No.    | Qual |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1 |              |                           |                          |               |                |            |      |
| <b>Surrogates</b>              |         |                                 |              |                           |                          |               |                |            |      |
| 1,2-Dichloroethane-d4 (S)      | 107     | %                               | 81-127       |                           | 1                        |               | 01/21/16 16:13 | 17060-07-0 |      |
| Preservation pH                | 1.0     |                                 | 0.10         | 0.10                      | 1                        |               | 01/21/16 16:13 |            |      |
| <b>300.0 IC Anions 28 Days</b> |         | Analytical Method: EPA 300.0    |              |                           |                          |               |                |            |      |
| Bromide                        | 38.8    | mg/L                            | 25.0         | 12.5                      | 25                       |               | 01/20/16 17:00 | 24959-67-9 |      |
| Chloride                       | 5060    | mg/L                            | 500          | 250                       | 500                      |               | 01/20/16 17:44 | 16887-00-6 |      |
| Fluoride                       | 2.1J    | mg/L                            | 5.0          | 1.8                       | 25                       |               | 01/20/16 17:00 | 16984-48-8 | D3   |
| Sulfate                        | 182     | mg/L                            | 25.0         | 6.2                       | 25                       |               | 01/20/16 17:00 | 14808-79-8 |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Sample: MW-PS3                 |         | Lab ID: 60211350002   |              | Collected: 01/14/16 11:45 |    | Received: 01/15/16 08:50 |                | Matrix: Water |      |
|--------------------------------|---------|---|--------------|---------------------------|----|--------------------------|----------------|---------------|------|
| Parameters                     | Results | Units   | Report Limit | MDL                       | DF | Prepared                 | Analyzed       | CAS No.       | Qual |
| <b>Gasoline Range Organics</b> |         | Analytical Method: EPA 5030B/8015B                                |              |                           |    |                          |                |               |      |
| TPH-GRO                        | ND      | mg/L  | 0.50         | 0.024                     | 1  |                          | 01/19/16 13:25 |               |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| 4-Bromofluorobenzene (S)       | 97      | %   | 82-114       |                           | 1  |                          | 01/19/16 13:25 | 460-00-4      |      |
| Preservation pH                | 1.0     |   | 0.10         |                           | 1  |                          | 01/19/16 13:25 |               |      |
| <b>6010 MET ICP</b>            |         | Analytical Method: EPA 6010 Preparation Method: EPA 3010          |              |                           |    |                          |                |               |      |
| Arsenic                        | 13.4    | ug/L  | 10.0         | 4.5                       | 1  | 01/19/16 09:00           | 01/25/16 12:10 | 7440-38-2     |      |
| Barium                         | 154     | ug/L  | 10.0         | 0.52                      | 1  | 01/19/16 09:00           | 01/25/16 12:10 | 7440-39-3     |      |
| Cadmium                        | 0.75J   | ug/L  | 5.0          | 0.56                      | 1  | 01/19/16 09:00           | 01/25/16 12:10 | 7440-43-9     |      |
| Chromium                       | 1.8J    | ug/L  | 5.0          | 0.96                      | 1  | 01/19/16 09:00           | 01/25/16 12:10 | 7440-47-3     |      |
| Lead                           | ND      | ug/L  | 5.0          | 1.9                       | 1  | 01/19/16 09:00           | 01/25/16 16:41 | 7439-92-1     |      |
| Selenium                       | ND      | ug/L  | 15.0         | 5.8                       | 1  | 01/19/16 09:00           | 01/25/16 12:10 | 7782-49-2     |      |
| Silver                         | ND      | ug/L  | 7.0          | 1.1                       | 1  | 01/19/16 09:00           | 01/25/16 12:10 | 7440-22-4     |      |
| <b>7470 Mercury</b>            |         | Analytical Method: EPA 7470 Preparation Method: EPA 7470          |              |                           |    |                          |                |               |      |
| Mercury                        | ND      | ug/L  | 0.20         | 0.012                     | 1  | 01/20/16 01:30           | 01/21/16 10:17 | 7439-97-6     |      |
| <b>8270 MSSV PAH by SIM</b>    |         | Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C |              |                           |    |                          |                |               |      |
| Acenaphthene                   | ND      | ug/L  | 0.091        | 0.013                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 83-32-9       |      |
| Acenaphthylene                 | ND      | ug/L  | 0.091        | 0.015                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 208-96-8      |      |
| Anthracene                     | ND      | ug/L  | 0.091        | 0.013                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 120-12-7      |      |
| Benzo(a)anthracene             | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 56-55-3       |      |
| Benzo(a)pyrene                 | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 50-32-8       |      |
| Benzo(b)fluoranthene           | ND      | ug/L  | 0.091        | 0.011                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 205-99-2      |      |
| Benzo(g,h,i)perylene           | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 191-24-2      |      |
| Benzo(k)fluoranthene           | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 207-08-9      |      |
| Chrysene                       | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 218-01-9      |      |
| Dibenz(a,h)anthracene          | ND      | ug/L  | 0.091        | 0.015                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 53-70-3       |      |
| Fluoranthene                   | ND      | ug/L  | 0.45         | 0.017                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 206-44-0      |      |
| Fluorene                       | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 86-73-7       |      |
| Indeno(1,2,3-cd)pyrene         | ND      | ug/L  | 0.091        | 0.014                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 193-39-5      |      |
| Naphthalene                    | 0.32J   | ug/L  | 0.45         | 0.042                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 91-20-3       |      |
| Phenanthrene                   | ND      | ug/L  | 0.45         | 0.022                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 85-01-8       |      |
| Pyrene                         | ND      | ug/L  | 0.091        | 0.027                     | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 129-00-0      |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| 2-Fluorobiphenyl (S)           | 58      | %   | 39-85        |                           | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 321-60-8      |      |
| Terphenyl-d14 (S)              | 77      | %   | 48-95        |                           | 1  | 01/20/16 00:00           | 01/22/16 19:31 | 1718-51-0     |      |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1                                   |              |                           |    |                          |                |               |      |
| Benzene                        | 0.71J   | ug/L  | 1.0          | 0.060                     | 1  |                          | 01/21/16 16:54 | 71-43-2       |      |
| Toluene                        | ND      | ug/L  | 1.0          | 0.17                      | 1  |                          | 01/21/16 16:54 | 108-88-3      |      |
| Ethylbenzene                   | ND      | ug/L  | 1.0          | 0.18                      | 1  |                          | 01/21/16 16:54 | 100-41-4      |      |
| Xylene (Total)                 | ND      | ug/L  | 3.0          | 0.42                      | 1  |                          | 01/21/16 16:54 | 1330-20-7     |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| Toluene-d8 (S)                 | 99      | %   | 80-120       |                           | 1  |                          | 01/21/16 16:54 | 2037-26-5     |      |
| 4-Bromofluorobenzene (S)       | 98      | %   | 77-130       |                           | 1  |                          | 01/21/16 16:54 | 460-00-4      |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Sample: MW-PS3                 |         | Lab ID: 60211350002             |              | Collected: 01/14/16 11:45 | Received: 01/15/16 08:50 | Matrix: Water |                |            |      |
|--------------------------------|---------|---------------------------------|--------------|---------------------------|--------------------------|---------------|----------------|------------|------|
| Parameters                     | Results | Units                           | Report Limit | MDL                       | DF                       | Prepared      | Analyzed       | CAS No.    | Qual |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1 |              |                           |                          |               |                |            |      |
| <b>Surrogates</b>              |         |                                 |              |                           |                          |               |                |            |      |
| 1,2-Dichloroethane-d4 (S)      | 108     | %                               | 81-127       |                           | 1                        |               | 01/21/16 16:54 | 17060-07-0 |      |
| Preservation pH                | 1.0     |                                 | 0.10         | 0.10                      | 1                        |               | 01/21/16 16:54 |            |      |
| <b>300.0 IC Anions 28 Days</b> |         | Analytical Method: EPA 300.0    |              |                           |                          |               |                |            |      |
| Bromide                        | 38.8    | mg/L                            | 25.0         | 12.5                      | 25                       |               | 01/20/16 19:10 | 24959-67-9 |      |
| Chloride                       | 4980    | mg/L                            | 500          | 250                       | 500                      |               | 01/20/16 19:24 | 16887-00-6 |      |
| Fluoride                       | 2.5J    | mg/L                            | 5.0          | 1.8                       | 25                       |               | 01/20/16 19:10 | 16984-48-8 | D3   |
| Sulfate                        | 240     | mg/L                            | 25.0         | 6.2                       | 25                       |               | 01/20/16 19:10 | 14808-79-8 |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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|                         |                          |                       |                         |
|-------------------------|--------------------------|-----------------------|-------------------------|
| QC Batch:               | GCV/5293                 | Analysis Method:      | EPA 5030B/8015B         |
| QC Batch Method:        | EPA 5030B/8015B          | Analysis Description: | Gasoline Range Organics |
| Associated Lab Samples: | 60211350001, 60211350002 |                       |                         |

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METHOD BLANK: 1699129 Matrix: Water

Associated Lab Samples: 60211350001, 60211350002

| Parameter                | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|-------|----------------|------------|
| TPH-GRO                  | mg/L  | 0.036J       | 0.50            | 0.024 | 01/19/16 11:17 |            |
| 4-Bromofluorobenzene (S) | %     | 97           | 82-114          |       | 01/19/16 11:17 |            |

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LABORATORY CONTROL SAMPLE: 1699130

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-GRO                  | mg/L  | 1           | 1.0        | 105       | 68-110       |            |
| 4-Bromofluorobenzene (S) | %     |             |            | 97        | 82-114       |            |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

QC Batch: MERP/10270

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 60211350001, 60211350002

METHOD BLANK: 1699792

Matrix: Water

Associated Lab Samples: 60211350001, 60211350002

| Parameter | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|-------|----------------|------------|
| Mercury   | ug/L  | ND           | 0.20            | 0.046 | 01/21/16 11:42 |            |

LABORATORY CONTROL SAMPLE: 1699793

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Mercury   | ug/L  | 5           | 5.7        | 114       | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1699794 1699795

| Parameter | Units | 60211350001 |                | MS             |           | MSD        |          | MS        |        | MSD |    | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|-------------|----------------|----------------|-----------|------------|----------|-----------|--------|-----|----|--------------|-----|---------|------|
|           |       | Result      | MS Spike Conc. | MS Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec |        |     |    |              |     |         |      |
| Mercury   | ug/L  | ND          | 5              | 5              | 0.87      | 0.78       | 17       | 16        | 75-125 | 10  | 20 | M1           |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

QC Batch: MPRP/34643 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
 Associated Lab Samples: 60211350001, 60211350002

METHOD BLANK: 1698900 Matrix: Water

Associated Lab Samples: 60211350001, 60211350002

| Parameter | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|------|----------------|------------|
| Arsenic   | ug/L  | ND           | 10.0            | 4.5  | 01/25/16 11:56 |            |
| Barium    | ug/L  | ND           | 10.0            | 0.52 | 01/25/16 11:56 |            |
| Cadmium   | ug/L  | ND           | 5.0             | 0.56 | 01/25/16 11:56 |            |
| Chromium  | ug/L  | ND           | 5.0             | 0.96 | 01/25/16 11:56 |            |
| Lead      | ug/L  | ND           | 5.0             | 1.9  | 01/25/16 16:27 |            |
| Selenium  | ug/L  | ND           | 15.0            | 5.8  | 01/25/16 11:56 |            |
| Silver    | ug/L  | ND           | 7.0             | 1.1  | 01/25/16 11:56 |            |

LABORATORY CONTROL SAMPLE: 1698901

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Arsenic   | ug/L  | 1000        | 993        | 99        | 80-120       |            |
| Barium    | ug/L  | 1000        | 1010       | 101       | 80-120       |            |
| Cadmium   | ug/L  | 1000        | 1020       | 102       | 80-120       |            |
| Chromium  | ug/L  | 1000        | 988        | 99        | 80-120       |            |
| Lead      | ug/L  | 1000        | 953        | 95        | 80-120       |            |
| Selenium  | ug/L  | 1000        | 1040       | 104       | 80-120       |            |
| Silver    | ug/L  | 500         | 493        | 99        | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1698902 1698903

| Parameter | Units | 60211350001 |       | MS          |             | MSD    |        | MS    |        | MSD |    | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|-------------|-------|-------------|-------------|--------|--------|-------|--------|-----|----|--------------|-----|---------|------|
|           |       | Result      | Conc. | Spike Conc. | Spike Conc. | Result | Result | % Rec | % Rec  |     |    |              |     |         |      |
| Arsenic   | ug/L  | 8.1J        | 1000  | 1000        | 1080        | 1090   | 107    | 108   | 75-125 | 1   | 20 |              |     |         |      |
| Barium    | ug/L  | 255         | 1000  | 1000        | 1280        | 1280   | 103    | 102   | 75-125 | 1   | 20 |              |     |         |      |
| Cadmium   | ug/L  | 0.76J       | 1000  | 1000        | 1110        | 1110   | 111    | 111   | 75-125 | 0   | 20 |              |     |         |      |
| Chromium  | ug/L  | 1.7J        | 1000  | 1000        | 936         | 943    | 93     | 94    | 75-125 | 1   | 20 |              |     |         |      |
| Lead      | ug/L  | ND          | 1000  | 1000        | 902         | 900    | 90     | 90    | 75-125 | 0   | 20 |              |     |         |      |
| Selenium  | ug/L  | ND          | 1000  | 1000        | 1070        | 1070   | 107    | 107   | 75-125 | 0   | 20 |              |     |         |      |
| Silver    | ug/L  | ND          | 500   | 500         | 555         | 555    | 111    | 111   | 75-125 | 0   | 20 |              |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

QC Batch: MSV/73845 Analysis Method: EPA 8260/OA1  
 QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER  
 Associated Lab Samples: 60211350001, 60211350002

METHOD BLANK: 1700433 Matrix: Water

Associated Lab Samples: 60211350001, 60211350002

| Parameter                 | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|---------------------------|-------|--------------|-----------------|-------|----------------|------------|
| Benzene                   | ug/L  | ND           | 1.0             | 0.060 | 01/21/16 12:06 |            |
| Ethylbenzene              | ug/L  | ND           | 1.0             | 0.18  | 01/21/16 12:06 |            |
| Toluene                   | ug/L  | ND           | 1.0             | 0.17  | 01/21/16 12:06 |            |
| Xylene (Total)            | ug/L  | ND           | 3.0             | 0.42  | 01/21/16 12:06 |            |
| 1,2-Dichloroethane-d4 (S) | %     | 103          | 81-127          |       | 01/21/16 12:06 |            |
| 4-Bromofluorobenzene (S)  | %     | 98           | 77-130          |       | 01/21/16 12:06 |            |
| Toluene-d8 (S)            | %     | 99           | 80-120          |       | 01/21/16 12:06 |            |

LABORATORY CONTROL SAMPLE: 1700434

| Parameter                 | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---------------------------|-------|-------------|------------|-----------|--------------|------------|
| Benzene                   | ug/L  | 20          | 19.1       | 96        | 79-116       |            |
| Ethylbenzene              | ug/L  | 20          | 18.1       | 91        | 81-110       |            |
| Toluene                   | ug/L  | 20          | 18.0       | 90        | 82-111       |            |
| Xylene (Total)            | ug/L  | 60          | 53.6       | 89        | 80-111       |            |
| 1,2-Dichloroethane-d4 (S) | %     |             |            | 105       | 81-127       |            |
| 4-Bromofluorobenzene (S)  | %     |             |            | 98        | 77-130       |            |
| Toluene-d8 (S)            | %     |             |            | 98        | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700435 1700436

| Parameter                 | Units | 60211325004    |                 | 1700436   |            | MS % Rec | MSD % Rec | % Rec Limits | RPD    | Max RPD | Qual |
|---------------------------|-------|----------------|-----------------|-----------|------------|----------|-----------|--------------|--------|---------|------|
|                           |       | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result |          |           |              |        |         |      |
| Benzene                   | ug/L  | ND             | 20              | 20        | 17.8       | 19.4     | 89        | 97           | 37-151 | 9       | 40   |
| Ethylbenzene              | ug/L  | ND             | 20              | 20        | 16.4       | 18.1     | 82        | 90           | 29-151 | 10      | 45   |
| Toluene                   | ug/L  | ND             | 20              | 20        | 16.9       | 18.5     | 85        | 92           | 37-147 | 9       | 43   |
| Xylene (Total)            | ug/L  | ND             | 60              | 60        | 48.5       | 53.1     | 81        | 88           | 27-156 | 9       | 46   |
| 1,2-Dichloroethane-d4 (S) | %     |                |                 |           |            |          | 104       | 107          | 81-127 |         |      |
| 4-Bromofluorobenzene (S)  | %     |                |                 |           |            |          | 99        | 100          | 77-130 |         |      |
| Toluene-d8 (S)            | %     |                |                 |           |            |          | 100       | 100          | 80-120 |         |      |
| Preservation pH           |       | 1.0            |                 |           | 1.0        | 1.0      |           |              |        | 0       |      |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700437 1700438

| Parameter | Units | 60211350001    |                 | 1700438   |            | MS % Rec | MSD % Rec | % Rec Limits | RPD    | Max RPD | Qual |
|-----------|-------|----------------|-----------------|-----------|------------|----------|-----------|--------------|--------|---------|------|
|           |       | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result |          |           |              |        |         |      |
| Benzene   | ug/L  | 1.0            | 20              | 20        | 20.9       | 20.5     | 99        | 97           | 37-151 | 2       | 40   |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Parameter                 | Units | 60211350001 |                | 1700437         |           | 1700438    |     | % Rec | % Rec  | % Rec | Limits | RPD | Max RPD | Qual |
|---------------------------|-------|-------------|----------------|-----------------|-----------|------------|-----|-------|--------|-------|--------|-----|---------|------|
|                           |       | Result      | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result |     |       |        |       |        |     |         |      |
| Ethylbenzene              | ug/L  | ND          | 20             | 20              | 18.0      | 18.3       | 89  | 91    | 29-151 | 2     | 45     |     |         |      |
| Toluene                   | ug/L  | ND          | 20             | 20              | 18.3      | 18.4       | 92  | 92    | 37-147 | 1     | 43     |     |         |      |
| Xylene (Total)            | ug/L  | ND          | 60             | 60              | 53.6      | 53.9       | 89  | 90    | 27-156 | 1     | 46     |     |         |      |
| 1,2-Dichloroethane-d4 (S) | %     |             |                |                 |           |            | 107 | 107   | 81-127 |       |        |     |         |      |
| 4-Bromofluorobenzene (S)  | %     |             |                |                 |           |            | 98  | 100   | 77-130 |       |        |     |         |      |
| Toluene-d8 (S)            | %     |             |                |                 |           |            | 98  | 99    | 80-120 |       |        |     |         |      |
| Preservation pH           |       | 1.0         |                |                 | 1.0       | 1.0        |     |       |        |       |        | 0   |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

QC Batch: OEXT/52796

Analysis Method: EPA 8270C by SIM

QC Batch Method: EPA 3510C

Analysis Description: 8270 Water PAH by SIM MSSV

Associated Lab Samples: 60211350001, 60211350002

METHOD BLANK: 1699484

Matrix: Water

Associated Lab Samples: 60211350001, 60211350002

| Parameter              | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|------------------------|-------|--------------|-----------------|-------|----------------|------------|
| Acenaphthene           | ug/L  | ND           | 0.10            | 0.014 | 01/22/16 13:44 |            |
| Acenaphthylene         | ug/L  | ND           | 0.10            | 0.017 | 01/22/16 13:44 |            |
| Anthracene             | ug/L  | ND           | 0.10            | 0.014 | 01/22/16 13:44 |            |
| Benzo(a)anthracene     | ug/L  | ND           | 0.10            | 0.013 | 01/22/16 13:44 |            |
| Benzo(a)pyrene         | ug/L  | ND           | 0.10            | 0.011 | 01/22/16 13:44 |            |
| Benzo(b)fluoranthene   | ug/L  | ND           | 0.10            | 0.012 | 01/22/16 13:44 |            |
| Benzo(g,h,i)perylene   | ug/L  | ND           | 0.10            | 0.011 | 01/22/16 13:44 |            |
| Benzo(k)fluoranthene   | ug/L  | ND           | 0.10            | 0.013 | 01/22/16 13:44 |            |
| Chrysene               | ug/L  | ND           | 0.10            | 0.011 | 01/22/16 13:44 |            |
| Dibenz(a,h)anthracene  | ug/L  | ND           | 0.10            | 0.017 | 01/22/16 13:44 |            |
| Fluoranthene           | ug/L  | ND           | 0.50            | 0.019 | 01/22/16 13:44 |            |
| Fluorene               | ug/L  | ND           | 0.10            | 0.013 | 01/22/16 13:44 |            |
| Indeno(1,2,3-cd)pyrene | ug/L  | ND           | 0.10            | 0.015 | 01/22/16 13:44 |            |
| Naphthalene            | ug/L  | ND           | 0.50            | 0.046 | 01/22/16 13:44 |            |
| Phenanthrene           | ug/L  | ND           | 0.50            | 0.024 | 01/22/16 13:44 |            |
| Pyrene                 | ug/L  | ND           | 0.10            | 0.030 | 01/22/16 13:44 |            |
| 2-Fluorobiphenyl (S)   | %     | 57           | 39-85           |       | 01/22/16 13:44 |            |
| Terphenyl-d14 (S)      | %     | 67           | 48-95           |       | 01/22/16 13:44 |            |

LABORATORY CONTROL SAMPLE: 1699485

| Parameter              | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|------------------------|-------|-------------|------------|-----------|--------------|------------|
| Acenaphthene           | ug/L  | 10          | 7.1        | 71        | 44-106       |            |
| Acenaphthylene         | ug/L  | 10          | 7.4        | 74        | 45-111       |            |
| Anthracene             | ug/L  | 10          | 8.2        | 82        | 49-111       |            |
| Benzo(a)anthracene     | ug/L  | 10          | 8.7        | 87        | 53-120       |            |
| Benzo(a)pyrene         | ug/L  | 10          | 8.6        | 86        | 51-115       |            |
| Benzo(b)fluoranthene   | ug/L  | 10          | 8.3        | 83        | 44-126       |            |
| Benzo(g,h,i)perylene   | ug/L  | 10          | 8.8        | 88        | 39-122       |            |
| Benzo(k)fluoranthene   | ug/L  | 10          | 8.6        | 86        | 48-115       |            |
| Chrysene               | ug/L  | 10          | 8.2        | 82        | 42-98        |            |
| Dibenz(a,h)anthracene  | ug/L  | 10          | 9.9        | 99        | 30-127       |            |
| Fluoranthene           | ug/L  | 10          | 9.1        | 91        | 57-121       |            |
| Fluorene               | ug/L  | 10          | 7.5        | 75        | 47-110       |            |
| Indeno(1,2,3-cd)pyrene | ug/L  | 10          | 8.8        | 88        | 35-126       |            |
| Naphthalene            | ug/L  | 10          | 6.8        | 68        | 40-106       |            |
| Phenanthrene           | ug/L  | 10          | 7.4        | 74        | 45-107       |            |
| Pyrene                 | ug/L  | 10          | 8.1        | 81        | 42-117       |            |
| 2-Fluorobiphenyl (S)   | %     |             |            | 63        | 39-85        |            |
| Terphenyl-d14 (S)      | %     |             |            | 74        | 48-95        |            |

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Parameter              | Units | 60211350001 |                | MSD             |           | MSD        |          | MS        |        | MSD |    | % Rec | Limits | RPD | Max RPD | Qual |
|------------------------|-------|-------------|----------------|-----------------|-----------|------------|----------|-----------|--------|-----|----|-------|--------|-----|---------|------|
|                        |       | Result      | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec |        |     |    |       |        |     |         |      |
| Acenaphthene           | ug/L  | ND          | 9.1            | 9.1             | 5.5       | 5.1        | 61       | 56        | 55-105 | 9   | 80 |       |        |     |         |      |
| Acenaphthylene         | ug/L  | ND          | 9.1            | 9.1             | 5.9       | 5.5        | 65       | 61        | 56-114 | 6   | 81 |       |        |     |         |      |
| Anthracene             | ug/L  | ND          | 9.1            | 9.1             | 7.4       | 6.8        | 82       | 75        | 51-123 | 9   | 85 |       |        |     |         |      |
| Benzo(a)anthracene     | ug/L  | ND          | 9.1            | 9.1             | 8.1       | 7.2        | 89       | 79        | 60-124 | 12  | 81 |       |        |     |         |      |
| Benzo(a)pyrene         | ug/L  | ND          | 9.1            | 9.1             | 7.9       | 6.9        | 87       | 76        | 63-113 | 13  | 80 |       |        |     |         |      |
| Benzo(b)fluoranthene   | ug/L  | ND          | 9.1            | 9.1             | 8.1       | 6.8        | 89       | 74        | 50-129 | 18  | 83 |       |        |     |         |      |
| Benzo(g,h,i)perylene   | ug/L  | ND          | 9.1            | 9.1             | 7.5       | 6.5        | 82       | 72        | 44-128 | 14  | 80 |       |        |     |         |      |
| Benzo(k)fluoranthene   | ug/L  | ND          | 9.1            | 9.1             | 7.4       | 6.8        | 81       | 74        | 59-107 | 9   | 79 |       |        |     |         |      |
| Chrysene               | ug/L  | ND          | 9.1            | 9.1             | 7.8       | 6.9        | 85       | 76        | 45-100 | 12  | 79 |       |        |     |         |      |
| Dibenz(a,h)anthracene  | ug/L  | ND          | 9.1            | 9.1             | 8.4       | 7.2        | 93       | 79        | 42-129 | 16  | 80 |       |        |     |         |      |
| Fluoranthene           | ug/L  | ND          | 9.1            | 9.1             | 8.7       | 7.6        | 95       | 84        | 62-124 | 12  | 82 |       |        |     |         |      |
| Fluorene               | ug/L  | ND          | 9.1            | 9.1             | 5.7       | 5.3        | 63       | 58        | 58-111 | 7   | 83 |       |        |     |         |      |
| Indeno(1,2,3-cd)pyrene | ug/L  | ND          | 9.1            | 9.1             | 7.7       | 6.6        | 84       | 73        | 45-129 | 15  | 80 |       |        |     |         |      |
| Naphthalene            | ug/L  | 0.33J       | 9.1            | 9.1             | 6.4       | 5.8        | 66       | 60        | 35-117 | 10  | 48 |       |        |     |         |      |
| Phenanthrene           | ug/L  | 0.12J       | 9.1            | 9.1             | 6.7       | 6.1        | 72       | 66        | 53-103 | 9   | 79 |       |        |     |         |      |
| Pyrene                 | ug/L  | ND          | 9.1            | 9.1             | 7.4       | 6.7        | 82       | 74        | 52-109 | 10  | 85 |       |        |     |         |      |
| 2-Fluorobiphenyl (S)   | %     |             |                |                 |           |            |          | 50        | 39-85  |     | 78 |       |        |     |         |      |
| Terphenyl-d14 (S)      | %     |             |                |                 |           |            |          | 74        | 48-95  |     | 79 |       |        |     |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

QC Project No.: 60211350

QC Batch: WETA/37799 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Associated Lab Samples: 60211350001, 60211350002

METHOD BLANK: 1699579 Matrix: Water

Associated Lab Samples: 60211350001, 60211350002

| Parameter | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|-------|----------------|------------|
| Bromide   | mg/L  | ND           | 1.0             | 0.50  | 01/20/16 11:29 |            |
| Chloride  | mg/L  | ND           | 1.0             | 0.50  | 01/20/16 11:29 |            |
| Fluoride  | mg/L  | ND           | 0.20            | 0.073 | 01/20/16 11:29 |            |
| Sulfate   | mg/L  | ND           | 1.0             | 0.25  | 01/20/16 11:29 |            |

LABORATORY CONTROL SAMPLE: 1699580

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Bromide   | mg/L  | 5           | 5.0        | 100       | 90-110       |            |
| Chloride  | mg/L  | 5           | 4.9        | 97        | 90-110       |            |
| Fluoride  | mg/L  | 2.5         | 2.6        | 104       | 90-110       |            |
| Sulfate   | mg/L  | 5           | 5.0        | 99        | 90-110       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1699581 1699582

| Parameter | Units | 60211350001 |                | MSD             |        | MS         |       | MSD   |        | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|-------------|----------------|-----------------|--------|------------|-------|-------|--------|--------------|-----|---------|------|
|           |       | Result      | MS Spike Conc. | MSD Spike Conc. | Result | MSD Result | % Rec | % Rec |        |              |     |         |      |
| Bromide   | mg/L  | 38.8        | 125            | 125             | 141    | 140        | 82    | 81    | 80-120 | 0            | 15  |         |      |
| Chloride  | mg/L  | 5060        | 2500           | 2500            | 7180   | 7140       | 85    | 83    | 80-120 | 1            | 15  |         |      |
| Fluoride  | mg/L  | 2.1J        | 62.5           | 62.5            | 57.6   | 57.7       | 89    | 89    | 80-120 | 0            | 15  |         |      |
| Sulfate   | mg/L  | 182         | 125            | 125             | 286    | 287        | 83    | 84    | 80-120 | 0            | 15  |         |      |

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## QUALIFIERS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### BATCH QUALIFIERS

Batch: GCV/5293

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

### ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211350

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211350001 | MW-PS1    | EPA 5030B/8015B | GCV/5293   |                   |                  |
| 60211350002 | MW-PS3    | EPA 5030B/8015B | GCV/5293   |                   |                  |
| 60211350001 | MW-PS1    | EPA 3010        | MPRP/34643 | EPA 6010          | ICP/25405        |
| 60211350002 | MW-PS3    | EPA 3010        | MPRP/34643 | EPA 6010          | ICP/25405        |
| 60211350001 | MW-PS1    | EPA 7470        | MERP/10270 | EPA 7470          | MERC/10217       |
| 60211350002 | MW-PS3    | EPA 7470        | MERP/10270 | EPA 7470          | MERC/10217       |
| 60211350001 | MW-PS1    | EPA 3510C       | OEXT/52796 | EPA 8270C by SIM  | MSSV/17176       |
| 60211350002 | MW-PS3    | EPA 3510C       | OEXT/52796 | EPA 8270C by SIM  | MSSV/17176       |
| 60211350001 | MW-PS1    | EPA 8260/OA1    | MSV/73845  |                   |                  |
| 60211350002 | MW-PS3    | EPA 8260/OA1    | MSV/73845  |                   |                  |
| 60211350001 | MW-PS1    | EPA 300.0       | WETA/37799 |                   |                  |
| 60211350002 | MW-PS3    | EPA 300.0       | WETA/37799 |                   |                  |

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt  
ESI Tech Spec Client

WO#: 60211350  
60211350

Client Name: BP Stantec

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client   
Tracking #: 6508 8163 4593 Pace Shipping Label Used? Yes  No

Optional  
Proj Due Date:  
Proj Name:

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 T-262 Type of Ice: Wet Blue None  Samples received on ice, cooling process has begun.  
(circle one)

Cooler Temperature: 2.0  
Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 1/15

|  |  |                             |
|--|--|-----------------------------|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 1.                          |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 2.                          |
| Chain of Custody relinquished:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 3.                          |
| Sampler name & signature on COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 4.                          |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 5.                          |
| Short Hold Time analyses (<72hr):  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 6.                          |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 7.                          |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 8.                          |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                             |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 10.                         |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 11.                         |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 12.                         |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                             |
| Includes date/time/ID/analyses Matrix: <u>WT</u>   |  | 13.                         |
| All containers needing preservation have been checked.                                     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                             |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 14.                         |
| Exceptions: <u>VOA</u> Coliform, O&G, WI-DRO (water)                                       | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              | Initial when completed      |
| Trip Blank present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Lot # of added preservative |
| Pace Trip Blank lot # (if purchased): <u>1/7/16</u>  |  | 15.                         |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 16.                         |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 17. List State:             |
| Additional labels attached to 5035A vials in the field?                                    | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.                         |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: AAF Date: 01/15/16

|  |        |
|--|--------|
| Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>1300</u>   | Start: |
| End: <u>1308</u>   | End:   |
| Temp:  | Temp:  |



January 27, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: BYRD PUMP INVESTIGATION  
Pace Project No.: 60211351

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on January 15, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Lab ID      | Sample ID  | Matrix | Date Collected | Date Received  |
|-------------|------------|--------|----------------|----------------|
| 60211351001 | MW-PS2     | Water  | 01/14/16 14:00 | 01/15/16 08:50 |
| 60211351002 | MW-PS4     | Water  | 01/14/16 15:40 | 01/15/16 08:50 |
| 60211351003 | DUP-1-GW   | Water  | 01/14/16 08:00 | 01/15/16 08:50 |
| 60211351004 | EB-01      | Water  | 01/14/16 15:15 | 01/15/16 08:50 |
| 60211351005 | TRIP BLANK | Water  | 01/14/16 08:00 | 01/15/16 08:50 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Lab ID      | Sample ID | Method           | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|------------------|----------|-------------------|------------|
| 60211351001 | MW-PS2    | EPA 5030B/8015B  | JTK      | 3                 | PASI-K     |
|             |           | EPA 6010         | ZBM      | 7                 | PASI-K     |
|             |           | EPA 7470         | TDS      | 1                 | PASI-K     |
|             |           | EPA 8270C by SIM | NAW      | 18                | PASI-K     |
|             |           | EPA 8260/OA1     | JDH      | 8                 | PASI-K     |
|             |           | EPA 300.0        | RAB      | 4                 | PASI-K     |
| 60211351002 | MW-PS4    | EPA 5030B/8015B  | JTK      | 3                 | PASI-K     |
|             |           | EPA 6010         | ZBM      | 7                 | PASI-K     |
|             |           | EPA 7470         | TDS      | 1                 | PASI-K     |
|             |           | EPA 8270C by SIM | NAW      | 18                | PASI-K     |
|             |           | EPA 8260/OA1     | JDH      | 8                 | PASI-K     |
|             |           | EPA 300.0        | RAB      | 4                 | PASI-K     |
| 60211351003 | DUP-1-GW  | EPA 5030B/8015B  | JTK      | 3                 | PASI-K     |
|             |           | EPA 6010         | ZBM      | 7                 | PASI-K     |
|             |           | EPA 7470         | TDS      | 1                 | PASI-K     |
|             |           | EPA 8270C by SIM | NAW      | 18                | PASI-K     |
|             |           | EPA 8260/OA1     | JDH      | 8                 | PASI-K     |
|             |           | EPA 300.0        | RAB      | 4                 | PASI-K     |
| 60211351004 | EB-01     | EPA 6010         | ZBM      | 7                 | PASI-K     |
|             |           | EPA 7470         | TDS      | 1                 | PASI-K     |
|             |           | EPA 8270C by SIM | NAW      | 18                | PASI-K     |
|             |           | EPA 300.0        | RAB      | 4                 | PASI-K     |

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

---

**Method:** EPA 5030B/8015B

**Description:** Gasoline Range Organics

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

3 samples were analyzed for EPA 5030B/8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCV/5293

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

**Additional Comments:**

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

---

**Method:** EPA 6010

**Description:** 6010 MET ICP

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

---

**Method:** EPA 7470

**Description:** 7470 Mercury

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MERP/10270

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60211350001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1699794)
  - Mercury
- MSD (Lab ID: 1699795)
  - Mercury

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

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**Method:** EPA 8270C by SIM

**Description:** 8270 MSSV PAH by SIM

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

4 samples were analyzed for EPA 8270C by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

## REPORT OF LABORATORY ANALYSIS

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

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**Method:** EPA 8260/OA1

**Description:** 8260/OA1 UST, Water

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

3 samples were analyzed for EPA 8260/OA1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

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## PROJECT NARRATIVE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

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**Method:** EPA 300.0

**Description:** 300.0 IC Anions 28 Days

**Client:** BP Stantec TX

**Date:** January 27, 2016

**General Information:**

4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

Analyte Comments:

QC Batch: WETA/37799

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- DUP-1-GW (Lab ID: 60211351003)
  - Fluoride
- MW-PS2 (Lab ID: 60211351001)
  - Fluoride
- MW-PS4 (Lab ID: 60211351002)
  - Fluoride

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Sample: MW-PS2                 |         | Lab ID: 60211351001   |              | Collected: 01/14/16 14:00 |    | Received: 01/15/16 08:50 |                | Matrix: Water |      |
|--------------------------------|---------|---|--------------|---------------------------|----|--------------------------|----------------|---------------|------|
| Parameters                     | Results | Units   | Report Limit | MDL                       | DF | Prepared                 | Analyzed       | CAS No.       | Qual |
| <b>Gasoline Range Organics</b> |         | Analytical Method: EPA 5030B/8015B                                |              |                           |    |                          |                |               |      |
| TPH-GRO                        | ND      | mg/L  | 0.50         | 0.024                     | 1  |                          | 01/19/16 13:42 |               |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| 4-Bromofluorobenzene (S)       | 95      | %   | 82-114       |                           | 1  |                          | 01/19/16 13:42 | 460-00-4      |      |
| Preservation pH                | 1.0     |   | 0.10         |                           | 1  |                          | 01/19/16 13:42 |               |      |
| <b>6010 MET ICP</b>            |         | Analytical Method: EPA 6010 Preparation Method: EPA 3010          |              |                           |    |                          |                |               |      |
| Arsenic                        | 9.7J    | ug/L  | 10.0         | 4.5                       | 1  | 01/19/16 09:00           | 01/25/16 12:13 | 7440-38-2     |      |
| Barium                         | 212     | ug/L  | 10.0         | 0.52                      | 1  | 01/19/16 09:00           | 01/25/16 12:13 | 7440-39-3     |      |
| Cadmium                        | ND      | ug/L  | 5.0          | 0.56                      | 1  | 01/19/16 09:00           | 01/25/16 12:13 | 7440-43-9     |      |
| Chromium                       | 1.3J    | ug/L  | 5.0          | 0.96                      | 1  | 01/19/16 09:00           | 01/25/16 12:13 | 7440-47-3     |      |
| Lead                           | ND      | ug/L  | 5.0          | 1.9                       | 1  | 01/19/16 09:00           | 01/25/16 16:43 | 7439-92-1     |      |
| Selenium                       | ND      | ug/L  | 15.0         | 5.8                       | 1  | 01/19/16 09:00           | 01/25/16 12:13 | 7782-49-2     |      |
| Silver                         | ND      | ug/L  | 7.0          | 1.1                       | 1  | 01/19/16 09:00           | 01/25/16 12:13 | 7440-22-4     |      |
| <b>7470 Mercury</b>            |         | Analytical Method: EPA 7470 Preparation Method: EPA 7470          |              |                           |    |                          |                |               |      |
| Mercury                        | ND      | ug/L  | 0.20         | 0.012                     | 1  | 01/20/16 01:30           | 01/21/16 10:02 | 7439-97-6     |      |
| <b>8270 MSSV PAH by SIM</b>    |         | Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C |              |                           |    |                          |                |               |      |
| Acenaphthene                   | ND      | ug/L  | 0.091        | 0.013                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 83-32-9       |      |
| Acenaphthylene                 | ND      | ug/L  | 0.091        | 0.015                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 208-96-8      |      |
| Anthracene                     | ND      | ug/L  | 0.091        | 0.013                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 120-12-7      |      |
| Benzo(a)anthracene             | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 56-55-3       |      |
| Benzo(a)pyrene                 | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 50-32-8       |      |
| Benzo(b)fluoranthene           | ND      | ug/L  | 0.091        | 0.011                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 205-99-2      |      |
| Benzo(g,h,i)perylene           | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 191-24-2      |      |
| Benzo(k)fluoranthene           | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 207-08-9      |      |
| Chrysene                       | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 218-01-9      |      |
| Dibenz(a,h)anthracene          | ND      | ug/L  | 0.091        | 0.015                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 53-70-3       |      |
| Fluoranthene                   | ND      | ug/L  | 0.45         | 0.017                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 206-44-0      |      |
| Fluorene                       | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 86-73-7       |      |
| Indeno(1,2,3-cd)pyrene         | ND      | ug/L  | 0.091        | 0.014                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 193-39-5      |      |
| Naphthalene                    | 0.064J  | ug/L  | 0.45         | 0.042                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 91-20-3       |      |
| Phenanthrene                   | 0.047J  | ug/L  | 0.45         | 0.022                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 85-01-8       |      |
| Pyrene                         | ND      | ug/L  | 0.091        | 0.027                     | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 129-00-0      |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| 2-Fluorobiphenyl (S)           | 46      | %   | 39-85        |                           | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 321-60-8      |      |
| Terphenyl-d14 (S)              | 70      | %   | 48-95        |                           | 1  | 01/20/16 00:00           | 01/22/16 19:53 | 1718-51-0     |      |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1                                   |              |                           |    |                          |                |               |      |
| Benzene                        | 0.29J   | ug/L  | 1.0          | 0.060                     | 1  |                          | 01/21/16 17:08 | 71-43-2       |      |
| Toluene                        | ND      | ug/L  | 1.0          | 0.17                      | 1  |                          | 01/21/16 17:08 | 108-88-3      |      |
| Ethylbenzene                   | ND      | ug/L  | 1.0          | 0.18                      | 1  |                          | 01/21/16 17:08 | 100-41-4      |      |
| Xylene (Total)                 | ND      | ug/L  | 3.0          | 0.42                      | 1  |                          | 01/21/16 17:08 | 1330-20-7     |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| Toluene-d8 (S)                 | 99      | %   | 80-120       |                           | 1  |                          | 01/21/16 17:08 | 2037-26-5     |      |
| 4-Bromofluorobenzene (S)       | 99      | %   | 77-130       |                           | 1  |                          | 01/21/16 17:08 | 460-00-4      |      |

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Sample: MW-PS2                 |             | Lab ID: 60211351001             |              | Collected: 01/14/16 14:00 | Received: 01/15/16 08:50 | Matrix: Water |                |            |      |
|--------------------------------|-------------|---------------------------------|--------------|---------------------------|--------------------------|---------------|----------------|------------|------|
| Parameters                     | Results     | Units                           | Report Limit | MDL                       | DF                       | Prepared      | Analyzed       | CAS No.    | Qual |
| <b>8260/OA1 UST, Water</b>     |             | Analytical Method: EPA 8260/OA1 |              |                           |                          |               |                |            |      |
| <b>Surrogates</b>              |             |                                 |              |                           |                          |               |                |            |      |
| 1,2-Dichloroethane-d4 (S)      | 106         | %                               | 81-127       |                           | 1                        |               | 01/21/16 17:08 | 17060-07-0 |      |
| Preservation pH                | <b>1.0</b>  |                                 | 0.10         | 0.10                      | 1                        |               | 01/21/16 17:08 |            |      |
| <b>300.0 IC Anions 28 Days</b> |             | Analytical Method: EPA 300.0    |              |                           |                          |               |                |            |      |
| Bromide                        | <b>25.7</b> | mg/L                            | 25.0         | 12.5                      | 25                       |               | 01/20/16 19:39 | 24959-67-9 |      |
| Chloride                       | <b>3720</b> | mg/L                            | 500          | 250                       | 500                      |               | 01/20/16 19:53 | 16887-00-6 |      |
| Fluoride                       | <b>1.9J</b> | mg/L                            | 5.0          | 1.8                       | 25                       |               | 01/20/16 19:39 | 16984-48-8 | D3   |
| Sulfate                        | <b>193</b>  | mg/L                            | 25.0         | 6.2                       | 25                       |               | 01/20/16 19:39 | 14808-79-8 |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Sample: MW-PS4                 |         | Lab ID: 60211351002   |              | Collected: 01/14/16 15:40 |    | Received: 01/15/16 08:50 |                | Matrix: Water |      |
|--------------------------------|---------|---|--------------|---------------------------|----|--------------------------|----------------|---------------|------|
| Parameters                     | Results | Units   | Report Limit | MDL                       | DF | Prepared                 | Analyzed       | CAS No.       | Qual |
| <b>Gasoline Range Organics</b> |         | Analytical Method: EPA 5030B/8015B                                |              |                           |    |                          |                |               |      |
| TPH-GRO                        | ND      | mg/L  | 0.50         | 0.024                     | 1  |                          | 01/19/16 14:00 |               |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| 4-Bromofluorobenzene (S)       | 92      | %   | 82-114       |                           | 1  |                          | 01/19/16 14:00 | 460-00-4      |      |
| Preservation pH                | 1.0     |   | 0.10         |                           | 1  |                          | 01/19/16 14:00 |               |      |
| <b>6010 MET ICP</b>            |         | Analytical Method: EPA 6010 Preparation Method: EPA 3010          |              |                           |    |                          |                |               |      |
| Arsenic                        | 11.8    | ug/L  | 10.0         | 4.5                       | 1  | 01/19/16 09:00           | 01/25/16 12:19 | 7440-38-2     |      |
| Barium                         | 171     | ug/L  | 10.0         | 0.52                      | 1  | 01/19/16 09:00           | 01/25/16 12:19 | 7440-39-3     |      |
| Cadmium                        | ND      | ug/L  | 5.0          | 0.56                      | 1  | 01/19/16 09:00           | 01/25/16 12:19 | 7440-43-9     |      |
| Chromium                       | ND      | ug/L  | 5.0          | 0.96                      | 1  | 01/19/16 09:00           | 01/25/16 12:19 | 7440-47-3     |      |
| Lead                           | ND      | ug/L  | 5.0          | 1.9                       | 1  | 01/19/16 09:00           | 01/25/16 16:46 | 7439-92-1     |      |
| Selenium                       | ND      | ug/L  | 15.0         | 5.8                       | 1  | 01/19/16 09:00           | 01/25/16 12:19 | 7782-49-2     |      |
| Silver                         | ND      | ug/L  | 7.0          | 1.1                       | 1  | 01/19/16 09:00           | 01/25/16 12:19 | 7440-22-4     |      |
| <b>7470 Mercury</b>            |         | Analytical Method: EPA 7470 Preparation Method: EPA 7470          |              |                           |    |                          |                |               |      |
| Mercury                        | ND      | ug/L  | 0.20         | 0.012                     | 1  | 01/20/16 01:30           | 01/21/16 10:04 | 7439-97-6     |      |
| <b>8270 MSSV PAH by SIM</b>    |         | Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C |              |                           |    |                          |                |               |      |
| Acenaphthene                   | ND      | ug/L  | 0.091        | 0.013                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 83-32-9       |      |
| Acenaphthylene                 | ND      | ug/L  | 0.091        | 0.015                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 208-96-8      |      |
| Anthracene                     | ND      | ug/L  | 0.091        | 0.013                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 120-12-7      |      |
| Benzo(a)anthracene             | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 56-55-3       |      |
| Benzo(a)pyrene                 | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 50-32-8       |      |
| Benzo(b)fluoranthene           | ND      | ug/L  | 0.091        | 0.011                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 205-99-2      |      |
| Benzo(g,h,i)perylene           | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 191-24-2      |      |
| Benzo(k)fluoranthene           | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 207-08-9      |      |
| Chrysene                       | ND      | ug/L  | 0.091        | 0.010                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 218-01-9      |      |
| Dibenz(a,h)anthracene          | ND      | ug/L  | 0.091        | 0.015                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 53-70-3       |      |
| Fluoranthene                   | ND      | ug/L  | 0.45         | 0.017                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 206-44-0      |      |
| Fluorene                       | ND      | ug/L  | 0.091        | 0.012                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 86-73-7       |      |
| Indeno(1,2,3-cd)pyrene         | ND      | ug/L  | 0.091        | 0.014                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 193-39-5      |      |
| Naphthalene                    | 0.22J   | ug/L  | 0.45         | 0.042                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 91-20-3       |      |
| Phenanthrene                   | 0.062J  | ug/L  | 0.45         | 0.022                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 85-01-8       |      |
| Pyrene                         | ND      | ug/L  | 0.091        | 0.027                     | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 129-00-0      |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| 2-Fluorobiphenyl (S)           | 48      | %   | 39-85        |                           | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 321-60-8      |      |
| Terphenyl-d14 (S)              | 68      | %   | 48-95        |                           | 1  | 01/20/16 00:00           | 01/22/16 20:15 | 1718-51-0     |      |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1                                   |              |                           |    |                          |                |               |      |
| Benzene                        | 0.13J   | ug/L  | 1.0          | 0.060                     | 1  |                          | 01/21/16 17:22 | 71-43-2       |      |
| Toluene                        | ND      | ug/L  | 1.0          | 0.17                      | 1  |                          | 01/21/16 17:22 | 108-88-3      |      |
| Ethylbenzene                   | ND      | ug/L  | 1.0          | 0.18                      | 1  |                          | 01/21/16 17:22 | 100-41-4      |      |
| Xylene (Total)                 | ND      | ug/L  | 3.0          | 0.42                      | 1  |                          | 01/21/16 17:22 | 1330-20-7     |      |
| <b>Surrogates</b>              |         |   |              |                           |    |                          |                |               |      |
| Toluene-d8 (S)                 | 99      | %   | 80-120       |                           | 1  |                          | 01/21/16 17:22 | 2037-26-5     |      |
| 4-Bromofluorobenzene (S)       | 100     | %   | 77-130       |                           | 1  |                          | 01/21/16 17:22 | 460-00-4      |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Sample: MW-PS4                 |         | Lab ID: 60211351002             |              | Collected: 01/14/16 15:40 | Received: 01/15/16 08:50 | Matrix: Water |                |            |      |
|--------------------------------|---------|---------------------------------|--------------|---------------------------|--------------------------|---------------|----------------|------------|------|
| Parameters                     | Results | Units                           | Report Limit | MDL                       | DF                       | Prepared      | Analyzed       | CAS No.    | Qual |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1 |              |                           |                          |               |                |            |      |
| <b>Surrogates</b>              |         |                                 |              |                           |                          |               |                |            |      |
| 1,2-Dichloroethane-d4 (S)      | 107     | %                               | 81-127       |                           | 1                        |               | 01/21/16 17:22 | 17060-07-0 |      |
| Preservation pH                | 1.0     |                                 | 0.10         | 0.10                      | 1                        |               | 01/21/16 17:22 |            |      |
| <b>300.0 IC Anions 28 Days</b> |         | Analytical Method: EPA 300.0    |              |                           |                          |               |                |            |      |
| Bromide                        | 106     | mg/L                            | 50.0         | 25.0                      | 50                       |               | 01/20/16 20:08 | 24959-67-9 |      |
| Chloride                       | 5270    | mg/L                            | 500          | 250                       | 500                      |               | 01/20/16 20:22 | 16887-00-6 |      |
| Fluoride                       | 3.9J    | mg/L                            | 10.0         | 3.6                       | 50                       |               | 01/20/16 20:08 | 16984-48-8 | D3   |
| Sulfate                        | 603     | mg/L                            | 50.0         | 12.4                      | 50                       |               | 01/20/16 20:08 | 14808-79-8 |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Sample: DUP-1-GW      Lab ID: 60211351003      Collected: 01/14/16 08:00      Received: 01/15/16 08:50      Matrix: Water |         |       |              |       |    |                |                |           |      |
|---|---------|-------|--------------|-------|----|----------------|----------------|-----------|------|
| Parameters  | Results | Units | Report Limit | MDL   | DF | Prepared       | Analyzed       | CAS No.   | Qual |
| <b>Gasoline Range Organics</b> Analytical Method: EPA 5030B/8015B   |         |       |              |       |    |                |                |           |      |
| TPH-GRO   | ND      | mg/L  | 0.50         | 0.024 | 1  |                | 01/19/16 14:17 |           |      |
| <b>Surrogates</b>   |         |       |              |       |    |                |                |           |      |
| 4-Bromofluorobenzene (S)  | 86      | %     | 82-114       |       | 1  |                | 01/19/16 14:17 | 460-00-4  |      |
| Preservation pH   | 1.0     |       | 0.10         |       | 1  |                | 01/19/16 14:17 |           |      |
| <b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010   |         |       |              |       |    |                |                |           |      |
| Arsenic   | 12.4    | ug/L  | 10.0         | 4.5   | 1  | 01/19/16 09:00 | 01/25/16 12:22 | 7440-38-2 |      |
| Barium  | 181     | ug/L  | 10.0         | 0.52  | 1  | 01/19/16 09:00 | 01/25/16 12:22 | 7440-39-3 |      |
| Cadmium   | 0.92J   | ug/L  | 5.0          | 0.56  | 1  | 01/19/16 09:00 | 01/25/16 12:22 | 7440-43-9 |      |
| Chromium  | ND      | ug/L  | 5.0          | 0.96  | 1  | 01/19/16 09:00 | 01/25/16 12:22 | 7440-47-3 |      |
| Lead  | ND      | ug/L  | 5.0          | 1.9   | 1  | 01/19/16 09:00 | 01/25/16 16:48 | 7439-92-1 |      |
| Selenium  | ND      | ug/L  | 15.0         | 5.8   | 1  | 01/19/16 09:00 | 01/25/16 12:22 | 7782-49-2 |      |
| Silver  | ND      | ug/L  | 7.0          | 1.1   | 1  | 01/19/16 09:00 | 01/25/16 12:22 | 7440-22-4 |      |
| <b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470   |         |       |              |       |    |                |                |           |      |
| Mercury   | ND      | ug/L  | 0.20         | 0.012 | 1  | 01/20/16 01:30 | 01/21/16 10:06 | 7439-97-6 |      |
| <b>8270 MSSV PAH by SIM</b> Analytical Method: EPA 8270C by SIM      Preparation Method: EPA 3510C                        |         |       |              |       |    |                |                |           |      |
| Acenaphthene  | ND      | ug/L  | 0.091        | 0.013 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 83-32-9   |      |
| Acenaphthylene  | ND      | ug/L  | 0.091        | 0.015 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 208-96-8  |      |
| Anthracene  | ND      | ug/L  | 0.091        | 0.013 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 120-12-7  |      |
| Benzo(a)anthracene  | ND      | ug/L  | 0.091        | 0.012 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 56-55-3   |      |
| Benzo(a)pyrene  | ND      | ug/L  | 0.091        | 0.010 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 50-32-8   |      |
| Benzo(b)fluoranthene  | ND      | ug/L  | 0.091        | 0.011 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 205-99-2  |      |
| Benzo(g,h,i)perylene  | ND      | ug/L  | 0.091        | 0.010 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 191-24-2  |      |
| Benzo(k)fluoranthene  | ND      | ug/L  | 0.091        | 0.012 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 207-08-9  |      |
| Chrysene  | ND      | ug/L  | 0.091        | 0.010 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 218-01-9  |      |
| Dibenz(a,h)anthracene   | ND      | ug/L  | 0.091        | 0.015 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 53-70-3   |      |
| Fluoranthene  | ND      | ug/L  | 0.45         | 0.017 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 206-44-0  |      |
| Fluorene  | ND      | ug/L  | 0.091        | 0.012 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 86-73-7   |      |
| Indeno(1,2,3-cd)pyrene  | ND      | ug/L  | 0.091        | 0.014 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 193-39-5  |      |
| Naphthalene   | 0.29J   | ug/L  | 0.45         | 0.042 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 91-20-3   |      |
| Phenanthrene  | 0.053J  | ug/L  | 0.45         | 0.022 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 85-01-8   |      |
| Pyrene  | ND      | ug/L  | 0.091        | 0.027 | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 129-00-0  |      |
| <b>Surrogates</b>   |         |       |              |       |    |                |                |           |      |
| 2-Fluorobiphenyl (S)  | 51      | %     | 39-85        |       | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 321-60-8  |      |
| Terphenyl-d14 (S)   | 70      | %     | 48-95        |       | 1  | 01/20/16 00:00 | 01/22/16 20:36 | 1718-51-0 |      |
| <b>8260/OA1 UST, Water</b> Analytical Method: EPA 8260/OA1  |         |       |              |       |    |                |                |           |      |
| Benzene   | 0.12J   | ug/L  | 1.0          | 0.060 | 1  |                | 01/21/16 17:35 | 71-43-2   |      |
| Toluene   | ND      | ug/L  | 1.0          | 0.17  | 1  |                | 01/21/16 17:35 | 108-88-3  |      |
| Ethylbenzene  | ND      | ug/L  | 1.0          | 0.18  | 1  |                | 01/21/16 17:35 | 100-41-4  |      |
| Xylene (Total)  | ND      | ug/L  | 3.0          | 0.42  | 1  |                | 01/21/16 17:35 | 1330-20-7 |      |
| <b>Surrogates</b>   |         |       |              |       |    |                |                |           |      |
| Toluene-d8 (S)  | 99      | %     | 80-120       |       | 1  |                | 01/21/16 17:35 | 2037-26-5 |      |
| 4-Bromofluorobenzene (S)  | 99      | %     | 77-130       |       | 1  |                | 01/21/16 17:35 | 460-00-4  |      |

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Sample: DUP-1-GW               |         | Lab ID: 60211351003             |              | Collected: 01/14/16 08:00 | Received: 01/15/16 08:50 | Matrix: Water |                |            |      |
|--------------------------------|---------|---------------------------------|--------------|---------------------------|--------------------------|---------------|----------------|------------|------|
| Parameters                     | Results | Units                           | Report Limit | MDL                       | DF                       | Prepared      | Analyzed       | CAS No.    | Qual |
| <b>8260/OA1 UST, Water</b>     |         | Analytical Method: EPA 8260/OA1 |              |                           |                          |               |                |            |      |
| <b>Surrogates</b>              |         |                                 |              |                           |                          |               |                |            |      |
| 1,2-Dichloroethane-d4 (S)      | 105     | %                               | 81-127       |                           | 1                        |               | 01/21/16 17:35 | 17060-07-0 |      |
| Preservation pH                | 1.0     |                                 | 0.10         | 0.10                      | 1                        |               | 01/21/16 17:35 |            |      |
| <b>300.0 IC Anions 28 Days</b> |         | Analytical Method: EPA 300.0    |              |                           |                          |               |                |            |      |
| Bromide                        | 92.1    | mg/L                            | 50.0         | 25.0                      | 50                       |               | 01/20/16 20:37 | 24959-67-9 |      |
| Chloride                       | 5330    | mg/L                            | 500          | 250                       | 500                      |               | 01/20/16 20:51 | 16887-00-6 |      |
| Fluoride                       | 4.0J    | mg/L                            | 10.0         | 3.6                       | 50                       |               | 01/20/16 20:37 | 16984-48-8 | D3   |
| Sulfate                        | 613     | mg/L                            | 50.0         | 12.4                      | 50                       |               | 01/20/16 20:37 | 14808-79-8 |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

Sample: **EB-01** Lab ID: **60211351004** Collected: 01/14/16 15:15 Received: 01/15/16 08:50 Matrix: Water

| Parameters  | Results       | Units | Report |       |    | Prepared       | Analyzed       | CAS No.    | Qual |
|---|---------------|-------|--------|-------|----|----------------|----------------|------------|------|
|   |               |       | Limit  | MDL   | DF |                |                |            |      |
| <b>6010 MET ICP</b> Analytical Method: EPA 6010 Preparation Method: EPA 3010                  |               |       |        |       |    |                |                |            |      |
| Arsenic   | ND            | ug/L  | 10.0   | 4.5   | 1  | 01/19/16 09:00 | 01/25/16 12:24 | 7440-38-2  |      |
| Barium  | <b>1.2J</b>   | ug/L  | 10.0   | 0.52  | 1  | 01/19/16 09:00 | 01/25/16 12:24 | 7440-39-3  |      |
| Cadmium   | ND            | ug/L  | 5.0    | 0.56  | 1  | 01/19/16 09:00 | 01/25/16 12:24 | 7440-43-9  |      |
| Chromium  | <b>1.7J</b>   | ug/L  | 5.0    | 0.96  | 1  | 01/19/16 09:00 | 01/25/16 12:24 | 7440-47-3  |      |
| Lead  | ND            | ug/L  | 5.0    | 1.9   | 1  | 01/19/16 09:00 | 01/25/16 16:55 | 7439-92-1  |      |
| Selenium  | ND            | ug/L  | 15.0   | 5.8   | 1  | 01/19/16 09:00 | 01/25/16 12:24 | 7782-49-2  |      |
| Silver  | ND            | ug/L  | 7.0    | 1.1   | 1  | 01/19/16 09:00 | 01/25/16 12:24 | 7440-22-4  |      |
| <b>7470 Mercury</b> Analytical Method: EPA 7470 Preparation Method: EPA 7470                  |               |       |        |       |    |                |                |            |      |
| Mercury   | ND            | ug/L  | 0.20   | 0.012 | 1  | 01/20/16 01:30 | 01/21/16 10:08 | 7439-97-6  |      |
| <b>8270 MSSV PAH by SIM</b> Analytical Method: EPA 8270C by SIM Preparation Method: EPA 3510C |               |       |        |       |    |                |                |            |      |
| Acenaphthene  | ND            | ug/L  | 0.091  | 0.013 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 83-32-9    |      |
| Acenaphthylene  | ND            | ug/L  | 0.091  | 0.015 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 208-96-8   |      |
| Anthracene  | ND            | ug/L  | 0.091  | 0.013 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 120-12-7   |      |
| Benzo(a)anthracene  | ND            | ug/L  | 0.091  | 0.012 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 56-55-3    |      |
| Benzo(a)pyrene  | ND            | ug/L  | 0.091  | 0.010 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 50-32-8    |      |
| Benzo(b)fluoranthene  | ND            | ug/L  | 0.091  | 0.011 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 205-99-2   |      |
| Benzo(g,h,i)perylene  | ND            | ug/L  | 0.091  | 0.010 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 191-24-2   |      |
| Benzo(k)fluoranthene  | ND            | ug/L  | 0.091  | 0.012 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 207-08-9   |      |
| Chrysene  | ND            | ug/L  | 0.091  | 0.010 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 218-01-9   |      |
| Dibenz(a,h)anthracene   | ND            | ug/L  | 0.091  | 0.015 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 53-70-3    |      |
| Fluoranthene  | ND            | ug/L  | 0.45   | 0.017 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 206-44-0   |      |
| Fluorene  | ND            | ug/L  | 0.091  | 0.012 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 86-73-7    |      |
| Indeno(1,2,3-cd)pyrene  | ND            | ug/L  | 0.091  | 0.014 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 193-39-5   |      |
| Naphthalene   | ND            | ug/L  | 0.45   | 0.042 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 91-20-3    |      |
| Phenanthrene  | <b>0.047J</b> | ug/L  | 0.45   | 0.022 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 85-01-8    |      |
| Pyrene  | ND            | ug/L  | 0.091  | 0.027 | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 129-00-0   |      |
| <b>Surrogates</b>   |               |       |        |       |    |                |                |            |      |
| 2-Fluorobiphenyl (S)  | 51            | %     | 39-85  |       | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 321-60-8   |      |
| Terphenyl-d14 (S)   | 64            | %     | 48-95  |       | 1  | 01/20/16 00:00 | 01/22/16 20:58 | 1718-51-0  |      |
| <b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0                                   |               |       |        |       |    |                |                |            |      |
| Bromide   | ND            | mg/L  | 1.0    | 0.50  | 1  |                | 01/20/16 16:46 | 24959-67-9 |      |
| Chloride  | ND            | mg/L  | 1.0    | 0.50  | 1  |                | 01/20/16 16:46 | 16887-00-6 |      |
| Fluoride  | ND            | mg/L  | 0.20   | 0.073 | 1  |                | 01/20/16 16:46 | 16984-48-8 |      |
| Sulfate   | ND            | mg/L  | 1.0    | 0.25  | 1  |                | 01/20/16 16:46 | 14808-79-8 |      |

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**QUALITY CONTROL DATA**

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

QC Batch: MERP/10270 Analysis Method: EPA 7470  
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

METHOD BLANK: 1699792 Matrix: Water  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

| Parameter | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|-------|----------------|------------|
| Mercury   | ug/L  | ND           | 0.20            | 0.046 | 01/21/16 11:42 |            |

LABORATORY CONTROL SAMPLE: 1699793

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Mercury   | ug/L  | 5           | 5.7        | 114       | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1699794 1699795

| Parameter | Units | 60211350001 |                | 60211350002     |                 | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|-------------|----------------|-----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
|           |       | Result      | MS Spike Conc. | MSD Spike Conc. | MSD Spike Conc. |           |            |          |           |              |     |         |      |
| Mercury   | ug/L  | ND          | 5              | 5               | 5               | 0.87      | 0.78       | 17       | 16        | 75-125       | 10  | 20      | M1   |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

QC Batch: MPRP/34643 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

METHOD BLANK: 1698900 Matrix: Water  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

| Parameter | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|------|----------------|------------|
| Arsenic   | ug/L  | ND           | 10.0            | 4.5  | 01/25/16 11:56 |            |
| Barium    | ug/L  | ND           | 10.0            | 0.52 | 01/25/16 11:56 |            |
| Cadmium   | ug/L  | ND           | 5.0             | 0.56 | 01/25/16 11:56 |            |
| Chromium  | ug/L  | ND           | 5.0             | 0.96 | 01/25/16 11:56 |            |
| Lead      | ug/L  | ND           | 5.0             | 1.9  | 01/25/16 16:27 |            |
| Selenium  | ug/L  | ND           | 15.0            | 5.8  | 01/25/16 11:56 |            |
| Silver    | ug/L  | ND           | 7.0             | 1.1  | 01/25/16 11:56 |            |

LABORATORY CONTROL SAMPLE: 1698901

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Arsenic   | ug/L  | 1000        | 993        | 99        | 80-120       |            |
| Barium    | ug/L  | 1000        | 1010       | 101       | 80-120       |            |
| Cadmium   | ug/L  | 1000        | 1020       | 102       | 80-120       |            |
| Chromium  | ug/L  | 1000        | 988        | 99        | 80-120       |            |
| Lead      | ug/L  | 1000        | 953        | 95        | 80-120       |            |
| Selenium  | ug/L  | 1000        | 1040       | 104       | 80-120       |            |
| Silver    | ug/L  | 500         | 493        | 99        | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1698902 1698903

| Parameter | Units | 60211350001 |             | MSD         |           | MS         |       | MSD   |        | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|-------------|-------------|-------------|-----------|------------|-------|-------|--------|--------------|-----|---------|------|
|           |       | Result      | Spike Conc. | Spike Conc. | MS Result | MSD Result | % Rec | % Rec |        |              |     |         |      |
| Arsenic   | ug/L  | 8.1J        | 1000        | 1000        | 1080      | 1090       | 107   | 108   | 75-125 | 1            | 20  |         |      |
| Barium    | ug/L  | 255         | 1000        | 1000        | 1280      | 1280       | 103   | 102   | 75-125 | 1            | 20  |         |      |
| Cadmium   | ug/L  | 0.76J       | 1000        | 1000        | 1110      | 1110       | 111   | 111   | 75-125 | 0            | 20  |         |      |
| Chromium  | ug/L  | 1.7J        | 1000        | 1000        | 936       | 943        | 93    | 94    | 75-125 | 1            | 20  |         |      |
| Lead      | ug/L  | ND          | 1000        | 1000        | 902       | 900        | 90    | 90    | 75-125 | 0            | 20  |         |      |
| Selenium  | ug/L  | ND          | 1000        | 1000        | 1070      | 1070       | 107   | 107   | 75-125 | 0            | 20  |         |      |
| Silver    | ug/L  | ND          | 500         | 500         | 555       | 555        | 111   | 111   | 75-125 | 0            | 20  |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION  
Pace Project No.: 60211351

QC Batch: MSV/73845 Analysis Method: EPA 8260/OA1  
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER  
Associated Lab Samples: 60211351001, 60211351002, 60211351003

METHOD BLANK: 1700433 Matrix: Water  
Associated Lab Samples: 60211351001, 60211351002, 60211351003

| Parameter                 | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|---------------------------|-------|--------------|-----------------|-------|----------------|------------|
| Benzene                   | ug/L  | ND           | 1.0             | 0.060 | 01/21/16 12:06 |            |
| Ethylbenzene              | ug/L  | ND           | 1.0             | 0.18  | 01/21/16 12:06 |            |
| Toluene                   | ug/L  | ND           | 1.0             | 0.17  | 01/21/16 12:06 |            |
| Xylene (Total)            | ug/L  | ND           | 3.0             | 0.42  | 01/21/16 12:06 |            |
| 1,2-Dichloroethane-d4 (S) | %     | 103          | 81-127          |       | 01/21/16 12:06 |            |
| 4-Bromofluorobenzene (S)  | %     | 98           | 77-130          |       | 01/21/16 12:06 |            |
| Toluene-d8 (S)            | %     | 99           | 80-120          |       | 01/21/16 12:06 |            |

LABORATORY CONTROL SAMPLE: 1700434

| Parameter                 | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---------------------------|-------|-------------|------------|-----------|--------------|------------|
| Benzene                   | ug/L  | 20          | 19.1       | 96        | 79-116       |            |
| Ethylbenzene              | ug/L  | 20          | 18.1       | 91        | 81-110       |            |
| Toluene                   | ug/L  | 20          | 18.0       | 90        | 82-111       |            |
| Xylene (Total)            | ug/L  | 60          | 53.6       | 89        | 80-111       |            |
| 1,2-Dichloroethane-d4 (S) | %     |             |            | 105       | 81-127       |            |
| 4-Bromofluorobenzene (S)  | %     |             |            | 98        | 77-130       |            |
| Toluene-d8 (S)            | %     |             |            | 98        | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700435 1700436

| Parameter                 | Units | 60211325004 |                 | 1700436   |                 | MS % Rec | MSD % Rec | % Rec Limits | RPD    | Max RPD | Qual |
|---------------------------|-------|-------------|-----------------|-----------|-----------------|----------|-----------|--------------|--------|---------|------|
|                           |       | MS Result   | MSD Spike Conc. | MS Result | MSD Spike Conc. |          |           |              |        |         |      |
| Benzene                   | ug/L  | ND          | 20              | 20        | 17.8            | 19.4     | 89        | 97           | 37-151 | 9       | 40   |
| Ethylbenzene              | ug/L  | ND          | 20              | 20        | 16.4            | 18.1     | 82        | 90           | 29-151 | 10      | 45   |
| Toluene                   | ug/L  | ND          | 20              | 20        | 16.9            | 18.5     | 85        | 92           | 37-147 | 9       | 43   |
| Xylene (Total)            | ug/L  | ND          | 60              | 60        | 48.5            | 53.1     | 81        | 88           | 27-156 | 9       | 46   |
| 1,2-Dichloroethane-d4 (S) | %     |             |                 |           |                 |          | 104       | 107          | 81-127 |         |      |
| 4-Bromofluorobenzene (S)  | %     |             |                 |           |                 |          | 99        | 100          | 77-130 |         |      |
| Toluene-d8 (S)            | %     |             |                 |           |                 |          | 100       | 100          | 80-120 |         |      |
| Preservation pH           |       | 1.0         |                 |           | 1.0             | 1.0      |           |              |        | 0       |      |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700437 1700438

| Parameter | Units | 60211350001 |                 | 1700438   |                 | MS % Rec | MSD % Rec | % Rec Limits | RPD    | Max RPD | Qual |
|-----------|-------|-------------|-----------------|-----------|-----------------|----------|-----------|--------------|--------|---------|------|
|           |       | MS Result   | MSD Spike Conc. | MS Result | MSD Spike Conc. |          |           |              |        |         |      |
| Benzene   | ug/L  | 1.0         | 20              | 20        | 20.9            | 20.5     | 99        | 97           | 37-151 | 2       | 40   |

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Parameter                 | Units | 60211350001 |                | 1700437         |           | 1700438    |     | % Rec | % Rec  | % Rec | Limits | RPD | Max RPD | Qual |
|---------------------------|-------|-------------|----------------|-----------------|-----------|------------|-----|-------|--------|-------|--------|-----|---------|------|
|                           |       | Result      | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result |     |       |        |       |        |     |         |      |
| Ethylbenzene              | ug/L  | ND          | 20             | 20              | 18.0      | 18.3       | 89  | 91    | 29-151 | 2     | 45     |     |         |      |
| Toluene                   | ug/L  | ND          | 20             | 20              | 18.3      | 18.4       | 92  | 92    | 37-147 | 1     | 43     |     |         |      |
| Xylene (Total)            | ug/L  | ND          | 60             | 60              | 53.6      | 53.9       | 89  | 90    | 27-156 | 1     | 46     |     |         |      |
| 1,2-Dichloroethane-d4 (S) | %     |             |                |                 |           |            | 107 | 107   | 81-127 |       |        |     |         |      |
| 4-Bromofluorobenzene (S)  | %     |             |                |                 |           |            | 98  | 100   | 77-130 |       |        |     |         |      |
| Toluene-d8 (S)            | %     |             |                |                 |           |            | 98  | 99    | 80-120 |       |        |     |         |      |
| Preservation pH           |       | 1.0         |                |                 | 1.0       | 1.0        |     |       |        |       |        | 0   |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

QC Batch: OEXT/52796 Analysis Method: EPA 8270C by SIM  
 QC Batch Method: EPA 3510C Analysis Description: 8270 Water PAH by SIM MSSV  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

METHOD BLANK: 1699484 Matrix: Water  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

| Parameter              | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|------------------------|-------|--------------|-----------------|-------|----------------|------------|
| Acenaphthene           | ug/L  | ND           | 0.10            | 0.014 | 01/22/16 13:44 |            |
| Acenaphthylene         | ug/L  | ND           | 0.10            | 0.017 | 01/22/16 13:44 |            |
| Anthracene             | ug/L  | ND           | 0.10            | 0.014 | 01/22/16 13:44 |            |
| Benzo(a)anthracene     | ug/L  | ND           | 0.10            | 0.013 | 01/22/16 13:44 |            |
| Benzo(a)pyrene         | ug/L  | ND           | 0.10            | 0.011 | 01/22/16 13:44 |            |
| Benzo(b)fluoranthene   | ug/L  | ND           | 0.10            | 0.012 | 01/22/16 13:44 |            |
| Benzo(g,h,i)perylene   | ug/L  | ND           | 0.10            | 0.011 | 01/22/16 13:44 |            |
| Benzo(k)fluoranthene   | ug/L  | ND           | 0.10            | 0.013 | 01/22/16 13:44 |            |
| Chrysene               | ug/L  | ND           | 0.10            | 0.011 | 01/22/16 13:44 |            |
| Dibenz(a,h)anthracene  | ug/L  | ND           | 0.10            | 0.017 | 01/22/16 13:44 |            |
| Fluoranthene           | ug/L  | ND           | 0.50            | 0.019 | 01/22/16 13:44 |            |
| Fluorene               | ug/L  | ND           | 0.10            | 0.013 | 01/22/16 13:44 |            |
| Indeno(1,2,3-cd)pyrene | ug/L  | ND           | 0.10            | 0.015 | 01/22/16 13:44 |            |
| Naphthalene            | ug/L  | ND           | 0.50            | 0.046 | 01/22/16 13:44 |            |
| Phenanthrene           | ug/L  | ND           | 0.50            | 0.024 | 01/22/16 13:44 |            |
| Pyrene                 | ug/L  | ND           | 0.10            | 0.030 | 01/22/16 13:44 |            |
| 2-Fluorobiphenyl (S)   | %     | 57           | 39-85           |       | 01/22/16 13:44 |            |
| Terphenyl-d14 (S)      | %     | 67           | 48-95           |       | 01/22/16 13:44 |            |

LABORATORY CONTROL SAMPLE: 1699485

| Parameter              | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|------------------------|-------|-------------|------------|-----------|--------------|------------|
| Acenaphthene           | ug/L  | 10          | 7.1        | 71        | 44-106       |            |
| Acenaphthylene         | ug/L  | 10          | 7.4        | 74        | 45-111       |            |
| Anthracene             | ug/L  | 10          | 8.2        | 82        | 49-111       |            |
| Benzo(a)anthracene     | ug/L  | 10          | 8.7        | 87        | 53-120       |            |
| Benzo(a)pyrene         | ug/L  | 10          | 8.6        | 86        | 51-115       |            |
| Benzo(b)fluoranthene   | ug/L  | 10          | 8.3        | 83        | 44-126       |            |
| Benzo(g,h,i)perylene   | ug/L  | 10          | 8.8        | 88        | 39-122       |            |
| Benzo(k)fluoranthene   | ug/L  | 10          | 8.6        | 86        | 48-115       |            |
| Chrysene               | ug/L  | 10          | 8.2        | 82        | 42-98        |            |
| Dibenz(a,h)anthracene  | ug/L  | 10          | 9.9        | 99        | 30-127       |            |
| Fluoranthene           | ug/L  | 10          | 9.1        | 91        | 57-121       |            |
| Fluorene               | ug/L  | 10          | 7.5        | 75        | 47-110       |            |
| Indeno(1,2,3-cd)pyrene | ug/L  | 10          | 8.8        | 88        | 35-126       |            |
| Naphthalene            | ug/L  | 10          | 6.8        | 68        | 40-106       |            |
| Phenanthrene           | ug/L  | 10          | 7.4        | 74        | 45-107       |            |
| Pyrene                 | ug/L  | 10          | 8.1        | 81        | 42-117       |            |
| 2-Fluorobiphenyl (S)   | %     |             |            | 63        | 39-85        |            |
| Terphenyl-d14 (S)      | %     |             |            | 74        | 48-95        |            |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Parameter              | Units | 60211350001 |                | 1699486         |           | 1699487    |          | % Rec | % Rec  | Limits | RPD | Max RPD | Qual |
|------------------------|-------|-------------|----------------|-----------------|-----------|------------|----------|-------|--------|--------|-----|---------|------|
|                        |       | Result      | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec |       |        |        |     |         |      |
| Acenaphthene           | ug/L  | ND          | 9.1            | 9.1             | 5.5       | 5.1        | 61       | 56    | 55-105 | 9      | 80  |         |      |
| Acenaphthylene         | ug/L  | ND          | 9.1            | 9.1             | 5.9       | 5.5        | 65       | 61    | 56-114 | 6      | 81  |         |      |
| Anthracene             | ug/L  | ND          | 9.1            | 9.1             | 7.4       | 6.8        | 82       | 75    | 51-123 | 9      | 85  |         |      |
| Benzo(a)anthracene     | ug/L  | ND          | 9.1            | 9.1             | 8.1       | 7.2        | 89       | 79    | 60-124 | 12     | 81  |         |      |
| Benzo(a)pyrene         | ug/L  | ND          | 9.1            | 9.1             | 7.9       | 6.9        | 87       | 76    | 63-113 | 13     | 80  |         |      |
| Benzo(b)fluoranthene   | ug/L  | ND          | 9.1            | 9.1             | 8.1       | 6.8        | 89       | 74    | 50-129 | 18     | 83  |         |      |
| Benzo(g,h,i)perylene   | ug/L  | ND          | 9.1            | 9.1             | 7.5       | 6.5        | 82       | 72    | 44-128 | 14     | 80  |         |      |
| Benzo(k)fluoranthene   | ug/L  | ND          | 9.1            | 9.1             | 7.4       | 6.8        | 81       | 74    | 59-107 | 9      | 79  |         |      |
| Chrysene               | ug/L  | ND          | 9.1            | 9.1             | 7.8       | 6.9        | 85       | 76    | 45-100 | 12     | 79  |         |      |
| Dibenz(a,h)anthracene  | ug/L  | ND          | 9.1            | 9.1             | 8.4       | 7.2        | 93       | 79    | 42-129 | 16     | 80  |         |      |
| Fluoranthene           | ug/L  | ND          | 9.1            | 9.1             | 8.7       | 7.6        | 95       | 84    | 62-124 | 12     | 82  |         |      |
| Fluorene               | ug/L  | ND          | 9.1            | 9.1             | 5.7       | 5.3        | 63       | 58    | 58-111 | 7      | 83  |         |      |
| Indeno(1,2,3-cd)pyrene | ug/L  | ND          | 9.1            | 9.1             | 7.7       | 6.6        | 84       | 73    | 45-129 | 15     | 80  |         |      |
| Naphthalene            | ug/L  | 0.33J       | 9.1            | 9.1             | 6.4       | 5.8        | 66       | 60    | 35-117 | 10     | 48  |         |      |
| Phenanthrene           | ug/L  | 0.12J       | 9.1            | 9.1             | 6.7       | 6.1        | 72       | 66    | 53-103 | 9      | 79  |         |      |
| Pyrene                 | ug/L  | ND          | 9.1            | 9.1             | 7.4       | 6.7        | 82       | 74    | 52-109 | 10     | 85  |         |      |
| 2-Fluorobiphenyl (S)   | %     |             |                |                 |           |            | 50       | 48    | 39-85  |        | 78  |         |      |
| Terphenyl-d14 (S)      | %     |             |                |                 |           |            | 74       | 66    | 48-95  |        | 79  |         |      |

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### QUALITY CONTROL DATA

Project: BYRD PUMP INVESTIGATION

QC Project No.: 60211351

QC Batch: WETA/37799 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

METHOD BLANK: 1699579 Matrix: Water  
 Associated Lab Samples: 60211351001, 60211351002, 60211351003, 60211351004

| Parameter | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|-------|----------------|------------|
| Bromide   | mg/L  | ND           | 1.0             | 0.50  | 01/20/16 11:29 |            |
| Chloride  | mg/L  | ND           | 1.0             | 0.50  | 01/20/16 11:29 |            |
| Fluoride  | mg/L  | ND           | 0.20            | 0.073 | 01/20/16 11:29 |            |
| Sulfate   | mg/L  | ND           | 1.0             | 0.25  | 01/20/16 11:29 |            |

LABORATORY CONTROL SAMPLE: 1699580

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Bromide   | mg/L  | 5           | 5.0        | 100       | 90-110       |            |
| Chloride  | mg/L  | 5           | 4.9        | 97        | 90-110       |            |
| Fluoride  | mg/L  | 2.5         | 2.6        | 104       | 90-110       |            |
| Sulfate   | mg/L  | 5           | 5.0        | 99        | 90-110       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1699581 1699582

| Parameter | Units | 60211350001 |                | 60211350002     |           | MS         |       | MSD   |        | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|-------------|----------------|-----------------|-----------|------------|-------|-------|--------|--------------|-----|---------|------|
|           |       | Result      | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | % Rec | % Rec |        |              |     |         |      |
| Bromide   | mg/L  | 38.8        | 125            | 125             | 141       | 140        | 82    | 81    | 80-120 | 0            | 15  |         |      |
| Chloride  | mg/L  | 5060        | 2500           | 2500            | 7180      | 7140       | 85    | 83    | 80-120 | 1            | 15  |         |      |
| Fluoride  | mg/L  | 2.1J        | 62.5           | 62.5            | 57.6      | 57.7       | 89    | 89    | 80-120 | 0            | 15  |         |      |
| Sulfate   | mg/L  | 182         | 125            | 125             | 286       | 287        | 83    | 84    | 80-120 | 0            | 15  |         |      |

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## QUALIFIERS

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### BATCH QUALIFIERS

Batch: GCV/5293

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

### ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BYRD PUMP INVESTIGATION

Pace Project No.: 60211351

| Lab ID      | Sample ID | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 60211351001 | MW-PS2    | EPA 5030B/8015B | GCV/5293   |                   |                  |
| 60211351002 | MW-PS4    | EPA 5030B/8015B | GCV/5293   |                   |                  |
| 60211351003 | DUP-1-GW  | EPA 5030B/8015B | GCV/5293   |                   |                  |
| 60211351001 | MW-PS2    | EPA 3010        | MPRP/34643 | EPA 6010          | ICP/25405        |
| 60211351002 | MW-PS4    | EPA 3010        | MPRP/34643 | EPA 6010          | ICP/25405        |
| 60211351003 | DUP-1-GW  | EPA 3010        | MPRP/34643 | EPA 6010          | ICP/25405        |
| 60211351004 | EB-01     | EPA 3010        | MPRP/34643 | EPA 6010          | ICP/25405        |
| 60211351001 | MW-PS2    | EPA 7470        | MERP/10270 | EPA 7470          | MERC/10217       |
| 60211351002 | MW-PS4    | EPA 7470        | MERP/10270 | EPA 7470          | MERC/10217       |
| 60211351003 | DUP-1-GW  | EPA 7470        | MERP/10270 | EPA 7470          | MERC/10217       |
| 60211351004 | EB-01     | EPA 7470        | MERP/10270 | EPA 7470          | MERC/10217       |
| 60211351001 | MW-PS2    | EPA 3510C       | OEXT/52796 | EPA 8270C by SIM  | MSSV/17176       |
| 60211351002 | MW-PS4    | EPA 3510C       | OEXT/52796 | EPA 8270C by SIM  | MSSV/17176       |
| 60211351003 | DUP-1-GW  | EPA 3510C       | OEXT/52796 | EPA 8270C by SIM  | MSSV/17176       |
| 60211351004 | EB-01     | EPA 3510C       | OEXT/52796 | EPA 8270C by SIM  | MSSV/17176       |
| 60211351001 | MW-PS2    | EPA 8260/OA1    | MSV/73845  |                   |                  |
| 60211351002 | MW-PS4    | EPA 8260/OA1    | MSV/73845  |                   |                  |
| 60211351003 | DUP-1-GW  | EPA 8260/OA1    | MSV/73845  |                   |                  |
| 60211351001 | MW-PS2    | EPA 300.0       | WETA/37799 |                   |                  |
| 60211351002 | MW-PS4    | EPA 300.0       | WETA/37799 |                   |                  |
| 60211351003 | DUP-1-GW  | EPA 300.0       | WETA/37799 |                   |                  |
| 60211351004 | EB-01     | EPA 300.0       | WETA/37799 |                   |                  |

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt  
ESI Tech Spec Client

WO#: 60211351  
60211351

Client Name: BP Stantec

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client

Tracking #: 650881634023 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 / T-262 Type of Ice: Wet Blue  None  Samples received on ice, cooling process has begun.

Cooler Temperature: 1.1

Temperature should be above freezing to 6°C

Date and initials of person examining contents: PUL/16 PUL/15/16

|  |  |                             |
|--|--|-----------------------------|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 1.                          |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 2.                          |
| Chain of Custody relinquished:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 3.                          |
| Sampler name & signature on COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 4.                          |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 5.                          |
| Short Hold Time analyses (<72hr):  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 6.                          |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 7.                          |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 8.                          |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 10.                         |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 11.                         |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 12.                         |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                             |
| Includes date/time/ID/analyses Matrix: <u>WT</u>   |  | 13.                         |
| All containers needing preservation have been checked.                                     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |                             |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 14.                         |
| Exceptions: <u>VOA</u> Coliform, O&G, WI-DRO (water)                                       | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                              | Initial when completed      |
| Trip Blank present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Lot # of added preservative |
| Pace Trip Blank lot # (if purchased): <u>116915-3</u>                                      |  | 15.                         |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 16.                         |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 17. List State:             |
| Additional labels attached to 5035A vials in the field?                                    | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.                         |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: AAF Date: 01/15/16

|  |        |
|--|--------|
| Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>1100</u>   | Start: |
| End: <u>1110</u>   | End:   |
| Temp:  | Temp:  |



March 14, 2016

Susan Hall  
BP Stantec  
8770 Guion Rd. Ste B  
Indianapolis, IN 46268

RE: Project: BP Byrd Pump Site Investigatio  
Pace Project No.: 60214252

Dear Susan Hall:

Enclosed are the analytical results for sample(s) received by the laboratory on March 04, 2016. The results relate only to the samples included in this report. Results contained within this report conform to the most current version of the TNI standards, BP LaMP Technical Requirements Revision 10.1, and any applicable Quality Assurance Project Plan (QAPP), or Work Plan unless otherwise narrated in the body of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alice Flanagan  
alice.flanagan@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

---

### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

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| Lab ID      | Sample ID     | Matrix | Date Collected | Date Received  |
|-------------|---------------|--------|----------------|----------------|
| 60214252001 | MW-PS1-030316 | Water  | 03/03/16 14:35 | 03/04/16 08:40 |
| 60214252002 | MW-PS2-030316 | Water  | 03/03/16 13:23 | 03/04/16 08:40 |
| 60214252003 | MW-PS3-030316 | Water  | 03/03/16 15:45 | 03/04/16 08:40 |
| 60214252004 | MW-PS4-030316 | Water  | 03/03/16 12:16 | 03/04/16 08:40 |
| 60214252005 | MW-DUP-030316 | Water  | 03/03/16 00:00 | 03/04/16 08:40 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

| Lab ID      | Sample ID     | Method    | Analysts | Analytes Reported | Laboratory |
|-------------|---------------|-----------|----------|-------------------|------------|
| 60214252001 | MW-PS1-030316 | EPA 8015B | ACW      | 3                 | PASI-K     |
|             |               | EPA 6010  | JGP      | 4                 | PASI-K     |
|             |               | SM 2540C  | LJS      | 1                 | PASI-K     |
|             |               | EPA 353.2 | AJM      | 2                 | PASI-K     |
| 60214252002 | MW-PS2-030316 | EPA 8015B | ACW      | 3                 | PASI-K     |
|             |               | EPA 6010  | JGP      | 4                 | PASI-K     |
|             |               | SM 2540C  | LJS      | 1                 | PASI-K     |
|             |               | EPA 353.2 | AJM      | 2                 | PASI-K     |
| 60214252003 | MW-PS3-030316 | EPA 8015B | ACW      | 3                 | PASI-K     |
|             |               | EPA 6010  | JGP      | 4                 | PASI-K     |
|             |               | SM 2540C  | LJS      | 1                 | PASI-K     |
|             |               | EPA 353.2 | AJM      | 2                 | PASI-K     |
| 60214252004 | MW-PS4-030316 | EPA 8015B | ACW      | 3                 | PASI-K     |
|             |               | EPA 6010  | JGP      | 4                 | PASI-K     |
|             |               | SM 2540C  | LJS      | 1                 | PASI-K     |
|             |               | EPA 353.2 | AJM      | 2                 | PASI-K     |
| 60214252005 | MW-DUP-030316 | EPA 8015B | ACW      | 3                 | PASI-K     |
|             |               | EPA 6010  | JGP      | 4                 | PASI-K     |
|             |               | SM 2540C  | LJS      | 1                 | PASI-K     |
|             |               | EPA 353.2 | AJM      | 2                 | PASI-K     |

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## PROJECT NARRATIVE

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

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**Method:** EPA 8015B

**Description:** 8015B Diesel Range Organics

**Client:** BP Stantec TX

**Date:** March 14, 2016

**General Information:**

5 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Surrogates:**

All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

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## PROJECT NARRATIVE

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

---

**Method:** EPA 6010

**Description:** 6010 MET ICP

**Client:** BP Stantec TX

**Date:** March 14, 2016

**General Information:**

5 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MPRP/35094

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60214252001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1720697)
  - Calcium
  - Magnesium
  - Sodium
- MSD (Lab ID: 1720698)
  - Calcium
  - Magnesium
  - Sodium

**Additional Comments:**

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## PROJECT NARRATIVE

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

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**Method:** SM 2540C

**Description:** 2540C Total Dissolved Solids

**Client:** BP Stantec TX

**Date:** March 14, 2016

**General Information:**

5 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

**Additional Comments:**

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## PROJECT NARRATIVE

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

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**Method:** EPA 353.2

**Description:** 353.2 Nitrogen, NO<sub>2</sub>/NO<sub>3</sub> unpres

**Client:** BP Stantec TX

**Date:** March 14, 2016

**General Information:**

5 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**

All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

**Sample: MW-PS1-030316**      **Lab ID: 60214252001**      Collected: 03/03/16 14:35      Received: 03/04/16 08:40      Matrix: Water

| Parameters  | Results        | Units | Report |       |    | Prepared       | Analyzed       | CAS No.   | Qual |
|---|----------------|-------|--------|-------|----|----------------|----------------|-----------|------|
|   |                |       | Limit  | MDL   | DF |                |                |           |      |
| <b>8015B Diesel Range Organics</b>                              |                |       |        |       |    |                |                |           |      |
| Analytical Method: EPA 8015B      Preparation Method: EPA 3510C |                |       |        |       |    |                |                |           |      |
| TPH-DRO   | <b>0.59</b>    | mg/L  | 0.45   | 0.23  | 1  | 03/09/16 00:00 | 03/10/16 10:13 |           |      |
| <b>Surrogates</b>   |                |       |        |       |    |                |                |           |      |
| p-Terphenyl (S)   | 108            | %     | 18-135 |       | 1  | 03/09/16 00:00 | 03/10/16 10:13 | 92-94-4   |      |
| n-Tetracosane (S)   | 88             | %     | 21-121 |       | 1  | 03/09/16 00:00 | 03/10/16 10:13 | 646-31-1  |      |
| <b>6010 MET ICP</b>   |                |       |        |       |    |                |                |           |      |
| Analytical Method: EPA 6010      Preparation Method: EPA 3010   |                |       |        |       |    |                |                |           |      |
| Calcium   | <b>1100000</b> | ug/L  | 500    | 40.7  | 5  | 03/07/16 15:30 | 03/10/16 11:21 | 7440-70-2 | M1   |
| Magnesium   | <b>486000</b>  | ug/L  | 250    | 79.0  | 5  | 03/07/16 15:30 | 03/10/16 11:21 | 7439-95-4 | M1   |
| Potassium   | <b>11100</b>   | ug/L  | 2500   | 643   | 5  | 03/07/16 15:30 | 03/10/16 11:21 | 7440-09-7 |      |
| Sodium  | <b>980000</b>  | ug/L  | 2500   | 104   | 5  | 03/07/16 15:30 | 03/10/16 11:21 | 7440-23-5 | M1   |
| <b>2540C Total Dissolved Solids</b>                             |                |       |        |       |    |                |                |           |      |
| Analytical Method: SM 2540C                                     |                |       |        |       |    |                |                |           |      |
| Total Dissolved Solids  | <b>11100</b>   | mg/L  | 5.0    | 5.0   | 1  |                | 03/05/16 14:13 |           |      |
| <b>353.2 Nitrogen, NO2/NO3 unpres</b>                           |                |       |        |       |    |                |                |           |      |
| Analytical Method: EPA 353.2                                    |                |       |        |       |    |                |                |           |      |
| Nitrogen, Nitrate   | ND             | mg/L  | 0.10   | 0.012 | 1  |                | 03/04/16 13:24 |           |      |
| Nitrogen, Nitrite   | ND             | mg/L  | 0.10   | 0.010 | 1  |                | 03/04/16 13:24 |           |      |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

| Sample: MW-PS2-030316                 |                | Lab ID: 60214252002  |              | Collected: 03/03/16 13:23 | Received: 03/04/16 08:40 | Matrix: Water  |                |           |      |  |
|---------------------------------------|----------------|--|--------------|---------------------------|--------------------------|----------------|----------------|-----------|------|--|
| Parameters                            | Results        | Units  | Report Limit | MDL                       | DF                       | Prepared       | Analyzed       | CAS No.   | Qual |  |
| <b>8015B Diesel Range Organics</b>    |                | Analytical Method: EPA 8015B Preparation Method: EPA 3510C |              |                           |                          |                |                |           |      |  |
| TPH-DRO                               | <b>0.60</b>    | mg/L   | 0.45         | 0.23                      | 1                        | 03/09/16 00:00 | 03/10/16 10:20 |           |      |  |
| <b>Surrogates</b>                     |                |  |              |                           |                          |                |                |           |      |  |
| p-Terphenyl (S)                       | 108            | %  | 18-135       |                           | 1                        | 03/09/16 00:00 | 03/10/16 10:20 | 92-94-4   |      |  |
| n-Tetracosane (S)                     | 99             | %  | 21-121       |                           | 1                        | 03/09/16 00:00 | 03/10/16 10:20 | 646-31-1  |      |  |
| <b>6010 MET ICP</b>                   |                | Analytical Method: EPA 6010 Preparation Method: EPA 3010   |              |                           |                          |                |                |           |      |  |
| Calcium                               | <b>1120000</b> | ug/L   | 500          | 40.7                      | 5                        | 03/07/16 15:30 | 03/10/16 11:36 | 7440-70-2 |      |  |
| Magnesium                             | <b>456000</b>  | ug/L   | 250          | 79.0                      | 5                        | 03/07/16 15:30 | 03/10/16 11:36 | 7439-95-4 |      |  |
| Potassium                             | <b>11300</b>   | ug/L   | 2500         | 643                       | 5                        | 03/07/16 15:30 | 03/10/16 11:36 | 7440-09-7 |      |  |
| Sodium                                | <b>758000</b>  | ug/L   | 2500         | 104                       | 5                        | 03/07/16 15:30 | 03/10/16 11:36 | 7440-23-5 |      |  |
| <b>2540C Total Dissolved Solids</b>   |                | Analytical Method: SM 2540C                                |              |                           |                          |                |                |           |      |  |
| Total Dissolved Solids                | <b>10900</b>   | mg/L   | 5.0          | 5.0                       | 1                        |                | 03/05/16 14:14 |           |      |  |
| <b>353.2 Nitrogen, NO2/NO3 unpres</b> |                | Analytical Method: EPA 353.2                               |              |                           |                          |                |                |           |      |  |
| Nitrogen, Nitrate                     | ND             | mg/L   | 0.10         | 0.012                     | 1                        |                | 03/04/16 13:27 |           |      |  |
| Nitrogen, Nitrite                     | ND             | mg/L   | 0.10         | 0.010                     | 1                        |                | 03/04/16 13:27 |           |      |  |

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## ANALYTICAL RESULTS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

| Sample: MW-PS3-030316                 |                | Lab ID: 60214252003  |              | Collected: 03/03/16 15:45 |    | Received: 03/04/16 08:40 |                | Matrix: Water |      |
|---------------------------------------|----------------|--|--------------|---------------------------|----|--------------------------|----------------|---------------|------|
| Parameters                            | Results        | Units  | Report Limit | MDL                       | DF | Prepared                 | Analyzed       | CAS No.       | Qual |
| <b>8015B Diesel Range Organics</b>    |                | Analytical Method: EPA 8015B Preparation Method: EPA 3510C |              |                           |    |                          |                |               |      |
| TPH-DRO                               | <b>0.42J</b>   | mg/L   | 0.45         | 0.23                      | 1  | 03/09/16 00:00           | 03/10/16 10:44 |               |      |
| <b>Surrogates</b>                     |                |  |              |                           |    |                          |                |               |      |
| p-Terphenyl (S)                       | 92             | %  | 18-135       |                           | 1  | 03/09/16 00:00           | 03/10/16 10:44 | 92-94-4       |      |
| n-Tetracosane (S)                     | 86             | %  | 21-121       |                           | 1  | 03/09/16 00:00           | 03/10/16 10:44 | 646-31-1      |      |
| <b>6010 MET ICP</b>                   |                | Analytical Method: EPA 6010 Preparation Method: EPA 3010   |              |                           |    |                          |                |               |      |
| Calcium                               | <b>1670000</b> | ug/L   | 500          | 40.7                      | 5  | 03/07/16 15:30           | 03/10/16 11:40 | 7440-70-2     |      |
| Magnesium                             | <b>828000</b>  | ug/L   | 250          | 79.0                      | 5  | 03/07/16 15:30           | 03/10/16 11:40 | 7439-95-4     |      |
| Potassium                             | <b>17400</b>   | ug/L   | 2500         | 643                       | 5  | 03/07/16 15:30           | 03/10/16 11:40 | 7440-09-7     |      |
| Sodium                                | <b>1880000</b> | ug/L   | 2500         | 104                       | 5  | 03/07/16 15:30           | 03/10/16 11:40 | 7440-23-5     |      |
| <b>2540C Total Dissolved Solids</b>   |                | Analytical Method: SM 2540C                                |              |                           |    |                          |                |               |      |
| Total Dissolved Solids                | <b>19000</b>   | mg/L   | 5.0          | 5.0                       | 1  |                          | 03/05/16 14:15 |               |      |
| <b>353.2 Nitrogen, NO2/NO3 unpres</b> |                | Analytical Method: EPA 353.2                               |              |                           |    |                          |                |               |      |
| Nitrogen, Nitrate                     | ND             | mg/L   | 0.10         | 0.012                     | 1  |                          | 03/04/16 13:28 |               |      |
| Nitrogen, Nitrite                     | ND             | mg/L   | 0.10         | 0.010                     | 1  |                          | 03/04/16 13:28 |               |      |

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## ANALYTICAL RESULTS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

| Sample: MW-PS4-030316                 |                | Lab ID: 60214252004  |              | Collected: 03/03/16 12:16 | Received: 03/04/16 08:40 | Matrix: Water  |                |           |      |  |
|---------------------------------------|----------------|--|--------------|---------------------------|--------------------------|----------------|----------------|-----------|------|--|
| Parameters                            | Results        | Units  | Report Limit | MDL                       | DF                       | Prepared       | Analyzed       | CAS No.   | Qual |  |
| <b>8015B Diesel Range Organics</b>    |                | Analytical Method: EPA 8015B Preparation Method: EPA 3510C |              |                           |                          |                |                |           |      |  |
| TPH-DRO                               | <b>0.61</b>    | mg/L   | 0.45         | 0.23                      | 1                        | 03/09/16 00:00 | 03/10/16 10:51 |           |      |  |
| <b>Surrogates</b>                     |                |  |              |                           |                          |                |                |           |      |  |
| p-Terphenyl (S)                       | 120            | %  | 18-135       |                           | 1                        | 03/09/16 00:00 | 03/10/16 10:51 | 92-94-4   |      |  |
| n-Tetracosane (S)                     | 115            | %  | 21-121       |                           | 1                        | 03/09/16 00:00 | 03/10/16 10:51 | 646-31-1  |      |  |
| <b>6010 MET ICP</b>                   |                | Analytical Method: EPA 6010 Preparation Method: EPA 3010   |              |                           |                          |                |                |           |      |  |
| Calcium                               | <b>978000</b>  | ug/L   | 500          | 40.7                      | 5                        | 03/07/16 15:30 | 03/10/16 11:52 | 7440-70-2 |      |  |
| Magnesium                             | <b>520000</b>  | ug/L   | 250          | 79.0                      | 5                        | 03/07/16 15:30 | 03/10/16 11:52 | 7439-95-4 |      |  |
| Potassium                             | <b>11500</b>   | ug/L   | 2500         | 643                       | 5                        | 03/07/16 15:30 | 03/10/16 11:52 | 7440-09-7 |      |  |
| Sodium                                | <b>1320000</b> | ug/L   | 2500         | 104                       | 5                        | 03/07/16 15:30 | 03/10/16 11:52 | 7440-23-5 |      |  |
| <b>2540C Total Dissolved Solids</b>   |                | Analytical Method: SM 2540C                                |              |                           |                          |                |                |           |      |  |
| Total Dissolved Solids                | <b>10800</b>   | mg/L   | 5.0          | 5.0                       | 1                        |                | 03/05/16 14:15 |           |      |  |
| <b>353.2 Nitrogen, NO2/NO3 unpres</b> |                | Analytical Method: EPA 353.2                               |              |                           |                          |                |                |           |      |  |
| Nitrogen, Nitrate                     | ND             | mg/L   | 0.10         | 0.012                     | 1                        |                | 03/04/16 13:30 |           |      |  |
| Nitrogen, Nitrite                     | ND             | mg/L   | 0.10         | 0.010                     | 1                        |                | 03/04/16 13:30 |           |      |  |

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## ANALYTICAL RESULTS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

| Sample: MW-DUP-030316                 |                | Lab ID: 60214252005  |              | Collected: 03/03/16 00:00 | Received: 03/04/16 08:40 | Matrix: Water  |                |           |      |  |
|---------------------------------------|----------------|--|--------------|---------------------------|--------------------------|----------------|----------------|-----------|------|--|
| Parameters                            | Results        | Units  | Report Limit | MDL                       | DF                       | Prepared       | Analyzed       | CAS No.   | Qual |  |
| <b>8015B Diesel Range Organics</b>    |                | Analytical Method: EPA 8015B Preparation Method: EPA 3510C |              |                           |                          |                |                |           |      |  |
| TPH-DRO                               | <b>0.46</b>    | mg/L   | 0.45         | 0.23                      | 1                        | 03/09/16 00:00 | 03/10/16 10:59 |           |      |  |
| <b>Surrogates</b>                     |                |  |              |                           |                          |                |                |           |      |  |
| p-Terphenyl (S)                       | 98             | %  | 18-135       |                           | 1                        | 03/09/16 00:00 | 03/10/16 10:59 | 92-94-4   |      |  |
| n-Tetracosane (S)                     | 94             | %  | 21-121       |                           | 1                        | 03/09/16 00:00 | 03/10/16 10:59 | 646-31-1  |      |  |
| <b>6010 MET ICP</b>                   |                | Analytical Method: EPA 6010 Preparation Method: EPA 3010   |              |                           |                          |                |                |           |      |  |
| Calcium                               | <b>1010000</b> | ug/L   | 500          | 40.7                      | 5                        | 03/07/16 15:30 | 03/10/16 11:48 | 7440-70-2 |      |  |
| Magnesium                             | <b>544000</b>  | ug/L   | 250          | 79.0                      | 5                        | 03/07/16 15:30 | 03/10/16 11:48 | 7439-95-4 |      |  |
| Potassium                             | <b>11600</b>   | ug/L   | 2500         | 643                       | 5                        | 03/07/16 15:30 | 03/10/16 11:48 | 7440-09-7 |      |  |
| Sodium                                | <b>1350000</b> | ug/L   | 2500         | 104                       | 5                        | 03/07/16 15:30 | 03/10/16 11:48 | 7440-23-5 |      |  |
| <b>2540C Total Dissolved Solids</b>   |                | Analytical Method: SM 2540C                                |              |                           |                          |                |                |           |      |  |
| Total Dissolved Solids                | <b>10400</b>   | mg/L   | 5.0          | 5.0                       | 1                        |                | 03/05/16 14:16 |           |      |  |
| <b>353.2 Nitrogen, NO2/NO3 unpres</b> |                | Analytical Method: EPA 353.2                               |              |                           |                          |                |                |           |      |  |
| Nitrogen, Nitrate                     | ND             | mg/L   | 0.10         | 0.012                     | 1                        |                | 03/04/16 13:31 |           |      |  |
| Nitrogen, Nitrite                     | ND             | mg/L   | 0.10         | 0.010                     | 1                        |                | 03/04/16 13:31 |           |      |  |

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**QUALITY CONTROL DATA**

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

QC Batch: MPRP/35094 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
 Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

METHOD BLANK: 1720695 Matrix: Water  
 Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

| Parameter | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|-----------|-------|--------------|-----------------|------|----------------|------------|
| Calcium   | ug/L  | 62.0J        | 100             | 8.1  | 03/10/16 10:24 |            |
| Magnesium | ug/L  | ND           | 50.0            | 15.8 | 03/10/16 10:24 |            |
| Potassium | ug/L  | ND           | 500             | 129  | 03/10/16 10:24 |            |
| Sodium    | ug/L  | ND           | 500             | 20.7 | 03/10/16 10:24 |            |

LABORATORY CONTROL SAMPLE: 1720696

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Calcium   | ug/L  | 10000       | 9880       | 99        | 80-120       |            |
| Magnesium | ug/L  | 10000       | 10500      | 105       | 80-120       |            |
| Potassium | ug/L  | 10000       | 10100      | 101       | 80-120       |            |
| Sodium    | ug/L  | 10000       | 10200      | 102       | 80-120       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1720697 1720698

| Parameter | Units | 60214252001 Result | MS          |             | MSD     |         | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|-----------|-------|--------------------|-------------|-------------|---------|---------|----------|-----------|--------------|-----|---------|------|
|           |       |                    | Spike Conc. | Spike Conc. | Result  | Result  |          |           |              |     |         |      |
| Calcium   | ug/L  | 1100000            | 10000       | 10000       | 1180000 | 1160000 | 800      | 590       | 75-125       | 2   | 20      | M1   |
| Magnesium | ug/L  | 486000             | 10000       | 10000       | 522000  | 518000  | 352      | 316       | 75-125       | 1   | 20      | M1   |
| Potassium | ug/L  | 11100              | 10000       | 10000       | 22800   | 22500   | 118      | 114       | 75-125       | 1   | 20      |      |
| Sodium    | ug/L  | 980000             | 10000       | 10000       | 1060000 | 1040000 | 830      | 625       | 75-125       | 2   | 20      | M1   |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: BP Byrd Pump Site Investigatio  
Pace Project No.: 60214252

QC Batch: OEXT/53388 Analysis Method: EPA 8015B  
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B  
Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

METHOD BLANK: 1721769 Matrix: Water  
Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

| Parameter         | Units | Blank Result | Reporting Limit | MDL  | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|------|----------------|------------|
| TPH-DRO           | mg/L  | ND           | 0.50            | 0.25 | 03/10/16 09:42 |            |
| n-Tetracosane (S) | %     | 115          | 21-121          |      | 03/10/16 09:42 |            |
| p-Terphenyl (S)   | %     | 100          | 18-135          |      | 03/10/16 09:42 |            |

LABORATORY CONTROL SAMPLE: 1721770

| Parameter         | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|-------------|------------|-----------|--------------|------------|
| TPH-DRO           | mg/L  | 12.5        | 12.2       | 97        | 53-107       |            |
| n-Tetracosane (S) | %     |             |            | 113       | 21-121       |            |
| p-Terphenyl (S)   | %     |             |            | 108       | 18-135       |            |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1721771 1721772

| Parameter         | Units | 60214252001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|-------------------|-------|--------------------|----------------|-----------------|-----------|------------|----------|-----------|--------------|-----|---------|------|
| TPH-DRO           | mg/L  | 0.59               | 11.4           | 11.4            | 12.8      | 11.6       | 108      | 97        | 24-128       | 10  | 35      |      |
| n-Tetracosane (S) | %     |                    |                |                 |           |            | 115      | 104       | 21-121       |     | 30      |      |
| p-Terphenyl (S)   | %     |                    |                |                 |           |            | 126      | 114       | 18-135       |     | 30      |      |

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### QUALITY CONTROL DATA

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

QC Batch: WET/60440

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

METHOD BLANK: 1720234

Matrix: Water

Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

| Parameter              | Units | Blank Result | Reporting Limit | MDL | Analyzed       | Qualifiers |
|------------------------|-------|--------------|-----------------|-----|----------------|------------|
| Total Dissolved Solids | mg/L  | ND           | 5.0             | 5.0 | 03/05/16 14:08 |            |

LABORATORY CONTROL SAMPLE: 1720235

| Parameter              | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|------------------------|-------|-------------|------------|-----------|--------------|------------|
| Total Dissolved Solids | mg/L  | 1000        | 950        | 95        | 80-120       |            |

SAMPLE DUPLICATE: 1720236

| Parameter              | Units | 60214081001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|------------------------|-------|--------------------|------------|-----|---------|------------|
| Total Dissolved Solids | mg/L  | 11200              | 10600      | 6   | 10      |            |

SAMPLE DUPLICATE: 1720240

| Parameter              | Units | 60214252001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|------------------------|-------|--------------------|------------|-----|---------|------------|
| Total Dissolved Solids | mg/L  | 11100              | 12200      | 9   | 10      |            |

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### QUALITY CONTROL DATA

Project: BP Byrd Pump Site Investigatio  
Pace Project No.: 60214252

QC Batch: WETA/38365 Analysis Method: EPA 353.2  
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.  
Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

METHOD BLANK: 1719792 Matrix: Water  
Associated Lab Samples: 60214252001, 60214252002, 60214252003, 60214252004, 60214252005

| Parameter         | Units | Blank Result | Reporting Limit | MDL   | Analyzed       | Qualifiers |
|-------------------|-------|--------------|-----------------|-------|----------------|------------|
| Nitrogen, Nitrate | mg/L  | ND           | 0.10            | 0.012 | 03/04/16 13:22 |            |
| Nitrogen, Nitrite | mg/L  | ND           | 0.10            | 0.010 | 03/04/16 13:22 |            |

LABORATORY CONTROL SAMPLE: 1719793

| Parameter         | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|-------------|------------|-----------|--------------|------------|
| Nitrogen, Nitrate | mg/L  | 1.6         | 1.7        | 106       | 85-115       |            |
| Nitrogen, Nitrite | mg/L  | .4          | 0.38       | 95        | 90-110       |            |

MATRIX SPIKE SAMPLE: 1719794

| Parameter         | Units | 60214252001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|-------------------|-------|--------------------|-------------|-----------|----------|--------------|------------|
| Nitrogen, Nitrate | mg/L  | ND                 | 1.6         | 1.8       | 111      | 85-115       |            |
| Nitrogen, Nitrite | mg/L  | ND                 | .4          | 0.38      | 95       | 90-110       |            |

SAMPLE DUPLICATE: 1719795

| Parameter         | Units | 60214252003 Result | Dup Result | RPD | Max RPD | Qualifiers |
|-------------------|-------|--------------------|------------|-----|---------|------------|
| Nitrogen, Nitrate | mg/L  | ND                 | ND         |     | 20      |            |
| Nitrogen, Nitrite | mg/L  | ND                 | ND         |     | 20      |            |

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## QUALIFIERS

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BP Byrd Pump Site Investigatio

Pace Project No.: 60214252

| Lab ID      | Sample ID     | QC Batch Method | QC Batch   | Analytical Method | Analytical Batch |
|-------------|---------------|-----------------|------------|-------------------|------------------|
| 60214252001 | MW-PS1-030316 | EPA 3510C       | OEXT/53388 | EPA 8015B         | GCSV/20645       |
| 60214252002 | MW-PS2-030316 | EPA 3510C       | OEXT/53388 | EPA 8015B         | GCSV/20645       |
| 60214252003 | MW-PS3-030316 | EPA 3510C       | OEXT/53388 | EPA 8015B         | GCSV/20645       |
| 60214252004 | MW-PS4-030316 | EPA 3510C       | OEXT/53388 | EPA 8015B         | GCSV/20645       |
| 60214252005 | MW-DUP-030316 | EPA 3510C       | OEXT/53388 | EPA 8015B         | GCSV/20645       |
| 60214252001 | MW-PS1-030316 | EPA 3010        | MPRP/35094 | EPA 6010          | ICP/25702        |
| 60214252002 | MW-PS2-030316 | EPA 3010        | MPRP/35094 | EPA 6010          | ICP/25702        |
| 60214252003 | MW-PS3-030316 | EPA 3010        | MPRP/35094 | EPA 6010          | ICP/25702        |
| 60214252004 | MW-PS4-030316 | EPA 3010        | MPRP/35094 | EPA 6010          | ICP/25702        |
| 60214252005 | MW-DUP-030316 | EPA 3010        | MPRP/35094 | EPA 6010          | ICP/25702        |
| 60214252001 | MW-PS1-030316 | SM 2540C        | WET/60440  |                   |                  |
| 60214252002 | MW-PS2-030316 | SM 2540C        | WET/60440  |                   |                  |
| 60214252003 | MW-PS3-030316 | SM 2540C        | WET/60440  |                   |                  |
| 60214252004 | MW-PS4-030316 | SM 2540C        | WET/60440  |                   |                  |
| 60214252005 | MW-DUP-030316 | SM 2540C        | WET/60440  |                   |                  |
| 60214252001 | MW-PS1-030316 | EPA 353.2       | WETA/38365 |                   |                  |
| 60214252002 | MW-PS2-030316 | EPA 353.2       | WETA/38365 |                   |                  |
| 60214252003 | MW-PS3-030316 | EPA 353.2       | WETA/38365 |                   |                  |
| 60214252004 | MW-PS4-030316 | EPA 353.2       | WETA/38365 |                   |                  |
| 60214252005 | MW-DUP-030316 | EPA 353.2       | WETA/38365 |                   |                  |

## REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt  
ESI Tech Spec Client

WO#: 60214252



60214252

Client Name: BP Stantec

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Other  Client

Tracking #: 650881652743 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-239 / T-262 Type of Ice: Wet  Blue  None  Samples received on ice, cooling process has begun.

Cooler Temperature: 3.1

Temperature should be above freezing to 6°C

Date and initials of person examining contents: WJ 3/4/16

|  |  |                             |
|--|--|-----------------------------|
| Chain of Custody present:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 1.                          |
| Chain of Custody filled out:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 2.                          |
| Chain of Custody relinquished:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 3.                          |
| Sampler name & signature on COC:   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            | 4.                          |
| Samples arrived within holding time:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 5.                          |
| Short Hold Time analyses (<72hr):  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 6. <u>NO2 NO3</u>           |
| Rush Turn Around Time requested:   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | 7.                          |
| Sufficient volume:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 8.                          |
| Correct containers used:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Pace containers used:  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 9.                          |
| Containers intact:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 10.                         |
| Unpreserved 5035A soils frozen w/in 48hrs?   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 11.                         |
| Filtered volume received for dissolved tests?  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 12.                         |
| Sample labels match COC:   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 13.                         |
| Includes date/time/ID/analyses Matrix: <u>WT</u>   |  | 13.                         |
| All containers needing preservation have been checked.                                     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 14.                         |
| All containers needing preservation are found to be in compliance with EPA recommendation. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | 14.                         |
| Exceptions: VOA, Coliform, O&G, WI-DRO (water)   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                              | Initial when completed      |
| Trip Blank present:  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Lot # of added preservative |
| Pace Trip Blank lot # (if purchased):  |  | 15.                         |
| Headspace in VOA vials (>6mm):   | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 16.                         |
| Project sampled in USDA Regulated Area:  | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 17. List State:             |
| Additional labels attached to 5035A vials in the field?                                    | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 18.                         |

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: AAF Date: 3/4/16

|   |        |
|---|--------|
| <b>Temp Log:</b> Record start and finish times when unpacking cooler, if >20 min, recheck sample temps. |        |
| Start: <u>0940</u>  | Start: |
| End: <u>945</u>   | End:   |
| Temp:   | Temp:  |

**Laboratory Management Program LaMP Chain of Custody Record**

BP/ARC Project Name: Byrd Pump Site Investigation  
 BP/ARC Facility No.: Byrd Pump Site  
 Reg Due Date (mm/dd/yy): STD Rush TAT: Yes No No X  
 Lab Work Order Number: \_\_\_\_\_

Lab Name: Pace Analytical Services, Inc. Consultant/Contractor: Stantec Consulting  
 Lab Address: 9608 Loiret Blvd Consultant/Contractor Project No: 182630008  
 Lab PM: Alice Flanagan Lead Regulatory Agency: NIM OCD Address: 8770 Guion Rd. Ste B Indianapolis, IN 46268  
 Lab Phone: 916-563-1409 California Global ID No.: NA Consultant/Contractor PM: Susan Hall  
 Lab Shipping Acct: Enfos Proposal No: 009PD-002 Phone: 317-876-8375  
 Lab Bottle Order No: Accounting Mode: Provision X OOC-BU OOC-RM Email EDD To: susn.hall@stantec.com  
 Other Info: Stage: 4\_Execute Activity: Project Spend Invoice To: BP/ARC X Contractor: \_\_\_\_\_

| Lab No. | Sample Description | Date   | Time | Matrix       |                |             |                            |             |                                | No. Containers / Preservative |     |          |               |               |            | Requested Analyses |                           |                                   |                         |                               |  | Report Type & QC Level |
|---------|--------------------|--------|------|--------------|----------------|-------------|----------------------------|-------------|--------------------------------|-------------------------------|-----|----------|---------------|---------------|------------|--------------------|---------------------------|-----------------------------------|-------------------------|-------------------------------|--|------------------------|
|         |                    |        |      | Soil / Solid | Water / Liquid | Air / Vapor | Total Number of Containers | Unpreserved | H <sub>2</sub> SO <sub>4</sub> | HNO <sub>3</sub>              | HCl | Methanol | TPH-DRO 8015B | TPH-GRO 8015B | BTEX 8260B | PAH 8310           | RCRA METALS 6010C / 245.7 | Anions (Br, Cl, F, Sulfate) 300.0 | Nitrate / Nitrate 9056A | Cations - Ca, Mg, Na, K 6010C | TDS 160 / SM 2540C   |                        |
|         | MW-PS1-030316      | 3/3/16 | 1435 | X            | X              | X           | 9                          | 3           |                                |                               |     |          |               |               | X          | X                  | X                         | X                                 | X                       | X                             | Standard <u>X</u>  |                        |
|         | MW-PS2-030316      | ↓      | 1323 | X            | X              | X           | 3                          | 1           |                                |                               |     |          |               |               | X          | X                  | X                         | X                                 | X                       | X                             | Full Data Package _____  |                        |
|         | MW-PS3-030316      | ↓      | 1545 | X            | X              | X           | 3                          | 1           |                                |                               |     |          |               |               | X          | X                  | X                         | X                                 | X                       | X                             | Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description. |                        |
|         | MW-PS4-030316      | ↓      | 1216 | X            | X              | X           | 3                          | 1           |                                |                               |     |          |               |               | X          | X                  | X                         | X                                 | X                       | X                             |  |                        |
|         | MW-DUP-030316      | ↓      | ---  | X            | X              | X           | 3                          | 1           |                                |                               |     |          |               |               | X          | X                  | X                         | X                                 | X                       | X                             |  |                        |
|         | Trip Blank         | ↓      | ---  | X            | X              | X           | 3                          | 3           |                                |                               |     |          |               |               | X          | X                  | X                         | X                                 | X                       | X                             |  |                        |

Sampler's Name: Tyler Heming  
 Sampler's Company: Stantec  
 Shipment Method: FED EX Ship Date: 3/3/16  
 Shipment Tracking No: \_\_\_\_\_  
 Requisitioned By / Affiliation: Tyler Heming / Stantec  
 Date: 3/3/16 Time: 1730  
 Accepted By / Affiliation: FED EX  
 Date: 3/4/16 Time: 0840  
 Requisitioned By / Affiliation: FED EX  
 Date: 3/4/16 Time: 0840

**BYRD PUMP SITE  
OCD #1R0034**

Appendix C Field Notes  
May 17, 2016

**Appendix C FIELD NOTES**

Byrd Pump Site  
Stockpile Sampling



Clean Stock Pile

| Sample ID            | Date       | Time                 | Northing  | Easting                           | Depth   | PID | Comments                                    |
|----------------------|------------|----------------------|-----------|-----------------------------------|---------|-----|---|
| SAMPLE - 2A<br>AH 2A | 11/13/2016 | 0857                 | 577446.92 | 858306.32                         | Surface | 0.4 | SS-2A                                       |
| SAMPLE - 2B<br>AH 2B | ↓          | 0859                 | ↓         | ↓                                 |         | 0.0 | SS-2B                                       |
| SAMPLE - 2C<br>AH 2C | ↓          | 0901                 | ↓         | ↓                                 |         | 0.2 | SS-2B <sup>off</sup> SS-2C                  |
| SAMPLE - 2D<br>AH 2D | ↓          | 0903                 | ↓         | ↓                                 |         | 0.0 | SS-2D                                       |
| SAMPLE - 2A<br>AH 2A | 11/13/2016 | 0919                 | 577405.2  | 858233.99                         | Surface | 0.0 | SS-1A                                       |
| SAMPLE - 2B<br>AH 2B | ↓          | 0922                 | ↓         | ↓                                 |         | 0.0 | SS-1B                                       |
| SAMPLE - 2C<br>AH 2C | ↓          | 0923                 | ↓         | ↓                                 |         | 0.0 | SS-1C                                       |
| SAMPLE - 2D<br>AH 2D | ↓          | 0928                 | ↓         | ↓                                 |         | 0.0 | SS-1D                                       |
| SAMPLE - 3A          | 1/12/16    | 1540                 | 577403.09 | 858290.36                         | Surface | 2.3 | labeled "SS-3A"                             |
| SAMPLE - 3B          | ↓          | 1542                 | ↓         | ↓                                 |         | 5.1 | labeled "SS-3B"                             |
| SAMPLE - 3C          | ↓          | 1545                 | ↓         | ↓                                 |         | 4.7 | labeled SS-3C                               |
| SAMPLE - 3D          | ↓          | 1548                 | ↓         | ↓                                 |         | 5.6 | labeled SS-3D                               |
| SAMPLE - 4A          | 1/12/16    | 1522                 | 577330.84 | 858226.29                         | Surface | 2.5 | labeled <del>SS-3<sup>off</sup></del> SS-4A |
| SAMPLE - 4B          | ↓          | 1525                 | ↓         | ↓                                 |         | 1.2 | labeled SS-4B                               |
| SAMPLE - 4C          | ↓          | 1527                 | ↓         | ↓                                 |         | 2.3 | labeled SS-4C                               |
| SAMPLE - 4D          | ↓          | 1530                 | ↓         | ↓                                 |         | 2.5 | labeled SS-4D                               |
| SAMPLE - 5A          | 1/12/16    | 1508                 | 577312.90 | 858332.30                         | Surface | 0.0 | labeled SS-5A                               |
| SAMPLE - 5B          | ↓          | 1509                 | ↓         | ↓                                 |         | 1.7 | labeled SS-5B                               |
| SAMPLE - 5C          | ↓          | 1511                 | ↓         | ↓                                 |         | 1.4 | labeled SS-5C                               |
| SAMPLE - 5D          | ↓          | 1513                 | ↓         | ↓                                 |         | 1.9 | labeled SS-5D                               |
| SAMPLE - 6A          | 1/12/16    | 1455                 | 577282.76 | 858294.40<br><del>858299 AH</del> | Surface | 0.0 | labeled SS-6A                               |
| SAMPLE - 6B          | ↓          | 1456                 | ↓         | ↓                                 |         | 1.2 | labeled SS-6B                               |
| SAMPLE - 6C          | ↓          | <del>1457</del> 1457 | ↓         | ↓                                 |         | 0.2 | labeled SS-6C                               |
| SAMPLE - 6D          | ↓          | <del>1430</del> 1500 | ↓         | ↓                                 |         | 0.0 | labeled SS-6D                               |

Byrd Pump Site  
Stockpile Sampling



Landfarm Stock Pile

| Sample ID    | Date      | Time | Northing  | Easting   | Depth   | PID | Comments              |
|--------------|-----------|------|-----------|-----------|---------|-----|-----------------------|
| SAMPLE - 7A  | 1/13/2010 | 0950 | 577098.39 | 858102.70 | Surface | 0.0 | SS-7A, MSI/MSDI taken |
| SAMPLE - 7B  | ↓         | 0952 | ↓         | ↓         |         | 0.2 | SS-7B                 |
| SAMPLE - 7C  | ↓         | 0954 | ↓         | ↓         |         | 0.6 | SS-7C                 |
| SAMPLE - 7D  | ↓         | 0955 | ↓         | ↓         |         | 0.2 | SS-7D                 |
| SAMPLE - 8A  | 1/13/2010 | 1018 | 577014.70 | 858089.08 | Surface | 0.0 | SS-8A                 |
| SAMPLE - 8B  | ↓         | 1020 | ↓         | ↓         |         | 0.4 | SS-8B                 |
| SAMPLE - 8C  | ↓         | 1022 | ↓         | ↓         |         | 0.0 | SS-8C                 |
| SAMPLE - 8D  | ↓         | 1024 | ↓         | ↓         |         | 0.0 | SS-8D                 |
| SAMPLE - 9A  | 1/13/2010 | 1037 | 576958.17 | 858092.23 | Surface | 0.0 | SS-9A                 |
| SAMPLE - 9B  | ↓         | 1043 | ↓         | ↓         |         | 0.2 | SS-9B                 |
| SAMPLE - 9C  | ↓         | 1044 | ↓         | ↓         |         | 0.0 | SS-9C                 |
| SAMPLE - 9D  | ↓         | 1045 | ↓         | ↓         |         | 0.4 | SS-9D                 |
| SAMPLE - 10A | 1/13/2010 | 1100 | 576891.20 | 858080.81 | Surface | 0.2 | SS-10A, DUP2 taken    |
| SAMPLE - 10B | ↓         | 1109 | ↓         | ↓         |         | 0.0 | SS-10B                |
| SAMPLE - 10C | ↓         | 1112 | ↓         | ↓         |         | 0.0 | SS-10C                |
| SAMPLE - 10D | ↓         | 1114 | ↓         | ↓         |         | 0.2 | SS-10D                |
| SAMPLE - 11A | 1/13/2010 | 1132 | 576804.54 | 858056.40 | Surface | 0.8 | SS-11A                |
| SAMPLE - 11B | ↓         | 1134 | ↓         | ↓         |         | 0.8 | SS-11B                |
| SAMPLE - 11C | ↓         | 1137 | ↓         | ↓         |         | 0.2 | SS-11C                |
| SAMPLE - 11D | ↓         | 1140 | ↓         | ↓         |         | 0.0 | SS-11D                |

Byrd Pump Site  
Stockpile Sampling



Landfarm Stock Pile

| Sample ID    | Date      | Time                            | Northing  | Easting                                    | Depth   | PID | Comments                                 |
|--------------|-----------|---------------------------------|-----------|--|---------|-----|--|
| SAMPLE - 12A | 1/13/2010 | 1155                            | 576719.41 | 858051.84                                  | Surface | 0.2 | SS-12A                                   |
| SAMPLE - 12B | ↓         | 1158                            | ↓         | ↓  |         | 0.0 | SS-12B                                   |
| SAMPLE - 12C | ↓         | 1159                            | ↓         | ↓  |         | 0.0 | SS-12C                                   |
| SAMPLE - 12D | ↓         | 1201                            | ↓         | ↓  |         | 0.0 | SS-12D                                   |
| SAMPLE - 13A | 1/13/2010 | 1225                            | 576670.99 | 858107.107                                 | Surface | 0.0 | SS-13A                                   |
| SAMPLE - 13B | ↓         | 1228                            | ↓         | ↓  |         | 0.0 | SS-13B                                   |
| SAMPLE - 13C | ↓         | 1231                            | ↓         | ↓  |         | 0.0 | SS-13C                                   |
| SAMPLE - 13D | ↓         | 1232                            | ↓         | ↓  |         | 0.0 | SS-13D                                   |
| SAMPLE - 14A | 1/13/2010 | <del>1232</del> <sup>1244</sup> | 576640.60 | <del>858184.16</del> <sup>858183.647</sup> | Surface | 0.0 | SS-14A                                   |
| SAMPLE - 14B | ↓         | 1245                            | ↓         | ↓  |         | 0.0 | SS-14B                                   |
| SAMPLE - 14C | ↓         | 1249                            | ↓         | ↓  |         | 0.0 | SS-14C                                   |
| SAMPLE - 14D | ↓         | 1251                            | ↓         | ↓  |         | 0.0 | SS-14D                                   |
| SAMPLE - 15A | 1/13/2010 | 1302                            | 576622.54 | 858285.10                                  | Surface | 0.0 | SS-15A                                   |
| SAMPLE - 15B | ↓         | 1304                            | ↓         | ↓  |         | 0.0 | SS-15B                                   |
| SAMPLE - 15C | ↓         | 1308                            | ↓         | ↓  |         | 0.0 | SS-15C                                   |
| SAMPLE - 15D | ↓         | 1310                            | ↓         | ↓  |         | 0.0 | SS-15 <del>A</del> <sup>all</sup> SS-15D |
| SAMPLE - 16A | 1/13/2010 | 1320                            | 576693.26 | 858288.47                                  | Surface | 0.0 | SS-16A                                   |
| SAMPLE - 16B | ↓         | 1322                            | ↓         | ↓  |         | 0.0 | SS-16B                                   |
| SAMPLE - 16C | ↓         | 1328                            | ↓         | ↓  |         | 0.0 | SS-16C                                   |
| SAMPLE - 16D | ↓         | 1330                            | ↓         | ↓  |         | 0.0 | SS-16D                                   |

Byrd Pump Site  
Stockpile Sampling



Landfarm Stock Pile

| Sample ID    | Date      | Time                            | Northing  | Easting                                   | Depth   | PID | Comments              |
|--------------|-----------|---------------------------------|-----------|---|---------|-----|-----------------------|
| SAMPLE - 17A | 1/13/2016 | 1338                            | 576762.48 | 858282.14                                 | Surface | 0.0 | SS-17A                |
| SAMPLE - 17B | ↓         | 1340                            | ↓         | ↓   |         | 0.0 | SS-17B                |
| SAMPLE - 17C | ↓         | 1346                            | ↓         | ↓   |         | 0.2 | SS-17C                |
| SAMPLE - 17D | ↓         | 1349                            | ↓         | ↓   |         | 0.0 | SS-17D                |
| SAMPLE - 18A | 1/13/2016 | 1358                            | 576847.42 | <del>858278.09</del> <sup>858291.64</sup> | Surface | 0.0 | SS-18A                |
| SAMPLE - 18B | ↓         | 1402                            | ↓         | ↓   |         | 0.2 | SS-18B                |
| SAMPLE - 18C | ↓         | <del>1400</del> <sup>1406</sup> | ↓         | ↓   |         | 0.0 | SS-18C                |
| SAMPLE - 18D | ↓         | 1408                            | ↓         | ↓   |         | 0.0 | SS-18D                |
| SAMPLE - 19A | 1/13/2016 | 1418                            | 576912.49 | 858303.40                                 | Surface | 0.0 | SS-19A                |
| SAMPLE - 19B | ↓         | 1421                            | ↓         | ↓   |         | 0.0 | SS-19B                |
| SAMPLE - 19C | ↓         | 1426                            | ↓         | ↓   |         | 0.0 | SS-19C                |
| SAMPLE - 19D | ↓         | 1430                            | ↓         | ↓   |         | 0.0 | SS-19D                |
| SAMPLE - 20A | 1/13/2016 | 1444                            | 576972.72 | 858315.55                                 | Surface | 0.0 | SS-20A DUP 3 taken    |
| SAMPLE - 20B | ↓         | 1446                            | ↓         | ↓   |         | 0.0 | SS-20B                |
| SAMPLE - 20C | ↓         | 1448                            | ↓         | ↓   |         | 0.0 | SS-20C                |
| SAMPLE - 20D | ↓         | 1452                            | ↓         | ↓   |         | 0.0 | SS-20D                |
| SAMPLE - 21A | 1/13/2016 | <del>1508</del> <sup>1508</sup> | 577035.41 | 858254.72                                 | Surface | 0.0 | SS-21A, MS2/MD2 taken |
| SAMPLE - 21B | ↓         | 1510                            | ↓         | ↓   |         | 0.0 | SS-21B                |
| SAMPLE - 21C | ↓         | 1512                            | ↓         | ↓   |         | 0.0 | SS-21C                |
| SAMPLE - 21D | ↓         | 1514                            | ↓         | ↓   |         | 0.0 | SS-21D                |

**BYRD PUMP SITE  
OCD #1R0034**

Appendix D Groundwater Sampling Field Data Sheets  
May 17, 2016

**Appendix D GROUNDWATER SAMPLING FIELD DATA SHEETS**



### Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PS1

Client BP  
Project # 182630009

Rev. 2.1 Jan 2014  
Site BPS

Field Pers A Harkins Date 1/14/16 Time 0900 Temp 26°F  
Sample ID MW-PS1 Weather sunny Part.Cldy - OverCast - fog - Rain - Snow (circle) Wind (vel/dir) from West

CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..... (.....))  
Well Material PVC  Iron  SS  Other  Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 28' AH 44.98' CASING VOLUME (gal) = 1.89 gal  
DEPTH TO PRODUCT (feet) = — CALCULATED PURGE VOL (gal) = 5.07 gal  
DEPTH TO WATER (feet) = 33.86' ACTUAL PURGE VOL (gal) = 2.10 gal  
WATER COLUMN HEIGHT (feet) = 11.12 feet PID UPON OPENING WELL (ppm) = —

| PARAMETERS (ORBA) | TIME (2400hr) | VOL. (gal)  | DTW (ft)     | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (mg/L)   | TEMP. (°C)   | ORP (mg/L) | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |
|-------------------|---------------|-------------|--------------|---------------|---------------------|-------------------|-------------|--------------|------------|----------------|----------------------------------|
|                   | <u>0949</u>   | <u>1.58</u> | <u>34.01</u> | <u>6.73</u>   | <u>14.2</u>         | <u>105.9</u>      | <u>6.73</u> | <u>16.79</u> | <u>90</u>  | <u>cloudy</u>  | <u>—</u>                         |
|                   | <u>0952</u>   | <u>1.68</u> | <u>34.01</u> | <u>6.73</u>   | <u>14.3</u>         | <u>101.3</u>      | <u>6.64</u> | <u>16.81</u> | <u>85</u>  | <u>cloudy</u>  | <u>—</u>                         |
|                   | <u>0955</u>   | <u>1.79</u> | <u>34.01</u> | <u>6.72</u>   | <u>14.5</u>         | <u>103.1</u>      | <u>6.61</u> | <u>16.85</u> | <u>83</u>  | <u>cloudy</u>  | <u>—</u>                         |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

DATE PURGED 1/3/16 1/14/16 START (2400hr) 0900 END (2400hr) 1000  
SEDIMENT THICKNESS (start) — SEDIMENT THICKNESS (end) — (original water column)  
Bladder Pump Bailer (Teflon) Calcul of max draw down at time of sampling: ..... X0.8=  
Centrifugal Pump Bailer (PVC) Disposal method  
Submersible Pump Bailer (Stainless Steel)  
Peristaltic Pump Dedicated / Disposable  
Pump/Tubing Depth (ft) 39.3'  
Other equ., (surge block, air lifting, ...) (Identify analyses sampled with which equipment)

DATE SAMPLED 1/14/16 SAMPLE TIME (2400hr) 1000  
SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other   
DEPTH AT WHICH SAMPLE TAKEN 39.3' DRAW DOWN LESS THAN 0.4 % OF INITIAL WL DTW at sample time 34.01'  
COLOR cloudy ODOR Faint  Medium  Strong  NATURE OF ODOR NONE SHEEN Y  N   
ANALYSIS GRO PAH Metals BTEX Anions/alkalinity/TDS — — — — —  
PRESERVATIVE HCl NA HNO<sub>3</sub> HCl NA — — — — —  
CONTAINER TYPE AND CONTENTANCE 40ml 100ml 250ml 40ml 250ml — — — — —  
# OF CONT. 9 6 3 9 3 — — — — —  
FILTERED (Y/N) N N Yes N N — — — — —  
QA/QC Y Y Y Y Y — — — — —  
NOTES (incl. deviation from plan) MS/MSD taken = extra volume.

| WELL INTEGRITY  | Yes                                 | No                                  | Comments |
|---|-------------------------------------|-------------------------------------|----------|
| Well identification number clearly marked?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <u>—</u> |
| Well covers and locks in good condition and secure?                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <u>—</u> |
| Is the concrete pad and surface seal in good condition?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <u>—</u> |
| Are soils surrounding the well pad eroded?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <u>—</u> |
| Is there standing water in the flush mount?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <u>—</u> |
| Is the PVC well casing in good condition?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <u>—</u> |
| Is the measuring point on PVC casing well marked?                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <u>—</u> |
| Does DTB sounded correspond with original well completion DTB?                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <u>—</u> |
| Well coordinates:   |                                     |                                     |          |
| Others: instructions to find well, missing bolts (size), need retaping, other repair: |                                     |                                     | <u>—</u> |



### Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PS2

Client BP  
Project # 182630008

Rev. 2.1 Jan 2014  
Site BPS

Field Pers A. Hawkins

Date 1/14/2016

Time 1305

Temp 101°F

Sample ID

Weather sunny Part.Cldy - OverCast - fog - Rain - Snow (circle)

Wind (vel/dir) wind from West

CASING DIAMETER (1 casing vol (gal/linear ft) (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..... (.....))

Well Material PVC  Iron  SS  Other  Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 48.39'

CASING VOLUME (gal) = 2.36

DEPTH TO PRODUCT (feet) = -

CALCULATED PURGE VOL (gal) = 7.08 gal

DEPTH TO WATER (feet) = 34.5'

ACTUAL PURGE VOL (gal) = 2.3 gal

WATER COLUMN HEIGHT (feet) = 13.89'

PID UPON OPENING WELL (ppm) = 2

| PARAMETERS (ORIBA) | TIME (2400hr) | VOL. (gal) | DTW (ft) | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (%) | TEMP. (°C) | ORP (mg/L) | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |
|--------------------|---------------|------------|----------|---------------|---------------------|-------------------|--------|------------|------------|----------------|----------------------------------|
|                    | 1352          | 1.97       | 34.60    | 6.90          | 10.2                | 0.0               | 8.07   | 19.05      | 57         | cloudy         | reddish-brown                    |
|                    | 1355          | 2.10       | 34.60    | 6.90          | 10.3                | 0.0               | 8.03   | 19.03      | 57         | cloudy         | reddish-brown                    |
|                    | 1358          | 2.23       | 34.60    | 6.90          | 10.3                | 0.0               | 8.05   | 19.06      | 56         | cloudy         | reddish-brown                    |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

**Development / Purging**

DATE PURGED 1/14/2016 START (2400hr) 1305 END (2400hr) 1400

SEDIMENT THICKNESS (start) - SEDIMENT THICKNESS (end) - (Original water column)

Bladder Pump  Bailer (Teflon)  Calcul of max draw down at time of sampling: ..... X0.8=

Centrifugal Pump  Bailer (PVC)  Disposal method

Submersible Pump  Bailer (Stainless Steel)

Peristaltic Pump  Dedicated / Disposable

Pump/Tubing Depth (ft) 41.5'

Other equ., (surge block, air lifting, ...)

(Identify analytes sampled with which equipment)

**SAMPLE INFORMATION AT TIME OF SAMPLING**

DATE SAMPLED 1/14/2016 SAMPLE TIME (2400hr) 1400

SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other

DEPTH AT WHICH SAMPLE TAKEN 41.5' DRAW DOWN LESS THAN 0.3% OF INITIAL WL DTW at sample time 34.60'

COLOR reddish/brown ODOR Faint  Medium  Strong  NATURE OF ODOR None SHEEN Y  N

| ANALYSIS                                      | PRESERVATIVE           | CONTAINER TYPE AND CONTENANCE | # OF CONT. | FILTERED (Y/N) | QA/QC     |
|---|------------------------|-------------------------------|------------|----------------|-----------|
| GRO PAH Metals BTEX Anions / Alkalinity / TDS | HCl None HNO3 HCl None | 40ml 100ml 250ml 40ml 250ml   | 3 2 1 3 1  | N N Y N N      | N N N N N |

**WELL INTEGRITY**

| LOCK KEY #   | Yes                                 | No                                  | Comments |
|--|-------------------------------------|-------------------------------------|----------|
| Well identification number clearly marked?                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | -        |
| Well covers and locks in good condition and secure?            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | -        |
| Is the concrete pad and surface seal in good condition?        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | -        |
| Are soils surrounding the well pad eroded?                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | -        |
| Is there standing water in the flush mount?                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | NA       |
| Is the PVC well casing in good condition?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | -        |
| Is the measuring point on PVC casing well marked?              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | -        |
| Does DTB sounded correspond with original well completion DTB? | <input type="checkbox"/>            | <input type="checkbox"/>            | -        |

Well coordinates:

Others: instructions to find well, missing bolts (size), need retaping, other repair: -



# Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PS3

Client BP  
Project # 182630008

Rev. 2.1 Jan 2014  
Site BPS

Field Pers A. Hawkins Date 1/14/16 Time 1100 Temp 45°F  
Sample ID MW-PS3 Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) Wind (vel/dir) Windy-N

CASING DIAMETER (1 casing vol (gal/linear ft)) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..... (.....)  
Well Material PVC  Iron  SS  Other  Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 45.0' CASING VOLUME (gal) = 1.99 gal  
DEPTH TO PRODUCT (feet) = - CALCULATED PURGE VOL (gal) = 5.97  
DEPTH TO WATER (feet) = 33.29' ACTUAL PURGE VOL (gal) = 1.8 gal  
WATER COLUMN HEIGHT (feet) = 11.71' PID UPON OPENING WELL (ppm) = -

| PARAMETERS (YORIBA) | TIME (2400hr) | VOL. (gal) | DTW (ft) | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (%) | TEMP. (°C) | ORP (mg/L) | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |
|---------------------|---------------|------------|----------|---------------|---------------------|-------------------|--------|------------|------------|----------------|----------------------------------|
|                     | 1135          | 1.40       | 33.28    | 6.78          | 15.4                | 151               | 6.54   | 18.76      | 100        | cloudy         | reddish/brown                    |
|                     | 1138          | 1.52       | 33.28    | 6.78          | 15.4                | 148               | 6.44   | 18.79      | 100        | ↓              | ↓                                |
|                     | 1141          | 1.41       | 33.28    | 6.79          | 15.5                | 153               | 6.41   | 18.78      | 105        | ↓              | ↓                                |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

DATE PURGED 1/14/16 START (2400hr) 1100 END (2400hr) 1145  
SEDIMENT THICKNESS (start) - SEDIMENT THICKNESS (end) - (Original water column)  
Bladder Pump Bailer (Teflon) Calcul of max draw down at time of sampling: ..... X0.8= Disposal method  
Centrifugal Pump Bailer (PVC)  
Submersible Pump Bailer (Stainless Steel)  
Peristaltic Pump Dedicated / Disposable  
Pump/Tubing Depth (ft) ~39.0'  
Other eq. (surge block, or filling, ...) (Identify analytes sampled with which equipment)

DATE SAMPLED 1/14/16 SAMPLE TIME (2400hr) 1145  
SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other -  
DEPTH AT WHICH SAMPLE TAKEN ~39.0' DRAW DOWN LESS THAN 0 % OF INITIAL WL DTW at sample time 33.28  
COLOR cloudy ODOR Faint  Medium  Strong  NATURE OF ODOR NONE SHEEN Y  N   
ANALYSIS GAO PAH Metals BTEX Anions/alkalinity/TDS  
PRESERVATIVE HCl None HNO3 HCl None  
CONTAINER TYPE AND CONTENTANCE 400ml 100ml 250ml 400ml 250ml  
# OF CONT. 3 2 1 3 1  
FILTERED (Y/N) N N Y N N  
QA/QC N N N N N

NOTES (incl. deviation from plan)  
WELL INTEGRITY  
LOCK KEY # Yes No Comments  
Well identification number clearly marked?   -  
Well covers and locks in good condition and secure?   -  
Is the concrete pad and surface seal in good condition?   -  
Are soils surrounding the well pad eroded?   No.  
Is there standing water in the flush mount?   NA  
Is the PVC well casing in good condition?   -  
Is the measuring point on PVC casing well marked?   -  
Does DTB sounded correspond with original well completion DTB?   -  
Well coordinates: -  
Others: instructions to find well, missing bolts (size), need retaping, other repair: -

|   |  | Groundwater Development, Monitoring & Sampling Form  |   |  |  |  | ESPA-305              |                    |                         |                |                                  |  |
|---|--|--|---|--|--|--|-----------------------|--------------------|-------------------------|----------------|----------------------------------|--|
|   |  | WELL I.D.  | Client  |  |  | Rev. 2.1   | Jan 2014              |                    |                         |                |                                  |  |
|   |  | MW-PS4   | BP  |  |  |  |                       |                    |                         |                |                                  |  |
|   |  |  | Project # 182630008   |  |  | Site BPS   |                       |                    |                         |                |                                  |  |
| Field Pers  |  | A. Harkins   | Date  | 9/14/16  | Time   | 1510   | Temp                  | 63°F               |                         |                |                                  |  |
| Sample ID   |  | MW-PS4   | Weather <input checked="" type="radio"/> sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle)  |  |  |  | Wind (vel/dir)        |                    | NE                      |                |                                  |  |
| CASING DIAMETER (1 casing vol (gal/linear ft) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) .....")         |  |  |   |  |  |  |                       |                    |                         |                |                                  |  |
| Well Material   |  | PVC <input checked="" type="checkbox"/> Iron <input type="checkbox"/> SS <input type="checkbox"/> Other <input type="checkbox"/> | Stick up <input checked="" type="checkbox"/> Flush Mount <input type="checkbox"/>   |  | PLEASE CIRCLE WELL DIAMETER                              |  |                       |                    |                         |                |                                  |  |
| DEPTH TO BOTTOM (feet) =  |  | <del>43.8'</del> 44.98'  | CASING VOLUME (gal) =   |  | 2.23 gal   |  |                       |                    |                         |                |                                  |  |
| DEPTH TO PRODUCT (feet) =   |  | —  | CALCULATED PURGE VOL (gal) =  |  | 6.68   |  |                       |                    |                         |                |                                  |  |
| DEPTH TO WATER (feet) =   |  | 31.09'   | ACTUAL PURGE VOL (gal) =  |  | 1.6 gal  |  |                       |                    |                         |                |                                  |  |
| WATER COLUMN HEIGHT (feet) =  |  | 13.09'   | PID UPON OPENING WELL (ppm) =   |  | —  |  |                       |                    |                         |                |                                  |  |
| PARAMETERS (YORIBA)   | TIME (2400hr)  | VOL. (gal)   | DTW (ft)  | pH (no units)                                    | CONDUCT. (mmhos/cm)                                      | TURBID. (Vis/NTU)  | DO (%)                | TEMP. (°C)         | ORP (mg/L)              | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |  |
|   | 1531   | 1.12   | 31.95   | 6.98   | 14.7   | 49.3   | 10.36                 | 18.161             | 62                      | cloudy         | —                                |  |
|   | 1534   | 1.28   | 31.95   | 6.98   | 14.9   | 49.5   | 10.39                 | 18.03              | 62                      | ↓              | —                                |  |
|   | 1537   | 1.44   | 31.95   | 6.97   | 15.0   | 49.2   | 10.31                 | 18.04              | 62                      | ↓              | —                                |  |
| Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10% |  |  |   |  |  |  |                       |                    |                         |                |                                  |  |
| Development / Purging   | DATE PURGED  |  | 11/14/16  | START (2400hr)                                   | 1510   | END (2400hr)   | 1540                  |                    |                         |                |                                  |  |
|   | SEDIMENT THICKNESS (start)                                     |  | —   |  | SEDIMENT THICKNESS (end)                                 |  | —                     |                    | (Original water column) |                |                                  |  |
|   | Bladder Pump   |  | Bailer (Teflon)   |  | Calcul of max draw down at time of sampling: ..... X0.8= |  |                       |                    |                         |                |                                  |  |
|   | Centrifugal Pump   |  | Bailer (PVC)  |  | Disposal method  |  |                       |                    |                         |                |                                  |  |
| Submersible Pump  |  | Bailer (Stainless Steel)   |   |  |  |  |                       |                    |                         |                |                                  |  |
| Peristaltic Pump  |  | Dedicated / Disposable   |   |  |  |  |                       |                    |                         |                |                                  |  |
| Pump/Tubing Depth (ft)  |  | 38.5'  |   |  |  |  |                       |                    |                         |                |                                  |  |
| Other equ. (surge block, air lifting, ...)  |  |  |   | (Identify analytes sampled with which equipment) |  |  |                       |                    |                         |                |                                  |  |
| SAMPLE INFORMATION AT TIME OF SAMPLING  | DATE SAMPLED   |  | 11/14/16  | SAMPLE TIME (2400hr)                             |  | 1540   |                       |                    |                         |                |                                  |  |
|   | SAMPLE TYPE  |  | Groundwater <input checked="" type="checkbox"/> Surface Water <input type="checkbox"/> Treatment INF <input type="checkbox"/> EFF <input type="checkbox"/> Other <input type="checkbox"/> |  |  |  |                       |                    |                         |                |                                  |  |
|   | DEPTH AT WHICH SAMPLE TAKEN                                    |  | 38.5'   | DRAW DOWN LESS THAN                              |  | 0.2 % OF INITIAL WL  |                       | DTW at sample time |                         | 31.95'         |                                  |  |
|   | COLOR  |  | cloudy-clear  | ODOR   |  | Faint <input type="checkbox"/> Medium <input type="checkbox"/> Strong <input type="checkbox"/> |                       | NATURE OF ODOR     |                         | None           |                                  |  |
|   | ANALYSIS   |  | GRO   | BTEX   | METALS   | PAH  | Amions/Alkalinity/TDS |                    |                         |                |                                  |  |
|   | PRESERVATIVE   |  | HCl   | HCl  | HNO3   | None   | None                  |                    |                         |                |                                  |  |
|   | CONTAINER TYPE AND CONTENTANCE                                 |  | 40ml  | 40ml   | 250ml  | 100ml  | 250ml                 |                    |                         |                |                                  |  |
|   | # OF CONT.   |  | 6   | 6  | 2  | 4  | 2                     |                    |                         |                |                                  |  |
|   | FILTERED (Y/N)   |  | N   | N  | Y  | N  | N                     |                    |                         |                |                                  |  |
|   | QA/QC  |  | DUP-1-GW  | DUP-1-GW   | DUP-1-GW   | DUP-1-GW   | DUP-1-GW              |                    |                         |                |                                  |  |
| NOTES (incl. deviation from plan)   |  | DUP-1-GW   |   |  |  |  |                       |                    |                         |                |                                  |  |
| WELL INTEGRITY  | LOCK KEY #   |  |   |  | Yes  | No   | Comments              |                    |                         |                |                                  |  |
|   | Well identification number clearly marked?                     |  |   |  | <input checked="" type="checkbox"/>                      | <input type="checkbox"/>   |                       |                    |                         |                |                                  |  |
|   | Well covers and locks in good condition and secure?            |  |   |  | <input checked="" type="checkbox"/>                      | <input type="checkbox"/>   |                       |                    |                         |                |                                  |  |
|   | Is the concrete pad and surface seal in good condition?        |  |   |  | <input checked="" type="checkbox"/>                      | <input type="checkbox"/>   |                       |                    |                         |                |                                  |  |
|   | Are soils surrounding the well pad eroded?                     |  |   |  | <input type="checkbox"/>                                 | <input checked="" type="checkbox"/>  |                       |                    |                         |                |                                  |  |
|   | Is there standing water in the flush mount?                    |  |   |  | <input type="checkbox"/>                                 | <input checked="" type="checkbox"/>  | NA                    |                    |                         |                |                                  |  |
|   | Is the PVC well casing in good condition?                      |  |   |  | <input checked="" type="checkbox"/>                      | <input type="checkbox"/>   |                       |                    |                         |                |                                  |  |
|   | Is the measuring point on PVC casing well marked?              |  |   |  | <input checked="" type="checkbox"/>                      | <input type="checkbox"/>   |                       |                    |                         |                |                                  |  |
|   | Does DTB sounded correspond with original well completion DTB? |  |   |  | <input type="checkbox"/>                                 | <input type="checkbox"/>   |                       |                    |                         |                |                                  |  |
|   | Well coordinates:  |  |   |  |  |  |                       |                    |                         |                |                                  |  |
| Others: instructions to find well, missing bolts (size), need retaping, other repair:   |  | NA.  |   |  |  |  |                       |                    |                         |                |                                  |  |



# Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PS1

Client BP  
Project # 19260TH 182630008

Rev. 2.1 Jan 2014

Site Byrd

Field Pers Tyler Herning Date 3/3/16 Time 1346 Temp 66°F

Sample ID MW-PS1-030316 Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) Wind (vel/dir) 10mph (NW)

CASING DIAMETER (1 casing vol (gal/linear ft)) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10)....." (.....)

Well Material PVC  Iron  SS  Other Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 44.91 CASING VOLUME (gal) = 1.86

DEPTH TO PRODUCT (feet) = — CALCULATED PURGE VOL (gal) = 5.58

DEPTH TO WATER (feet) = 33.95 ACTUAL PURGE VOL (gal) = 3.5

WATER COLUMN HEIGHT (feet) = 10.96 PID UPON OPENING WELL (ppm) = 0.0

| PARAMETERS (ORIBA) | TIME (2400hr) | VOL. (gal) | DTW (ft) | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (%) | TEMP. (°C) | ORP (mg/L) | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |
|--------------------|---------------|------------|----------|---------------|---------------------|-------------------|--------|------------|------------|----------------|----------------------------------|
|                    | 1424          | ↓          | 34.01    | 6.44          | 13.7                | 147               | 3.00   | 20.05      | 476        | clear          |                                  |
|                    | 1431          | ↓          | ↓        | 6.43          | 13.8                | 143               | 2.97   | 20.13      | 475        | ↓              |                                  |
|                    | 1434          | 3.5        | ↓        | 6.45          | 13.9                | 139               | 2.94   | 20.27      | 474        | ↓              |                                  |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

DATE PURGED 3/3/16 START (2400hr) 1356 END (2400hr) 1434  
SEDIMENT THICKNESS (start) — SEDIMENT THICKNESS (end) — (↓ original water column)

Bladder Pump Bailer (Teflon) Calcul of max draw down at time of sampling: ..... X0.8=  
Centrifugal Pump Bailer (PVC) Disposal method On-site 55 gal drum  
Submersible Pump Bailer (Stainless Steel)  
Peristaltic Pump Dedicated/ Disposable Tubing  
Pump/Tubing Depth (ft) ~39.43  
Other equ., (surge block, air lifting, sampled with which equipment)

DATE SAMPLED 3/3/16 SAMPLE TIME (2400hr) 1435  
SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other 34.01  
DEPTH AT WHICH SAMPLE TAKEN ~39.43 DRAW-DOWN LESS THAN — % OF INITIAL WL DTW at sample time —  
COLOR clear ODOR Faint  Medium  Strong  NATURE OF ODOR NONE SHEEN Y  N   
ANALYSIS TH120 Nitrate TDS Colours  
PRESERVATIVE — — HNO3  
AND CONTENANCE 6/100mL 3/250mL 3/250mL  
# OF CONT. — — —  
FILTERED (Y/N) N N N  
QA/QC MS/MSD  
NOTES (incl. deviation from plan) —

| WELL INTEGRITY  | Yes                                 | No                                  | Comments |
|---|-------------------------------------|-------------------------------------|----------|
| LOCK KEY #  |                                     |                                     |          |
| Well identification number clearly marked?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |          |
| Well covers and locks in good condition and secure?                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |          |
| Is the concrete pad and surface seal in good condition?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |          |
| Are soils surrounding the well pad eroded?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |          |
| Is there standing water in the flush mount?   | <input type="checkbox"/>            | <input type="checkbox"/>            | N/A      |
| Is the PVC well casing in good condition?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |          |
| Is the measuring point on PVC casing well marked?                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |          |
| Does DTB sounded correspond with original well completion DTB?                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |          |
| Well coordinates:   |                                     |                                     |          |
| Others: instructions to find well, missing bolts (size), need retaping, other repair: |                                     |                                     |          |



# Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PSZ

Client BP  
Project # 14260008

Rev. 2.1 Jan 2014

Site Byrd

Field Pers Tyler Henning Date 3/3/16 Time 1234 Temp 60°F

Sample ID MW-PSZ-030316 Weather (Sunny) - Part.Cldy - OverCast - fog - Rain - Snow (circle) Wind (vel/dir) 10 mph (NW)

CASING DIAMETER (1 casing vol (gal/linear ft)) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..... " (.....)  
Well Material PVC  Iron  SS  Other \_\_\_\_\_ Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 48.20 CASING VOLUME (gal) = 2.31  
DEPTH TO PRODUCT (feet) = - CALCULATED PURGE VOL (gal) = 6.93  
DEPTH TO WATER (feet) = 34.62 ACTUAL PURGE VOL (gal) = 3.0  
WATER COLUMN HEIGHT (feet) = 13.58 PID UPON OPENING WELL (ppm) = 0.0

| PARAMETERS (ORIBA) | TIME (2400hr) | VOL. (gal) | DTW (ft)     | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (%)      | TEMP. (°C)   | ORP (mg/L) | COLOR (visu) | COMMENTS / OTHERS (Fe, TDS, ...) |
|--------------------|---------------|------------|--------------|---------------|---------------------|-------------------|-------------|--------------|------------|--------------|----------------------------------|
|                    | <u>1316</u>   | <u>↓</u>   | <u>34.72</u> | <u>6.52</u>   | <u>12.2</u>         | <u>17.6</u>       | <u>2.20</u> | <u>19.42</u> | <u>389</u> | <u>clear</u> |                                  |
|                    | <u>1319</u>   | <u>↓</u>   | <u>↓</u>     | <u>6.52</u>   | <u>12.3</u>         | <u>17.5</u>       | <u>2.18</u> | <u>19.43</u> | <u>384</u> | <u>↓</u>     |                                  |
|                    | <u>1322</u>   | <u>3.0</u> | <u>↓</u>     | <u>6.51</u>   | <u>12.4</u>         | <u>16.8</u>       | <u>2.17</u> | <u>19.47</u> | <u>383</u> | <u>↓</u>     |                                  |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

DATE PURGED 3/3/16 START (2400hr) 1250 END (2400hr) 1322  
SEDIMENT THICKNESS (start) \_\_\_\_\_ SEDIMENT THICKNESS (end) \_\_\_\_\_ (↓ original water column)  
Bladder Pump \_\_\_\_\_ Bailer (Teflon) \_\_\_\_\_ Calcul of max draw down at time of sampling: ..... X0.8=  
Centrifugal Pump \_\_\_\_\_ Bailer (PVC) \_\_\_\_\_ Disposal method On-site 55-gal drum  
Submersible Pump \_\_\_\_\_ Bailer (Stainless Steel) \_\_\_\_\_  
Peristaltic Pump \_\_\_\_\_ Dedicated / Disposable Tubing  
Pump/Tubing Depth (ft) ~41.41  
Other equ., (surge block, air lifting, \_\_\_\_\_) sampled with which equipment \_\_\_\_\_

DATE SAMPLED 3/3/16 SAMPLE TIME (2400hr) 1323  
SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other \_\_\_\_\_  
DEPTH AT WHICH SAMPLE TAKEN ~41.41 DRAW DOWN LESS THAN \_\_\_\_\_ % OF INITIAL WL \_\_\_\_\_ DTW at sample time 34.72  
COLOR clear ODOR Faint  Medium  Strong  NATURE OF ODOR NONE SHEEN Y  N   
ANALYSIS TPH DPO Nitrate Nitrite TDS Cations  
PRESERVATIVE \_\_\_\_\_ HNO3  
AND CONTENANCE 2/100mL 1/250mL 1/250mL  
# OF CONT. \_\_\_\_\_  
FILTERED (Y/N) N N N  
QA/QC N/A  
NOTES (incl. deviation from plan) \_\_\_\_\_

WELL INTEGRITY

| LOCK KEY #   | Yes                                 | No                                  | Comments   |
|--|-------------------------------------|-------------------------------------|------------|
| Well identification number clearly marked?                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Well covers and locks in good condition and secure?            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Is the concrete pad and surface seal in good condition?        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Are soils surrounding the well pad eroded?                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |            |
| Is there standing water in the flush mount?                    | <input type="checkbox"/>            | <input type="checkbox"/>            | <u>N/A</u> |
| Is the PVC well casing in good condition?                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Is the measuring point on PVC casing well marked?              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Does DTB sounded correspond with original well completion DTB? | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Well coordinates:  |                                     |                                     |            |

Others: instructions to find well, missing bolts (size), need retaping, other repair:



# Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PS3

Client BP

Rev. 2.1 Jan 2014

Project # 182630008

Site Byrd

Field Pers Tyler Fenning Date 3/3/16 Time 1451 Temp 68°F

Sample ID MW-PS3-030316 Weather sunny - Part.Cldy - OverCast - fog - Rain - Snow (circle) Wind (vel/dir) mph (var)

CASING DIAMETER (1 casing vol (gal/linear ft)) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..... " (.....)  
Well Material PVC  Iron  SS  Other \_\_\_\_\_ Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 48.41 CASING VOLUME (gal) = 2.57  
DEPTH TO PRODUCT (feet) = — CALCULATED PURGE VOL (gal) = 7.71  
DEPTH TO WATER (feet) = 33.30 ACTUAL PURGE VOL (gal) = 3.5  
WATER COLUMN HEIGHT (feet) = 15.11 PID UPON OPENING WELL (ppm) = 0.0

| PARAMETERS (YORIBA) | TIME (2400hr) | VOL. (gal) | DTW (ft)     | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (%)      | TEMP. (°C)   | ORP (mg/L) | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |
|---------------------|---------------|------------|--------------|---------------|---------------------|-------------------|-------------|--------------|------------|----------------|----------------------------------|
|                     | <u>1538</u>   | <u>↓</u>   | <u>33.40</u> | <u>6.42</u>   | <u>20.4</u>         | <u>22.6</u>       | <u>4.90</u> | <u>20.59</u> | <u>456</u> | <u>clear</u>   |                                  |
|                     | <u>1541</u>   | <u>↓</u>   | <u>↓</u>     | <u>6.41</u>   | <u>20.7</u>         | <u>21.4</u>       | <u>4.87</u> | <u>20.86</u> | <u>455</u> | <u>↓</u>       |                                  |
|                     | <u>1544</u>   | <u>3.5</u> | <u>↓</u>     | <u>6.41</u>   | <u>20.8</u>         | <u>20.9</u>       | <u>4.77</u> | <u>20.80</u> | <u>455</u> | <u>↓</u>       |                                  |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

DATE PURGED 3/3/16 START (2400hr) 1503 END (2400hr) 1544  
SEDIMENT THICKNESS (start) \_\_\_\_\_ SEDIMENT THICKNESS (end) \_\_\_\_\_ (original water column)  
Bladder Pump \_\_\_\_\_ Bailer (Teflon) \_\_\_\_\_ Calcul of max draw down at time of sampling: ..... X0.8=  
Centrifugal Pump \_\_\_\_\_ Bailer (PVC) \_\_\_\_\_ Disposal method On-site Drum (55-gal)  
Submersible Pump \_\_\_\_\_ Bailer (Stainless Steel) \_\_\_\_\_  
Peristaltic Pump \_\_\_\_\_ dedicated Disposable Tubing  
Pump/Tubing Depth (ft) ~40.85  
Other equ., (surge block, air lifting, \_\_\_\_\_) sampled with which equipment)

DATE SAMPLED 3/3/16 SAMPLE TIME (2400hr) 1545  
SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other \_\_\_\_\_ DTW at sample time 33.40  
DEPTH AT WHICH SAMPLE TAKEN ~40.85 DRAW DOWN LESS THAN \_\_\_\_\_ % OF INITIAL WL  
COLOR clear ODOR None NATURE OF ODOR None SHEEN Y  N   
ANALYSIS TPH-DRO Nitrate Nitrite TDS Cations \_\_\_\_\_  
PRESERVATIVE \_\_\_\_\_ HNO3 \_\_\_\_\_  
AND CONTENANCE 2/100mL 1/250mL 1/250mL \_\_\_\_\_  
# OF CONT. \_\_\_\_\_  
FILTERED (Y/N) N N N \_\_\_\_\_  
QA/QC N/A \_\_\_\_\_  
NOTES (incl. deviation from plan) \_\_\_\_\_

| WELL INTEGRITY  | Yes                                 | No                                  | Comments   |
|---|-------------------------------------|-------------------------------------|------------|
| LOCK KEY #  |                                     |                                     |            |
| Well identification number clearly marked?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Well covers and locks in good condition and secure?                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Is the concrete pad and surface seal in good condition?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Are soils surrounding the well pad eroded?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |            |
| Is there standing water in the flush mount?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <u>N/A</u> |
| Is the PVC well casing in good condition?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Is the measuring point on PVC casing well marked?                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Does DTB sounded correspond with original well completion DTB?                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |            |
| Well coordinates:   |                                     |                                     |            |
| Others: instructions to find well, missing bolts (size), need retaping, other repair: |                                     |                                     |            |



# Groundwater Development, Monitoring & Sampling Form

ESPA-305

WELL I.D. MW-PS4

Client BP  
Project # 182630008

Rev. 2.1 Jan 2014

Site Byrd

Field Pers Tyler Hering Date 3/3/16 Time 1126 Temp 62°F

Sample ID MW-PS4-030316 Weather sunny Part.Cldy - OverCast - fog - Rain - Snow (circle) Wind (vel/dir) 18 mph (var)

CASING DIAMETER (1 casing vol (gal/linear ft)) 1" (0.04) 2" (0.17) 3" (0.37) 4" (0.65) 5" (1.02) 6" (1.47) 6.5" (1.7) 8" (2.61) 10" (4.10) ..... (.....)  
Well Material PVC  Iron  SS  Other Stick up  Flush Mount  PLEASE CIRCLE WELL DIAMETER

DEPTH TO BOTTOM (feet) = 46.13 CASING VOLUME (gal) = 2.41  
DEPTH TO PRODUCT (feet) = — CALCULATED PURGE VOL (gal) = 7.23  
DEPTH TO WATER (feet) = 31.95 ACTUAL PURGE VOL (gal) = 3.5  
WATER COLUMN HEIGHT (feet) = 14.18 PID UPON OPENING WELL (ppm) = 0.0

| PARAMETERS (YORIBA) | TIME (2400hr) | VOL. (gal) | DTW (ft) | pH (no units) | CONDUCT. (mmhos/cm) | TURBID. (Vis/NTU) | DO (%) | TEMP. (°C) | ORP (mg/L) | COLOR (visual) | COMMENTS / OTHERS (Fe, TDS, ...) |
|---------------------|---------------|------------|----------|---------------|---------------------|-------------------|--------|------------|------------|----------------|----------------------------------|
|                     | 1209          | ↓          | 32.07    | 6.70          | 16.2                | 14.1              | 6.00   | 19.87      | 450        | clear          | sl. petrol odor                  |
|                     | 1212          | ↓          | 32.68    | 6.70          | 16.0                | 13.6              | 6.68   | 19.64      | 450        | ↓              | ↓                                |
|                     | 1215          | 3.5        | 32.09    | 6.74          | 15.9                | 13.8              | 6.13   | 19.79      | 457        | ↓              | ↓                                |

Stabilization is project specific or complete when 3 successive readings are within the following limits: pH ± 0.1, Cond. ± 5%, Temp. ± 0.5%, Turb. ± 10%

DATE PURGED 3/3/16 START (2400hr) 1143 END (2400hr) 1215  
SEDIMENT THICKNESS (start) — SEDIMENT THICKNESS (end) — (original water column)  
Bladder Pump Bailer (Teflon) Calcul of max draw down at time of sampling: ..... X0.8=  
Centrifugal Pump Bailer (PVC) Disposal method On-site 55gal Drum  
Submersible Pump Bailer (Stainless Steel)  
Peristaltic Pump Dedicated / Disposable Tubing  
Pump/Tubing Depth (ft) ~39.04  
Other equ., (surge block, air lifting) sampled with which equipment)

DATE SAMPLED 3/3/16 SAMPLE TIME (2400hr) 1216  
SAMPLE TYPE Groundwater  Surface Water  Treatment INF  EFF  Other 32.08  
DEPTH AT WHICH SAMPLE TAKEN ~39.04 DRAW DOWN LESS THAN % OF INITIAL WL DTW at sample time —  
COLOR clear ODOR Faint  Medium  Strong  NATURE OF ODOR Petrol. SHEEN Y  N   
ANALYSIS TPH/DRO Nitrate Nitrite TDS Cations  
PRESERVATIVE — — — HNO3  
AND CONTENANCE 2/100mL 1/250mL 1/250mL  
# OF CONT. — — —  
FILTERED (Y/N) N N N  
QA/QC MW-DUP-030316  
NOTES (incl. deviation from plan) —

WELL INTEGRITY  
LOCK KEY #  
Well identification number clearly marked?  Yes  No Comments  
Well covers and locks in good condition and secure?  Yes  No  
Is the concrete pad and surface seal in good condition?  Yes  No  
Are soils surrounding the well pad eroded?  Yes  No  
Is there standing water in the flush mount?  Yes  No MA  
Is the PVC well casing in good condition?  Yes  No  
Is the measuring point on PVC casing well marked?  Yes  No  
Does DTB sounded correspond with original well completion DTB?  Yes  No  
Well coordinates:  
Others: instructions to find well, missing bolts (size), need retaping, other repair: