30 Day Progress Report to the US EPA

RE: Statoil Eisenbarth Well Pad Site, Clarington, Ohio, Docket No. V-W-14-C-012, Administrative Settlement Agreement and Order on Consent for Removal Action, US EPA Region 5 (effective August 20, 2014); Reporting Period August 16 – September 15, 2015

Prepared for
Statoil USA Onshore Properties Inc.
By
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EXECUTIVE SUMMARY

Statoil USA Onshore Properties Inc. (Statoil) and the United States Environmental Protection Agency (US EPA), Region 5, entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC), Docket No. V-W-14-C-012, effective August 20, 2014. On March 2, 2015, Statoil received US EPA's conditional approval of Statoil's Draft Work Plan, which was submitted to US EPA pursuant to the AOC on September 3, 2014 (initial submittal), and December 23, 2014 (revised submittal per US EPA comments). Statoil received EPA's final approval of the Work Plan on May 5, 2015. As specified in Paragraph 19.a of the AOC, Statoil is required to submit a progress report to US EPA every 30th day following receipt of US EPA's approval of the Work Plan. Statoil is submitting this Progress Report (PR) pursuant to Paragraph 19.a.

Also as specified in Paragraph 19.a, this PR describes all significant developments during the preceding period, including actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems. For purposes of this PR, the reporting period is August 16, 2015 through September 15, 2015.

1.0 INTRODUCTION

This Progress Report (PR) prepared by Moody and Associates (Moody) on behalf of Statoil addresses the areas specified in AOC Paragraph 19.a for the period of August 16, 2015 to September 15, 2015 (i.e., the preceding period) as well as anticipated developments for September 16, 2015 to October 15, 2015 (i.e., the next reporting period).

2.0 SIGNIFICANT DEVELOPMENTS OF THE PRECEDING 30 DAYS (AUGUST 16, 2015 TO SEPTEMBER 15, 2015)

2.1 Actions Performed

On behalf of Statoil and accompanied by a US EPA representative, Moody completed the second of the three rounds of Paragraph 15.a.ii stream monitoring on August 24, 2015. This sampling satisfied the Work Plan requirement for one (1) sampling event to be conducted after three (3) consecutive days of dry weather. The results of this sampling event, including the previous sampling event, are in **Tables 1 and 2.** Trending and interpretation for these results will be submitted sixteen weeks following the receipt of data from the laboratory for the final sampling event, as specified in the Work Plan. The final sampling event is currently scheduled in October 2015.

On behalf of Statoil and accompanied by a US EPA representative, Moody conducted a portion of Paragraph 15.a.iii requirements for 2015 on September 9, 2015. This work included the Biological Assessment and the collection of samples for Whole Sediment Toxicity (WST) and Whole Effluent Toxicity (WET) testing. Sediment samples were collected from SW04, SW12, SW17, SW21, and SW20; surface water samples were collected from SW04, SW12, and SW21. The SW12 location is the established background, sampled for comparative purposes.

Statoil submitted a report to the Ohio Department of Natural Resources (ODNR) on August 31, 2015, summarizing environmental investigations performed at the well pad and the surrounding area for the Unified Command, the US EPA, and the ODNR. As noted in our September 1, 2015 Progress Report, we have included a copy of the transmittal memorandum and report (*Summary of Environmental Investigations Arising from the June 28, 2014 Incident at the Eisenbarth Well Pad*) with this submission. A copy of the transmittal memorandum, report text, figures, and tables is provided as **Appendix A** to this PR; appendices associated with the report are too large to transmit electronically but can be provided to the US EPA on CD if requested.

As discussed in our September 1, 2015 Progress Report, all monitoring wells, including piezometers, associated with the Site were abandoned according to Ohio Environmental Protection Agency (OEPA) requirements between August 3 to August 7, 2015. On August 19, August 21, and September 10, 2015,

Moody added hydrated bentonite pellets to SB21, GP24, SB20, SB27, SB15, GP8, GP1, and GP21, after settling of bentonite grout had occurred at these locations. ODNR representatives were on site on September 10, 2015 to observe and document a portion of the process.

2.2 Problems Encountered

Three of the sample locations previously established in the Work Plan for Paragraph 15.a.ii monitoring, including SW02, PD03, and PD07, did not have enough sediment to sample. These locations are associated with the slope drainage system and are not expected to have sediments in the future.

2.3 Samples Collected

Fourteen (14) surface water and eleven (11) sediment samples were collected during the August 24, 2015 stream sampling event, including one (1) field duplicate for each media collected at the SW08 location.

Three (3) surface water samples and five (5) sediment samples were collected as part of the WET and WST testing procedure on September 9, 2015. Sample volumes for WET and WST testing included a 7.5 gallon grab sample of surface water for *P. promelas* and *C. dubia* testing (one 2.5 gallon and one 5 gallon container) for each sample location and one (1) 1 gallon grab sample of fine grained sediment for *C. tentans* and *H. azteca* testing (one 2-gallon bucket for each sample location). Sediment samples were sieved during collection to 1.00 mm or less and submitted to American Aquatics Testing (AAT) for analysis.

2.4 Analytical Data Received

Data received from the August 24, 2015 sampling event, for Paragraph 15.a.ii, are included in **Appendix B** and are summarized in **Table 1** and **Table 2** (attached).

Data for sampling associated with Paragraph 15.a.iii, including the biological assessment, WET and WST testing samples has not yet been received. This data will be provided in the progress report period in which it is received. Trending and interpretation for these results will be submitted in accordance to the Work Plan Schedule.

3.0 ANTICIPATED DEVELOPMENTS: SEPTEMBER 16, 2015 TO OCTOBER 15, 2015

3.1 Schedule of Actions

The remaining round of Paragraph 15.a.ii stream monitoring is scheduled for October of 2015. As required by the AOC, Statoil will provide US EPA with advance notice of the sampling activity. This will satisfy the Work Plan requirement for one (1) sampling event to be conducted in the fall season of 2015.

Moody, along with representatives from the Midwest Biodiversity Institute, will conduct the second pass of the two-phase 2015 fish electro shocking (at Opossum Creek sites 13 and 14 and Sunfish Creek sites 1 and 2) on September 24 and 25, 2015. The benthic macroinvertebrate artificial substrate samplers (Hester Dendy's) placed on August 13 and 14, 2015 will be collected and evaluated during this event.

3.2 Anticipated Problems

Statoil does not anticipate any problems in performing work required by the AOC during the next reporting period.

3.3 Planned Resolutions

Statoil does not anticipate any problems and as a result, there are no planned resolutions for the next reporting period.

4.0 CONCLUSIONS

Monitoring and the evaluation of data will continue as outlined in the approved Work Plan. This PR described all significant developments during the preceding period (August 16, 2015 - September 15, 2015), including actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period (September 16, 2015-October 15, 2015), including a schedule of actions to be performed, anticipated problems, and planned resolutions.

Statoil's next progress report will be submitted to the US EPA on November 1, 2015 for the September 16, 2015 to October 15, 2015 reporting period.

STATOIL USA ONSHORE PROPERTIES INC.

Table 1

EISENBARTH STREAM SAMPLE ANALYTICAL RESULT TABLE

Analyte	Screening Level	Units	Sample ID	SW02	SW02	SW04	SW04	SW06	SW06	SW08	SW08	SW08DUP	SW08DUP	SW17	SW17	SW18	SW18
			Date	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015
			Time	--	--	1330	1310	1355	1328	0930	1015	1015	1040	1210	1201	1110	1058
GCAL Results																	
Acetone (EPA 8015C Method)	1.7	mg/L		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropyl Alcohol (EPA 8015C Method)	Not Applicable	mg/L		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TTPC (LC/MS/MS Method)	1.0	µg/L		--	--	ND	0.0438 J	0.123	0.0523 J	ND	0.0185 J	ND	ND	0.161	0.0438 J	0.0643 J	ND
TTPC (HPLC Method)	1.0	µg/L		--	--	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND
Pace Results																	
Acetone (EPA 8260B Method)	1,700	µg/L		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH (EPA 8015B Method)	Not Applicable	mg/L		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloride (SM 4500-CL-E Method)	230	mg/L		--	--	6.3	7.0	8.1	8.5	19.0	40.9	18.1	40.6	6.7	8.9	6.0	7.4

Analyte	Screening Level	Units	Sample ID	SW20	SW20	SW21	SW21	SW24	SW24	SW25	SW25	PD03	PD03	PD07	PD07	SW001	SW001	SW15	SW15
																Background Samples			
			Date	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015
			Time	1200	1410	1415	1356	0945	1140	1325	1251	1230	1050	1110	1230	1430	1410	1530	1130
GCAL Results																			
Acetone (EPA 8015C Method)	1.7	mg/L		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropyl Alcohol (EPA 8015C Method)	Not Applicable	mg/L		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TTPC (LC/MS/MS Method)	1.0	µg/L		0.0256 J	ND	0.775	0.112	0.026 J	ND	0.198	0.0339 J	ND	ND	ND	ND	0.0411 J	ND	ND	ND
TTPC (HPLC Method)	1.0	µg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
Pace Results																			
Acetone (EPA 8260B Method)	1,700	µg/L		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH (EPA 8015B Method)	Not Applicable	mg/L		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloride (SM 4500-CL-E Method)	230	mg/L		5.9	7.3	7.0	12.6	27.4	49.4	6.1	6.2	35.2	41.4	40.0	82.0	10.7	46.6	3.2	4.2

NOTES:

-- No sample collected; Insufficient water present to collect sample

NA = Not Analyzed; approximately 1 in 5 samples were analyzed for the additional HPLC Method analysis for TTPC

ND = Indicates the constituent was analyzed for but not detected above the specified reporting limit

J = Indicates the result is between the Method of Detection Limit and Limit of Quantitation

Acetone EPA Region 5 RCRA Screening Level: 1,700 µg/L (1.7 mg/L)

Isopropyl Alcohol has no current screening level for surface waters

TTPC EPA Suggested Screening Level: 1 µg/L

TPH has no current screening level for surface waters

Chrloride EPA Freshwater Chronic Continuous Concentration = 230 mg/L

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Table 2

EISENBARTH SEDIMENT SAMPLE ANALYTICAL RESULT TABLE

Analyte	Screening Level	Units	Sample ID	SW02	SW02	SW04	SW04	SW06	SW06	SW08	SW08	SW08DUP	SW08DUP	SW17	SW17	SW18	SW18
			Date	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015
			Time	--	--	1330	1310	1355	1328	0930	1015	1015	1040	1210	1201	1110	1058
GCAL Results																	
Acetone (EPA 8015C Method)	9.9	µg/kg		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropyl Alcohol (EPA 8015C Method)	Not Applicable	µg/kg		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TTPC (LC/MS/MS Method)	859,000	µg/kg		--	--	26.4	10.3	14,100	1,040	8.0	10.9	6.0	5.79	10,900	8,070	420	3,940
TTPC (HPLC Method)	859,000	µg/kg		--	--	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND
Pace Results																	
Acetone (EPA 8260B Method)	9.9	µg/kg		--	--	ND	ND	ND	ND	ND	ND	37.3	ND	ND	ND	ND	ND
TPH (EPA 8015B Method)	380	mg/kg		--	--	ND	10.6	ND	ND	ND	28.2	12.3	29.2	ND	ND	ND	ND
Chloride (SM 4500-Cl-E Method)	Not Applicable	mg/L		--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analyte	Screening Level	Units	Sample ID	SW20	SW20	SW21	SW21	SW24	SW24	SW25	SW25	PD03	PD03	PD07	PD07	SW001	SW001	SW15	SW15
																Background Samples			
			Date	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015	7/7/2015	8/24/2015
			Time	1200	1410	1415	1356	1030	--	1325	1251	--	--	--	--	--	1410	1530	1130
GCAL Results																			
Acetone (EPA 8015C Method)	9.9	µg/kg		ND	ND	ND	ND	ND	--	ND	ND	--	--	--	--	--	ND	ND	ND
Isopropyl Alcohol (EPA 8015C Method)	Not Applicable	µg/kg		ND	ND	ND	ND	ND	--	ND	ND	--	--	--	--	--	ND	ND	ND
TTPC (LC/MS/MS Method)	859,000	µg/kg		1,190	1,760	19,300	29,700	13.7	--	7,880	94,600	--	--	--	--	--	0.306 J	0.0473 J	0.0838 J
TTPC (HPLC Method)	859,000	µg/kg		NA	NA	NA	NA	NA	--	NA	NA	--	--	--	--	--	ND	NA	NA
Pace Results																			
Acetone (EPA 8260B Method)	9.9	µg/kg		ND	ND	ND	ND	ND	--	ND	40.4	--	--	--	--	--	59.5	ND	ND
TPH (EPA 8015B Method)	380	mg/kg		10.8	ND	ND	ND	ND	--	ND	355	--	--	--	--	--	84.1	10.6	23.4
Chloride (SM 4500-Cl-E Method)	Not Applicable	mg/L		ND	ND	ND	ND	ND	--	ND	ND	--	--	--	--	--	ND	ND	ND

NOTES:

-- = No sample collected; Insufficient sediment present to collect sample

NA = Not Analyzed; approximately 1 in 10 samples were analyzed with the additional HPLC Method analysis for TTPC

TTPC US EPA Suggested Screening Level: 859,000 µg/kg

Isopropyl Alcohol has no current screening level for sediment

Acetone US EPA Region 5 RCRA Screening Level: 9.9 µg/kg

TPH Screening Level = 380 mg/kg OEPA DERR

Chloride has no current screening level for sediment

ND = Indicates the constituent was analyzed for but not detected

J = Indicates the result is between the Method of Detection Limit and Limit of Quantitation

Summary of Environmental Investigations Arising from the June 28, 2014 Incident at the Eisenbarth Well Pad

for the

Ohio Department of Natural Resources, Division of Oil and Gas Resources Management

August 31, 2015

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- B.2 October 13, 2014 Letter from Statoil to ODNR regarding acetone
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- F.2 September 2014 Draft Work Plan
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LIST OF ACRONYMS

ACRONYM	NAME OR PHRASE
AOC	Administrative Settlement Agreement and Order on Consent for Removal Action
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	Below Ground Surface
CDC	Centers for Disease and Control
CME	Central Mine Equipment
CTEH	Center for Toxicology and Environmental Health, L.L.C.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DRO	Diesel Range Organics
DUP/DUPE	Field Duplicate
DWS	Drinking Water Standards
EcoSAR	US EPA Ecological Structure-Activity Relationship
Eco-SSL	US EPA Ecological Screening Levels
EDataPro	Environmental Data Professional, LLC
EMA	Monroe County Emergency Management Agency
E-SAP	Environmental Sampling and Analysis Plan
ESBs	Equilibrium Partitioning Sediment Benchmarks
GCAL	Gulf Coast Analytical Laboratories, LLC
GCAL SOP HPLC	GCAL Standard Operating Procedures for the Laboratory Method HPLC
GDP	Ground Disturbance Permit
GP	Geo-probes
GPS	Global Positioning System
HASP	Health and Safety Plan
HPLC-UV	High Performance Liquid Chromatography- Ultra Violet
HSDB	Hazardous Substances Data Bank
ICS	Incident Command System
ID	Identification
IDW	Investigation derived wastes
JSA	Job Safety Analysis
LC/MS/MS	Liquid Chromatography/Mass Spectrometry/Mass
LCS	Laboratory Control Spikes
LIDAR	Light Detection and Ranging
MRLs	Minimum Risk Levels
MS	Matrix Spike
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NIOSH	National Institute for Occupational Safety and Health
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
Ohio EPA	Ohio Environmental Protection Agency
OOI-SAP	Ohio Operations Incident Sampling and Analysis Plan

ACRONYM	NAME OR PHRASE
ORP	Oxidation-Reduction Potential
OSHA	Occupational Safety and Health Administration
OUPS	Ohio Utilities Protection Service
PD	Pad/Puddle
PID	Photoionization Detector
POSCs	Potential on-site constituents
PVC	Polyvinyl Chloride
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RSL	Regional Screening Level
SB	Soil Boring
SDSs	Safety Data Sheets
SIR	Site Investigation Report
SOP	Standard Operating Procedures
SS	Surface Soil
SVOCs	Semi-Volatile Organic Compounds
SW	Surface Water
TDS	Total Dissolved Solids
TEC	Threshold Effect Concentrations
TICs	Tentatively Identified Compounds
TP	Test Pits
TPH	Total Petroleum Hydrocarbons
TTPC	Tri-n- butyl tetradecyl phosphonium chloride
US EPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WET	Whole Effluent Toxicity
WHO	World Health Organization
WMP	Waste Management Plan
WSSSAAP	Water, Soil, and Sediment Sampling and Analysis Adjustment Plan
WST	Whole Sediment Toxicity
YSI	Yellow Springs Instruments Company, now YSI

EXECUTIVE SUMMARY

This report summarizes investigative activities completed to date, as well as planned additional investigation activities, to assess potential environmental impacts from an incident at Statoil USA Onshore Properties, Inc.'s (Statoil) Eisenbarth Well Pad, located in Clarington, Ohio. The incident, which occurred on June 28, 2014, involved a well pad fire arising from a blender unit owned and operated by Halliburton Energy Services, Inc. (Halliburton). The fire subsequently spread on the well pad, combusting materials and equipment located on-site. Flowback water from one of the wells and freshwater used for firefighting flowed off the well pad.

Under a Unified Command composed of Statoil, the United States Environmental Protection Agency (US EPA), the Ohio Department of Natural Resources (ODNR), and the Ohio Environmental Protection Agency (Ohio EPA), Statoil conducted a multi-media investigation to evaluate the nature and extent of potential impacts to the well pad and surrounding area. Statoil was subject to different sampling plans during the Unified Command response work. The media investigated under the oversight of the Unified Command included air, water, soil, and sediment. The Unified Command sampling activities commenced on June 28, 2014. As the data was collected and analyzed, air and soil sampling were discontinued under the Unified Command. Daily air sampling was discontinued on July 19, 2014, at the time that the Water, Soil, and Sediment Sampling and Analysis Adjustment Plan (WSSSAAP) was implemented. Soil sampling was completed on July 18, 2014, pending removal of equipment from the pad. Water and sediment sampling continued until Statoil received authorization on April 3, 2015, to cease sampling under the WSSSAAP. Final sampling under the WSSSAAP occurred on April 8, 2015.

In addition to the investigative activities Statoil performed under the oversight of the Unified Command, Statoil has also performed separate investigative activities for ODNR and US EPA. All investigative activities performed under the oversight of the ODNR followed the procedures outlined in the Eisenbarth Pad – Ohio Operations Incident Sampling and Analysis Plan, Revision 2 (OOI-SAP), prepared by Penn E&R on behalf of Statoil and approved by the ODNR on November 14, 2014. The culmination of Statoil's investigative activities for the ODNR conducted pursuant to the OOI-SAP was previously addressed in the March 10, 2015 Site Investigation Report (SIR), and in two addendums submitted on April 14, 2015 and July 9, 2015. The SIR and addendums are summarized herein.

Based on soil and groundwater data presented in the SIR, Statoil concluded that conditions at the well pad were naturally attenuating and that there would be no current or future on-pad or off-pad impacts to soil, sediment, or water from the well pad. Statoil reached this conclusion because soil and groundwater data showed no presence of potential on-site constituents (POSCs) above established screening levels. Groundwater data collected in March and June 2015, confirmed the conclusions in the SIR, as described in the April and July addendums to the SIR.

In August 2014, Statoil entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) with the US EPA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Pursuant to the AOC, Statoil is required to monitor, sample,

and assess potential impacts to surface water and sediment in potentially impacted areas arising from the June 28, 2014 incident at the Eisenbarth Well Pad. The AOC consists of three investigative areas:

- AOC Paragraph 15.a.i – An evaluation of the pathways by which materials released from the well pad potentially migrated to the unnamed tributary to Opossum Creek.

- AOC Paragraph 15.a.ii - An evaluation of POSCs in the surface waters and sediments of the unnamed tributary to Opossum Creek, Opossum Creek, and a portion of the Ohio River.

- AOC Paragraph 15.a.iii - An evaluation of potential acute and chronic toxicological impacts on aquatic life and recovery of aquatic communities through Whole Effluent Toxicity (WET) testing, Whole Sediment Toxicity (WST) testing, and a two phase biological assessment.

Statoil is required to submit a written report to US EPA for each of these investigative areas. Statoil has already submitted two of the three reports. In the first report, submitted to US EPA on May 27, 2015 (15.a.i report, **Appendix A.1**), Statoil evaluated the potential surface and subsurface pathways by which materials released from the Eisenbarth Well Pad may have migrated to the unnamed tributary to Opossum Creek. To do this, Statoil evaluated soil and water samples collected from June 28, 2014-March 2, 2015, physical and geological data, field investigations, and other relevant information. Statoil concluded that the migration pathway immediately following the June 28, 2014 incident was along surface water channels. Once water was no longer introduced onto the well pad, berms were installed, and outfalls were contained, surface flow was no longer a migration pathway. Statoil further concluded that there had been no subsurface migration from the well pad at any time from the June 28, 2014 incident.

Statoil submitted a second report to US EPA on July 22, 2015 (15.a.ii report**, Appendix A.2**), which evaluated the surface waters and sediments of the unnamed tributary to Opossum Creek, Opossum Creek, and a portion of the Ohio River from the confluence with Opossum Creek to the first downstream public water intake for POSCs. Statoil evaluated data from surface water and sediment collected from June 29, 2014-April 8, 2015. Statoil concluded that for three of the four POSCs subject to the evaluation (acetone, chloride, and total petroleum hydrocarbons (TPH)), no further assessment in the surface waters or sediments of these water bodies was necessary. Based on the data evaluated for the surface water of the unnamed tributary to Opossum Creek, Statoil concluded that additional testing required under the Work Plan would inform decisions regarding the need for further assessment of Tri-n- butyl tetradecyl phosphonium chloride (TTPC) in the unnamed tributary to Opossum Creek.

In 2015 and 2016, Statoil will conduct WET testing, WST testing, and a two phase biological assessment in order to evaluate potential acute and chronic toxicological impacts on aquatic life and recovery of aquatic communities. Statoil will submit a report to US EPA (15.a.iii report) detailing its findings from these tests.

Based on the results of the environmental field investigations that Statoil has performed for the Unified Command, ODNR, and US EPA, and as described in reports that Statoil has previously submitted to ODNR and US EPA, it is apparent that conditions at the Eisenbarth Well Pad are naturally attenuating and no current or future impacts to the soil, stream, sediments, or water from the well pad are anticipated.

Therefore, no further on-pad investigation or on-pad remedial action for the ODNR is warranted. Off-pad investigations are subject to US EPA's AOC, and the Work Plan and schedule approved by US EPA thereunder. Statoil will keep the ODNR apprised of Statoil's investigations for the US EPA pursuant to the AOC. Additional samples that are scheduled to be collected and analyzed pursuant to the US EPA AOC will be submitted to ODNR. Based on all of the information presented in this report, including its appendices, as well as prior reports submitted to ODNR and US EPA that are summarized in this report, Statoil should be allowed to immediately resume full operations at the Eisenbarth Well Pad, as requested in our July 9, 2015 submission to ODNR.

1.0 INTRODUCTION

This Summary of Environmental Investigations Arising from the June 28, 2014 Incident at the Eisenbarth Well Pad, prepared by Moody and Associates (Moody) on behalf of Statoil USA Onshore Properties, Inc. (Statoil), summarizes field investigations performed at: the Eisenbarth Well Pad located near Clarington, Ohio, in the community near the pad, an unnamed tributary to Opossum Creek, Opossum Creek, and a portion of the Ohio River. As discussed in the Executive Summary, Statoil has conducted investigations to assess potential impacts to environmental media under the authority of three different entities: the Unified Command, the US EPA, and the ODNR. Collectively, the objective of these environmental investigations was to evaluate and analyze air, outfall water, surface water, sediment, soil, and groundwater conditions to determine the nature and extent of potential impacts to the well pad and surrounding area arising from the June 28, 2014 incident.

On July 30, 2014, Statoil met with representatives of the ODNR to discuss the process for pad reclamation, which included an investigation of the well pad as a potential source of contamination to soil, surface water, and groundwater. ODNR directed Statoil to perform sampling and monitoring of soil and groundwater on and beneath the pad and slopes in order to evaluate potential sources of on-site constituents.

Over the course of several months following the July 30 meeting, Statoil provided ODNR with all of the data that had been generated through the Unified Command sampling programs as well as a comprehensive summary of that data, submitted on September 15, 2014 (**Appendix K**). Statoil also met with representatives of ODNR in August, September, and October, 2014, to discuss the Unified Command-generated data. Statoil submitted a proposed sampling plan to the ODNR on September 15, 2014. Statoil subsequently submitted two revised sampling plans to address comments that Statoil received from the ODNR on October 23, 2014, and November 10, 2014. Statoil received approval from ODNR to implement the OOI-SAP (**Appendix B.1**) on November 14, 2014 (**Appendix B.5**). Statoil performed investigative activities under the OOI-SAP in November and December 2014, and in March and June 2015. Statoil submitted a Site Investigation Report to ODNR on March 10, 2015 (SIR) (**Appendix N.1**), and addendums to the SIR on April 14, 2015 (**Appendix N.3**), and July 9, 2015 (**Appendix N.4**), to reflect data collected in March and June, 2015, respectively. Findings from the OOI-SAP investigation were described in the SIR, and are summarized in this report. On July 9, 2015, as had been previously agreed between ODNR and Statoil at a meeting on May 28, 2015, Statoil requested ODNR's approval to resume full operations at the Eisenbarth Well Pad because no POSCs exceeded

applicable screening levels. As of the submission of this report, Statoil has not been granted approval to resume full operations at the Eisenbarth Well Pad.

In addition to the ODNR investigation, Statoil performed investigative activities under the oversight of the Unified Command and pursuant to the AOC with the US EPA. Air sampling was conducted under the Air Sampling and Analysis Plan (**Appendix C**) (Unified Command) from June 28, 2014-July 18, 2014. Environmental water and sediment quality sampling was conducted under the Environmental Sampling and Analysis Plan (E-SAP) (**Appendix D**) (Unified Command) from June 28, 2014-July 18, 2014. Sampling under the Water, Soil, and Sediment Sampling and Analysis Adjustment Plan (WSSSAAP) (**Appendix E**) (Unified Command) was conducted from July 19, 2014 to April 8, 2015. As of April 8, 2015, Statoil was no longer performing sampling activities pursuant to the Unified Command sampling program.

On April 29, 2015, the US EPA approved Statoil's Work Plan (**Appendix F.7**) to implement investigative activities required by the AOC, which are further described below.

As the ODNR, Division of Oil and Gas Management requested, in this report we have summarized: the scope of the E-SAP, WSSSAAP, OOI-SAP, and Work Plan; and the findings from the SIR and addendums submitted to ODNR and the two reports submitted to US EPA. Pending investigative activities for US EPA are also discussed. Tables referenced in the text that are too large to be included in the body of this report can be located immediately following the end of the report.

1.1 Description of Incident and Response

A detailed description of the incident and response activities conducted from June 28, 2014-July 17, 2014, can be obtained from the two US EPA Pollution Reports (**Appendix G.1 and G.2**), the ICS-201 for the Ohio Operations Incident (**Appendix G.3**), the Incident Action Plans for the five operational periods (covering June 30, 2014-July 12, 2014) (**Appendix G.4-G.8**), and the 30-day Written Notification submitted to Ohio EPA (**Appendix H**). ODNR requested that Statoil include a detailed summary of the incident and response activities in this report. Statoil has summarized information contained in the US EPA's Pollution Reports, which does not necessarily represent Statoil's knowledge or belief. Further, **Table 1** (following the report) identifies response activities performed under the Unified Command, the ODNR site investigation, and the US EPA AOC, based on either the US EPA Pollution Reports or Statoil's knowledge of events.

On June 28, 2014, at approximately 9:00 am ET, a fire and explosion occurred at the Eisenbarth Well Pad located at 42240 Long Ridge Road in Clarington, Ohio. Preliminary reports suggested the fire resulted from a broken hydraulic line located on Halliburton's blender, which sprayed hydraulic fluid onto hot equipment (**Appendix G.1**). This subsequently ignited and the fire spread, resulting in the loss of most of the equipment and chemicals on the pad (**Appendix G.1**).

Several fire departments responded to the scene and a one mile evacuation notice was issued for the surrounding area (**Appendix G.1**). As a result of firefighting efforts, fresh water, on-site chemicals not consumed in the fire, and flowback water from one of the wells flowed off-site via sheet flow and catch basins located in the northwest and southeast corners of the pad (**Appendix G.1**). Runoff from the

Eisenbarth Well Pad entered an unnamed tributary to Opossum Creek which flows into Opossum Creek and ultimately into the Ohio River (**Appendix G.1**).

At approximately 19:00 on June 28, 2014, fire departments ceased fire-fighting efforts and left the scene. (**Appendix G.1**). A water curtain was maintained, using pump lines from the Eisenbarth impoundment, to prevent the fire from spreading to a trailer containing chemicals, including but not limited to: 1,100 pounds of SP Breaker (an oxidizer), 200 pounds of soda ash, three (3) 2,000 pound compressed gas cylinders of oxygen, two (2) 2,000 pound cylinders of acetylene, six (6) 20 pound compressed gas cylinders of propane, and miscellaneous aerosol cans (**Figure 1**) (**Appendix G.1**).

Halliburton and Allied Horizontal Wireline (Allied) were both conducting operations on the pad at the time of the incident. The equipment being used included Allied's wireline unit and Halliburton's #1 blender unit. A fire started at the blender, which was approximately 250 feet from the wireline unit. The wireline lubricator was installed on top of the frac stack, supported by a crane. Due to worsening conditions on the pad, the crane subsequently collapsed. The falling crane boom broke the lubricator and the wireline above the frac stack. With the lubricator and lubricator seal broken off of the top of the frac stack, water that Halliburton had previously pumped into the well during pump-down operation flowed onto the well pad. The well was shut in at approximately 12:30 am ET on June 29, 2014 (**Appendix G.1**).

State and federal agencies that either responded to, or were otherwise involved in the response, include, but may not be limited to: local fire departments, Monroe County Emergency Management Agency (EMA), ODNR, Ohio EPA, US EPA, the Ohio State Fire Marshall, the Occupational Safety and Health Administration (OSHA), the U.S. Fish and Wildlife Service, and the Agency for Toxic Substances and Disease Registry (ATSDR). The primary contractors supporting the response work include, but may not be limited to: Center for Toxicology and Environmental Health, L.L.C. (CTEH), Witt O'Brien's, Wild Well Control, Penn E&R, Moody, Leggette, Brashears, and Graham, Inc., Bandera Resources, Progressive Global Energy and Natural Resources, and Tetra-Tech, Inc.

Health and safety plans that were developed for response activities are included in **Appendix I**.

2.0 ENVIRONMENTAL INVESTIGATIONS AND GOVERNING DOCUMENTS

As discussed in the Executive Summary and in Section 1, Statoil has conducted investigations to assess potential impacts to environmental media under the authority of three different entities: Unified Command, ODNR, and US EPA. This section provides an overview of these three investigations and the respective documents that have guided Statoil's investigations thereunder.

2.1 Investigations for the Unified Command

Under the oversight of the Unified Command, Statoil evaluated surface water, groundwater, soil, sediment, and air quality to delineate areas of potential impacts, as well as background surface water, groundwater, soil, and sediment samples to establish a range of background concentrations. Statoil's investigation under the Unified Command commenced on June 28, 2014, and continued through April 8, 2015. Over 120 different POSCs were initially examined in surface water, soil, sediment, and air

monitoring programs for the Unified Command. This section discusses the sampling plans reviewed by the Unified Command, the media subject to those sampling plans, and sampling methodologies and procedures.

2.1.1 Environmental Sampling and Analysis Plan (E-SAP)

From approximately June 29, 2014, through July 18, 2014, water, soil, and sediment investigative activities followed the E-SAP prepared by CTEH. The E-SAP specified the collection of water, soil, and sediment from areas of potential impact, and background samples to distinguish target analytes related to the incident from non-incident related target analytes.

As described in Section 1 of the E-SAP, the objectives of the environmental investigation and proposed sampling under the E-SAP included: (1) the collection of water, soil, and sediment samples to delineate areas of potential impact and assess the need for and effectiveness of the containment and cleanup activities on the Eisenbarth Well Pad and areas potentially impacted from off-pad runoff and (2) the collection of background surface water, soil, and sediment samples to develop the range of potential background concentrations for comparative purposes to distinguish between target analytes related to the incident and non-related target analytes (**Appendix D**).

With agreement from the Unified Command, the POSCs for the site were selected based on a review of the Safety Data Sheets (SDSs) for the materials stored on the pad at the time of the incident. CTEH toxicologists evaluated the potential toxic characteristics of each of the compounds identified on the SDSs and their potential risk to human health and the environment. Additionally, CTEH evaluated the SDSs for the presence of tentatively identified compounds (TICs), i.e., chemicals or compounds that may be present but not typically reported with US EPA approved method laboratory analysis. Based on this review and Unified Command's approval, no other potential target analytes or TICs beyond the POSCs were necessary to adequately evaluate the conditions on the Eisenbarth Well Pad (**Table 2**). Details regarding these determinations are provided in the E-SAP and in the Summary of Air and Environmental Sampling and Analysis in Response to the Ohio Operations Incident Leading to the Adjusted Sampling and Analysis Plan (Summary of Air and Environmental Sampling and Analysis) (**Appendix K**), submitted to the ODNR on September 15, 2014.

2.1.1.a E-SAP Surface Water and Sediment Monitoring

The following description of surface water and sediment monitoring pursuant to Section 4.0 of the E-SAP (**Appendix D**), has been incorporated essentially verbatim from that document for the reader's convenience.

Surface water monitoring under the E-SAP was focused to surrounding drainage pathways and waterways downstream of the incident location, which included visual inspection and photo-documentation to note any adverse impacts. Documentation included general conditions such as, odors, water flow, weather, observations of any dead organisms, etc., and the locations of these observations were identified by Global Positioning System (GPS) coordinates. General field water quality readings were documented along waterways both up- and down-gradient of the Eisenbarth Well Pad to evaluate potential measurable impacts. Surface water monitoring was conducted daily and included the following field parameters:

temperature, pH, conductivity, dissolved oxygen, turbidity, oxidation-reduction potential (ORP), salinity, and total dissolved solids (TDS).

Sediment samples were collected from the unnamed tributary to Opossum Creek, Opossum Creek, and the Ohio River in conjunction with the corresponding surface water monitoring locations, on a periodic basis. The sediment sampling location details can be found in the E-SAP (**Appendix D)**.

Initial sampling consisted of the collection of surface water samples from the potentially impacted areas where runoff from the incident flowed off the Eisenbarth Well Pad. In addition to single-event surface water samples, i.e., locations sampled at one point in time only (site runoff and/or feeding tributaries), additional samples were collected daily from established surface water sampling locations provided there was actual flowing surface water to sample. The frequency of sampling along with a map identifying the location of each station is provided in the E-SAP (**Appendix D**). Sample locations on surface water stream channels were located in the unnamed tributary to Opossum Creek and Opossum Creek. Surface water sampling continued daily until implementation of the WSSSAAP, when Unified Command deemed daily sampling of every station to be unnecessary following the assessment of analytical sampling results.

Additional surface water sampling locations, outside of the unnamed tributary to Opossum Creek and Opossum Creek, occurred at the following additional locations: within the confluence of the Ohio River and Opossum Creek, within the Ohio River (immediately upstream of the Ohio River confluence with Opossum Creek), within the Ohio River (immediately downstream of the Ohio River confluence with Opossum Creek to the first public water intake), and within the Ohio River along the West Virginia shoreline, directly across from the confluence with Opossum Creek. On July 17, 2014, sampling of the Ohio River ceased after no impacts were identified.

Surface water samples were properly decanted directly into laboratory supplied sample containers and submitted to Pace Analytical, a NELAP-accredited laboratory, in Pittsburgh, Pennsylvania. Water quality parameters (pH, ORP, dissolved oxygen, conductivity, salinity, TDS, temperature, and turbidity) were recorded for each surface water sample using a Horiba U-52 (or similar) water quality meter.

Surface water and sediment monitoring samples were analyzed for:

Table 2
E-SAP Surface Water POSCs

Analysis	**Method**
VOCs + Tentatively Identified Compounds (TICs)	US EPA Method 8260
Semi-Volatile Organic Compounds (SVOCs) + TICs	US EPA Method 8260
TPH– Diesel Range Organics (DRO)	US EPA Method 8015
Cations	US EPA Method 6010B
Anions	US EPA Method SM4500
Ethylene Glycol	US EPA Method 8015

2.1.1.b E-SAP Soil Sample Monitoring

The following description of soil monitoring pursuant to Section 5.0 of the E-SAP (**Appendix D**), has been incorporated essentially verbatim from that document for the reader's convenience.

Prior to field mobilization, a utility mark-out was performed to identify underground utilities at and near the well pad. The utility mark-out was made through the Ohio Utilities Protection Service (OUPS) – underground utilities search system at 8-1-1 or (800) 362-2764. In addition to the OUPS call, a review of available site drawings was conducted to evaluate for the presence of site utilities not identified by the OUPS notification. If deemed necessary, soil boring locations were modified in the field to avoid potential interference from utilities.

2.1.1.b.1 E-SAP Surface Soil Sample

Field screening was performed to assess any surface soil impacts along the downgradient slopes from the Eisenbarth Well Pad. Soil samples were collected across the slopes at approximately 100-foot intervals and placed in containers (either glass jars or Ziploc bags). After approximately 15 minutes, the head space was checked for VOCs through the use of a handheld Photoionization Detector (PID). Following the headspace analyses, the location was labeled and marked with a Pin flag for further investigation if deemed necessary.

Surface soil samples were collected from the Eisenbarth Well Pad production area in order to characterize and evaluate the surface and subsurface soils for the presence of POSCs. The planned sample locations are detailed in the E-SAP (**Appendix D**). Soil samples were collected from the ground surface to a depth of approximately ten (10) feet.

2.1.1.b.2 E-SAP Subsurface Soil Sample

Subsurface soil samples were collected from potentially impacted areas both on and off the Eisenbarth Well Pad. Samples were collected via hand advanced direct push soil borings.

Initial subsurface soil samples were collected in the areas of the preferential runoff pathways or surface water runoff areas down-gradient of the production pad area. Boring locations were also selected along the western and southern slopes below the Eisenbarth Well Pad. The hand probe was used for the steep slope areas and a track mounted drilling rig was utilized at bench locations on the slopes.

Subsurface soil samples were collected through the use of direct push Geoprobe System's - Large Bore soil sample barrel. These borings were driven into the ground using either an electric jackhammer outfitted with the direct push equipment or Geoprobe Model 54LT direct push track mounted machine.

Soil borings were advanced to the depth of approximately 30 feet with the model 54LT track mounted unit or approximately 10 feet with jackhammer driven equipment.

Field work conducted during this investigation and soil boring and sampling activities were conducted in

accordance with the Job Safety Analysis (JSA) and Ground Disturbance Permit (GDP); examples of these are included in **Appendix I.**

Continuous soil cores were collected within disposable acetate sleeves with the direct push equipment. Upon retrieval from the boring, the sleeves were opened by CTEH personnel for field screening with a handheld PID, visual evaluation, and sample collection. At a minimum, one (1) soil sample was collected from the level of where the highest PID reading was observed and another one (1) soil sample was collected from the bottom of the borehole.

Following completion of field screening and sampling activities, soil not used for sampling was returned to the respective boring. Select soil borings were temporarily left open and fitted with temporary PVC well screens to keep the bore hole open to investigate the shallow groundwater conditions. These piezometers were sampled when the water volume was sufficient. Due to the low volume of water, samples were collected without developing the wells.

2.1.1.b.3. E-SAP Soil Test Pits

In order to investigate any potential shallow groundwater or migration from the Eisenbarth Well Pad, four (4) test pits (TP1, TP2, TP3, and TP4) were excavated at off pad locations by making use of a mini-excavator. The test pits were excavated to a depth of approximately three (3) to four (4) feet and an average length of approximately four (4) feet, and a width of approximately two (2) feet. The soil test pits were backfilled after visual observations and PID screenings were complete.

A total of five (5) soil samples were collected for analyses from the test pits.

2.1.2 Air Sampling and Analysis Plan

On June 28, 2014, CTEH initiated air monitoring around the Eisenbarth Well Pad and in residential areas pursuant to the Preliminary Air Sampling and Analysis Plan (**Appendix C.1**). No readings above background were detected in the residential areas. Based on these results, the initial evacuation of nearby residences was lifted with the exception of two residences located within 200 yards of the well pad, which were permitted reentry later. CTEH also collected one grab sample in the smoke plume during the incident. On June 29, 2014, the Preliminary Air Sampling and Analysis Plan was amended to reflect the known site conditions (**Appendix C.2**). Air monitoring in the community was discontinued on July 18, 2014. Air monitoring on the site was active through the equipment removal activities. No samples had detections above the screening levels.

2.1.3 Water, Soil, and Sediment Sampling and Analysis Adjustment Plan (WSSSAAP)

Based on an evaluation of the collected data, the E-SAP was refined to eliminate and/or reduce environmental sampling efforts for the Eisenbarth Well Pad in the WSSSAAP (**Appendix E**). The following description of the basis for, and monitoring under, the WSSSAAP, has been incorporated essentially verbatim from that document for the reader's convenience.

The WSSSAAP refined water, soil, and sediment sampling efforts based on the data collected, the

completion of remediation efforts at various locations, and a comparison of analytical results to ecological and human health screening levels established by the Ohio EPA, US EPA Region V RCRA, and US EPA. The following subsections identify the rationale for the reduction and/or elimination of environmental sampling efforts.

2.1.3.a Sampling Locations and Schedule

Pursuant to the WSSSAAP, sediment sampling was performed along the upstream tributaries, the tributary to Opossum Creek and Opossum Creek within 24 hours after a significant rain event of 0.5 inches or more. Soil sampling was discontinued on July 19, 2014, pending removal of equipment from the pad. Sediment and surface water sampling along the Ohio River was discontinued. Sediment and surface water sampling of Opossum Creek and the unnamed tributary to Opossum Creek was conducted on a three-day rotation.

The Eisenbarth Well Pad runoff, including outflow pipes and drainage ditches, was sampled every third day while the well pad containment remained in place, and until all equipment had been removed from the pad. Outflows were assessed daily for changes in odor, water flow, and water quality. If changes were observed, a sampling event would be initiated. Once all outflows showed that the POSCs were below screening levels and the well pad remediation was complete, the containments were removed. On April 7, 2015, Statoil was authorized by the US EPA to cease collection and containment of the outfalls. ODNR approved the cessation of these activities on April 10, 2015.

2.1.3.b Environmental Sampling Constituents

In the development of the WSSSAAP, each E-SAP POSC was evaluated and assessed in the context of the Eisenbarth Well Pad investigation. Reported data was compared to screening levels identified by the Ohio EPA and Region V US EPA as being protective of human health and aquatic life (**Appendix E**).

The Summary of Air and Environmental Sampling and Analysis (**Appendix K**), provides a detailed summary of the POSC selection guidance. Initially, water sampling results from Eisenbarth Well Pad runoff locations were compared to samples collected from upstream tributaries to determine baseline creek constituents. Based on a comparison of the upstream and downstream water quality data, twenty five (25) preliminary POSCs were identified. Of the 25, fifteen (15) were localized to only the Eisenbarth Well Pad run-off samples. These 15 POSCs were not detected in the tributary to Opossum Creek or Opossum Creek following the incident.

This resulted in a list of ten (10) POSCs that were detected in the tributary to Opossum Creek or Opossum Creek following the incident:

- 2-methylphenol (o-cresol)
- Acetone
- Arsenic
- Bromide
- Chloride

- Lithium
- Phenol
- Sodium
- TPH (C10 – C28, DRO)
- Zinc

From this list of 10 POSCs, additional POSCs were removed based on other considerations. For example, 2-methylphenol, arsenic, lithium, bromide, and phenol were removed because they were only 1-2 day events. None of these detections exceeded ecological screening values set by the Ohio EPA as being protective of aquatic life, and had not been detected since July 2, 2014. All detections were localized to the area surrounding the Eisenbarth Well Pad (**Appendix E)**. Additionally, zinc was removed from the sampling suite because it was only detected in one (1) sample, collected on June 29, 2014, and it was regularly detected in low levels in the Ohio River. This one detection of zinc was determined to be a result of the large amount of industrial work performed along the river and not the incident at the well pad. All detections were below ecological screening values set by the Ohio EPA as being protective of aquatic life.

Based on the foregoing, and as further discussed below, the WSSSAAP monitoring was comprised of four POSCs: chloride, acetone, the biocide tri-n- butyl tetradecyl phosphonium chloride (TTPC), and general organics (TPH-DRO).

2.1.3.c POSCs Monitored under the WSSSAAP

As discussed in the Summary of Air and Environmental Sampling and Analysis (**Appendix K**) submitted to ODNR on September 15, 2014, based on the data evaluated, the Unified Command identified acetone and chloride as two POSCs that met criteria for continued monitoring under the WSSSAAP (i.e. detection in over 10% of samples, exceedance of ecological screening values, and consistent trending for surface waters). In addition, two other POSCs were identified: TPH and TTPC. Ohio does not have any regulatory standards for TPH. However, the Unified Command agreed that the presence of several petroleum distillates and other hydrocarbons on the Eisenbarth Well Pad warranted further monitoring. TTPC was identified as a target analyte due to its high aquatic toxicity, despite the lack of a regulatory standard for comparison. **Table 3** below summarizes all sampling performed under the WSSSAAP. The following subsections describe the screening levels and rationales for the four WSSSAAP POSCs (acetone, chloride, TPH and TTPC).

2.1.3.c.1 Acetone

There was no known source of acetone on the well pad at the time of the incident or prior to the incident. However, some of the initial samples collected during the response had acetone detections. Therefore acetone was added as a parameter for analysis and evaluation. A screening level of 1,700 µg/L for surface water and 9.9 µg/kg for sediments was utilized in accordance with US EPA Region V Resource Conservation and Recovery Act (RCRA) ecological screening levels (August 2003).

As Statoil explained in a letter to ODNR on October 13, 2014 (**Appendix B.2**), acetone can be created from some chemical reactions that may have occurred on the well pad. For example, NIOSH found that acetone was one of the 15 most common VOCs measured in smoke from a vehicle test fire, but a number

of other chemical by-products are also produced during fires (NIOSH, 2010). Many of these related by-products were not seen in Eisenbarth Well Pad sample analysis, suggesting that the fires themselves would not have produced sufficient quantities of acetone to be the source of the acetone observed in site water samples. Similarly, Isopropanol (also known as isopropyl alcohol) can be oxidized to form acetone, and isopropanol was on site as a component of Gas Perm 1000 during the incident. It is possible that the oxidation of the released isopropanol through biodegradation or other mechanisms may have produced some acetone at the site, but such reactions would not necessarily be expected to generate the quantities of acetone observed in site water samples.

Acetone may be shown as a false positive in some laboratory testing methods. Acetone is closely related to isopropanol and in some cases it can be inappropriately classified as acetone. Since August 6, 2014, Statoil has analyzed samples for acetone by both the US EPA 8260 and 8015 laboratory methods. In addition, Statoil has analyzed samples for isopropanol by laboratory method 8015 since August 6, 2014. While the data do not directly indicate the presence of isopropanol after August 2014, they do suggest a potential for false positives in the Method 8260 results (**Appendix B.2**). The data are insufficient to rule out the presence of isopropanol as an interfering chemical prior to August (given isopropanol's short half-life in the environment) (**Appendix B.2.1**).

Acetone is known to be a lab contaminant since it is a common chemical used to clean laboratory equipment. Using two different laboratory methods, 8260 and 8015, for the analysis of acetone has provided insight into laboratory contamination. These two methods were used by different laboratories; some samples do show evidence of sporadic lab contamination, but the contamination does not account for all the acetone detections or the earlier temporal trend in acetone results prior to August 2014.

2.1.3.c.2 Chloride

Limited guidance for chloride is available in regards to environmental response, and chloride is a necessary component of both fresh and salt water receptors. The US EPA aquatic life criterion of 230 mg/L for chronic, continuous concentrations in freshwater was utilized as the screening level for water quality samples analyzed for chloride. This closely aligns with the federal secondary drinking water standard of 250 mg/L. No screening levels are available from federal or regional agencies for chloride in soils or sediments. Chloride concentrations in sediments were therefore analyzed as a leachate (mg/L) using US EPA method SM4500.

2.1.3.c.3 TPH (DRO)

TPH guidelines vary by state and agency. The only applicable guidelines regarding TPH found for Ohio is the Ohio EPA Petroleum Contaminated Sites Guidance Document for Emergency Response Actions. These guidelines do not provide surface water screening or action levels for TPH, but provide a soil action level ranging from 380 parts per million (ppm) (380 mg/kg) to 1,156 ppm (1,156 mg/kg) depending on variables such as proximity to wells, water intakes, groundwater, and soil type. The conservative screening level of 380 mg/kg was established for the sediment analysis.

2.1.3.c.4 TTPC

As Statoil explained in the 15.a.ii report submitted to US EPA on July 22, 2015 (**Appendix A.2**), TTPC is a common oil and gas biocide control agent and is also approved for use in the papermaking industry, in cooling water systems, industrial cleaning water, and other industrial water systems. Industries in the

county, which include steel and aluminum plants (including aluminum smelting), other oil and gas operations (such as the Williams Pad), coal mining, and stone quarries could be considered as potential sources of TTPC. These industries use water in their daily operations, and commonly use re-circulatory systems (to reduce overall water usage) that require algae and bacteria control. TTPC has been detected in upstream, background tributaries that were not involved in the Eisenbarth Well Pad incident. Additionally, multiple background locations that are completely unassociated with the Eisenbarth Well Pad drainage area have shown sporadic detections of TTPC in surface water and sediment. Therefore, detections of TTPC in upstream locations that were not associated with the Eisenbarth Well Pad incident and within soils located upgradient of the Eisenbarth Well Pad strongly indicates that TTPC is used by other facilities and operations in the area.

Due to a lack of existing methods, two different laboratory methods were developed for the analysis of TTPC. The first method, using the High Performance Liquid Chromatography- Ultra Violet (HPLC-UV), was developed by GCAL and was utilized during the initial response to the incident. The second method was developed by the US EPA Ecological Structure-Activity Relationship (EcoSAR) assessment, and uses a Liquid Chromatography/Mass Spectrometry/Mass (LC/MS/MS). US EPA requested that Statoil begin using this method for TTPC analysis on September 26, 2014, and after the method was developed and duplicated by GCAL, the LC/MS/MS was used for all samples as of October 1, 2014. The HPLC-UV method has been used additionally for result confirmation and data quality verification. Both methods were validated by EDataPro prior to use; however, neither method has been published or certified by the US EPA. EDataPro uses the US EPA National Functional Guidelines that provides data reviewer guidance in determining the usability of analytical data (**Appendix L.3**). These guidelines aid in establishing if data meets specific technical and quality control criteria, and the usability of any data not meeting these criteria. SOPs for both methods are included in **Appendix L**.

A 1 part per billion (ppb) (1 µg/L) screening level was established for TTPC in water based upon the US EPA EcoSAR analysis of test data on analogous cationic surfactants. This report estimated that adverse effects may occur to aquatic organisms if concentrations of TTPC were to exceed 11 ppb (µg/L) in surface waters. The screening level was established by applying an uncertainty factor of 10 to this estimate, to arrive at the 1 ppb screening level. This presents a level conservatively protective of aquatic life that is not anticipated to cause any adverse effects to biota. Using the US EPA guidelines for sediment partitioning (Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms) that takes into account the TTPC binding affinity for soil and what level in sediment would potentially cause 1 ppb in surface waters, a sediment screening level of 859,000 µg/kg was established. EcoSar analysis and TTPC screening level calculations are included in **Appendix M**.

Table 3
Sampling performed under the Water, Soil, and Sediment Sampling and Analysis Adjustment Plan (WSSSAAP)

Analysis	Method	Estimated Number of Samples Analyzed			Date Range of Analysis	Notes
		Sediment	Soil	Water		
VOCs	US EPA 8260	124	19	976	7/19/14 – 4/8/2015	Only acetone was reported for samples collected after 7/20/14
TPH	US EPA 8015	124	9	972	7/19/14 – 4/8/2015	TPHs reported were diesel range organics: hydrocarbons in the range of C10 to C28
Anions	US EPA SM4500	124	19	972	7/19/14 – 4/8/2015	Only chloride was reported for samples collected after 7/18/14
TTPC	US EPA-developed LC/MS/MS GCAL-developed HPLC-UV	63	10	424	7/19/14 – 4/8/2015	Statoil used the HPLC-UV method until US EPA required the use of the LC/MS/MS method.

2.2 Site Investigation for the Ohio Department of Natural Resources

Commencing in July 2014, Statoil has been engaged in a process with ODNR to investigate the well pad as a potential source of contamination to soil, surface water, and groundwater. ODNR directed Statoil to perform sampling and monitoring of soil and groundwater on and beneath the pad and slopes in order to evaluate potential sources of on-site constituents. This section summarizes the approved sampling plan, the sampling methodology, the sampling constituents, and the sampling locations. Statoil completed all required sampling under the ODNR program in June 2015.

2.2.1 Ohio Operations Incident Sampling and Analysis Plan (OOI-SAP)

Statoil's investigative activities for the ODNR followed the OOI-SAP (**Appendix B.1**), approved by the ONDR on November 14, 2014 (**Appendix B.5**). The approved OOI-SAP outlined the methodology of establishing both on-pad and near-pad soil boring locations for subsurface evaluation, as well as the collection of soil and groundwater samples. The data collected during investigative activities under the OOI-SAP were evaluated to assess potential impacts to the site and the surrounding area following the

incident. This was utilized to evaluate the necessity of conducting pad restoration activities. The OOI-SAP also details POSCs and the installation and monitoring of temporary monitoring wells and piezometers.

2.2.1.a OOI-SAP Sampling Methodology and Analysis

Soil and groundwater samples were collected at the Eisenbarth Well Pad and analyzed for the following POSCs utilizing US EPA approved methods:

Table 4
OOI-SAP Sampling Constituents

Analysis	Method	Components	Potential Origin
VOCs	US EPA 8260	Benzene, toluene, ethylbenzene, acetone, total xylenes	Petroleum distillates
SVOCs	US EPA 8270	Petroleum distillates (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, Cumene (isopropylbenzene)	Petroleum distillates, diesel fuel
Isopropanol	US EPA 8015	NA	Gas Perm 1000
TTPC	GCAL-developed HPLC-UV method	NA	Biocide BE-9
pH	US EPA 9045	NA	Flowback and hydrochloric acid

Except for acetone, each sampling component is a constituent of a product or material that was present on the pad at the time of the incident. Isopropanol testing was established due to the presence of *GasPerm*

1000, which had been on location at the time of the incident. TTPC is a compound which comprises up to 10% (w/w) of the biocide *BE-9* which was also present. Petroleum distillates would have been on site as *FR-66*, diesel fuel, motor oil, hydraulic oil, and *LGC-36UC*, and other products kept on-site. Levels of pH would be influenced by the acidic nature of flowback waters and hydrochloric acid.

At the time of soil and groundwater sampling, PID screening was conducted and all samples were placed into sterile, laboratory-supplied containers which were immediately placed on ice and submitted to an accredited laboratory. The VOC, SVOC, isopropanol, and pH analyses were performed by ALS Environmental in Holland, Michigan. TTPC analyses were performed by GCAL in Baton Rouge, Louisiana. To protect sample integrity, custody seals were employed on the closure of the sample-containing coolers, and chain-of-custody procedures were documented from the time of sample collection until analysis at the laboratory.

The presence or absence of POSCs was investigated within the soil and groundwater samples collected from the pad. The collected soil samples were analyzed for the POSCs referenced in **Table 4**, above, by US EPA approved methods, when available. Citrus extract, terpenes and terpenoids, polyoxyalkylenes, guar gum, and monoethanolamine borate were not specifically analyzed for under the OOI-SAP due to the lack of a specific US EPA approved laboratory analytical method. The LC/MS/MS method was utilized for OOI-SAP sampling and analysis of TTPC. The HPLC-UV method has been used additionally for result confirmation and data quality verification. As mentioned previously, SOPs for both methods are included in **Appendix L**.

2.2.1.b Sample Locations

Soil samples were collected from the production pad area once equipment and stored materials were removed from the Eisenbarth Well Pad. Soil samples were collected from the production pad area to characterize the surface and subsurface soil for the presence of POSCs.

Three (3) soil borings were advanced in the vicinity of the catch basins to evaluate potential off-pad impacts to site soils around the Eisenbarth Well Pad. Additionally, six (6) borings were advanced on the southern and western slopes of the pad. Three (3) borings were advanced on each of the slopes. Soil samples and groundwater samples, if encountered, were analyzed by the same analytical methods as the on-pad soil and groundwater samples. Location selection rationale, naming conventions, mapping, and details are included in **Appendix B.1**.

2.2.1.c Soil Boring Advancement and Temporary Monitoring Well Installation

Per the OOI-SAP, a renewal of the utility OUPS one-call was performed to confirm the presence or absence of underground public utilities prior to commencement of boring activities. Engineering surveys were conducted by Penn E&R. Proposed soil boring locations were marked using labeled stakes prior to initiation of the onsite investigative activities.

Following utility clearance and the boring stake-out, a Ground Disturbance Permit (GDP) (**Appendix I**) was reviewed on a daily basis by on-site personnel to evaluate the potential for private, on-site utilities that would not have been identified by OUPS. As a result of this daily review, several borings located

along the southern edge of the site were shifted toward the interior of the pad to avoid impacting the existing pad drainage system. These adjustments were less than ten (10) feet from the originally-proposed locations.

Following utility clearances, the soil borings were advanced utilizing hollow-stem auger (3 ¼ inch inner diameter, and approximately 6 ½ inch outer diameter) and split-spoon (2 inch outer diameter) techniques. All drilling and sampling equipment were decontaminated prior to the initiation of drilling activities and before mobilizing to the next boring location. Drilling and sampling operations were overseen by a Penn E&R field scientist/geologist and were periodically observed by Moody field scientists, ODNR representatives, and US EPA representatives. All drilling activities were performed by the licensed drilling contractor Geo- Environmental, Inc. (licensed by the State of Ohio, Ohio Driller License No. 002413). To accelerate the investigation schedule, up to two drill rigs were operated concurrently. The drill rigs utilized on site were either Central Mine Equipment Company rigs CME-45 and CME-55, or a Diedrich Drill D-50 rig.

The supervising Penn E&R scientist/geologist prepared boring logs to document the materials encountered during the drilling process, and kept a record of daily field activities at the site. It was estimated in the approved OOI-SAP that the borings would likely be advanced to a total depth of 20 feet below ground surface (bgs) or less before bedrock refusal was encountered. If split-spoon refusal conditions were encountered, auger drilling was attempted down to the next sampling interval. If additional split spoon or auger refusal conditions were encountered, drilling would end. There were a few instances where split-spoon refusal was obtained and over the next interval the auger borings were able to be extended deeper than originally anticipated. During the performance of the boring program, bedrock or groundwater was encountered at depths of up to 43 feet bgs.

During drilling, continuous split spoon samples were collected, and each two (2) foot split spoon soil sample interval was retrieved from the borehole, opened, examined, screened for the potential presence of VOCs using a calibrated *MiniRAE 3000* PID, and logged for lithologic characteristics, groundwater occurrence, and evidence of potential impacts (staining, olfactory, etc.). At a minimum, two (2) soil samples were collected from each soil boring; one (1) from the surface interval (0 to 2-feet bgs), and one (1) from the interval where the highest PID reading or field indication of potential impact (sheen, discoloration, texture inconsistencies, odor other than earthy) was observed. Copies of the boring logs, which include the lithologic description, sample IDs with depth and time, interval-specific PID readings, split spoon return, and split-spoon blow counts for each interval, and field equipment calibration logs are provided in **Appendix N.1**.

When evidence of potential groundwater was encountered in a borehole (i.e., wet or saturated conditions), the soil boring was converted into a temporary groundwater monitoring well to be utilized for the collection of groundwater samples. Borings that were not converted into temporary monitoring wells were backfilled with bentonite chips.

Due to observed presence of groundwater, temporary monitoring wells were installed within six (6) borings: SB-15, SB-20, SB-21, SB-25, SB-27, and SB-31. The monitoring wells were installed within 6.5-inch diameter boreholes and were constructed with 10 foot sections of 2-inch diameter, 0.10-inch

slotted screen, with Type #2 filter pack sand extending a minimum of approximately 2 feet above the top of the screened interval. The well casings were completed with 2-inch diameter PVC casing and were sealed with bentonite from the top of the filter pack to the ground surface. Temporary monitoring well construction details are provided in **Appendix N.1**.

Prior to groundwater sampling, under the OOI-SAP, both the temporary monitoring wells and the existing, accessible piezometers previously installed by CTEH were developed and purged. Groundwater level measurements were obtained by Penn E&R representatives. All monitoring wells were developed in order to remove fine-grained materials from the wells and filter packs.

The wells and piezometers were purged by evacuating either three (3) well volumes or by purging the well or piezometer dry. Field parameters (pH, temperature, and conductivity) were evaluated in the context of parameter stabilization standard or established water quality standards during the development, purging, and sampling process utilizing an YSI Model 556-01. Purge Logs and field parameter readings are included in **Appendix N** and the sample locations in relation to groundwater flow are detailed on the **Figure 2** groundwater contour map**.** The temporary monitoring wells were constructed and maintained to prevent any potential impacts to the subsurface by installing the bentonite seal within the borehole near the ground surface. The temporary monitoring wells and the existing piezometers were sampled at the end of the pad-specific site investigation. The wells and piezometers were properly abandoned from August 3 to August 7, 2015, to eliminate potential migration pathways, and proper documentation was sent to the ODNR on August 21, 2015. In **Appendix O**, a copy of the well sealing reports and abandonment plan that was submitted to the ODNR is included.

The final locations of the soil borings, the temporary monitoring wells, and the existing piezometers were professionally surveyed by Penn E&R to establish horizontal and vertical points of reference (northings and eastings, and ground surface and top of casing elevations). A summary of the obtained soil boring survey data is provided in the attached **Table 5**, and the locations are identified on **Figure 3**.

2.3 US EPA AOC AND WORK PLAN

US EPA and Statoil entered into the AOC to evaluate whether environmental media located off the well pad had been impacted by the June 28, 2014 incident. Paragraph 15 of the AOC establishes three areas of investigation, further described below.

2.3.1 AOC 15.a.i Work Plan Scope and Report

On May 27, 2015, Statoil submitted a report to US EPA providing a comprehensive evaluation of the potential surface and subsurface pathways by which materials released from the Eisenbarth Well Pad on June 28, 2014, migrated to the unnamed tributary to Opossum Creek. This report was based upon sample data collected between June 28, 2014 and March 2, 2015 (**Appendix A.1**).

Statoil evaluated soil and water samples, physical and geologic data, field observations, and other relevant information to determine the nature and extent of potential surface and subsurface migration pathways. Statoil monitored, sampled, and conducted comprehensive assessments of the three separate pathways by

which materials released from the Eisenbarth Well Pad could have potentially migrated to an unnamed tributary of Opossum Creek. The three potential migration pathways evaluated were surface run-off, subsurface drains and outfalls, and subsurface/soil migration. Surface water (SW), Pad/puddle (PD), Surface soil (SS), Geo-Probe borehole (GP), Soil Boring (SB), and Test Pit (TP) sample locations were established to identify potential pathways and to capture comprehensive data on and around the Eisenbarth Well Pad, where samples were collected and analyzed for comparative analysis. Statoil monitored, sampled, and assessed the areas where surface water run-off was observed, areas of potential soil migration, areas influenced by the subsurface drainage and outfall system, and background locations. In the 15.a.i report (**Appendix A.1**), Statoil concluded that the migration pathway was through surface water channels and not through subsurface drains and outfalls or through soil migration. The outfalls may have been a means of initial transport until they were contained. Neither soil nor subsurface water had any POSCs exceeding screening values that would indicate a subsurface migration pathway at any time.

2.3.2 AOC 15.a.ii Work Plan Scope and Report

On July 22, 2015, Statoil submitted a report to US EPA summarizing the evaluation of surface waters and sediments of the unnamed tributary to Opossum Creek, Opossum Creek, and a portion of the Ohio River from the confluence with Opossum Creek to the first downstream public water intake for acetone, chloride, TPH, and TTPC. This report was based upon sample data collected between June 29, 2014 and April 8, 2015 (**Appendix A.2**). For acetone, chloride, and TPH, Statoil concluded that no further assessment in the surface waters or sediments of these water bodies was necessary. Statoil also concluded that no further assessment of the sediment of Opossum Creek and the Ohio River was necessary for TTPC. Statoil concluded that the additional testing required under the Work Plan would inform decisions regarding the need for further assessment of TTPC in the unnamed tributary to Opossum Creek.

Statoil is conducting three (3) sampling events of twelve (12) locations (not including background samples) to further evaluate the surface waters and sediments of the unnamed tributary to Opossum Creek and Opossum Creek. Sample locations are SW02, SW06, SW17, SW18, SW21, SW25, SW04, SW20, SW08, PD03, PD07, and SW24. This includes four (4) locations associated with the Eisenbarth Well Pad, five (5) locations associated with the unnamed tributary to Opossum Creek, and three (3) locations in Opossum Creek. Additionally, one (1) background sample location is established on a non-impacted unnamed tributary to Opossum Creek (SW15), and one (1) background sample location is established in the Sunfish Creek watershed (SW001).

2.3.3 AOC 15.a.iii Work Plan Scope

Pursuant to AOC Paragraph 15.a.iii and the Work Plan, Statoil is scheduled to conduct Whole Effluent Toxicity (WET) testing, Whole Sediment Toxicity (WST) testing, and a two phase biological assessment. WET testing will occur in the fall of 2015 and fall of 2016. This testing will provide information on any potential acute or chronic toxicological impacts on aquatic life and recovery of aquatic communities from the Eisenbarth Pad or from natural phenomena, such as low oxygen and temperature, which can also yield variable results. Per US EPA approval, rather than perform two separate WET tests, i.e., one for acute and one for chronic, Statoil will perform the chronic WET test and extrapolate the data to obtain the acute WET results. Accordingly, the chronic WET test would be used to address both the chronic and acute criteria.

Statoil will also perform two-phase WST testing in the fall of 2015 and fall of 2016. As recommended by the US EPA, Statoil proposed WST testing of sediments to be collected at locations within Opossum Creek and/or the unnamed tributary to Opossum Creek.

Test site selection for WET and WST testing will be targeted towards the locations where TTPC was observed in Opossum Creek and/or the unnamed tributary to Opossum Creek at the highest concentrations. The highest concentrations of TTPC detected in Opossum Creek and the unnamed tributary to Opossum Creek were detected at locations SW21 (in water and sediment) and SW04 (in water). As such, Statoil will conduct WST and WET testing at Location SW21 within the unnamed tributary to Opossum Creek and SW04 within Opossum Creek, downstream of the confluence with the unnamed tributary to Opossum Creek. Pursuant to US EPA's request for two additional WST locations, Statoil selected SW06 and SW20. A background control site was selected within Opossum Creek, upstream of the unnamed tributary to Opossum Creek confluence with Opossum Creek (SW12).

Statoil will also conduct a two-phase biological assessment in the fall of 2015 and fall of 2016 to evaluate population-level parameters (number, species composition, and size distribution) for fish, crayfish, and benthic macroinvertebrates. This testing will be done in accordance with state-specific biological assessment guidelines and protocols by Ohio EPA (Ohio EPA, 1988; Ohio EPA, 1998; Ohio EPA 2009b), which requires that biological survey sampling be conducted during the collection period of June 15 through September 30 for the most representative results.

The biological assessment of Opossum Creek will be conducted at the same sample locations utilized by the Ohio EPA for the watershed study summarized in Biological and Water Quality Study of the Sunfish Creek Watershed and Selected Ohio River Tributaries (Ohio EPA, 2009a). Specifically, sampling will be conducted at Ohio EPA Site Number 13 (Opossum Creek, Beautiful Ridge Road) at approximately 39.7211000° N Latitude, 80.8786000° W Longitude, and at Ohio EPA Site Number 14 (Opossum Creek, Ust Gilmore Run) at approximately 39.7261230° N Latitude, 80.8591640° W Longitude. Background locations are established on Sunfish Creek at Sunfish Creek 1 (approximately 39.7851000° N Latitude, 81.1171000° W Longitude) and Sunfish Creek 2 (approximately 39.7896931° N Latitude, 81.1121997° W Longitude). This biological survey will utilize similar methodology and locations to the November 2010 Ohio EPA Biological and Water Quality Study of the Sunfish Creek Watershed and Selected Ohio River Tributaries, which included the two locations in the Opossum Creek watershed area. In addition to these two (2) locations established in 2010 by Ohio EPA, Statoil selected sample locations along the nearby, unaffected watershed (Sunfish Creek).

As is the case with all analytical data, results of these tests may not necessarily be representative of impacts from the Eisenbarth Well Pad incident. Statoil will submit a report to US EPA regarding its findings in 2016.

3.0 PHYSICAL AND GEOLOGIC EVALUATION

Geologic and physical data was evaluated and presented in the US EPA 15.a.i report (**Appendix A.1**), the

US EPA 15.a.ii report (**Appendix A.2**), and the ODNR SIR (**Appendix N**), and is summarized here for the reader's convenience.

3.1 Geologic Data

The Eisenbarth Well Pad sits in the Allegheny Plateaus physiographic province and is underlain by Permian-Pennsylvanian Age bedrocks according to the Geologic Map of Ohio, published by the ODNR Division of Geologic Survey (2006). Locally, the Marietta Plateau is defined as a dissected, high-relief plateau and relief generally ranges between 350 feet, to 600 feet near the Ohio River, with mostly fine-grained rocks, red shales, and red soils. The Marietta Plateau is comprised of Pennsylvanian-age Upper Conemaugh Group through the Permian-age Dunkard Group, which consists of continental origin cyclic sequences of red and gray shales, siltstones, sandstones, limestones and coals. Pleistocene (Teays)-age Minford clay, red and brown silty-clay loam colluvium, and landslide deposits are also common within valley bottoms of major streams.

As part of the OOI-SAP investigation, 42 soil borings were advanced at locations within and surrounding the well pad between November 24, 2014 and December 16, 2014. Information obtained during the advancement of the borings, including records collected during CTEH's prior installation of the existing 2-inch diameter piezometers, was reviewed to evaluate the subsurface conditions at the Eisenbarth location. Based on data obtained (**Figures 4, 5,** and **6**), it appears that the well pad generally consists of native sedimentary materials that had been cut from the northern hillside and placed as fill on the southern and western portions of the pad. The well pad was then constructed with a relatively thin layer of gravel placed on top of the native fill materials. The native fill materials generally consisted of disturbed sandy or silty clay materials frequently intermixed with shale or sandstone fragments. Shale bedrock was encountered below the native fill at shallow depths on the northern and eastern portions of the pad, with the depths to bedrock increasing to the west and south (**Figures 4, 5,** and **6**).

Because the continuous layer of bedrock encountered during the boring program provides a natural confining unit to prevent the downward migration of POSCs, the soil borings are expected to be representative of the on-site material that could have potentially been impacted by the June 28, 2014 incident.

3.2 Hydrogeologic Data

Six (6) of the 42 soil borings established during OOI-SAP activity exhibited conditions indicating that groundwater may be present within the unconsolidated soils. These borings were converted into temporary monitoring wells (SB-15, SB-20, SB-21, SB-25, SB-27, and SB-31). However, groundwater was present within only four (4) of the six (6) monitoring wells (SB-15, SB-20, SB-21, and SB-31) during the course of the site investigation. The other locations (SB-25 and SB-27) remained dry throughout the investigation. Due to the relatively shallow depth to bedrock beneath the northern and eastern regions of the pad, groundwater was only encountered in the deeper borings located on the western and southern extents of the pad.

To supplement the hydrogeologic data obtained from the four (4) viable temporary monitoring wells, additional groundwater data were obtained from the twelve (12) 2-inch diameter piezometers previously

installed by CTEH at the Eisenbarth Well Pad (GP-1, GP-2, GP-5, GP-8, GP-9, GP-19, GP-21, GP-22, GP-23, GP-24, GP-26, and GP-28). Groundwater data were obtained from eight (8) of the twelve (12) piezometers; two (2) locations were dry (GP-5 and GP-21) and two (2) had damaged casings preventing access (GP-2 and GP-9). A summary of the information collected from the temporary monitoring wells and piezometers is provided in the report found in **Appendix N.3 and N.4** and **Table 6.**

Data collected from the temporary monitoring wells and piezometers indicate that, depending on the location, groundwater was encountered during drilling at depths ranging from approximately 14- to 40-feet bgs, with static depths to groundwater being measured between 20- to 31-feet bgs. Groundwater elevations and flow directions were estimated utilizing groundwater level measurements and survey data.

In this setting the unconfined aquifer piezometric surface generally conforms to surface topography, being highest beneath hilltops and lowest in valleys, where it commonly intersects the land surface and contributes flow to the local streams. The recharge areas of the unconfined aquifer are situated along hilltops and valley walls and discharge areas are within valley bottoms. In general, groundwater at the Eisenbarth location appears to flow to the west to an unnamed tributary to Opossum Creek from the western portion of the pad and to the south from the southern portion of the pad. These probable drainage pathway areas were focal points of investigative efforts, and data collected reflect no ongoing impacts from the June 28, 2014 incident.

There are two distinct aquifer systems in the Allegheny Plateau Physiographic province: the local (shallow) unconfined aquifer system and the regional aquifer system. The shallow aquifer system consists of soils or weathered bedrock overlying the hilltops and the valley walls and the alluvial deposits within the valley bottoms. Secondary porosity and permeability features such as bedding plane partings, joints, cleats and other rock fractures primarily control groundwater movement in the shallow bedrock flow system. Based on the local topographic setting, the Eisenbarth Well Pad is located above an isolated local shallow aquifer.

The local shallow aquifer system is present in areas of high relief, while the regional aquifer system is often found at greater depths and discharges into the major stream valleys. The shallow aquifer systems such as that overlain by the Eisenbarth Well Pad tend to be hydraulically isolated from the shallow aquifer systems of adjacent ridgelines, thus limiting migration potential.

The piezometric surface of the unconfined water table aquifer roughly mimics the surface topography. Groundwater elevations are higher beneath hilltops and lower in valleys, where aquifers commonly intersect the land surface and contribute base flow to the local streams. Groundwater flow direction can also be influenced locally by the presence of subsurface bedrock fractures, differences in hydraulic conductivity, and by the structural orientation of bedding plane fractures.

3.3 Soil Porosity and Permeability

Soil borings were advanced to bedrock or to split spoon refusal during ODNR investigative activity, and the boring depths correspond to the gradient of the bedrock depth across the pad.

Mapping obtained from the Soil Survey of Monroe County, Ohio (1974)
(http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/Ohio/monroeOH1974/monroeOH1974.pdf)

shows that the site has two soil types in the Gilpin Series. The soils located on higher elevations at the site were mapped as Gilpin-Upshur complex soils with 18 to 35 percent slopes and moderately eroded (GkE2). The middle elevations were mapped as Gilpin-Westmoreland silt loams with 35 to 70 percent slopes and moderately eroded (GoG2).

> "The Gilpin Series consists of moderately deep, well drained, loamy soils. These soils are throughout the county, mainly on narrow ridgetops, benches, and steep to very steep hillsides. Gilpin soils make up about one-fourth of the land area of Monroe County.
>
> Gilpin soils have a moderately deep rooting zone, but their available moisture capacity is generally low because of stone fragments in the lower part of the subsoil. Soils dry out and warm up rapidly in the spring and are easily worked. Un-limed areas are extremely acid to strongly acid, and natural fertility is low. Permeability is moderate.
>
> Gilpin soils make up about 50 to 70 percent of the complex, and the reddish Upshur soils about 15 to 40 percent… Although Upshur soils generally are not dominant, they are the soils that limit use of the complex. They are slowly permeable, have rapid runoff, and are subject to very severe erosion.
>
> In most areas of the Gilpin-Westmoreland complex the Gilpin soil makes up 50 to 60 percent of the complex, and the Westmoreland soil makes up 20 to 30 percent. The rest of the complex consists of included soils."
>
> Soil Survey of Monroe County, Ohio (1974) at page 85.

As described, these soils and weathered bedrock units were utilized during the cut and fill operation to construct the Eisenbarth Well Pad. The soils found at the Eisenbarth Well Pad therefore are likely to lend themselves more to surface runoff migration pathways rather than to infiltration.

3.4 Subsurface Bedrock Fracturing

Secondary porosity in the form of fractures is the primary factor in controlling water-bearing capabilities and local groundwater movement within the shallow bedrock aquifer system. Naturally occurring vertical or near vertical zones of concentrated rock breakage are present in areas with relatively shallow bedrock. Erosional unloading and structural forces are processes that cause fractures in rock. Fracture traces are found as the ground surface expressions of potential zones of rock breakage in underlying bedrock. These geologic features can be tentatively identified from aerial photography and other remote sensing techniques.

Moody conducted a fracture trace analysis using LIDAR imaging, a remote sensing technology, of the study area to identify potential fractures that could control groundwater flow direction in the shallow aquifer. Several linear features were identified in the area. However, none were identified intersecting the Eisenbarth Well Pad (**Figure 7**). Therefore, groundwater flow direction beneath the Eisenbarth Well Pad is expected to mimic surface topography.

3.5 Coal Mining Activities

A review of the information on the ODNR Ohio Mines Viewer website (https://gis.Ohiodnr.gov/website/dgs/mines/) indicates that the Eisenbarth Well Pad is located in an area with no recorded underground coal mining activity. Therefore, mining related subsidence fracturing is not of concern at the Eisenbarth Well Pad location. This limits the potential for subsurface migration at the Eisenbarth Well Pad location.

4.0 SAMPLING METHODOLOGY AND ANALYSIS

This section describes the sampling methodology used in the E-SAP, WSSSAAP, and the OOI-SAP. Evaluations of sampling data are provided in the 15.a.i report (**Appendix A.1**), 15.a.ii report (**Appendix A.2)**, and the SIR (**Appendix N.1**). The purpose of sampling was to characterize the surface and subsurface soils air, surface water, subsurface drains and outfalls, and sediment. Laboratory results for POSCs were compared to screening levels, which are summarized in **Table 7**.

4.1 Surface Water and Sediment

Surface runoff was monitored beginning on June 29, 2014. Upon initial assessment at the Eisenbarth Well Pad, surface runoff was identified as the primary pathway for offsite migration. While berms were being built on the site to contain firefighting water, surface flow was visible from the well pad. The following surface runoff sampling and monitoring locations were evaluated immediately following the incident: PD01, PD02, PD04, PD05, PD06, PD08, PD09, PD10, PD11, SW01, and SW03. These locations were sampled as frequently as possible, which was intermittent based on the availability of rain and firefighting water to collect in pools and ditches. Background samples were analyzed using the same methods as runoff samples.

CTEH personnel collected a runoff water sample from the pad during fire-fighting operations and prior to the well shut-in. As operations continued, CTEH continued to sample puddled water on-site, and from outfalls on the hill surrounding the Eisenbarth Well Pad that could be potential sources of surface runoff or subsurface infiltration. Water samples were also taken from four upstream tributaries in the region that were not impacted by the June 28, 2014 incident. Samples were analyzed using the same methods as runoff samples.

Surface water samples were collected at five (5) locations along the unnamed tributary to Opossum Creek directly downstream of the Eisenbarth Well Pad. These samples were collected daily, weather permitting, from June 29, 2014 through July 19, 2014, and then on a three-day rotation with the implementation of the WSSSAAP. Surface water samples were collected at multiple locations within Opossum Creek downstream of the Eisenbarth Well Pad. Weather permitting, these samples were collected daily from June 29, 2014 through July 19, 2014, and then on a three-day rotation with the implementation of the WSSSAAP.

To determine background concentrations for the Ohio River analyses, water samples were collected in the Ohio River upstream of the Opossum Creek confluence. The Ohio River was sampled daily, when

weather permitted, at five (5) locations downstream of its convergence point with Opossum Creek from June 29, 2014 through July 16, 2014. Sample locations included both the Ohio and West Virginia sides of the river, and were upstream of any public water intakes.

A comprehensive analysis of the results of the surface water evaluation is provided in the 15.a.ii report (**Appendix A.2**).

There are six (6) outfalls in the vicinity of the Eisenbarth Well Pad that were examined as part of the investigations. These outfalls and catch basins were monitored from June 28, 2014 to April 8, 2015. Two (2) of these outfalls are not associated with pad or slope drainage. The outfall farthest east is associated with the Williams pad and the outfall to the west was determined to not be associated with any well pad drainage by on-site responders working for CTEH in response to the incident. Outfall sample collection points were established to represent downgradient locations that could have potentially been collecting constituents from multiple areas, including areas unrelated to the Eisenbarth Well Pad incident. Sumps and outfalls were blocked to effectively prevent surface water runoff from July 11, 2014 to April 10, 2015, following authorization from US EPA and ODNR to discontinue outfall containment.

The outfalls that appeared to have continuous flow, without correlating rainfall around the time of the incident, were determined to be connected to the subsurface drainage and sump system that was previously installed beneath the Eisenbarth Well Pad. The original owner of the Eisenbarth Well Pad, Protégé Energy II LLC (Protégé), began pad construction in December 2010 and completed construction in February 2011. Spoil material which was excavated from the hilltop during well pad construction activities was placed on-site. Spoil material was placed in excavated keyways on the western and southern embankments adjacent to the well pad. During the last week of January 2011, tension cracks were observed, most notably on the western slope where the slip began to block a nearby unnamed tributary to Opossum Creek. Stabilization efforts were initiated, but failed due to ongoing wet weather conditions and advancement of the slippage of the slope. From the fall of 2011 through spring of 2012, the region experienced an abnormally high amount of precipitation through rain and snow, which kept the unconsolidated slip material in a near saturated condition. In May 2012, while still under ownership of Protégé, a rock buttress was constructed at the toe of the western slope, in what had been the stream channel. The western hillslope was terraced to reduce the overall slope angle of the final slope to further enhance slope stability and catch basins were installed in the terrace benches to collect overland flow. Underdrains were installed within the terraces to intercept groundwater as it was encountered during construction. The underdrains were tied into the catch basins, and the catch basins subsequently drain to the unnamed tributary to Opossum Creek.

Due to the historic slope slip at the location, site engineers working for Protégé installed a subsurface drainage system to mitigate the potential for future slips and to control the flow of water in the event that the pad experienced a substantial rainfall event over a short period of time. The outfalls with observable discharge correspond to PD07 (also known as Outfall 1), PD03 (Outfall 5), and SW24 (Outfall 2). The final outfall associated with the Eisenbarth Well Pad (SW-02, Outfall 6) has been dry for the majority of monitoring, but was sampled when flowing. PD07 and SW24 are west of the pad; PD03 and SW02 are south.

Subsurface drain and outfall evaluations are summarized in the US EPA 15.a.i report (**Appendix A.1).**

CTEH sampled sediment of the unnamed tributary to Opossum Creek, Opossum Creek, and the Ohio River beginning on June 29, 2014. The Summary of Air and Environmental Sampling and Analysis (**Appendix K**) details the methodology and logistics of sample collection and evaluation; comprehensive analysis of the results of the sediment evaluation is included in the US EPA 15.a.ii report (**Appendix A.2**).

Sediment samples were periodically taken with the surface water samples in response to rain events to check for migration of POSCs and to identify any sediment partitioning. Sediment sampling locations identified as well pad samples were in locations that had flow sporadically, either immediately following firefighting efforts on the Eisenbarth Well Pad or after rain events. After containment of runoff from the Eisenbarth Well Pad, several of these locations were re-labeled as being associated with the unnamed tributary.

Sediment samples were also obtained at background water sampling locations in the region. Samples were collected from upstream tributary locations that were not associated with the drainage pathway of the Eisenbarth Well Pad in order to determine background analyte concentrations. Sediment samples were also taken at correspondingly numbered surface water sampling locations in the unnamed tributary to Opossum Creek directly downstream of the Eisenbarth Well Pad. Sediment samples were taken at correspondingly numbered surface water sampling locations in Opossum Creek downstream of the Eisenbarth Well Pad.

As with the surface water, sediment samples were also taken in the Ohio River upstream of the confluence point to Opossum Creek and the Ohio River. This enabled further monitoring of potential background analytes from upstream industrial sources on the Ohio River. The Ohio River was sampled at multiple locations downstream of its confluence with Opossum Creek. Sample locations included both the Ohio and West Virginia sides of the river, and were upstream of any public water intakes.

4.2 Soil and Groundwater

Based on a review of local topography, the Eisenbarth Well Pad is located approximately 100 feet in elevation above the unnamed tributary to Opossum Creek. As noted previously, the Eisenbarth Well Pad is located above an isolated local shallow aquifer system. Hand and track-mounted Geo-probes (GP) were used to sample soil at varying depths on the perimeter of the Eisenbarth Well Pad and surface soil (SS) samples were also collected by hand. A total of five (5) test pits (TP) were sampled under the E-SAP on July 7 and 8, 2014. Also under the E-SAP, 38 GP boreholes were sampled for subsurface analysis. Fifty (50) surface soil samples were collected between July 6 and July 28, 2014.

Soil sampling data were evaluated to assess subsurface migration as a potential pathway. Soil samples were taken directly on the Eisenbarth Well Pad following the fire to identify constituents present in soil and potential subsurface migration from the pad to low-lying areas. Soil borings were screened using a PID for potential VOCs. Soil borings that did not contain VOCs upon PID analysis were not sent for laboratory analysis, while samples that contained detectable levels of VOCs were analyzed according to

the E-SAP. Soil sampling and evaluative field activities began under the E-SAP and where completed under the WSSSAAP on July 21, 2014. Additional soil sampling later took place in November and December under the OOI-SAP.

Initial soil sampling locations under the E-SAP and WSSSAAP are separated by their relation to the well pad – South of Pad, West of Pad, N/NW of Pad, and East of Pad. Statoil has collected soil samples at several locations on and around the well pad since the initial incident to confirm the presence or absence of POSCs including acetone, chloride, TPH, and TTPC. Soil sample depth, reported in ft bgs when applicable, is indicated by the numerical range at the end of the associated laboratory sample ID (i.e., SB-1 0-2 indicates a sampled collected at the 0 to 2 foot bgs interval of soil boring 1).

To assess the subsurface soil migration of POSCs, the GP soil direct push borings were placed at all sides of the pad in addition to key locations on the pad (**Appendix N**). Soil samples were collected from the surface and by direct push sampling at various depths within the soil boreholes. Eleven (11) of the direct push borings that were placed on the southern and western slopes of the Eisenbarth Well Pad were identified as being suitable for piezometers. These piezometers were installed, purged (**Table 8**), and sampled to assess any potential subsurface water migration from the Eisenbarth Well Pad by monitoring the chemical characteristics and flow patterns of groundwater in the shallow unconfined aquifer. Soil samples were collected at three depth intervals within each boring prior to piezometer installation. Nine (9) of these piezometers were utilized for monitoring (GP01, GP02, GP05, GP08, GP09, GP19, GP21, GP23, and GP24). Of these nine (9), groundwater was detected in five (5): GP08, GP23, GP24, GP26, and GP28. Piezometers were checked daily and when/if enough groundwater was available for sampling, the samples were analyzed. Prior to the implementation of the WSSSAAP, three (3) groundwater samples had been analyzed. Purge and development data is summarized in **Table 6**.

4.3 Screening Levels

The following discussion of screening levels is summarized essentially verbatim from the Summary of Air and Environmental Sampling and Analysis (**Appendix K**) for the readers convenience. Human health screening levels are values that can be used to protect populations, including sensitive groups, from specific exposures. Air sampling on the Eisenbarth Well Pad was compared to human health screening levels due to the presence of workers and nearby homes. When available, analytes were compared to the ATSDR Minimal Risk Levels (MRLs), which according to the CDC are “estimates of the daily human exposure to hazardous substances that is likely to be without appreciable risk of adverse non-cancer health effects over a specific duration of exposure.” (ATDSR) MRLs can be acute (1-14 days), intermediate (15-365 days), and chronic (>365 days). Acute MRLs were used when available. When an ATSDR MRL was unavailable, the US EPA Regional Screening Level (RSL) for residential air was used (**Appendix K**). These screening values are generated to protect human populations over extended periods of time.

Ecological screening levels are values that can be used to identify site constituents that may require further evaluation in a baseline ecological risk assessment. According to the Ohio EPA Ecological Risk Assessment Guidance (Ohio EPA, 2008), “If all concentrations of the site-related ecological stressors are below the appropriate screening concentrations, in all relevant media, and surface waters are meeting applicable criteria, then the entire site is considered to have minimal impact on important ecological

resources and no further ecological assessment is necessary. However, it is important to note that if a constituent exceeds an ecological screening level there will not necessarily be an adverse effect on aquatic life, wildlife, or human health. Common practice dictates that an exceedance of a screening level may simply require additional evaluation.

For soil, the Ohio EPA provides the following hierarchy for screening levels of constituents:

1. US EPA Ecological Screening Levels (Eco-SSL)
2. Preliminary Remediation Goals for Ecological Endpoints, Oak Ridge National Labs
3. Ecological Screening Levels, US EPA Region 5

For sediment, the Ohio EPA provides the following hierarchy for screening levels of constituents:

1. Consensus-based Threshold Effect Concentrations (TEC) values
2. Ecological Screening Levels, US EPA Region 5

Surface water constituents were compared to the chemical criteria supplied by the Ohio Administrative Code (OAC) 3745-1. The OAC further provides as follows, "If all chemical constituents are below their corresponding chemical criteria, then the surface water may be eliminated as an exposure medium." OAC 3745-300-08(G)(2)(a).

The screening levels developed for the Unified Command sampling programs (**Table 7**) were intended to protect aquatic life and terrestrial life from long-term exposures, as well as being protective of people against adverse exposure via eating fish. Therefore, these toxicity constants are conservative (i.e. health protective) in nature and by design are likely to overestimate the hazard posed by a given dose of a chemical (**Appendix K**).

5.0 QUALITY ASSURANCE

Sampling under the E-SAP, WSSSAAP, and OOI-SAP was carried out in conjunction with well-defined quality assurance (QA) programs to confirm generation of valid and defensible data. To provide QA for the proposed sampling event, the following sampling, analysis, and data validation procedures were performed.

5.1 Field Calibration

The goal of the field QA program was to document that samples were collected without the effects of accidental cross- or systematic contamination and refers to the sampling, analysis, and data validation procedures for generating valid and legally defensible data. Instruments used in the field as part of this investigation consisted of PID meters, pH/conductivity meters, GPS units, digital cameras, and hand-held data collection devices such as tablets/smart phones. The PID and pH/conductivity meters were individually calibrated on a daily basis and the calibration information was documented on dedicated equipment calibration forms and in the field log books (**Appendix I.4**). The other equipment did not require field calibration.

Copies of the laboratory report(s) for the US EPA split sample analysis were requested from the US EPA

and were not provided. Instruments used in the field included Horiba U-52 water quality meters, GPS units, digital cameras, and hand-held data collection devices such as tablets and smart phones. Horibas were calibrated daily. Other equipment required field calibration. Operators of each piece of equipment were responsible for maintaining (including proper battery charge) and operating the equipment such that it conformed to each respective manufacturer's specifications.

5.2 Field Duplicate Sample

For E-SAP and WSSSAAP sampling, Statoil representatives also collected one (1) field duplicate (DUP/DUPE) for approximately every ten (10) samples collected in the field and submitted it for laboratory analysis to verify the reproducibility of the sampling methods. In accordance with the OOI-SAP, for approximately every twenty (20) samples collected in the field, one (1) field DUP/DUPE was collected and submitted for laboratory analysis to verify the reproducibility of the sampling and analytical methods. Field DUP/DUPEs were prepared by separately submitting an aliquot from the same sample location to the laboratory for analysis consistent with the proscribed analyses. The field duplicate sample locations, specific to each field sampling activity, are summarized in the report where the field data is discussed. There was no anomalous or significant variation in the majority of laboratory analytical data between the respective parent and duplicate samples.

As noted in the US EPA Report 15.a.ii (**Appendix A.2**), two (2) field duplicate samples analyzed for TTPC showed variation in the results using the LC/MS/MS unpublished method developed by the US EPA for these analyses. TTPC is amphiphilic and binds strongly to plastics and other materials during laboratory analysis. Additionally, due to the nature of TTPC, this chemical may bind differently to various soil types and lithologic units, thus influencing results. It should also be noted that laboratory detection levels for these test results are currently measured in parts per trillion, which is well below the parts per billion screening levels calculated.

5.3 Field Split Samples

Per the OOI-SAP, field split samples were collected in conjunction with Penn E&R by a US EPA representative at select boring locations. Split soil samples were collected from soil borings SB-16, SB-35, and SB-41 at the 0 to 2 foot depth interval. Split groundwater samples were collected from the temporary monitoring well installed at the SB-31 location. These samples were independently submitted by the US EPA representative for laboratory analysis.

The US EPA analyses for the three (3) split soil samples did not show significant variation from the Penn E&R sample data. The SB-16 location did have SVOC detections in the Penn E&R sample that were not observed in the US EPA samples. However, the detection level utilized by the US EPA (400 µg/kg) was much higher than that of Penn E&R, and the detections observed in the Penn E&R sample were orders of magnitude below this threshold. Some slight variations were noted in the TTPC results. All other analyses indicated no anomalous or significant variation between the Penn E&R and US EPA split samples. Copies of the laboratory report(s) for the US EPA split sample analysis were requested from US EPA representatives but were not provided to Statoil.

5.4 Laboratory Quality Assurance/ Quality Control

Laboratory quality assurance/ quality control (QA/QC) procedures were consistent with the prescribed analytical methods and relevant state and federal regulatory guidance. Internal laboratory quality control procedures included method blanks, matrix spikes/matrix spike duplicates, surrogate samples, calibration standards, and laboratory control standards, all of which are documented in the lab specific Standard Operating Procedures (SOP) and on the laboratory reports for the respective samples when applicable.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples refer to field samples spiked with the analytes of interest prior to being analyzed at the laboratory to gauge the quality of analysis. Approximately one (1) in twenty (20) samples was analyzed as MS/MSD samples, according to laboratory protocol.

5.5 Data Validation

Validation of the data generated by the laboratory performing the analyses included sample holding times, accuracy and precision, contamination of field generated or laboratory method blanks, and surrogate compound recovery. Accuracy was determined by evaluating laboratory control spikes (LCS) and matrix spike (MS) recovery. Precision was determined by evaluating laboratory and field duplicate samples. Level II data validation was performed on 100% of submitted samples. Level IV data validation was or is being performed on at least 10% of submitted samples.

EDataPro validated the TTPC analytical methods using US EPA National Functional Guidelines that provides data reviewer guidance in determining the usability of analytical data. These guidelines aid in establishing if data meets specific technical and quality control criteria, and the usability of any data not meeting these criteria. Also in **Appendix L.3** is a report of an audit report of the GCAL laboratory peformed by EDataPro.

6.0 HEALTH AND SAFETY

During all stages of the investigation, contractors and consultants adhered to the site specific Health and Safety Plan (HASP) developed for site activities. All investigative activities were completed in a safe manner approved by on site Statoil representatives and under the conditions detailed in the HASP. A JSA and GDP were each completed and reviewed in the multi-company tailgate safety meeting held on site prior to commencement of work each day when applicable. Examples of the JSA and GDP are provided in **Appendix I**.

7.0 DECONTAMINATION PROCEDURES

Prior to collecting any samples for the E-SAP or WSSSAAP portions of the investigation, the following decontamination procedures were undertaken: non-disposable sampling equipment such as Kemmerer water sampling devices which came into contact with sampling media was decontaminated using a bristled brush and a solution comprised of a laboratory grade, non-phosphate detergent (e.g., Alconox or Liquinox), rinsed with distilled water, and then rinsed a second time with deionized water.

The decontamination of sampling equipment was conducted over poly sheeting at the sample location or in a nearby designated area. The sampling equipment to be decontaminated was first placed in a bucket containing the detergent solution and thoroughly washed using a bristled brush. The items were then transferred to a second 5-gallon bucket containing deionized water for rinsing. Following the initial rinsing, the item was held over the third 5-gallon bucket while deionized water was carefully decanted over each item. Decontaminated items were wrapped in clean aluminum foil for transit to the next sampling location. Nitrile gloves were worn by sampling personnel and changed between activities at each discrete sample collection location. Previously worn nitrile gloves were discarded in appropriate waste receptacles.

During OOI-SAP activity, drilling augers, drill bits, and split spoons were steamed cleaned prior to the initiation of drilling activities, following the completion of each borehole, and prior to initiation of subsequent boreholes. Steam cleaning was performed within a lined, bermed pad to contain the decontamination fluids. These fluids were managed by placement into the dedicated frac tank on-site. During drilling, individual split spoons were decontaminated between sampling intervals utilizing a brush with an Alconox wash followed by a distilled water rinse. All spilt spoon decontamination water was also managed in the dedicated frac tank. Sampling equipment (bailers or sample tubing) was dedicated to each sample point. Aside from the water level meter, no equipment was transferred between the other monitoring points and between uses the water level meter tape and probe were decontaminated utilizing an Alconox wash followed by a distilled water rinse. All decontamination water was managed with the purge and development waters either into the dedicated frac tank or a dedicated 55-gallon drum.

7.1 Waste Disposal

The method for storage and disposal of investigation derived waste materials complied with applicable local, state, and federal regulations in a manner consistent with the Statoil US Waste Management Plan (WMP).

All Investigation Derived Wastes (IDW) were segregated into liquids and solids for classification. Two waste streams were identified for disposal; 1) Solids- such as soil cuttings, gloves, sample containers, and general refuse and 2) Liquids- development/purge water.

All IDW Liquids were transferred directly from 5-gallon buckets utilized to collect fluids at the well heads into either the designated frac tank or designated 55-gallon drum. This was performed at a minimum on a daily basis; most frequently it occurred between sample points. Once the fluids were transferred into the tank or drum the fluids were managed by Statoil support personnel stationed on the pad. No waste water was generated during outfall sampling.

All IDW Solids were staged on plastic beneath or beside the drill rig while drilling the individual borings. Following visual and PID screening the cuttings were utilized to backfill the borings. Upon boring completion excess cuttings and other IDW were loaded into the designated roll-off containers by Statoil support personnel stationed on the pad on a daily basis. Waste manifests are included in **Appendix I.5**.

8.0 DATA EVALUATION SUMMARIES FROM PRIOR REPORTS

To assess the potential environmental impact from the June 28, 2014 incident, all data collected during the respective E-SAP, WSSSAAP, and OOI-SAP investigations were reviewed in the context of determining the presence/absence of POSCs and evaluated in reports submitted to ODNR (SIR) and US EPA (15.a.i and 15.a.ii reports). The air, surface water, sediment, soil and groundwater data findings from previously submitted reports are presented; laboratory results are included in their respective subsections of **Appendix P**. Where appropriate, cross-references to the reports evaluating this data have been noted.

8.1 Air Data

Analytical air samples collected over 24-hr periods were taken at several locations surrounding the Eisenbarth Well Pad (**Appendix K**). Additionally, a grab sample (instantaneous or short-term sample in which a volume of air containing a gaseous containment is collected) was collected in the smoke plume during the incident (Sample GB001). A summary of all analytes detected in air from June 29, 2014 through July 19, 2014 is shown in **Table 9**. Based on an evaluation of air sampling data, the Unified Command authorized Statoil to cease air sampling as of July 18, 2014.

Table 9 – Analytes Detected in Smoke Plume June 29, 2014

Analyte	Result (ppbv)	SL
Isopropanol	120.0	2,970[a]
Toluene	3.7	1,000[b]
1,3-Butadiene	11.0	0.04[a]
Propylene	38.0	1,800[a]
Benzene	16.0	9.0[b]

a- US EPA RSL for residential air
b- ATSDR Acute (1-14 days) MRL

In summary, no analytes detected in air around the Eisenbarth Well Pad during the incident were consistently detected and/or consistently exceeded screening levels during the initial phase of the incident. No airborne constituents such as VOCs were detected in the community. Particulate matter was detected in the community, as expected, but levels were well below screening levels.

8.2 Surface Water Data

CTEH sampled surface water within the unnamed tributary to Opossum Creek, Opossum Creek, and the Ohio River from June 29, 2014 until April 8, 2015. The data collected during the E-SAP and WSSSAAP can be located in **Appendix P**, and an evaluation of the data collected during the WSSSAAP can be found in the 15.a.ii report submitted to US EPA (**Appendix A.2**).

The 15.a.ii report evaluated data generated from monitoring, sampling, and assessment activities for surface water samples collected from an unnamed tributary to Opossum Creek, Opossum Creek, and the Ohio River from the Opossum Creek confluence to the first downstream public water intake. POSCs evaluated were acetone, chloride, TPH, and TTPC. The following subsections summarize Statoil's conclusions from the 15.a.ii report (**Appendix A.2**) submitted to US EPA on July 22, 2015.

8.2.1 Impoundment

TTPC was not analyzed at the PW05 impoundment location, as an analysis method was not established at the time of sample collection. However, acetone and TPH were both non-detect. Chloride was detected in PW05 but below the associated screening level. Accordingly, this data indicated that the WSSSAAP constituents were not present in the impoundment and no further assessment was necessary.

8.2.2 Unnamed Tributary to Opossum Creek

The unnamed tributary to Opossum Creek had initial detections of the four WSSSAAP constituents in surface water following the Eisenbarth Well Pad incident; surface water detections above screening levels for the majority of the WSSSAAP constituents in surface water ceased based on data collected through April 8, 2015. Acetone has not been detected in surface water of the unnamed tributary since July 9, 2014. Chloride has not been detected above established screening levels in surface water of the unnamed tributary since June 29, 2014. After December 1, 2014, all unnamed tributary locations were non-detect for TPH in surface water. TTPC in surface water constituents was continuing on a downward trend that is expected to continue through the remainder of the US EPA monitoring program. Two locations on the unnamed tributary had TTPC detection at or above the surface water screening level. This appears to be partially due to winter temperature and seasonal fluctuations and the freezing and thawing cycle likely releasing some bound TTPC from the sediments into the surface water. Accordingly, the data indicates that acetone, chloride, and TPH are not present in the unnamed tributary to Opossum Creek at levels at or above the established screening levels and that further assessment of these three constituents in the unnamed tributary to Opossum Creek is not necessary. The additional testing that will be conducted pursuant to the Work Plan will provide additional information to inform decisions regarding any further assessment of TTPC in the unnamed tributary to Opossum Creek.

8.2.3 Opossum Creek

In the days immediately after the well pad incident, several POSCs were detected in Opossum Creek surface water samples. Acetone has generally been non-detect in surface water for the duration of Opossum Creek monitoring. Chloride levels in Opossum Creek surface water have consistently been below established screening levels since monitoring began. TPH has not been detected in surface water at any locations on Opossum Creek since November 30, 2014. Surface water TTPC detections were sporadic and never exceeded the 1 µg/L screening level. Accordingly, the data indicates that the four WSSSAAP constituents were not present in Opossum Creek at or above established screening levels, and therefore no further assessment was necessary.

8.2.4 Ohio River

There have been no detections in the Ohio River surface water associated with the Eisenbarth Well Pad incident. The only constituent detected in the surface water was chloride. However, chloride was at a level that is normal in surface water for the area. Accordingly, the data indicates that the four WSSSAAP constituents were not present in the Ohio River at or above the established screening levels and no further assessment was necessary.

8.3 Drains and Outfalls

The following subsection summarizes Statoil's conclusions presented in the 15.a.i report (**Appendix A.1**) regarding the drains and outfalls as a potential migration pathway.

TTPC was detected in two (2) of the outfall locations, with six (6) total detections over the established screening level. Four (4) of the six detections over the screening level occurred during the E-SAP monitoring; two (2) exceedances occurred during the WSSSAAP monitoring. The maximum detection of TTPC was at PD03 (22.6 µg/L) on July 19, 2014, using the HLPC laboratory method. TTPC has been below the action level of 1 µg/L since August 12, 2014, indicating that TTPC was not migrating through this pathway.

Acetone showed an early peak during the E-SAP monitoring, followed by a downward trend until it became non-detect during the WSSSAAP monitoring. Acetone has not been detected at an outfall location since September 2, 2014. This shows that the acetone dissipated from the outfall drainage system shortly after the incident.

Chloride has been below the 230 mg/L screening level since August 3, 2014 at all outfall monitoring locations. A maximum concentration was detected early during the E-SAP monitoring (304 mg/L on July 4, 2014); however the downward trend and subsequent consistent concentrations below screening levels indicate chloride has naturally attenuated from the system. Chloride has been below screening levels since August 3, 2014.

During E-SAP monitoring between July 4, 2014 and July 17, 2014, SW24 and PD07 indicated elevated levels of TPH. There was no screening level for TPH in water. However, TPH in surface water was monitored, and TPH concentrations at the PD07 and SW24 locations, which are to the west of the Eisenbarth Well Pad, display a steady and rapid decline through September 5, 2014. After this date, TPH detections were irregular, infrequent, and orders of magnitude lower than the levels that were initially detected. The last detection above 1.0 mg/L at SW24 was on August 27, 2014 (1.6 mg/L); PD07 had a final, singular spike concentration of 3.5 mg/L on February 2, 2015. TPH had a single detection at the SW02 location during E-SAP monitoring only, on June 29, 2014 (730 mg/L), south of the Eisenbarth Well Pad. The results of outfall and subsurface drainage monitoring indicate that the majority of TPH present had dissipated from the system shortly after the incident.

Isopropanol was not detected at any of the outfall locations at any point during monitoring.

In summary, the drains and outfalls are not a potential migration pathway for POSCs. Acetone and chloride exceeded ecological screening levels in the days following the incident. The levels continued to remain near screening values in the days following the incident, before steadily receding. Isopropanol was not detected from any outfall location at any time during monitoring activities. While chloride detections have not exceeded ecological screening values in PD03 and SW24 at any time, detections in PD07 were near screening levels before steadily receding. The well pad's outfalls do not pose a risk to aquatic life based on ecological screening values, which is why Statoil was granted authorization to cease collection and containment activities on April 7, 2015 (by US EPA) and on April 10, 2015 (by ODNR).

8.4 Sediment Data

The 15.a.ii report (**Appendix A.2**) evaluated data generated from monitoring, sampling, and assessment activities for sediment samples collected from the substrate material of an unnamed tributary to Opossum Creek, Opossum Creek, and the Ohio River from the confluence with Opossum Creek to the first

downstream public water intake. The data was evaluated for acetone, chloride, TPH, and TTPC. The following subsections summarize Statoil's conclusions from the 15.a.ii report (**Appendix A.2**).

8.4.1 Unnamed Tributary to Opossum Creek

The unnamed tributary to Opossum Creek had initial detections of WSSSAAP constituents in sediments following the Eisenbarth Well Pad incident; however, detections above screening levels in sediment have ceased. Acetone had been detected intermittently, and occasionally, above the sediment screening level but detection levels showed a general decline and it was non-detect in the most recent data evaluated for the 15.a.ii report. TPH detections in the sediments of the unnamed tributary exceeded the screening level only once, and the range and frequency of TPH detections after September 3, 2014, are comparable in concentration to the unnamed tributary's background location. There have been no exceedances of the sediment screening level for TTPC since July 2014. The data indicated that no further assessment of acetone, chloride, or TPH in the sediment of the unnamed tributary to Opossum Creek was necessary.

8.4.2 Opossum Creek

Acetone was detected intermittently at all four of the sediment monitoring locations. However, given the lack of acetone in any product at the Eisenbarth Well Pad at the time of the incident, the lack of corresponding acetone in surface water, and the compound's natural tendency to volatilize, these detections are likely due in part to laboratory contamination. Chloride was largely absent from sediments of Opossum Creek with the exception of three (3) detections. TPH was never detected above the established screening levels in an Opossum Creek sediment monitoring location with the exception of the background location. TTPC was detected in the sediment of Opossum Creek, including at a background sampling location, but no detections exceeded the site-specific screening level. Accordingly, the data indicates that these constituents are not present in the sediment of Opossum Creek at levels at or above the established screening levels and no further assessment was necessary.

8.4.3 Ohio River

There have been no detections in the Ohio River sediment samples associated with the Eisenbarth Well Pad incident. Acetone has not been detected in sediments during Ohio River monitoring. Chloride was non-detect in all of the sediment samples. TPH detections in sediment at the sample locations upstream from the Opossum Creek confluence and those downstream of the confluence were similar in concentration. Sediment samples collected from the Ohio River were non-detect for TTPC using the HPLC-UV method. Accordingly, the data indicates that these constituents are not present in the Ohio River at levels at or above the established screening levels and no further assessment was necessary.

8.5 Soils Data

Statoil evaluated soil sample data in the SIR and the 15.a.i report. The following discussion is based on Statoil's conclusions from the SIR (Appendix N.1) and the 15.a.i report (**Appendix A.1**).

None of the soil samples collected at any of the borings exceeded the Ohio EPA Industrial/Commercial program action levels.

Acetone was initially detected in soil samples on the well pad, and acetone was consistently detected at relatively low concentrations with the exception of one soil sample that was presented in the laboratory

analysis report with a "J" qualifier indicating that the reported result is below limits of quantitation, a condition which degrades result validity. It should be noted that the outlier result of 620 "J" µg/kg of acetone is still statistically far below the conservative screening level of 2,500 µg/kg (and the Ohio EPA action level of 110,000,000 µg/kg) and is considered *de minimus*. Detections of acetone were below screening levels on the well pad, the northwest slope, to the north and south of the pad, and along the Bench 01 slope, primarily in the top 0-4 ft bgs sampling interval. The initial concentrations of acetone in soils show no observable migration pattern.

Chloride was detected in only five (5) soil samples, all of which were collected from the well pad, and only in the top surface sampling interval of 0 – 2 feet bgs. The data shows no significant levels or notable migration of chloride off pad or to depths beyond the surface interval.

TPH detections in soils off the pad were considerably less in quantity and magnitude than well pad soil sample detections. TPH was detected on the pad at four (4) of the seven (7) sample locations in concentrations varying from 8.6 mg/kg to 166.0 mg/kg. Off-pad TPH detections range from 7.2 mg/kg to 73.8 mg/kg and appear in only twenty (20) of the seventy-six (76) off-pad samples collected. All TPH detections were below the 380 mg/kg screening level established.

Isopropanol was not detected at any of the soil sampling locations.

All TTPC detections were orders of magnitude below the established screening level, and have been confined to the upper four (4) feet of soils on the pad location with the exception of eight (8) *de minimus* detections; four (4) detections at four (4) to six (6) foot intervals, two (2) detections at eight (8) to ten (10) foot intervals, one (1) detection at a 12 to 14 foot interval, and one (1) detection at a 28 to 30 foot interval. TTPC shows no signs of migration since the June 28, 2014 incident. TTPC was also detected in background soil sampling locations in borings SB-1, SB-2, and SB-3 of the OOI-SAP work program. These trace detections at bgs (4 feet) are not representative of subsurface conditions, given the significant variability displayed in TTPC duplicate samples in relation to the parent samples, the multiple detections of TTPC in background samples, and the hydrogeologic unlikelihood of TTPC to migrate through soils via groundwater given its natural tendency to bind to soils. Any *de minimus* detections of TTPC are unlikely to be a result of the June 28, 2014 incident. As confirmed by Ph.D. Toxicologists at CTEH, levels of TTPC in the ppb (or µg/kg) concentration range in soils do not cause TTPC levels in groundwater in exceedance of the 1 µg/L established screening level. Accordingly, no further analysis was necessary.

Soil sampling results are summarized in **Table 10**.

8.6 Groundwater Data

The pH level for the groundwater sample location GP-26 was detected below the Drinking Water Standards (DWS) range (6.5 – 8.5 S.U.), at 6.2 S.U., during laboratory analysis. This DWS range for pH was established for potable, public water supplies; a detection of pH at 6.2 S.U. in a non-potable groundwater sampling station (with noted weathered shale in the soil boring log) is within the normal and expected range.

Groundwater samples show initial acetone presence in GP23, GP24, GP26, and GP28 prior to July 24, 2014, but acetone was non-detect in all groundwater samples collected on and after July 24, 2014. The initial concentrations of acetone in groundwater show no observable migration pattern (**Table 11**).

Subsurface water samples taken on the pad showed that chloride was the only constituent to exceed an ecological screening value during monitoring. Chloride was detected in one subsurface water sample, at location GP-28, on July 14, 2014 that exceeded ecological screening levels. This was after a substantial rain event of 1.13 inches on July 13, 2014, which was also the first substantial rain event since the June 28, 2014 incident. GP-28 is located south of the Eisenbarth Well Pad. After July 14, 2014, chloride maintained levels below the screening level, and no other exceedances occurred. Chloride is a natural component of groundwater systems and sampling results indicate no elevated levels or migration patterns that correspond to the Eisenbarth Well Pad incident.

There was no screening level for TPH in water for comparative purposes. However, TPH groundwater detections have consistently been relatively low, with 0.31 mg/L detected at the GP-23 location during E-SAP monitoring on July 14, 2014. This was the highest detected TPH concentration throughout all monitoring.

Isopropanol was not detected at any of the groundwater sampling locations.

Residual TTPC, under the established screening level, was detected in some groundwater quality samples. While a screening level was developed based on potential impact to surface water, it is known that TTPC strongly adsorbs to soils, and therefore is not expected to readily migrate into the shallow aquifer system or migrate via runoff, as is evidenced by the lack of corresponding TTPC levels in groundwater samples.

POSCs did not exceed ecological screening levels, and therefore subsurface migration of fluids from the Eisenbarth Well Pad is not a migration pathway. This groundwater sampling information allowed for the cessation of groundwater sampling under the WSSSAAP; groundwater sampling data is summarized in **Table 11** and groundwater survey data is summarized in **Table 12**.

8.6.1 Addendums to the SIR

In total, twelve (12) water sampling locations had samples collected and analyzed for POSCs in March and June 2015. The analytical data from these events was compared to groundwater quality data from the same sample collection points evaluated in December 2014 (**Appendix N.1**) and presented in an April 2015 addendum (**Appendix N.3**) and a July 2015 addendum (**Appendix N.4**), respectively.

Groundwater analytical results indicate no exceedances above any POSC screening and action levels. Based on this additional information, Statoil concluded in the addendums to the SIR that conditions at the well pad have naturally attenuated and there are no continued impacts to the soil or groundwater related to the June 28, 2014 incident.

9.0 CONCLUSIONS FROM PRIOR REPORTS

This report summarizes field investigations performed at: the Eisenbarth Well Pad, the community near the pad, an unnamed tributary to Opossum Creek, Opossum Creek, and a portion of the Ohio River following the June 28, 2014 incident at the Eisenbarth Well Pad. The objectives of the environmental investigations discussed in this report were to field screen, evaluate, collect, and analyze air, outfall water, surface water, sediment, soil, and groundwater data to determine the nature and extent of potential impacts from the June 28, 2014 incident at the well pad. Investigative activities followed the procedures outlined in the E-SAP, the WSSSAAP, and the OOI-SAP.

Initial air monitoring indicated little to no presence of VOCs at the well pad and no presence in the adjacent community. Based on air monitoring results, the initial evacuation was quickly lifted with the exception of two residences located within 200 yards of the well pad, and the evacuation for these two residences was lifted shortly thereafter. Monitored air quality parameters were non-detect in the community.

Based on an evaluation of soil and groundwater data, there was no subsurface migration during the initial event or at any time after the event. Detections in surface soils confirm the initial southerly migration of on-site constituents from surface flow during the June 28, 2014 incident. Groundwater analytical results indicate no exceedances above any POSC screening levels or DWS action levels. Detections of constituents were highest in the soils on the pad, prior to equipment removal in August 2014. During the completion of the equipment removal and the pad reclamation activities, large quantities of top soil were removed and disposed. There are no continued impacts to the soil or groundwater related to the June 28, 2014 incident at the Eisenbarth Well Pad. Therefore, based on the analysis presented in the March 2015 SIR, and the April 2015 and June 2015 Addendums, no further on-site investigation or on-site remedial action is needed.

Based on the surface and sediment data, no further assessment of acetone, chloride, or TPH is necessary for the surface water or sediment of the unnamed tributary to Opossum Creek, Opossum Creek, or the portion of the Ohio River that was subject to investigation under the E-SAP and WSSSAAP. Similarly, no further assessment of TTPC in the sediment or surface water of Opossum Creek or the portion of the Ohio River that was subject to investigation is necessary. Additional testing that will be conducted pursuant to the Work Plan will inform decisions regarding the need for any further assessment of TTPC in the unnamed tributary to Opossum Creek, under the US EPA AOC.

Statoil will submit one additional report regarding data generated pursuant to Paragraph 15.a.ii pursuant to the timeline established by the Work Plan. Aquatic and sedimentary life within the waterways will also be evaluated during the continued monitoring in 2015 and 2016, with two (2) biological assessments, two (2) WET tests, and two (2) WST tests performed approximately 12 months apart. A report summarizing the results of this testing will be submitted to US EPA in 2016. Additional samples that are scheduled to be collected and analyzed pursuant to the US EPA AOC will be submitted to ODNR.

Based on all of the information summarized in this report, including its appendices, and prior reports submitted to ODNR and US EPA, the well pad does not presently impact the soil, groundwater, surface

water, or sediment. Therefore, Statoil should be allowed to immediately resume full operations at the Eisenbarth Well Pad, as requested in our July 9, 2015 submission to ODNR.

10.0 REFERENCES

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http://www.epa.gov/reg3hwmd/risk/hmnanlrb%C2%ADconcentration_table/usersguide.html.

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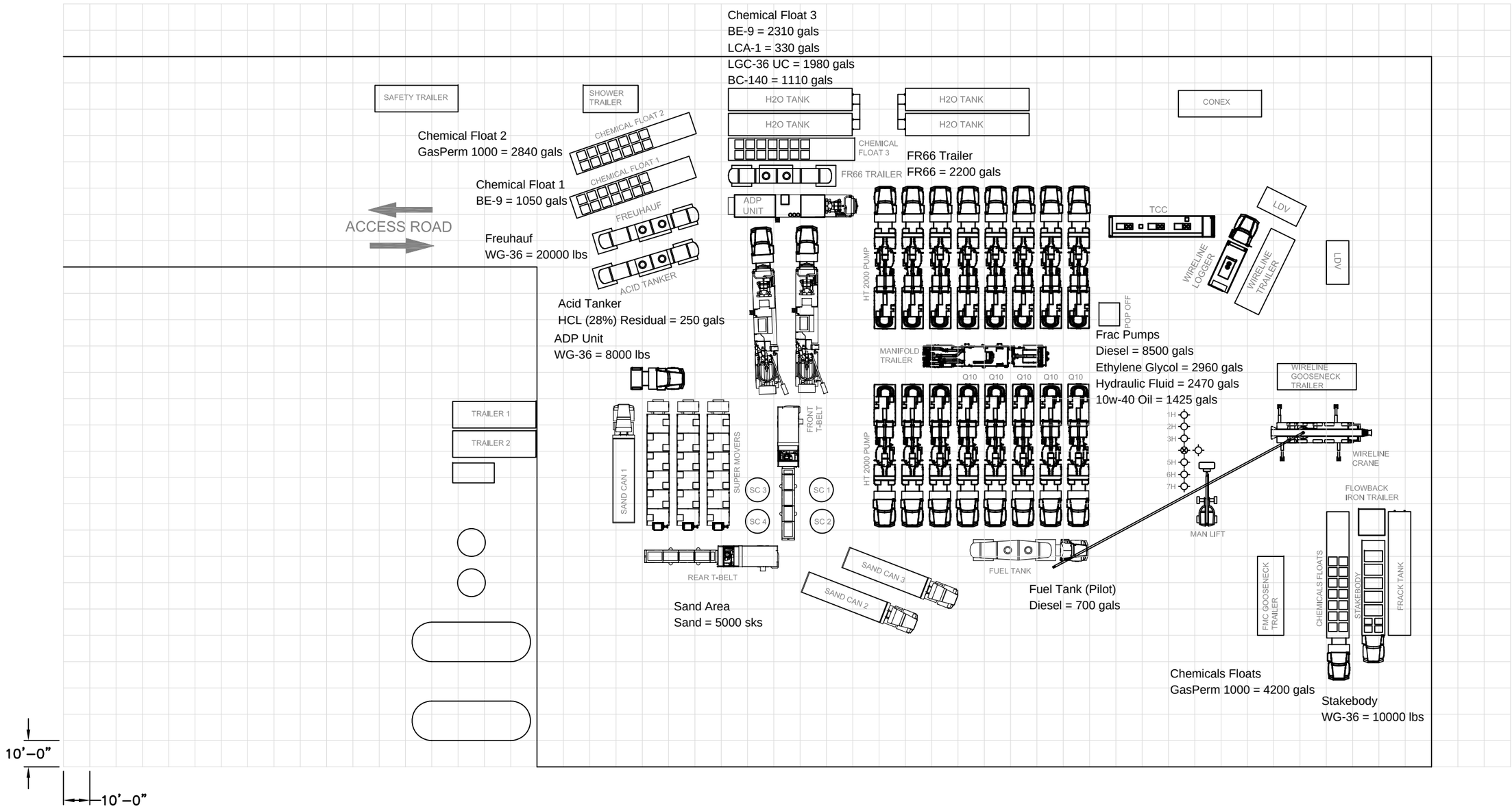
WSSSAPP. Ohio Operations Incident, Water, Soil, and Sediment Sampling and Analysis Adjustment Plan. Prepared by CTEH

FIGURES

Figure 1
Statoil Eisenbarth Well Pad



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.XXX = ± .060
ANGLES ± 3°
MACHINE
.X = ± .030
.XX = ± .015
.XXX = ± .005
.XXXX = ± .0010
ANGLES ± 1/2°

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DRAWN:	DEEPAK	7/8/14
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SUPERCEDES:		

THIRD ANGLE PROJECTION

HALLIBURTON — HALLIBURTON ENERGY SERVICES, INC. HOUSTON, TEXAS

TITLE
JOB SITE LAYOUT
EISENBARTH PAD STATOIL LAYOUT1H-7H

SIZE D | DWG. NO. D00936667 | REV A

SCALE: NTS | WEIGHT: - | SHEET 1 OF 1

DEEPAK 7/8/14

Form Revision C

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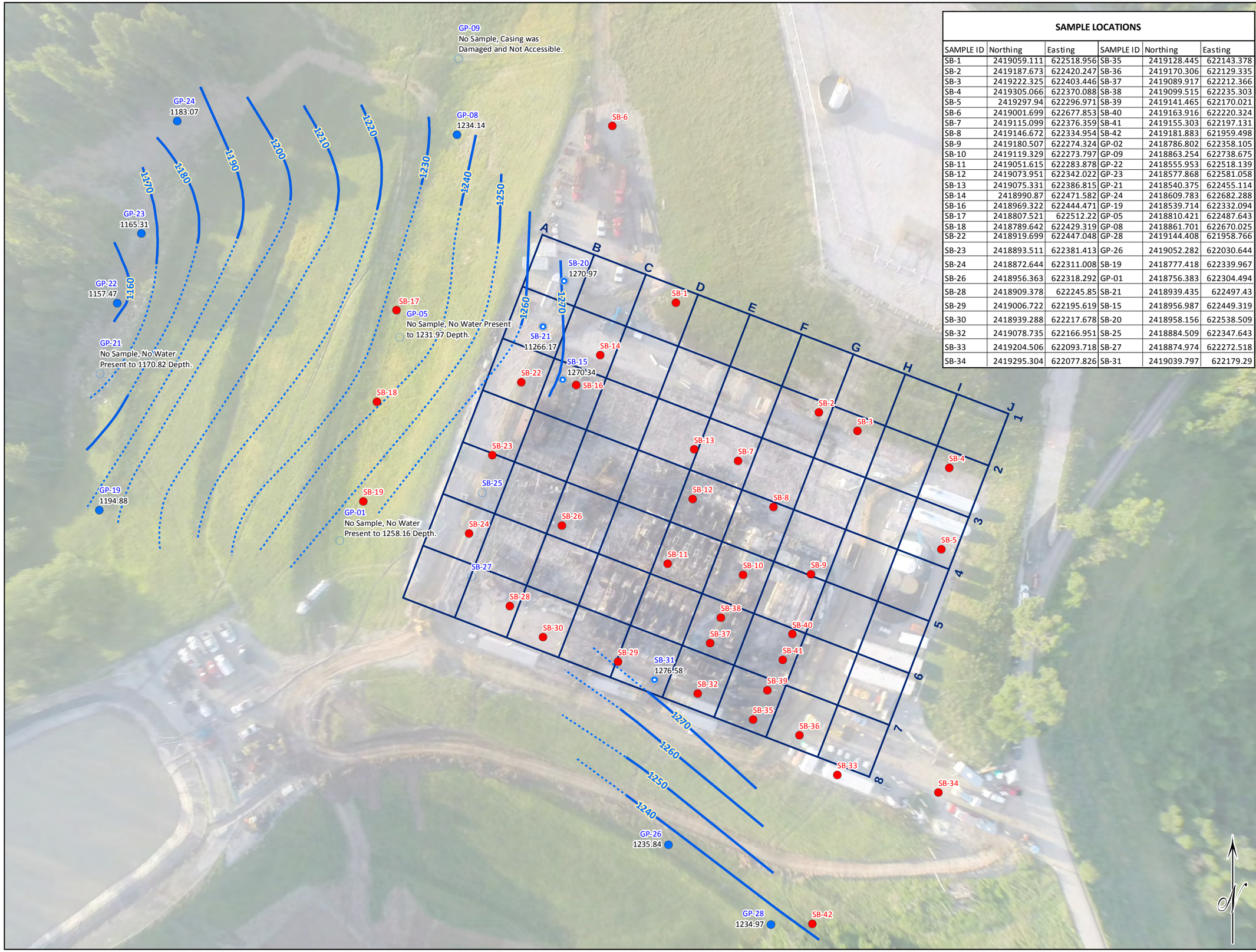

SAMPLE LOCATIONS

SAMPLE ID	Northing	Easting	SAMPLE ID	Northing	Easting
SB-1	2419059.111	622518.956	SB-35	2419128.445	622143.378
SB-2	2419187.673	622420.247	SB-36	2419170.306	622129.335
SB-3	2419222.325	622403.446	SB-37	2419089.917	622212.366
SB-4	2419305.066	622370.088	SB-38	2419099.515	622235.303
SB-5	2419297.94	622296.971	SB-39	2419141.465	622170.021
SB-6	2419001.699	622677.853	SB-40	2419163.916	622220.324
SB-7	2419115.099	622376.359	SB-41	2419155.303	622197.131
SB-8	2419146.672	622334.954	SB-42	2419181.883	621959.498
SB-9	2419180.507	622274.324	GP-02	2418786.802	622358.105
SB-10	2419119.329	622273.797	GP-09	2418863.254	622738.675
SB-11	2419051.615	622283.878	GP-22	2418555.953	622518.139
SB-12	2419073.951	622342.022	GP-23	2418577.868	622581.058
SB-13	2419075.331	622386.815	GP-21	2418540.375	622455.114
SB-14	2418990.87	622471.582	GP-24	2418609.783	622682.288
SB-16	2418969.322	622444.471	GP-19	2418539.714	622332.094
SB-17	2418807.521	622512.22	GP-05	2418810.421	622487.643
SB-18	2418789.642	622429.319	GP-08	2418861.701	622670.025
SB-22	2418919.699	622447.048	GP-28	2419144.408	621958.766
SB-23	2418893.511	622381.413	GP-26	2419052.282	622030.644
SB-24	2418872.644	622311.008	SB-19	2418777.418	622339.967
SB-26	2418956.363	622318.292	GP-01	2418756.383	622304.494
SB-28	2418909.378	622245.85	SB-21	2418939.435	622497.43
SB-29	2419006.722	622195.619	SB-15	2418956.987	622449.319
SB-30	2418939.288	622217.678	SB-20	2418958.156	622538.509
SB-32	2419078.735	622166.951	SB-25	2418884.509	622347.643
SB-33	2419204.506	622093.718	SB-27	2418874.974	622272.518
SB-34	2419295.304	622077.826	SB-31	2419039.797	622179.29

LEGEND

- Monitoring Well Location, Sample Completed
- Monitoring Well Location
- Monitoring Well Location, Sample Not Completed
- Piezometer Location
- Piezometer Location, Sample Not Completed
- Screening Grid
- Groundwater Elevation
- Inferred Groundwater Elevation

Survey Dates

SAMPLE ID	SAMPLE DATED
SB-15	12/18/14
SB-20	12/18/2014
SB-21	12/18/14
SB-25	12/18/2014
SB-27	12/18/2014
SB-31	12/18/2014
GP-1	12/17/2014
GP-2	12/17/2014
GP-5	12/17/2014
GP-8	12/17/14
GP-9	12/17/2014
GP-19	12/17/14
GP-21	12/17/2014
GP-22	12/17/14
GP-23	12/17/14
GP-24	12/17/14
GP-26	12/17/14
GP-28	12/17/14

Scale:

0 80 160

Feet

1 in = 80 ft

Map References:
- USGS 7½ minute quadrangle: Round Bottom, OH.
- Base map aerial imagery provided by Statoil USA Onshore Properties, Inc.

Notes:
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FIGURE 2:

GROUNDWATER ELEVATION MAP

Eisenbarth Well Pad Site

Ohio Township,
Monroe County, Ohio

Project #: 14-467-LM

Prepared for : Statoil

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Houston, PA 15342
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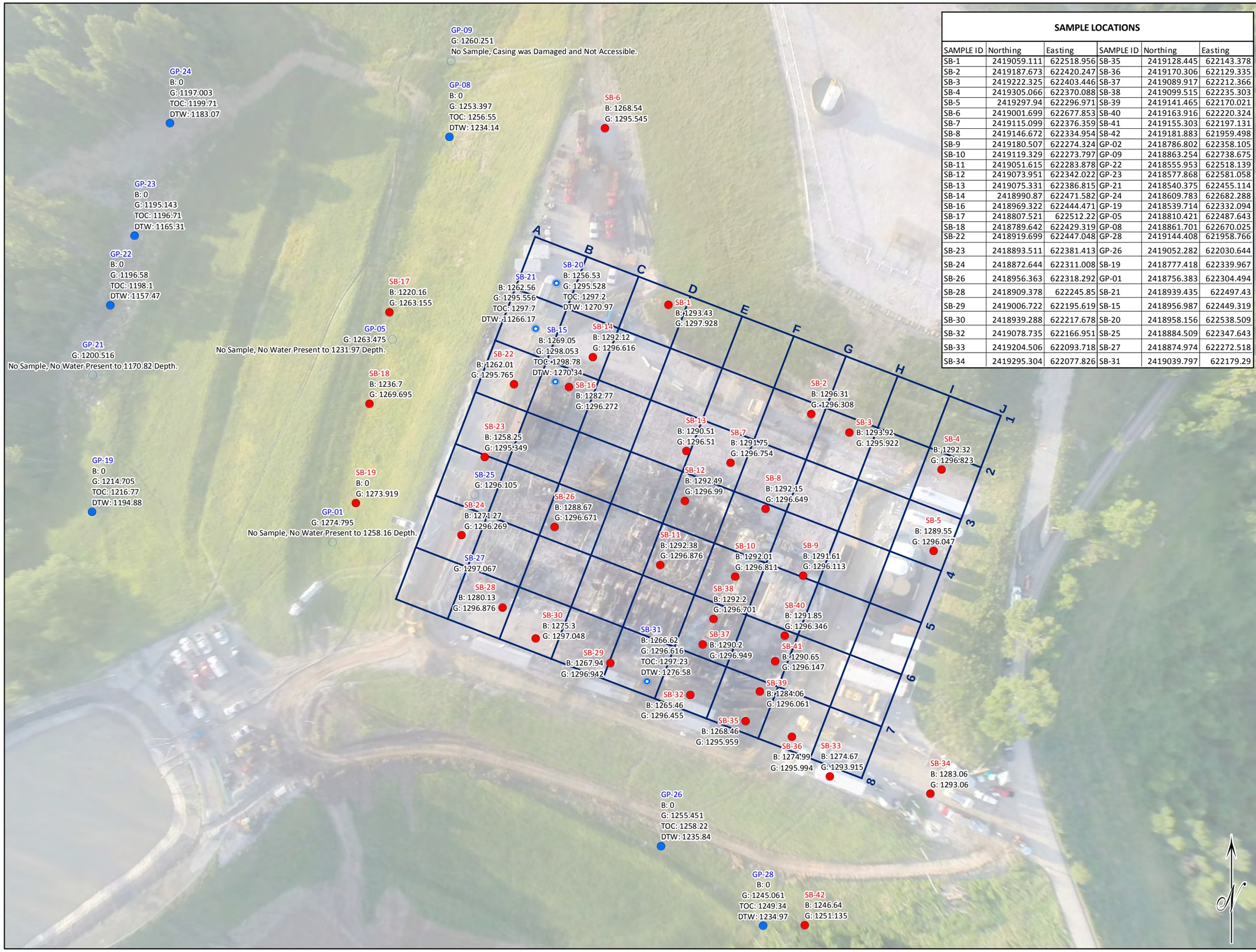
Moody and Associates, Inc.

Drawn by:	ADJ	Date:	8/31/2015
Checked by:	LM/JOJ	Revision:	



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SB-8	2419146.672	622334.954	SB-42	2419181.883	621959.498
SB-9	2419180.507	622274.324	GP-02	2418786.802	622358.105
SB-10	2419119.329	622273.797	GP-09	2418863.254	622738.675
SB-11	2419051.615	622283.878	GP-22	2418555.953	622518.139
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SB-13	2419075.331	622386.815	GP-21	2418540.375	622455.114
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SB-32	2419078.735	622166.951	SB-25	2418884.509	622347.643
SB-33	2419204.506	622093.718	SB-27	2418874.974	622272.518
SB-34	2419295.304	622077.826	SB-31	2419039.797	622179.29

LEGEND

- Monitoring Well Location, Sample Completed
- Monitoring Well Location
- Monitoring Well Location, Sample Not Completed
- Piezometer Location
- Piezometer Location, Sample Not Completed

Surface Elevation 'G'

Bottom of Boring Elevation 'B'

Groundwater Elevation 'DTW'

Top of Casing 'TOC'

Survey Dates

SAMPLE ID	SAMPLE DATE
SB-1, SB-2	11/24/2014
SB-3 - SB-8	11/25/2014
SB-9 - SB-15	12/3/2014
SB-16	12/4/2014
SB-17, SB-18	12/5/2014
SB-19, SB-20	12/8/2014
SB-21, SB-22	12/9/2014
SB-23 - SB-27	12/10/2014
SB-28 - SB-30	12/11/2014
SB-31 - SB-32	12/12/2014
SB-33 - SB-40	12/15/2014
SB-41 - SB-42	12/16/2014

Scale:

0 80 160

Feet

1 in = 80 ft

Map References:
- USGS 7½ minute quadrangle: Round Bottom, OH.
- Base map aerial imagery provided by Statoil USA Onshore Properties, Inc.

Notes:
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FIGURE 3:

DRILLING AND SAMPLING LOCATION MAP

Eisenbarth Well Pad Site

Ohio Township,
Monroe County, Ohio

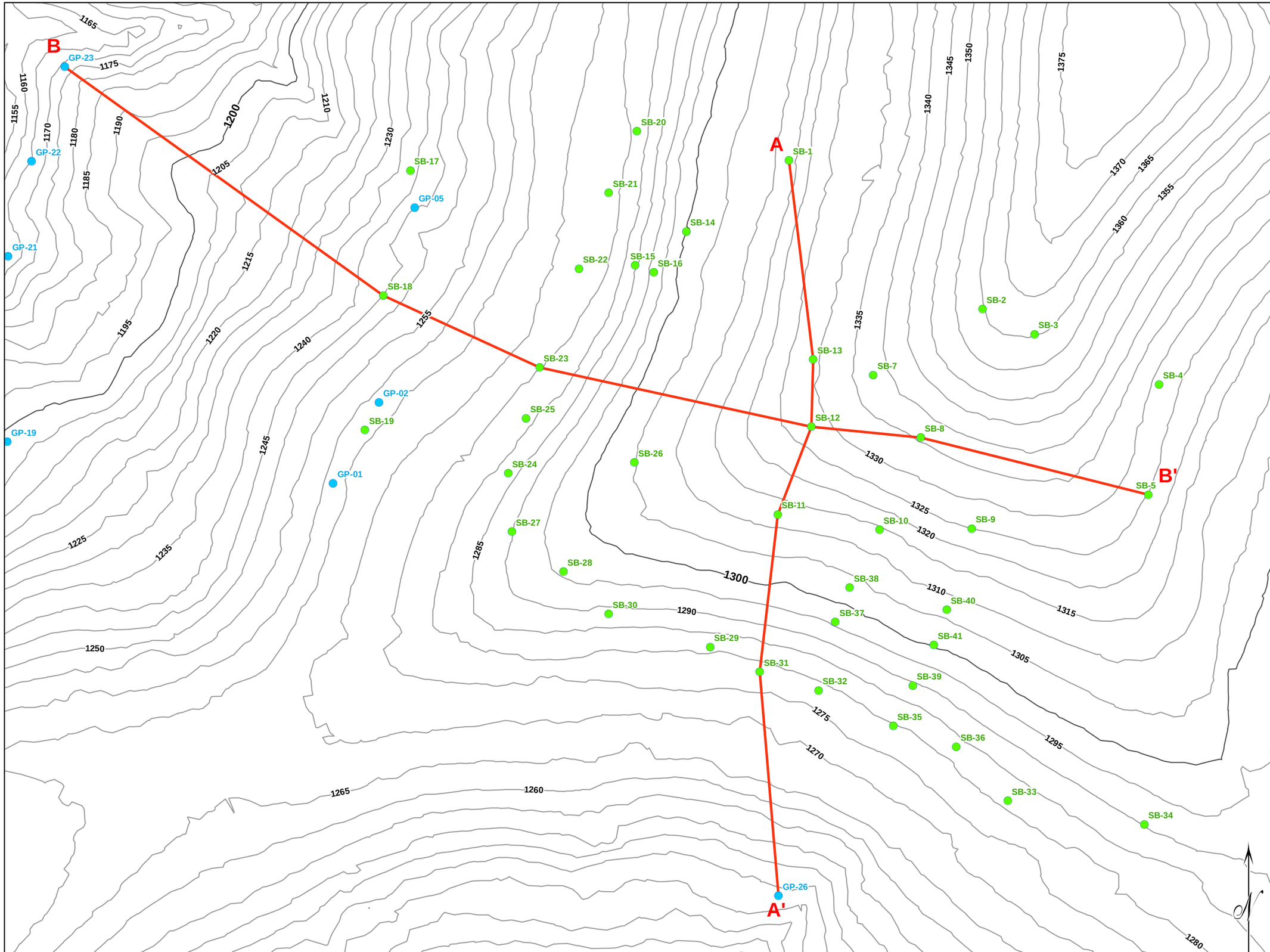
Project #: 14-467-LM

Prepared for : Statoil

199 Johnson Road
Building 2, Suite 101
Houston, PA 15342
Office: (724) 746-5200
Fax: (724) 746-5603
www.moody-s.com

Moody and Associates, Inc.

Drawn by:	ADJ	Date:	8/31/2015
Checked by:	LM/JOJ	Revision:	



LEGEND

- Soil Boring Locations
- Geoprobe Locations
- Lines Of Cross-Section

Scale:

0 60 120

Feet

1 in = 60 ft

Map References:
- Surface points provided by Statoil USA Onshore Properties, Inc.
- Cross-section lines determined and drawn by Moody and Associates Inc.

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FIGURE 4:
LINES OF CROSS-SECTION

Eisenbarth Well Pad Site

Ohio Township,
Monroe County, OH

Project #: 14-467-LM

Prepared for : Statoil

199 Johnson Road
Building 2, Suite 101
Houston, PA 15342
Office: (724) 746-5200
Fax: (724) 746-5603
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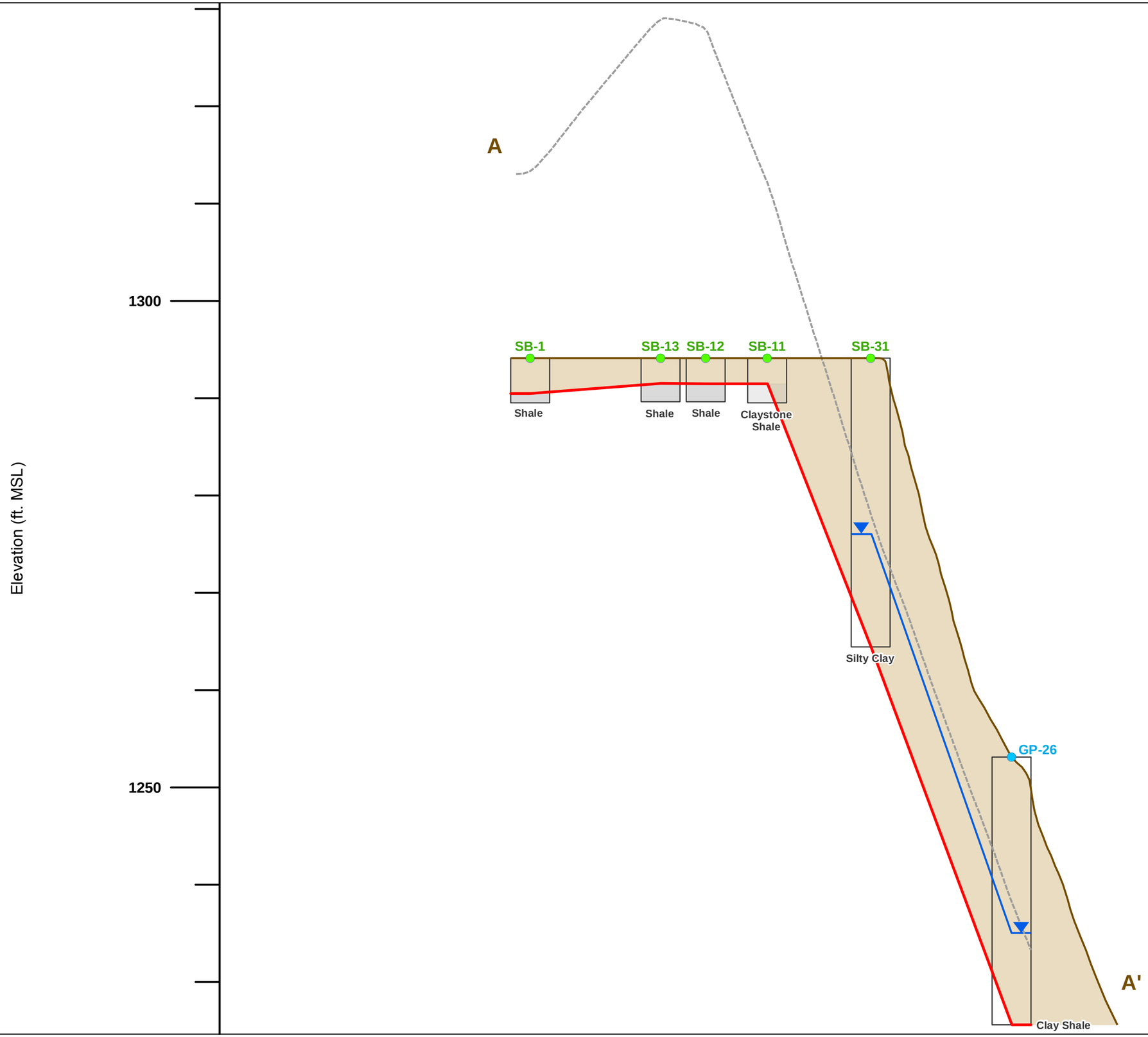
Moody and Associates, Inc.

Drawn by:	MPS	Date:	8/31/2015
Checked by:	DJK	Revision:	



LEGEND

- Soil Boring Locations
- Geoprobe Locations
- Existing Ground Surface Elevation
- Pre-Construction Elevation
- Groundwater Elevation
- Approximate Soil (Fill) - Rock Interface
- Fill

Scale:
- Vertical Exaggeration: 10x
- Horizontal Scale:

0 100 200
Feet
1 in = 100 ft

Map References:
• Surface points provided by Statoil USA Onshore Properties, Inc.
• Cross-sectional profile (including ground surface, pre-construction elevation, well levels and other information) created, drawn and analyzed by Moody and Associates Inc.

Notes:
• This drawing is the property of Statoil USA Onshore Properties, Inc. and contains information that is proprietary and confidential in nature. It may not be copied or otherwise reproduced in whole or in part without prior written consent.

FIGURE 5:
GEOLOGIC CROSS-SECTION A-A'

Eisenbarth Well Pad Site

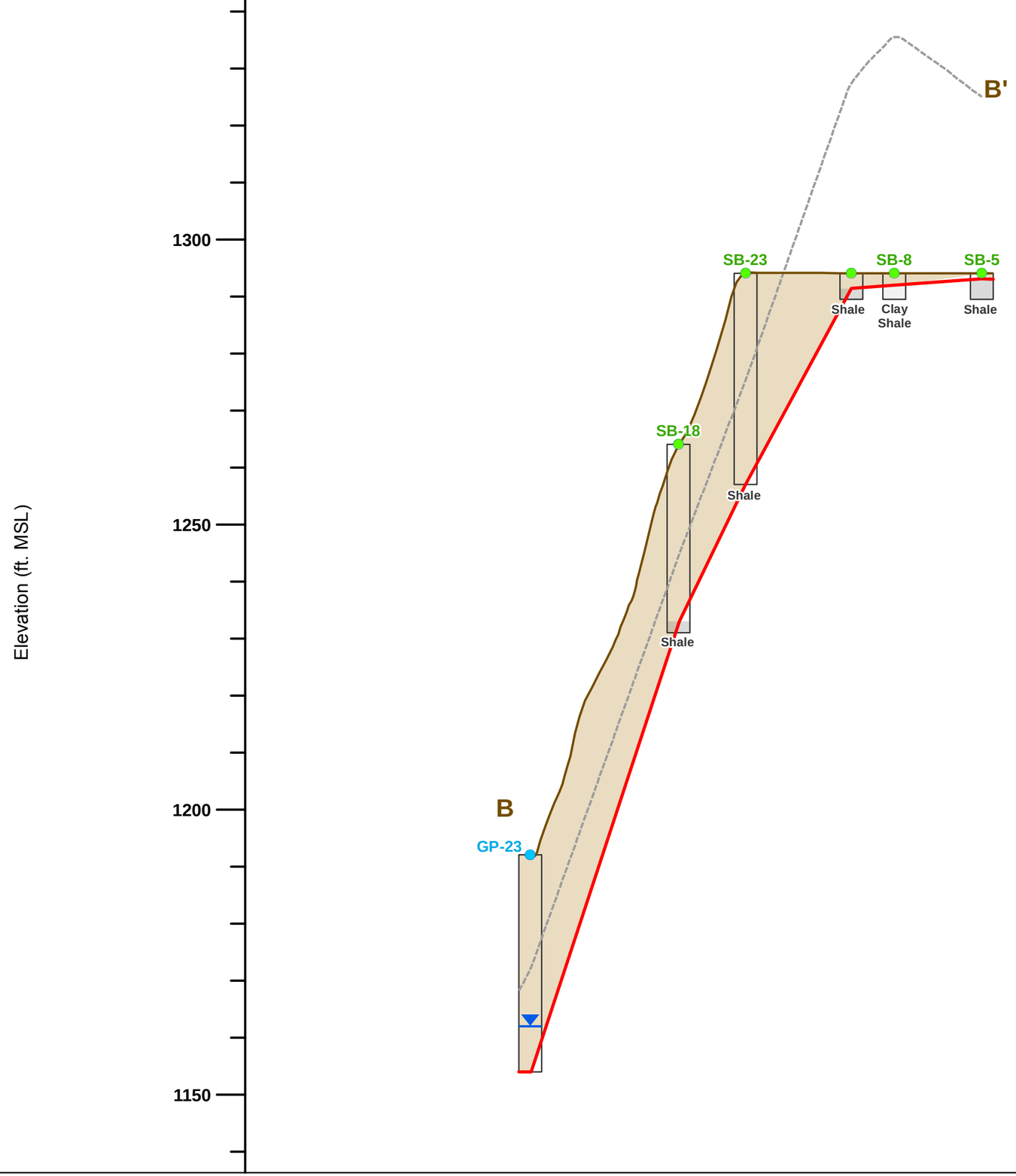
Ohio Township,
Monroe County, OH

Project #: 14-467-LM

Prepared for : Statoil

199 Johnson Road
Building 2, Suite 101
Houston, PA 15342
Office: (724) 746-5200
Fax: (724) 746-5603
www.moody-s.com
Moody and Associates, Inc.

Drawn by:	MPS	Date:	8/31/2015
Checked by:	DJK	Revision:	



LEGEND

- Soil Boring Locations
- Geoprobe Locations
- Existing Ground Surface Elevation
- Pre-Construction Elevation
- Groundwater Elevation
- Approximate Soil (Fill) - Rock Interface
- Fill

Scale:
- Vertical Exaggeration: 10x
- Horizontal Scale:

0 200 400
Feet
1 in = 200 ft

Map References:
• Surface points provided by Statoil USA Onshore Properties, Inc.
• Cross-sectional profile (including ground surface, pre-construction elevation, well levels and other information) created, drawn and analyzed by Moody and Associates Inc.

Notes:
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FIGURE 6:
GEOLOGIC CROSS-SECTION B-B'

Eisenbarth Well Pad Site

Ohio Township,
Monroe County, OH

Project #: 14-467-LM

Prepared for : Statoil

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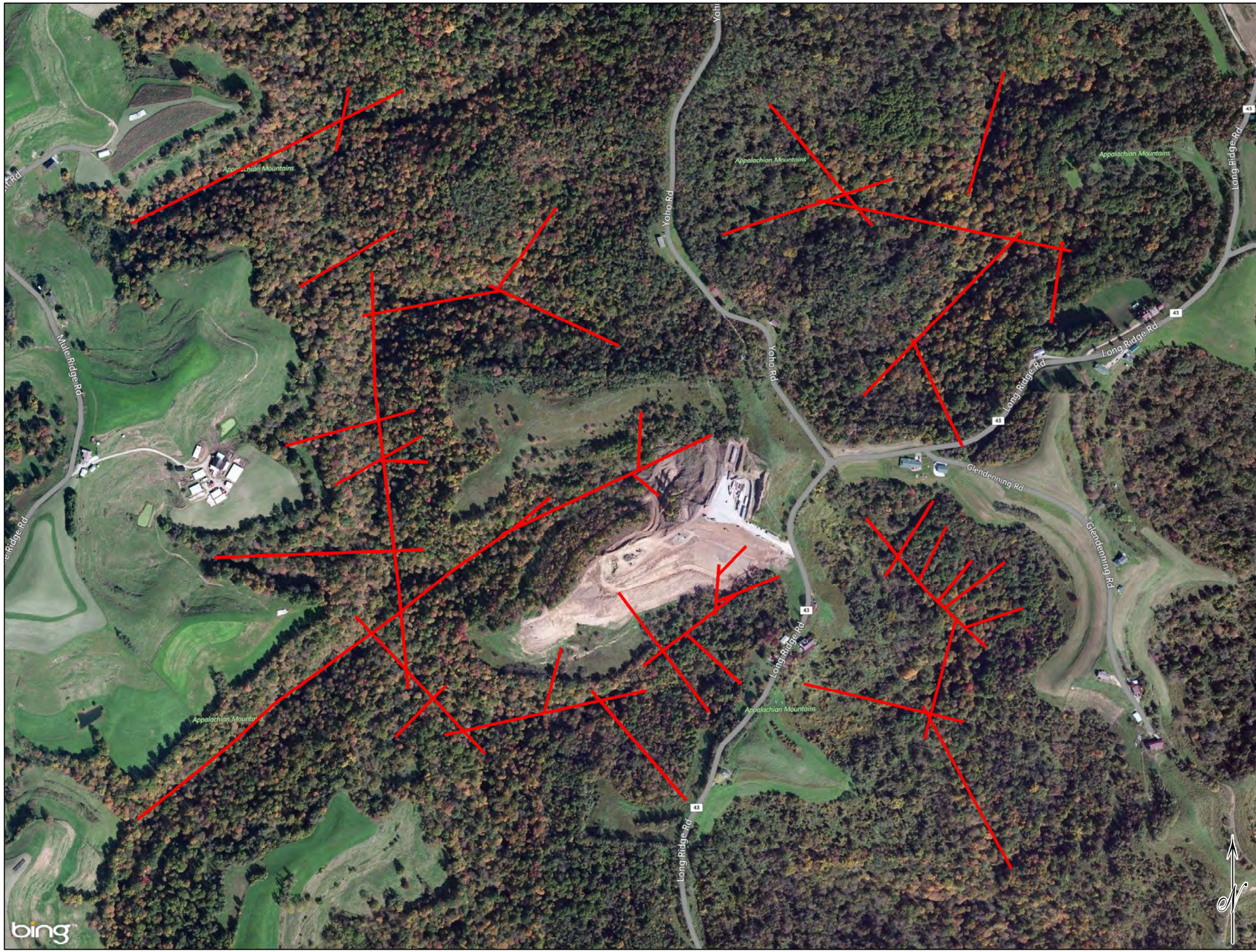
www.moody-s.com
Moody and Associates, Inc.

Drawn by:	MPS	Date:	8/31/2015
Checked by:	DJK	Revision:	



LEGEND

Apparent Fracture Trace

Scale:

0 500 1,000

Feet

1 in = 500 ft

Map References:
- Supply information retrieved by Moody and Associates, Inc.
- 7½ Minute Quadrangle: Round Bottom, OH

Notes:
- This drawing is the property of Statoil and contains information that is proprietary and confidential in nature. It may not be copied or otherwise reproduced in whole or in part without prior written consent.

FIGURE 7:
FRACTURE TRACE MAP

Eisenbarth Well Pad Site

Ohio Township,
Monroe County, OH

Project #: 14-314-LM

Prepared for : Statoil

199 Johnson Road
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Moody and Associates, Inc.

Drawn by:	BMP	Date:	8/31/2015
Checked by:	LM	Revision:	

TABLES

TABLE 1

Table 1: Summary of Response Activities for Eisenbarth Well Pad Incident	
June 28, 2014	• Fire and subsequent explosion occurred at approximately 09:00 ET on the Statoil Eisenbarth Well Pad • US EPA received a request via the National Response Center to provide air monitoring and sampling support • Based on the air monitoring results, the initial evacuation was lifted with the exception of two residences located within approximately 200 yards of the Eisenbarth Well Pad • Air and water sampling was initiated and an inceptor trench was excavated on the south side of the well pad to contain runoff; equipment was mobilized to construct an earthen berm to contain runoff and to flood the pad to extinguish remaining fires
June 29, 2014	• Unified Command was established • US EPA collected water samples from Opossum Creek • Initial construction of berm near the well pad • Monitoring and sampling conducted under guidance of the E-SAP
June 30, 2014	• On-site densometers were evaluated and found to be intact with no signs of radiation outside of background levels • Continued sampling runoff and surface water
July 1, 2014	• Explosives on the well pad were evaluated and recovered for transportation off-site by Allied • Air and water sampling continued
July 2, 2014	• Earthen berm surrounding pad completed; southeast and northwest catch basins plugged and converted into recovery sumps
July 3, 2014	• Inventory reconciliation determined that five (5) barrels of explosive materials remaining on the pad. All five missing barrels of explosive materials were located and removed by Allied • Plans to assess surrounding drinking water wells were being developed (**Appendix J**) • Proprietary components of GasPerm 1000, which was on the pad at the time of the incident, were provided by Halliburton, and after evaluation it was decided that current analytical techniques would be sufficient for assessing off-site impacts

Table 1: Summary of Response Activities for Eisenbarth Well Pad Incident	
July 4, 2014	• The well heads were inspected and found to be intact and uncompromised. The release from Well #7 was the result of a failure of the lubricator head and not a deficiency of the well head itself • Air and water sampling continued; water quality measurements indicated a return to normal ranges of dissolved oxygen
July 5, 2014	• 24 hour vacuum truck operations had been ongoing, due to water collected in the northwest catch basin • Plans to begin assessing subsurface migration pathways to the south and west of the well pad were delayed due to underground utility marking issues • Air and water sampling continued
July 6, 2014	• Soil sampling and geo-probing efforts began on the south and west slopes of the well pad
July 7, 2014	• Air and water sampling continued • Sumps and test pits were dug in the southeast corner of the pad • Sump monitoring and fluid collection/containment continued
July 8, 2014	• Air and water sampling continued • Geoprobe sampling on southern and western slopes continued • Ohio State Fire Marshall officials conducted an investigation onsite • Statoil preparing well isolation plan
July 9, 2014	• Air and water sampling continued • Geoprobe sampling on the western slopes continued • Outfall identified and had an acetone like smell; Statoil directed to contain the outfall, installed a damn below the French drain and plugged the northwest outfall
July 10, 2014	• Statoil finalized well isolation plan • Fluid collection/containment continued • Air and water sampling continued • Two additional geoprobe units were mobilized to expand and expedite slope characterization
July 11, 2014	• All wells determined to be under appropriate pressure to implement well isolation plan • Fluid collection/containment continued • Air and water sampling continued • Geoprobe soil borings continued on slopes • Unified Command to transition to a less formal incident command structure

Table 1: Summary of Response Activities for Eisenbarth Well Pad Incident	
July 12, 2014	• Statoil mobilized additional equipment to increase capacity for fluid collection/containment; fluids collected from three containment points pumped to new frac tank • Air and water sampling continued, data continues to show a decline in concentrations in the creek • Geoprobe soil borings continued on slopes
July 13, 2014	• Well isolation plan implemented • Air and water sampling continued • Fluid collection/containment continued • Geoprobe soil borings on slopes completed
July 14, 2014	• Soil sampling performed on north edge of well pad • Halliburton submitted salvage operation plan for removal of damaged equipment to ODNR for review and approval • Air and water sampling continue to show declining trends
July 15, 2014	• Offsite residential well sampling commenced • Additional soil sampling locations identified • Fluid collection/containment continued
July 16, 2014	• Offsite residential well sampling continued • Fluid collection/containment continued • Daily sampling shows analytical results well below all US EPA and Ohio EPA standards starting on July 6, 2014 • Dye testing to identify drainage path for drain on western edge of the pad, determined to drain to the sump in the northwest corner of the pad
July 17-18, 2014	• US EPA and Ohio EPA approved a revised site sampling plan to reduce the number and locations of required samples
July 19, 2014	• The WSSSAAP program replaced the E-SAP and continued until April 8, 2015
July 20, 2014	• US EPA redefined VOCs to include only acetone
July 11 to July 21, 2014	• Prior to groundwater monitoring, both the temporary monitoring wells and the existing, accessible piezometers previously installed by CTEH were developed and purged
August-September 2014	• Statoil and US EPA enter into an administrative settlement agreement and order on consent for removal action (AOC) under CERCLA • All damaged equipment, the remaining surface debris, and surface soil, was removed from the site; the waste was sent to appropriate disposal facilities

Table 1: Summary of Response Activities for Eisenbarth Well Pad Incident	
September 3, 2014	• "Draft Work Plan for Removal Actions" and the "Health and Safety Plan for the Protection of the Public" submitted to US EPA pursuant to the AOC for review
September 15, 2014	• Statoil submits OOI-SAP and Summary of Air and Environmental Sampling and Analysis to ODNR for review
October - November 2014	• Submittal of the OOI-SAP Revision 1 for ODNR review • Statoil received ODNR response following the review of OOI-SAP • Submittal of OOI-SAP Revision 2 • Review and approval of the OOI-SAP Revision 2 by ODNR • Began execution of OOI-SAP with on- and near-pad soil boring field activities
December 2014	• Comments received from US EPA in response to the Draft Work Plan • Data collected by Penn E&R from temporary monitoring wells and piezometers prior to full monitoring well development • Monitoring wells and established CTEH piezometers were purged and sampled, groundwater level data were collected by Penn E&R • Monitoring well and piezometer locations surveyed • Statoil re-submits Work Plan to US EPA in response to comments
March 2015	• Monitoring wells and CTEH piezometers were purged and sampled, groundwater level data were collected by Penn E&R
April 3, 2015	• Statoil authorized to cease sampling under the WSSSAAP by US EPA
April 7, 2015	• Statoil authorized to cease outfall containment by US EPA
April 8, 2015	• 3 day rotation of stream monitoring ceases
April 10, 2015	• Statoil authorized to cease outfall containment by ODNR and outfall containment ceases
June 24 to June 26, 2015	• 4th quarter/Final round of groundwater sampling of monitoring wells and piezometers pursuant to the OOI-SAP is completed
June 26 to July 1, 2015	• Pad reconstruction, additional soil removal
July 7, 2015	• Round 1 (of 3) of 15.a.ii stream monitoring
August 3, 2015 to August 7, 2015	• Monitoring Well Abandonment
August 13-14, 2015	• Commenced part one (of 2) of the 2015 Biological Assessment

Table 1: Summary of Response Activities for Eisenbarth Well Pad Incident	
August 24, 2015	• Round 2 stream monitoring and sampling after 3 days of no precipitation
September 2015	• Part two (of 2) of the 2015 Biological Assessment
October 2015	• Round 3 stream monitoring and sampling
Third Quarter, 2015	• Final outfall monitoring
Third Quarter, 2015	• Perform WET and WST testing
Third Quarter, 2016	• Perform WET testing, WST testing, and biological assessment

TABLE 5

STATOIL USA ONSHORE PROPERTIES, INC.

EISENBARTH WELL PAD SITE SURVEY DATA

TABLE 5

Obtained: Thursday, December 18, 2014

Location ID	Northing	Easting	Latitude	Longitude	Elevation
SB-01	622518.956	2419059.111	39°41'53.57"N	80°53'55.24"W	1297.928
SB-02	622420.247	2419187.673	39°41'52.57"N	80°53'53.62"W	1296.308
SB-03	622403.446	2419222.325	39°41'52.40"N	80°53'53.18"W	1295.922
SB-04	622370.088	2419305.066	39°41'52.06"N	80°53'52.13"W	1296.823
SB-05	622296.971	2419297.94	39°41'51.33"N	80°53'52.23"W	1296.047
SB-06	622677.853	2419001.699	39°41'55.15"N	80°53'55.94"W	1295.545
SB-07	622376.359	2419115.099	39°41'52.15"N	80°53'54.56"W	1296.754
SB-08	622334.954	2419146.672	39°41'51.74"N	80°53'54.16"W	1296.649
SB-09	622274.324	2419180.507	39°41'51.13"N	80°53'53.74"W	1296.113
SB-10	622273.797	2419119.329	39°41'51.14"N	80°53'54.52"W	1296.811
SB-11	622283.878	2419051.615	39°41'51.25"N	80°53'55.39"W	1296.876
SB-12	622342.022	2419073.951	39°41'51.82"N	80°53'55.09"W	1296.99
SB-13	622386.815	2419075.331	39°41'52.26"N	80°53'55.06"W	1296.51
SB-14	622471.582	2418990.87	39°41'53.11"N	80°53'56.12"W	1296.616
SB-15	622449.319	2418956.987	39°41'52.90"N	80°53'56.56"W	1298.053
SB-16	622444.471	2418969.322	39°41'52.85"N	80°53'56.41"W	1296.272
SB-17	622512.22	2418807.521	39°41'53.55"N	80°53'58.46"W	1263.155
SB-18	622429.319	2418789.642	39°41'52.73"N	80°53'58.71"W	1269.695
SB-19	622339.967	2418777.418	39°41'51.85"N	80°53'58.88"W	1273.919
SB-20	622538.509	2418958.156	39°41'53.78"N	80°53'56.53"W	1295.528
SB-21	622497.43	2418939.435	39°41'53.38"N	80°53'56.78"W	1295.556
SB-22	622447.048	2418919.699	39°41'52.88"N	80°53'57.04"W	1295.765
SB-23	622381.413	2418893.511	39°41'52.24"N	80°53'57.39"W	1295.349
SB-24	622311.008	2418872.644	39°41'51.55"N	80°53'57.67"W	1296.269
SB-25	622347.643	2418884.509	39°41'51.91"N	80°53'57.51"W	1296.105
SB-26	622318.292	2418956.363	39°41'51.60"N	80°53'56.60"W	1296.671
SB-27	622272.518	2418874.974	39°41'51.17"N	80°53'57.65"W	1297.067
SB-28	622245.85	2418909.378	39°41'50.90"N	80°53'57.22"W	1296.876
SB-29	622195.619	2419006.722	39°41'50.38"N	80°53'55.98"W	1296.942
SB-30	622217.678	2418939.288	39°41'50.61"N	80°53'56.84"W	1297.048
SB-31	622179.29	2419039.797	39°41'50.22"N	80°53'55.56"W	1296.616
SB-32	622166.951	2419078.735	39°41'50.09"N	80°53'55.07"W	1296.455
SB-33	622093.718	2419204.506	39°41'49.34"N	80°53'53.48"W	1293.915
SB-34	622077.826	2419295.304	39°41'49.17"N	80°53'52.32"W	1293.06
SB-35	622143.378	2419128.445	39°41'49.85"N	80°53'54.44"W	1295.959
SB-36	622129.335	2419170.306	39°41'49.70"N	80°53'53.91"W	1295.994
SB-37	622212.366	2419089.917	39°41'50.53"N	80°53'54.92"W	1296.949
SB-38	622235.303	2419099.515	39°41'50.76"N	80°53'54.79"W	1296.701
SB-39	622170.021	2419141.465	39°41'50.11"N	80°53'54.27"W	1296.061
SB-40	622220.324	2419163.916	39°41'50.60N	80°53'53.97"W	1296.346
SB-41	622197.131	2419155.303	39°41'50.37"N	80°53'54.08"W	1296.147
SB-42	621959.498	2419181.883	39°41'48.02"N	80°53'53.80"W	1251.135
GP-01	622304.494	2418756.383	39°41'51.50"N	80°53'59.16"W	1274.795
GP-02	622358.105	2418786.802	39°41'52.03"N	80°53'58.76"W	1272.493
GP-05	622487.643	2418810.421	39°41'53.30"N	80°53'58.43"W	1263.475
GP-08	622670.025	2418861.701	39°41'55.10"N	80°53'57.73"W	1253.397
GP-09	622738.675	2418863.254	39°41'55.77"N	80°53'57.70"W	1260.251
GP-19	622332.094	2418539.714	39°41'51.81"N	80°54'01.93"W	1214.705
GP-21	622455.114	2418540.375	39°41'53.03"N	80°54'01.89"W	1200.516
GP-22	622518.139	2418555.953	39°41'53.65"N	80°54'01.68"W	1196.58
GP-23	622581.058	2418577.868	39°41'54.27"N	80°54'01.38"W	1195.143
GP-24	622682.288	2418609.783	39°41'55.26"N	80°54'00.95"W	1197.003
GP-26	622030.644	2419052.282	39°41'48.75"N	80°53'55.44"W	1255.451
GP-28	621958.766	2419144.408	39°41'48.02"N	80°53'54.28"W	1245.061

Surveyed by Penn E&R

Vertical Datum is based on GPS RTN NAVD 88

TABLE 6

Statoil USA Onshore Properties, Inc.

EISENBARTH WELL PAD GROUNDWATER PURGE AND DEVELOPMENT DATA SUMMARY

TABLE 6

	Pre-Development Data (12-15-14)			Post-Development Data (12-16-14)		Purge and Sample Data		
Location ID	**Depth to Water at Installation (Boring Logs) (ft -bgs)**	**Depth to Water (Below TOC)**	**Groundwater Elevation (ft-msl)**	**Depth to Water (Below TOC)**	**Groundwater Elevation (ft-msl)**	**Measurement Date (Time)**	**Depth to Water (Below TOC)**	**Groundwater Elevation (ft-msl)**
SB-15	~26	30.08	1268.70	28.44	1270.34	12/18/14 (13:40)	28.44	1270.34
SB-20	~36	25.52	1271.68	26.23	1270.97	12/18/2014	24.86	1272.34
SB-21	~30	31.52	1266.18	31.53	1266.17	12/18/14 (13:05)	31.36	1266.34
SB-25	~20	Dry	<1273.65	Dry	<1273.65	12/18/2014	Dry	<1273.65
SB-27	~18	Dry	<1273.95	Dry	<1273.95	12/18/2014	Dry	<1273.95
SB-31	~20	NM	NA	20.65	1276.58	12/18/2014	21.24	1275.99
GP-1	Dry	Dry	<1258.16	Dry	<1258.16	12/17/2014	Dry	<1258.16
GP-2	NA	NA	NA	NA	NA	12/17/2014	NA	NA
GP-5	Dry	Dry	< 1231.97	Dry	< 1231.97	12/17/2014	Dry	< 1231.97
GP-8	~21	22.45	1234.10	22.41	1234.14	12/17/14 (12:45)	22.41	1234.14
GP-9	NA	NA	NA	NA	NA	12/17/2014	NA	NA
GP-19	~18	19.45	1197.32	21.89	1194.88	12/17/14 (12:15)	23.20	1193.57
GP-21	Dry	Dry	NA	Dry	NA	12/17/2014	Dry	NA
GP-22	NM	NM	NA	40.63	1157.47	12/17/14 (10:55)	41.03	1157.07
GP-23	NM	31.55	1165.16	31.4	1165.31	12/17/14 (10:00)	34.51	1162.20
GP-24	NM	16.58	1183.13	16.64	1183.07	12/17/14 (09:15)	18.73	1180.98
GP-26	NM	23.22	1235.00	22.38	1235.84	12/17/14 (08:10)	22.53	1235.69
GP-28	NM	14.23	1235.11	14.37	1234.97	12/17/14 (08:05)	14.66	1234.68

NA - Not Applicable
NM - Not Monitored

TABLE 7

Table 7 - Screening Levels

Statoil USA Onshore Properties, Inc.

Eisenbarth Well Pad

Analyte	Soil Screening Criteria (µg/kg)		Water Screening Criteria (µg/L)			Governing Document
	CTEH Developed Criteria	OEPA Industrial/ Commercial	OAC 3745-300-08	CTEH Developed Criteria	USEPA National DWS*	
Benzo(a)anthracene	5,210	58,000	0.92	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Benzo(a)pyrene	1,520	5,800	0.20	---	0.2	3745-300-08 Table VI Generic unrestricted potable use standard for a single chemical
Benzo(a)fluoranthene	---	---	---	---	---	---
Benzo(k)fluoranthene	148,000	580,000	9.20	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Chrysene	4,730	5,800,000	92	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Dibenz(a,h)anthrcene	18,400	5,800	0.09	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Indeno(1,2,3-c,d)pyrene	109,000	58,000	0.92	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Tributyl Tetradecyl Phosphonium Chloride (TTPC)	859,000	---	---	1	---	US EPA EcoSAR Guidance and CTEH calculation, see Appendix M
Acetone	2,500	110,000,000	12000	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Chloride	---	---	---	---	250,000	US EPA Federal Secondary Drinking Water Standard
Benzene	255	140,000	5.00	---	5	3745-300-08 Table VI Generic unrestricted potable use standard for a single chemical
Toluene	5,450	820,000	1000	---	1,000	3745-300-08 Table VI Generic unrestricted potable use standard for a single chemical
Ethylbenzene	5,160	480,000	700	---	700	3745-300-08 Table VI Generic unrestricted potable use standard for a single chemical
Xylenes	10,000	260,000	10000	---	10,000	3745-300-08 Table VI Generic unrestricted potable use standard for a single chemical
Cumene	---	270,000	390	---	---	3745-300-08 Table VII Generic unrestricted potable use standard for a single chemical
Naphthalene	99.4	450,000	1.40	---	---	3745-300-08 Table VII generic unrestricted potable use standard for a single chemical
Isopropanol	---	---	---	---	---	---
pH	---	---	---		6.5-8.5	US EPA National Secondary Drinking Water Standard

Notes:

--- = No Current Screening Level

* Drinking Water Standards (DWS)

TABLE 8

STATOIL USA ONSHORE PROPERTIES! INC.

EISENBARTH WELL PAD MONITORING WELL PURGING DATA

TABLE 8

Well ID	Date	Time	Well Depth (ft)	Explosimeter Borehole Reading	Purge Volume (3 Wellbore Volumes) (gal)	Depth to Water (ft)	Flow Meter Reading	Volume Purged (gal)	Temp (°C)	pH	Electrical Conductivity (mmho)	Turbidity (N.T.U.)	Comments	Were piezometers developed (Y/N)
GP-1	12/12/2014	NA (Not Applicable)	19.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-1	12/16/2014	NA	19.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-2	12/12/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well casing crushed, can not access	Y
GP-5	12/12/2014	NA	34.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-5	12/16/2014	NA	34.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-8	12/16/2014	1620	26.48	NA	0.51	22.41	NA	0.00	9.90	6.76	0.556	NA		Y
GP-8	12/16/2014	1625	26.48	NA	0.51	NA	NA	0.10	12.06	6.88	0.598	NA		Y
GP-8	12/16/2014	1627	26.48	NA	0.51	NA	NA	0.25	12.21	7.00	0.609	NA		Y
GP-8	12/16/2014	1630	26.48	NA	0.51	NA	NA	0.50	12.25	7.01	0.607	NA		Y
GP-8	12/17/2014	1245	26.48	NA	NA	22.41	NA	NA	5.25	6.75	0.541	NA	Samples following previoys days' purge	Y
GP-9	12/12/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well casing crushed, can not access	Y
GP-19	12/16/2014	1605	24.99	NA	0.11	21.89	NA	0	12.5	6.24	0.455	NA	Dry after removing 0.1 gallons	Y
Gp-19	12/17/2015	1215	24.99	NA	NA	23.2	NA	NA	NA	NA	NA	NA	Due to low water volume, collected sample immediately	Y
GP-21	12/12/2014	NA	29.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-21	2/16/2015	NA	29.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-22	12/13/2014	947	41.69	NA	0.04	40.05	NA	NA	9.38	5.94	0.374	NA	Dry after removing 1.5 bailers	Y
GP-22	12/17/2014	1055	41.69	NA	0.04	41.03	NA	NA	NA	NA	NA	NA	Due to low water volume, collected sample immediately	Y
GP-23	12/13/2014	928	39.46	NA	1	31.55	NA	0	5.51	5.32	0.33	NA		Y
GP-23	12/13/2014	936	39.46	NA	1	NA	NA	NA	6.18	6.17	0.245	NA	Water is less turbid	Y
GP-23	12/13/2014	941	39.46	NA	1	NA	NA	NA	5.74	6.09	0.217	NA	Well is becoming dry	Y
GP-23	12/13/2014	944	39.46	NA	1	NA	NA	0.5	5.95	6.1	0.229	NA		Y
GP-23	12/13/2014	945	39.46	NA	1	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
GP-23	12/16/2014	1530	39.46	NA	1	31.4	NA	0	11.49	6.35	0.277	NA		Y
GP-23	12/16/2014	1537	39.46	NA	1	NA	NA	0.1	12.12	5.96	0.274	NA		Y
GP-23	12/16/2014	1540	39.46	NA	1	NA	NA	0.2	11.94	5.95	0.27	NA		Y
GP-23	12/16/2014	1545	39.46	NA	1	NA	NA	0.3	12.46	6.01	0.267	NA		Y
GP-23	12/16/2014	1551	39.46	NA	1	NA	NA	0.4	12.23	6.07	0.233	NA	Well is dry	Y
GP-23	12/16/2014	1553	39.46	NA	1	NA	NA	0.5	NA	NA	NA	NA		Y
GP-23	12/17/2014	1000	39.46	NA	1	34.51	NA	NA	7.19	6.04	0.202	NA	Samples collected	Y
GP-24	12/13/2014	904	24.75	NA	1	16.61	NA	NA	9.75	7.31	0.551	NA		Y
GP-24	12/13/2014	908	24.75	NA	1	NA	NA	0.5	11.4	6.94	0.561	NA		Y
GP-24	12/13/2014	910	24.75	NA	1	NA	NA	0.5	NA	NA	NA	NA	Well is dry	Y
GP-24	12/16/2014	1516	24.75	NA	1	16.64	NA	0	12.37	6.84	0.429	NA		Y
GP-24	12/16/2014	1518	24.75	NA	1	NA	NA	0.1	13.05	6.79	0.399	NA		Y
GP-24	12/16/2014	1520	24.75	NA	1	NA	NA	0.4	NA	NA	NA	NA	Well is dry	Y
GP-24	12/17/2014	915	24.75	NA	1	18.73	NA	NA	9.38	6.88	0.438	NA	Samples collected	Y
GP-26	12/15/2014	820	29.55	NA	0.87	23.22	NA	0	8.07	6.71	0.91	NA	Wateris turbid	Y
GP-26	12/15/2014	825	29.55	NA	0.87	NA	NA	0.25	11.76	6.26	1.031	NA		Y
GP-26	12/15/2014	831	29.55	NA	0.87	NA	NA	0.5	10.29	6.5	0.719	NA		Y
GP-26	12/15/2014	838	29.55	NA	0.87	NA	NA	0.5-0.75	9.18	6.04	0.641	NA	Well is dry	Y
GP-26	12/16/2014	1400	29.55	NA	0.89	NA	NA	NA	11.53	6.17	0.837	NA		Y
GP-26	12/16/2014	1403	29.55	NA	0.89	NA	NA	NA	12.98	6.15	0.745	NA		Y
GP-26	12/16/2014	1405	29.55	NA	0.89	NA	NA	NA	12.98	6.06	0.692	NA		Y
GP-26	12/16/2014	1409	29.55	NA	0.89	NA	NA	NA	13.04	5.94	0.596	NA		Y
GP-26	12/16/2014	1413	29.55	NA	0.89	NA	NA	NA	12.59	5.94	0.596	NA	Well is dry	Y
GP-26	12/17/2014	810	29.55	NA	0.89	22.53	NA	NA	NA	6.17	0.594	NA	Samples collected	Y
GP-28	12/13/2014	800	14.66	NA	0.02	14.06	NA	NA	6.32	6.31	1.664	NA	well went dry immediately	Y
GP-28	12/16/2014	1350	14.66	NA	NA	14.37	NA	NA	NA	NA	NA	NA	well went dry immediately	Y
GP-28	12/17/2014	NA	14.66	NA	NA	14.66	NA	NA	NA	NA	NA	NA	Well is dry-no sample was collected	Y
SB-15	12/13/2014	1414	30.1	NA	0.27	NA	NA	NA	11.58	6.82	1.38	NA		Y
SB-15	12/13/2014	1424	30.1	NA	0.27	NA	NA	NA	11.74	6.86	1.33	NA		Y
SB-15	12/13/2014	1430	30.1	NA	0.27	NA	NA	0.5	NA	NA	NA	NA	Well is dry	Y
SB-15	12/18/2014	1345	30.1	NA	0.27	NA	NA	0	5.61	6.87	1.132	NA		Y
SB-15	12/18/2014	1347	30.1	NA	0.27	NA	NA	0.3	10.39	6.9	1.337	NA		Y
SB-15	12/18/2014	1350	30.1	NA	0.27	NA	NA	0.6	11.67	6.94	1.38	NA		Y
SB-15	12/18/2014	1400	30.1	NA	0.27	NA	NA	1	NA	NA	NA	NA	3+ volumes removed, begin sampling	Y
SB-20	12/13/2014	1150	40	NA	2.33	25.7	NA	0	9.99	7.01	0.887	NA		Y
SB-20	12/13/2014	1155	40	NA	2.33	NA	NA	NA	8.97	7.01	0.951	NA		Y
SB-20	12/13/2014	1205	40	NA	2.33	NA	NA	NA	9.7	7.01	0.975	NA		Y
SB-20	12/13/2014	1215	40	NA	2.33	NA	NA	NA	10.65	6.95	0.993	NA		Y
SB-20	12/13/2014	1220	40	NA	2.33	NA	NA	NA	10.63	7.01	0.997	NA		Y
SB-20	12/13/2014	1225	40	NA	2.33	NA	NA	2.5	10.3	7.01	0.98	NA		Y
SB-20	12/13/2014	1235	40	NA	2.33	NA	NA	3	10.6	6.99	1.012	NA	Development complete	Y
SB-20	12/18/2014	1018	40	NA	2.5	24.86	NA	NA	10.93	7	1.087	NA		Y
SB-20	12/18/2014	1044	40	NA	2.5	NA	NA	NA	10.99	7.06	1.059	NA		Y
SB-20	12/18/2014	1059	40	NA	2.5	NA	NA	NA	12.3	7.1	1.128	NA		Y
SB-20	12/18/2014	1115	40	NA	2.5	NA	NA	NA	11.61	6.99	1.094	NA		Y
SB-20	12/18/2014	1130	40	NA	2.5	NA	NA	NA	11.65	7.01	1.093	NA		Y
SB-20	12/18/2014	1145	40	NA	2.5	NA	NA	NA	11.49	6.99	1.082	NA		Y
SB-20	12/18/2014	1159	40	NA	2.5	NA	NA	7.5	11.8	7.02	1.098	NA		Y
SB-20	12/18/2014	1200	40	NA	2.5	NA	NA	NA	NA	NA	NA	NA	Begin collecting samples	Y
SB-21	12/13/2014	1308	35	NA	0.57	31.52	NA	0	8.18	6.68	0.992	NA		Y
SB-21	12/13/2014	1318	35	NA	0.57	NA	NA	NA	10.72	6.85	1.131	NA		Y
SB-21	12/13/2014	1331	35	NA	0.57	NA	NA	NA	10.36	6.79	1.126	NA		Y
SB-21	12/13/2014	1340	35	NA	0.57	NA	NA	NA	10.87	6.86	1.146	NA		Y
SB-21	12/13/2014	1350	35	NA	0.57	NA	NA	NA	11.08	6.87	1.167	NA		Y
SB-21	12/13/2014	1354	35	NA	0.57	NA	NA	1.5	NA	NA	NA	NA		Y
SB-21	12/18/2014	1305	35	NA	1.8	31.36	NA	0	9.01	6.88	1.073	NA		Y
SB-21	12/18/2014	NA	35	NA	1.8	NA	NA	1	12.57	6.84	1.246	NA		Y
SB-21	12/18/2014	NA	35	NA	1.8	NA	NA	2	12.04	6.86	1.261	NA		Y
SB-21	12/18/2014	1320	35	NA	1.8	NA	NA	NA	NA	NA	NA	NA	Three volumes removed	Y
SB-25	12/12/2014	NA	23.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
SB-25	12/16/2014	NA	23.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
SB-27	12/12/2014	NA	25.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
SB-27	12/16/2014	NA	25.35	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well is dry	Y
SB-31	12/13/2014	1448	30.15	NA	2.7	21.8	NA	0	NA	NA	NA	NA		Y
SB-31	12/13/2014	1450	30.15	NA	2.7	NA	NA	NA	11.69	6.86	1.267	NA		Y
SB-31	12/13/2014	1456	30.15	NA	2.7	NA	NA	NA	11.63	6.83	1.227	NA		Y
SB-31	12/13/2014	1500	30.15	NA	2.7	NA	NA	NA	11.81	6.81	1.246	NA		Y
SB-31	12/13/2014	1505	30.15	NA	2.7	NA	NA	NA	11.55	6.82	1.257	NA		Y
SB-31	12/13/2014	1510	30.15	NA	2.7	NA	NA	NA	11.33	6.84	1.213	NA		Y
SB-31	12/13/2014	1500	30.15	NA	2.7	NA	NA	2	NA	NA	NA	NA	Water is clear	Y
SB-31	12/18/2014	743	30.15	NA	4.36	21.24	NA	0	11.76	6.44	1.538	NA		Y
SB-31	12/18/2014	750	30.15	NA	4.36	NA	NA	NA	10.2	6.56	1.53	NA		Y
SB-31	12/18/2014	801	30.15	NA	4.36	NA	NA	NA	10.19	6.66	1.497	NA		Y
SB-31	12/18/2014	816	30.15	NA	4.36	NA	NA	NA	10.62	6.65	1.456	NA		Y
SB-31	12/18/2014	835	30.15	NA	4.36	NA	NA	NA	10.33	6.68	1.448	NA		Y
SB-31	12/18/2014	850	30.15	NA	4.36	NA	NA	4.5	NA	NA	NA	NA	Sampled collected	Y

TABLE 10

EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-1 0'-2'	SB-1 2'-4'	SB-2 0'-2'	SB-2 4'-6'	SB-3 0'-2'	SB-4 0'-2'	SB-4 2'-4'	SB-5 0'-2'	SB-5 2'-4'	SB-6 0'-2'	SB-6 24'-26'	SB-7 0'-2'	SB-7 4'-6'	SB-8 0'-2'
					Collection Date	11/24/14	11/24/14	11/24/14	11/24/14	11/25/14	11/25/14	11/25/14	11/25/14	11/25/14	11/25/14	11/25/14	11/25/14	11/25/14	11/25/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	13:50	14:25	14:45	15:10	8:41	9:41	9:51	10:23	10:37	11:30	13:25	14:55	15:15	15:30
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		< 1.5	< 1.4	< 1.5	< 1.4	< 1.5	< 1.4	< 1.3	< 1.4	< 1.4	8.6	< 1.5	15	< 1.4	6.2 J
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.5	< 2.3	< 2.4	< 2.3	< 2.5	< 2.4	< 2.2	< 2.3	< 2.3	24	< 2.5	28	< 2.3	< 2.2
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.2	< 2.1	< 2.2	< 2.0	< 2.3	< 2.2	< 2.0	< 2.0	< 2.0	19	< 2.3	24	< 2.1	< 2.0
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.6	< 1.5	< 1.6	< 1.5	< 1.6	< 1.6	< 1.4	< 1.5	< 1.5	16	< 1.6	17	< 1.5	< 1.4
chrysene	4,730	4,730	5,800,000	µg/kg-dry		< 1.8	< 1.7	< 1.8	< 1.6	< 1.8	< 1.7	< 1.6	< 1.7	< 1.6	5.9 J	< 1.8	13	< 1.7	3.8 J
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.8	< 2.7	< 2.8	< 2.6	< 2.9	< 2.7	< 2.5	< 2.6	< 2.9	< 2.9	< 2.9	< 2.5	< 2.6	< 2.5
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.5	< 2.4	< 2.5	< 2.3	< 206	< 2.4	< 2.3	< 2.3	< 2.3	20	< 2.6	20	< 2.3	< 2.3
Acetone	2,500	2,500	110,000,000	µg/kg-dry		31	16	13	13	21	18	10	21	14	43	15	29	9.2 J	20
Benzene	255	255	140,000	µg/kg-dry		8.3	13	4.1 J	0.46 J	8.7	1.6 J	1.6 J	1.8 J	2.3 J	13	30	4.3 J	1.1 J	1.8 J
Toluene	5,450	5,450	820,000	µg/kg-dry		7.2	8.1	1.1 J	< 0.25	3.5 J	1.7 J	0.71 J	2.7 J	0.80 J	12	12	6.7	1.3 J	3.6 J
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		1.4 J	2.6 J	0.20 J	< 0.20	0.76 J	0.32 J	< 0.17	0.44 J	< 0.2	1.8 J	3.3 J	1.4 J	0.24 J	0.92 J
xylenes	10,000	10,000	260,000	µg/kg-dry		3.2 J	3.6 J	< 0.49	< 0.61	1.3 J	1.1 J	< 0.50	1.5 J	< 0.6	4.5 J	5.3 J	4.6 J	1.0 J	2.1 J
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		0.22 J	0.33 J	< 0.17	< 0.20	0.26 J	< 0.15	< 0.17	< 0.20	< 0.2	0.29 J	0.42 J	0.25 J	< 0.2	< 0.21
naphthalene	99.4	99	450,000	µg/kg-dry		< 1.1	< 1.2	< 1.1	< 1.3	< 1.1	< 0.97	< 1.1	< 1.3	< 1.3	< 1.4	< 1.4	< 1.4	< 1.3	< 1.4
Isopropanol	---	---	---	µg/kg-dry		< 0.00052	< 0.00051	< 0.00054	< 0.00046	< 0.00041	< 0.00048	< 0.00049	< 0.00047	< 0.00045	< 0.00053	< 0.00051	< 0.00044	< 0.00046	< 0.00046
pH (Laboratory)	---	---	---	S.U.		7.8	7.9	8.3	8.3	8.2	8.7	9	9	8.9	8.0	7.9	8.2	8.2	8.3
TTPC	859,330	---	---	µg/kg		39.7	< 0.286	0.286	< 0.264	0.812	< 0.277	< 0.258	< 0.262	< 0.261	2.65	< 0.288	26.4	0.542	52.2
PID	---	---	---	ppm		0.5	0.6	0.4	1.0	0.2	0.3	0.6	0.4	0.4	0.3	1	0.5	0.5	0.7

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--- No Screening or Action Level
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S.U. = Standard Units

EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-8 4'-6'	SB-9 0'-2'	SB-9 2'-4'	SB-9 2'-4' DUPE-1	SB-10 0'-2'	SB-10 2'-4'	SB-11 0'-2'	SB-11 2'-4'	SB-12 0'-2'	SB-12 2'-4'	SB-13 0'-2'	SB-13 4'-6'	SB-14 0'-2'	SB-14 2'-4'
					Collection Date	11/25/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14	12/03/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	15:40	10:32	10:37	10:37	11:05	11:20	12:40	12:50	13:30	13:45	14:25	14:40	15:15	15:35
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		< 1.4	8.9	< 1.4	8.6	< 1.4	< 1.4	9.6	< 1.3	< 1.4	28	10	< 1.4	< 1.5	< 1.5
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.3	< 2.4	< 2.3	12	< 2.3	< 2.3	11	< 2.2	< 2.3	30	< 2.2	< 2.3	< 2.5	< 2.4
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.1	< 2.2	< 2.1	9.6	< 2.1	< 2.1	11	< 2.0	< 2.1	39	< 2.0	< 2.0	< 2.2	< 2.2
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.5	< 1.6	< 1.5	5.5 J	< 1.5	< 1.5	6.0 J	< 1.4	< 1.5	19	< 1.5	< 1.5	< 1.6	< 1.6
chrysene	4,730	4,730	5,800,000	µg/kg-dry		< 1.7	5.2 J	< 1.7	4.1 J	< 1.7	< 1.7	5.0 J	< 1.6	< 1.7	21	5.5 J	< 1.7	< 1.8	< 1.7
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.6	< 2.8	< 2.6	6.2 J	< 2.7	< 2.7	< 2.6	< 2.5	< 2.6	10	< 2.6	< 2.6	< 2.8	< 2.7
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.3	< 2.5	< 2.3	11	< 2.4	< 2.4	14	< 2.3	< 2.4	26	< 2.3	< 2.3	< 2.5	< 2.4
Acetone	2,500	2,500	110,000,000	µg/kg-dry		9.7 J	9.3 J	< 0.87	< 0.93	12 J	2.9 J	< 0.86	10 J	< 68	6.3 J	< 68	< 0.92	< 73	3.9 J
Benzene	255	255	140,000	µg/kg-dry		0.43 J	< 0.35	< 0.23	< 0.25	< 0.32	0.26 J	0.24 J	< 0.28	< 13	< 0.26	< 13	< 0.24	< 14	< 0.27
Toluene	5,450	5,450	820,000	µg/kg-dry		0.43 J	0.66 J	0.30 J	0.25 J	0.99 J	0.72 J	0.43 J	0.70 J	< 12	0.28 J	< 12	0.40 J	25 J	0.42 J
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		< 0.2	< 0.27	< 0.18	< 0.19	< 0.25	0.20 J	< 0.18	< 0.22	< 12	< 0.2	< 12	< 0.19	14 J	< 0.21
xylenes	10,000	10,000	260,000	µg/kg-dry		< 0.6	< 0.81	< 0.53	< 0.57	< 0.75	< 0.51	< 0.53	< 0.65	< 38	< 0.61	< 38	< 0.56	< 41	< 0.63
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		< 0.2	< 0.27	< 0.18	< 0.19	< 0.25	< 0.17	< 0.18	< 0.22	< 14	< 0.2	< 14	< 0.19	< 15	< 0.21
naphthalene	99.4	99	450,000	µg/kg-dry		< 1.3	< 1.8	< 1.2	< 1.2	< 1.6	< 1.1	< 1.2	< 1.4	< 14	< 1.3	< 14	< 1.2	< 15	< 1.4
Isopropanol	---	---	---	µg/kg-dry		< 0.00045	< 0.00049	< 0.00048	< 0.00049	< 0.00051	< 0.00049	< 0.00047	< 0.00046	< 0.00048	< 0.00047	< 0.00047	< 0.00049	< 0.00042	< 0.00053
pH (Laboratory)	---	---	---	S.U.		8.2	8.6	8.7	8.7	8.3	8.3	8.3	8.3	8.3	8.6	8.6	8.3	8.4	8.2
TTPC	859,330	---	---	µg/kg		< 0.265	39.0	0.265	0.266	113.0	11.8	78.30	19.4	16.30	0.757	12.0	0.413	23.40	3.57
PID	---	---	---	ppm		0.2	0.4	0.6	NT	1.5	0.6	1.4	0.2	0.8	0.4	0.7	1.1	2.0	0.7

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EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-15 2'-4'	SB-15 26'-28'	SB-15 28'-30'	SB-16 0'-2'	SB-16 8'-10'	SB-17 0'-2'	SB-17 26'-28'	SB-18 0'-2'	SB-18 32'-34'	SB-19 0'-2'	SB-19 2'-4'	SB-20 0'-2'	SB-20 32'-34'	SB-21 0'-2'
					Collection Date	12/03/14	12/04/14	12/05/14	12/04/14	12/04/14	12/04/14	12/04/14	12/05/14	12/05/14	12/08/14	12/08/14	12/08/14	12/08/14	12/08/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	17:50	9:15	9:25	11:15	11:42	15:15	17:20	11:20	13:50	8:05	8:20	9:45	12:25	15:24
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		< 1.5	11		16	8.8	< 1.5	< 1.4	< 1.6	< 1.4	17	< 1.5	< 1.5	< 1.4	< 1.5
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.4	12		13	< 2.5	< 2.5	< 2.4	< 2.6	< 2.4	19	< 2.5	< 2.5	< 2.3	< 2.5
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.2	15		14	< 2.2	< 2.3	< 2.1	< 2.4	< 2.1	22	< 2.2	< 2.2	< 2.1	< 2.3
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.6	6.0 J		5.5 J	< 1.6	< 1.6	< 1.5	< 1.7	< 1.5	11	< 1.6	< 1.6	< 1.5	< 1.6
chrysene	4,730	4,730	5,800,000	µg/kg-dry		< 1.8	6.4 J		7.8 J	5.3 J	< 1.8	< 1.7	< 1.9	< 1.7	16	< 1.8	< 1.8	< 1.7	< 1.9
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.8	< 2.8		< 2.9	< 2.8	< 2.9	< 2.7	< 3.0	< 2.7	< 3.0	< 2.9	< 2.8	< 2.7	< 2.9
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.5	13		10	< 2.5	< 2.6	< 2.4	< 2.7	< 2.4	20	< 2.6	< 2.5	< 2.4	< 2.6
Acetone	2,500	2,500	110,000,000	µg/kg-dry		20	11		< 76	20	40	36	50	12 J	< 0.89	< 0.88	65	19	20
Benzene	255	255	140,000	µg/kg-dry		< 0.24	< 0.25		< 14	2.8 J	13	44	8.8	22	< 0.24	< 0.23	3.4 J	49	5.7
Toluene	5,450	5,450	820,000	µg/kg-dry		0.35 J	0.43 J		< 13	1.3 J	7.6	18	4.6 J	11	0.29 J	0.52 J	1.8 J	26	2.8 J
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		< 0.18	< 0.19		< 13	0.26 J	2.0 J	4.1 J	1.0 J	3.0 J	< 0.18	< 0.18	0.37 J	5.4	0.60 J
xylenes	10,000	10,000	260,000	µg/kg-dry		< 0.55	< 0.57		< 42	< 0.54	3.0 J	7.5	2.0 J	4.2 J	< 0.55	< 0.54	< 0.62	13	0.96 J
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		< 0.18	< 0.19		< 15	< 0.18	0.22 J	0.59 J	< 0.20	0.35 J	< 0.18	< 0.18	< 0.21	0.75 J	< 0.17
naphthalene	99.4	99	450,000	µg/kg-dry		< 1.2	< 1.3		< 16	< 1.2	< 1.3	< 1.4	< 1.3	< 1.5	< 1.2	< 1.2	< 1.4	< 1.3	< 1.1
Isopropanol	---	---	---	µg/kg-dry		< 0.00050	< 0.00050		< 0.00047	< 0.00054	< 0.00053	< 0.00048	< 0.00052	< 0.00053	< 0.00057	< 0.00049	< 0.00052	< 0.00047	< 0.00056
pH (Laboratory)	---	---	---	S.U.		8.1	8.3		8.4	7.8	7.1	8.3	7.6	8.1	7.6	7.6	7.6	7.9	7.5
TTPC	859,330	---	---	µg/kg		13.7	< 0.287		720.0	7.85	< 0.312	< 0.272	10.7	> 0.275	1.14	6.65	0.343	< 0.270	0.355
PID	---	---	---	ppm		ND	NT	ND	1.2	1.7	ND	1.1	0.2	0.5	ND	0.1	ND	0.2	0.3

J = Detected above method limit but below the limit of quantitation
--- No Screening or Action Level
NT = Not Tested
ND = Not Detected above method limit
S.U. = Standard Units

EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-21 10'-12'	SB-22 0'-2'	SB-22 6'-8'	SB-22 0'-2' DUP-2	SB-23 0'-2'	SB-23 18'-20'	SB-24 0'-2'	SB-24 8'-10'	SB-25 0'-2'	SB-25 12'-14'	SB-26 0'-2'	SB-26 6'-7'	SB-27 0'-2'	SB-27 2'-4'
					Collection Date	12/08/14	12/09/14	12/09/14	12/09/14	12/09/14	12/10/14	12/09/14	12/09/14	12/10/14	12/10/14	12/10/14	12/10/14	12/10/14	12/10/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	16:45	9:40	10:45	9:40	14:35	13:15	15:35	17:00	11:00	12:30	15:05	15:40	16:00	16:05
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		< 1.5	10	< 1.4	13	< 1.5	65	< 1.5	< 1.4	17	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.4	< 2.3	< 2.4	< 2.3	< 2.5	46	< 2.4	< 2.3	19	< 2.4	< 2.3	< 2.3	< 2.4	< 2.4
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.2	< 2.1	< 2.1	< 2.0	< 2.3	65	< 2.2	< 2.1	30	< 2.1	< 2.1	< 2.0	< 2.2	< 2.1
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.6	< 1.5	< 1.5	< 1.5	< 1.6	29	< 1.6	< 1.5	13	< 1.5	< 1.5	< 1.5	< 1.6	< 1.5
chrysene	4,730	4,730	5,800,000	µg/kg-dry		< 1.8	20	< 1.7	19	< 1.8	58	< 1.8	< 1.7	31	< 1.7	< 1.7	< 1.6	< 1.7	< 1.7
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.8	< 2.6	< 2.7	< 2.6	< 2.9	15	< 2.8	< 2.6	< 2.7	< 2.7	< 2.7	< 2.6	< 2.7	< 2.7
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.5	< 2.4	< 2.4	< 2.3	< 2.6	33	< 2.5	< 2.3	15	< 2.4	< 2.4	< 2.3	< 2.4	< 2.4
Acetone	2,500	2,500	110,000,000	µg/kg-dry		8.9	29	13	23	3.1 J	20	< 1.0	9.0 J	< 71	7.4 J	< 0.82	< 71	< 0.88	4.5 J
Benzene	255	255	140,000	µg/kg-dry		3.2 J	2.4 J	2.2 J	2.8 J	< 0.28	< 0.24	< 0.27	< 0.25	< 13	< 0.21	< 0.22	< 14	< 0.23	< 0.22
Toluene	5,450	5,450	820,000	µg/kg-dry		1.2 J	4.6 J	0.78 J	4.4 J	0.39 J	0.33 J	0.38 J	0.51 J	< 13	0.83 J	0.55 J	< 13	0.29 J	0.34 J
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		0.21 J	1.3 J	< 0.17	0.95 J	< 0.22	< 0.19	< 0.21	< 0.20	< 12	< 0.17	< 0.17	< 12	< 0.18	< 0.17
xylenes	10,000	10,000	260,000	µg/kg-dry		< 0.48	2.7 J	< 0.50	2.1 J	< 0.64	< 0.56	< 0.63	< 0.59	< 39	< 0.50	< 0.50	< 40	< 0.54	< 0.51
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		< 0.16	< 0.18	< 0.17	< 0.18	< 0.22	< 0.19	< 0.21	< 0.20	< 14	< 0.17	< 0.17	< 14	< 0.18	< 0.17
naphthalene	99.4	99	450,000	µg/kg-dry		< 1.0	< 1.2	< 1.1	< 1.2	< 1.4	< 1.2	< 1.4	< 1.3	30 J	< 1.1	< 1.1	< 15	< 1.2	< 1.1
Isopropanol	---	---	---	µg/kg-dry		< 0.00048	< 0.00046	< 0.00051	< 0.00050	< 0.00051	< 0.00053	< 0.00048	< 0.00045	< 0.00046	< 0.00050	< 0.00050	< 0.00049	< 0.00049	< 0.00051
pH (Laboratory)	---	---	---	S.U.		7.8	8.4	8.1	8.3	8	7.8	8.0	8.1	8.7	8.0	8.2	8.2	8.2	7.8
TTPC	859,330	---	---	µg/kg		< 0.281	16.2	< 0.268	70.50	5.23	< 0.301	27.10	< 0.267	11.1	0.336	36.80	< 0.264	35.3	0.645
PID	---	---	---	ppm		0.9	0.2	0.4	NT	ND	0.3	1.1	3.1	0.5	1.6	0.4	11.7	0.7	0.3

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S.U. = Standard Units

EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-28 0'-2'	SB-28 10'-12'	SB-29 0'-2'	SB-29 28'-30'	SB-30 0'-2'	SB-30 10'-12'	SB-31 0'-2'	SB-31 2'-4'	SB-32 0'-2'	SB-32 30'-31'	SB-33 0'-2'	SB-33 0'-2' DUP-3	SB-33 8'-10'	SB-34 0'-2'
					Collection Date	12/11/14	12/11/14	12/11/14	12/11/14	12/11/14	12/11/14	12/11/14	12/11/14	12/11/14	12/12/14	12/15/14	12/15/14	12/15/14	12/15/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	9:15	10:15	10:28	12:55	12:00	12:45	13:50	14:10	15:50	12:30	9:20	9:10	9:55	8:33
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		11	< 1.5	< 1.4	< 1.4	< 1.5	< 1.5	< 1.4	< 1.6	< 1.5	< 1.5	12	16	750	15
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.2	< 2.5	< 2.3	< 2.3	< 2.5	< 2.5	< 2.3	< 2.6	< 2.5	< 2.4	< 2.6	33	550	< 2.3
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.0	< 2.3	< 2.1	< 2.0	< 2.2	< 2.2	< 2.1	< 2.4	< 2.2	< 2.2	< 2.3	29	700	< 2.1
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.5	< 1.6	< 1.5	< 1.5	< 1.6	< 1.6	< 1.5	< 1.7	< 1.6	< 1.6	< 1.7	21	310	< 1.5
chrysene	4,730	4,730	5,800,000	µg/kg-dry		7.2	< 1.8	< 1.7	< 1.6	< 1.8	< 1.8	< 1.7	< 1.9	< 1.8	< 1.8	< 1.9	< 1.9	740	< 1.7
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.6	< 2.9	< 2.6	< 2.6	< 2.8	< 2.9	< 2.7	< 3.0	< 2.8	< 2.8	< 2.9	< 3.0	79	< 2.6
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.3	< 2.6	< 2.3	< 2.3	< 2.5	< 2.5	< 2.4	< 2.7	< 2.5	< 2.5	< 2.6	30	280	< 2.3
Acetone	2,500	2,500	110,000,000	µg/kg-dry		< 100	4.7 J	< 67	8.6 J	19	35	< 1.0	< 78	< 1.1	< 0.91	3.6 J	< 2.6	7.3	< 2.9
Benzene	255	255	140,000	µg/kg-dry		< 19	< 0.24	< 13	0.77 J	< 0.26	< 0.21	< 0.27	< 15	< 0.29	< 0.24	< 0.63	< 0.53	< 0.54	< 0.6
Toluene	5,450	5,450	820,000	µg/kg-dry		< 18	< 0.23	< 12	0.64 J	0.26 J	0.49 J	7.0	< 14.0	< 0.27	0.52 J	< 1.3	< 1.1	< 1.1	< 1.2
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		< 18	< 0.19	< 12	< 0.22	< 0.20	< 0.16	< 0.21	< 14	< 0.22	< 0.19	< 0.62	< 0.52	< 0.53	< 0.59
xylenes	10,000	10,000	260,000	µg/kg-dry		< 57	< 0.57	< 37	< 0.65	< 0.60	< 0.49	60	< 44	< 0.67	< 0.56	< 1.2	< 1.0	< 1.0	< 1.2
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		< 21	< 0.19	< 14	< 0.22	< 0.20	< 0.16	< 0.21	< 16	< 0.22	< 0.19	< 0.73	< 0.62	< 0.63	< 0.70
naphthalene	99.4	99	450,000	µg/kg-dry		< 21	< 1.2	< 14	< 1.4	< 1.3	< 1.1	< 1.4	< 16	< 1.5	< 1.2	< 1.0	< 0.88	< 0.89	< 0.99
Isopropanol	---	---	---	µg/kg-dry		< 0.00049	< 0.00050	< 0.00044	< 0.00046	< 0.00047	< 0.00055	< 0.00045	< 0.00054	< 0.00049	< 0.00049	< 0.00055	< 0.00054	< 0.00053	< 0.00048
pH (Laboratory)	---	---	---	S.U.		8.7	8.4	9.0	8.4	8.4	7.1	9.1	7.1	8.5	8.1	7.7	7.7	6.5	8.8
TTPC	859,330	---	---	µg/kg		1.75	< 0.275	52.40	0.567	0.949	< 0.284	14.90	0.647	106.0	< 0.287	2,080.0	225.0	53.1	94.5
PID	---	---	---	ppm		1.1	1.4	0.4	ND	0.2	3.2	45.1	135	5.2	6.0	3.0	NT	5.1	ND

J = Detected above method limit but below the limit of quantitation
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S.U. = Standard Units

EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-34 8'-10'	SB-35 0'-2'	SB-35 2'-4'	SB-36 0'-2'	SB-36 4'-6'	SB-37 0'-2'	SB-37 2'-4'	SB-37 4'-6'	SB-38 0'-2'	SB-38 2'-4'	SB-39 0'-2'	SB-39 2'-4'	SB-40 0'-2'	SB-40 2'-4'
					Collection Date	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14	12/15/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	9:12	9:55	10:12	11:40	12:10	13:50	14:00	14:20	15:40	15:50	15:15	15:25	16:30	16:50
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		< 1.4	< 1.5	< 1.6	< 1.4	26	17	14		< 1.4	< 1.4	< 1.4	< 1.4	16	< 1.4
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.4	< 2.5	< 2.6	< 2.3	< 2.5	32	< 2.6		< 2.2	< 2.3	< 2.3	< 2.4	< 2.2	< 2.3
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.2	< 2.3	< 2.4	< 2.1	< 2.3	31	< 2.3		< 2.0	< 2.1	< 2.1	< 2.1	< 2.0	< 2.0
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.6	< 1.6	< 1.7	< 1.5	< 1.6	20	< 1.7		< 1.5	< 1.5	< 1.5	< 1.5	< 1.4	< 1.5
chrysene	4,730	4,730	5,800,000	µg/kg-dry		< 1.7	< 1.8	< 1.9	< 1.7	6.6 J	6.7 J	< 1.9		< 1.6	< 1.7	< 1.7	< 1.7	4.8 J	< 1.7
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.7	< 2.9	< 3.0	< 2.7	< 2.9	< 2.6	< 2.9		< 2.6	< 2.7	< 2.6	< 2.7	< 2.6	< 2.6
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.4	< 2.6	< 2.7	< 2.4	< 2.6	33	< 2.6		< 2.3	< 2.4	< 2.4	< 2.4	< 2.3	< 2.3
Acetone	2,500	2,500	110,000,000	µg/kg-dry		< 3.2	< 2.4	41	< 2.7	20	28	620 J		29	17	7.4	5.0	18.0	24
Benzene	255	255	140,000	µg/kg-dry		< 0.66	< 0.50	< 0.57	< 0.56	< 0.51	< 0.49	< 0.59		< 0.72	< 0.53	< 0.6	< 0.51	< 0.58	< 0.65
Toluene	5,450	5,450	820,000	µg/kg-dry		< 1.4	< 1.0	< 1.2	< 1.2	< 1.0	< 1.0	13		1.7 J	1.1 J	1.4 J	< 1.1	< 1.2	1.5 J
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		< 0.65	< 0.49	< 0.56	< 0.55	< 0.50	< 0.48	< 0.58		< 0.71	< 0.52	< 0.59	< 0.50	< 0.57	< 0.64
xylenes	10,000	10,000	260,000	µg/kg-dry		< 1.3	< 0.96	< 1.1	< 1.1	< 0.97	< 0.94	< 1.1		< 1.4	< 1.0	< 1.1	< 0.98	< 1.1	< 1.2
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		< 0.77	< 0.58	< 0.67	< 0.66	< 0.59	< 0.57	< 0.69		< 0.84	< 0.62	< 0.70	< 0.60	< 0.68	< 0.76
naphthalene	99.4	99	450,000	µg/kg-dry		< 1.1	< 0.83	< 0.95	< 0.93	1.5 J	< 0.81	< 0.98		< 1.2	< 0.88	< 0.99	< 0.85	< 0.96	< 1.1
Isopropanol	---	---	---	µg/kg-dry		< 0.00052	< 0.00049	< 0.00054	< 0.00051	< 0.00055	< 0.00047	< 0.00052		< 0.00044	< 0.00048	< 0.00048	< 0.00050	< 0.00044	< 0.00046
pH (Laboratory)	---	---	---	S.U.		7.7	8.1	7.9	8.6	8.1	8.2	6.3		8.5	8.3	8.3	8.3	8.6	8.5
TTPC	859,330	---	---	µg/kg		< 0.274	6,470.0	3,070.0	2,870.0	8.91	96.3	NT	8.28	13.30	13.60	22.50	16.20	68.3	9.09
PID	---	---	---	ppm		0.2	0.7	0.6	10.3	8.9	2.3	3.9	1.4	3.6	1.9	10.6	14.8	3.2	NT

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NT = Not Tested
ND = Not Detected above method limit
S.U. = Standard Units

EISENBARTH WELL PAD SOIL BORING RESULTS

Table 10

		SCREENING LEVELS	ACTION LEVELS		Sample ID	SB-41 0'-2'	SB-41 2'-4'	SB-42 0'-2'	SB-42 0'-2' DUP-4	SB-42 2'-4'
					Collection Date	12/16/14	12/16/14	12/16/14	12/16/14	12/16/14
Potential On-Site Constituents (POSCs)	CTEH Developed Criteria (µg/kg)	USEPA Region 5 RCRA (µg/kg)	OEPA Industrial / Commercial (µg/kg)	Units	Collection Time	8:10	8:40	8:15	8:15	8:25
benzo(a)anthracene	5,210	5,210	58,000	µg/kg-dry		< 1.4	< 1.5	< 1.7	9.3	< 1.6
benzo(a)pyrene	1,520	1,520	5,800	µg/kg-dry		< 2.3	< 2.4	< 2.8	< 2.6	< 2.6
benzo(b)fluoranthene		---	58,000	µg/kg-dry		< 2.0	< 2.2	< 2.5	< 2.4	< 2.3
benzo(k)fluoranthene	148,000	148,000	580,000	µg/kg-dry		< 1.5	< 1.6	< 1.8	< 1.7	< 1.7
chrysene	4,730	4,730	5,800,000	µg/kg-dry		< 1.7	< 1.8	< 2.0	< 1.9	< 1.9
dibenzo(a,h)anthracene	18,400	18,400	5,800	µg/kg-dry		< 2.6	< 2.7	< 3.2	< 3.0	< 2.9
indeno(1,2,3-c,d)pyrene	109,000	109,000	58,000	µg/kg-dry		< 2.3	< 2.5	< 2.9	< 2.7	< 2.6
Acetone	2,500	2,500	110,000,000	µg/kg-dry		12	< 2.6	28	< 3.4	< 3.2
Benzene	255	255	140,000	µg/kg-dry		< 0.65	< 0.54	< 0.62	< 0.71	< 0.66
Toluene	5,450	5,450	820,000	µg/kg-dry		1.8 J	< 1.1	< 1.3	< 1.5	< 1.4
Ethylbenzene	5,160	5,160	480,000	µg/kg-dry		< 0.64	< 0.54	< 0.61	< 0.70	< 0.65
xylenes	10,000	10,000	260,000	µg/kg-dry		< 1.2	< 1.0	< 1.2	< 1.4	< 1.3
Isopropylbenzene (cumene)	---	---	270,000	µg/kg-dry		< 0.76	< 0.63	< 0.72	< 0.82	< 0.77
naphthalene	99.4	99	450,000	µg/kg-dry		< 1.1	< 0.90	< 1.0	< 1.2	< 1.1
Isopropanol	---	---	---	µg/kg-dry		< 0.00049	< 0.00048	< 0.00058	< 0.00053	< 0.00053
pH (Laboratory)	---	---	---	S.U.		8.7	8.0	6.7	6.1	5.7
TTPC	859,330	---	---	µg/kg		3.61	< 0.273	< 0.293	0.396	< 0.304
PID	---	---	---	ppm		1.7	2.8	0.1	NT	0.4

J = Detected above method limit but below the limit of quantitation
--- No Screening or Action Level
NT = Not Tested
ND = Not Detected above method limit
S.U. = Standard Units

TABLE 11

STATOIL USA ONSHORE PROPERTIES, INC.

EISENBARTH WELL PAD GROUNDWATER SAMPLING DATA COMPARISON TABLE

TABLE 11

Analyte	Screening Level [A]	Units	Sample ID	GP 08	GP 08	GP 08	SB 15	SB 15	SB 15	GP 19	GP 19	GP 19	SB 20	SB 20	SB 20	SB 20 DUP-5	SB 21	SB 21	SB 21	GP 22	GP 22	GP 22
			Date	12/17/2014	3/19/2015	6/25/2015	12/18/2014	3/19/2015	6/25/2015	12/17/2014	3/19/2015	6/25/2015	12/18/2014	3/18/2015	6/25/2015	12/18/2014	12/18/2014	3/18/2015	6/25/2015	12/16/2014	3/18/2015	6/25/2015
			Time	12:45	8:45	17:45	14:00	12:40		12:15	9:30		12:00	14:15	15:10	12:10	13:20	16:00	15:45	15:55		
benzo(a)anthracene	0.92	µg/L		< 0.70	< 0.085	< 0.072	< 0.77	< 0.096		N/T	N/T		< 0.72	< 0.072	< 0.072	< 0.68	< 0.68	< 0.072	<0.10	N/T		
benzo(a)pyrene	0.2	µg/L		< 0.12	< 0.042	< 0.036	< 0.14	< 0.048		N/T	N/T		< 0.13	< 0.036	< 0.036	< 0.12	< 0.12	< 0.036	<0.051	N/T		
benzo(b)fluoranthene	0.92	µg/L		< 0.90	< 0.051	< 0.043	< 0.99	< 0.057		N/T	N/T		< 0.92	< 0.043	< 0.043	< 0.87	< 0.87	< 0.043	<0.061	N/T		
benzo(k)fluoranthene	9.2	µg/L		< 0.21	< 0.073	< 0.062	< 0.23	< 0.083		N/T	N/T		< 0.22	< 0.062	< 0.062	< 0.20	< 0.20	< 0.062	<0.089	N/T		
chrysene	92	µg/L		< 0.86	< 0.049	< 0.042	< 0.95	< 0.056		N/T	N/T		< 0.89	< 0.042	< 0.042	< 0.84	< 0.84	< 0.042	<0.060	N/T		
dibenzo(a,h)anthracene	0.092	µg/L		< 0.81	< 0.087	< 0.074	< 0.89	< 0.099		N/T	N/T		< 0.84	< 0.074	< 0.074	< 0.79	< 0.79	< 0.074	<0.11	N/T		
indeno(1,2,3-cd)pyrene	0.92	µg/L		< 0.84	< 0.075	< 0.064	< 0.93	< 0.085		N/T	N/T		< 0.87	< 0.064	< 0.064	< 0.82	< 0.82	< 0.064	<0.091	N/T		
Acetone	12,000	µg/L		3.4 J	< 3.1	< 3.1	< 3.1	< 3.1		< 2.2	< 3.1		< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	<3.1	3.8 J		
Benzene	5	µg/L		< 0.63	< 0.25	< 0.25	< 0.25	< 0.25		< 0.63	< 0.25		0.63 J	< 0.25	< 0.25	0.66 J	0.72 J	< 0.25	<0.25	< 0.63		
Toluene	1,000	µg/L		< 0.72	< 0.20	< 0.20	< 0.20	< 0.20		1.8 J	< 0.20		< 0.20	< 0.20	< 0.20	< 0.20	0.41 J	< 0.20	<0.20	< 0.72		
Ethylbenzene	700	µg/L		< 0.68	< 0.22	< 0.22	< 0.22	< 0.22		< 0.68	< 0.22		< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	<0.22	< 0.68		
xylenes, total	10,000	µg/L		< 1.1	< 0.62	< 0.62	< 0.62	< 0.62		< 1.1	< 0.62		< 0.62	< 0.62	< 0.62	< 0.62	1.0 J	< 0.62	<0.62	< 1.1		
Isopropylbenzene	390	µg/L		< 1.2	< 0.25	< 0.25	< 0.25	< 0.25		< 1.2	< 0.25		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	<0.25	< 1.2		
naphthalene	1.4	µg/L		< 0.84	< 0.76	< 0.76	< 0.76	< 0.76		< 0.84	< 0.76		0.88 J	< 0.76	< 0.76	0.79 J	< 0.76	< 0.76	<0.76	< 0.84		
isopropyl alcohol	NA	mg/L		< 0.48	< 0.44	< 0.44	< 0.48	< 0.44		N/T	N/T		< 0.48	< 0.44	< 0.44	< 0.48	< 0.48	< 0.44	<0.44	N/T		
pH	6.5-8.5	S.U.		7.09	6.79	7.11	7.30	6.85		N/T	N/T		7.10	6.90	7.30	7.06	6.97	6.76	7.36	N/T		
TTPC	1	µg/L		< 0.0143	< 0.0143	<0.0143/<0.850** <0.0143/<0.944	< 0.0143	< 0.0143		< 0.0143	< 0.0143		0.0307 J	< 0.0143	<0.0143/<0.850	< 0.0143	< 0.0143	< 0.0143	<0.0143/<0.850	< 0.0143		

J = Analyte is reported at an estimated concentation between the MDL and the RL/LOQ

N/T = Not Tested; Insufficient water present for full analytical suite

[A]Screening criteria for all analytes except for pH and TTPC were gathered from Ohio's Voluntary Action Program (OAC 3745-300-08); the pH screening level was derived from US EPA guidance; the TTPC screening level was derived via calculations

* = Parameter was re-run; both data results are reported

** = June TTPC results are reported as LCMS/HPLC; re-samples from 7/1/2015 are reported following original sample results. Original sample received to the labortory out of temperature requirements and was resampled on 7/1/2015. Both results are reported.

Analyte	Screening Level [A]	Units	Sample ID	GP 23	GP 23	GP 23	GP 24	GP 24	GP 24	SB 25	SB 25	SB 25	GP 26	GP 26	GP 26	SB 27	SB 27	SB 27	GP 28	GP 28	GP 28	SB 31	SB 31	SB 31	SB 31 DUP-5	Outfall #1	Outfall #1	Outfall #1 DUP	Outfall #2	Outfall #2	Outfall #5	Outfall #5
			Date	12/17/2014	3/18/2015	6/26/2015	12/17/2014	3/18/2015	6/26/2015	12/18/2014	3/19/2015	6/25/2015	12/17/2014	3/18/2015	6/26/2015	12/18/2014	3/19/2015	6/25/2015	12/16/2014	3/18/2015	6/25/2015	12/18/2014	3/18/2015	6/25/2015	3/18/2015	3/19/2015	6/25/2015	6/25/2015	3/19/2015	6/25/2015	3/19/2015	6/25/2015
			Time	10:00	17:45	8:50	9:15	17:45	8:20		12:10	16:50	8:10	18:50	10:00		12:05	16:55	13:55			8:50	10:25	8:20	12:00	11:30	10:30	12:00	10:00	11:15	11:00	11:55
benzo(a)anthracene	0.92	µg/L		< 0.74	< 0.72	<0.24	< 0.72	< 0.072	<0.24		< 0.090	<0.12	< 0.72	< 0.076	<0.13		< 0.074	<0.085	N/T			< 0.66	< 0.072	<0.072	< 0.072	< 0.080	<0.072	<0.072	< 0.080	<0.072	< 0.080	<0.072
benzo(a)pyrene	0.2	µg/L		< 0.13	< 0.36	<0.12	< 0.13	< 0.036	<0.12		< 0.045	<0.060	< 0.13	< 0.038	<0.065		< 0.037	<0.042	N/T			< 0.12	< 0.036	<0.036	< 0.036	< 0.040	<0.036	<0.036	< 0.040	<0.036	< 0.040	<0.036
benzo(b)fluoranthene	0.92	µg/L		< 0.95	< 0.43	<0.14	< 0.92	< 0.043	<0.14		< 0.054	<0.072	< 0.92	< 0.045	<0.078		< 0.044	<0.051	N/T			< 0.84	< 0.043	<0.043	< 0.043	< 0.048	<0.043	<0.043	< 0.048	<0.043	< 0.048	<0.043
benzo(k)fluoranthene	9.2	µg/L		< 0.22	< 0.62	<0.21	< 0.22	< 0.062	<0.21		< 0.078	<0.10	< 0.22	< 0.065	<0.11		< 0.064	<0.073	N/T			< 0.20	< 0.062	<0.062	< 0.062	< 0.069	<0.062	<0.062	< 0.069	<0.062	< 0.069	<0.062
chrysene	92	µg/L		< 0.92	< 0.42	<0.14	< 0.89	< 0.042	<0.14		< 0.052	<0.070	< 0.89	< 0.044	<0.076		< 0.043	<0.049	N/T			< 0.81	< 0.042	<0.042	< 0.042	< 0.047	<0.042	<0.042	< 0.047	<0.042	< 0.047	<0.042
dibenzo(a,h)anthracene	0.092	µg/L		< 0.87	< 0.74	<0.25	< 0.84	< 0.074	<0.25		< 0.092	<0.12	< 0.84	< 0.078	<0.13		< 0.076	<0.087	N/T			< 0.77	< 0.074	<0.074	< 0.074	< 0.082	<0.074	<0.074	< 0.082	<0.074	< 0.082	<0.074
indeno(1,2,3-cd)pyrene	0.92	µg/L		< 0.90	< 0.64	<0.21	< 0.87	< 0.064	<0.21		< 0.080	<0.11	< 0.87	< 0.067	<0.12		< 0.066	<0.075	N/T			< 0.79	< 0.064	<0.064	< 0.064	< 0.071	<0.064	<0.064	< 0.071	<0.064	< 0.071	<0.064
Acetone	12,000	µg/L		< 2.2	< 3.1	<3.1	< 2.2	< 3.1	<3.1		< 3.1	<3.1	< 2.2	< 3.1	<3.1		< 3.1	<3.1	< 2.2			< 3.1	< 3.1	<3.1	< 3.1	< 3.1	<3.1	<3.1	< 3.1	<3.1	< 3.1	<3.1
Benzene	5	µg/L		< 0.63	< 0.25	<0.25	< 0.63	< 0.25	<0.25		< 0.25	<0.25	< 0.63	< 0.25	<0.25		< 0.25	<0.25	< 0.63			< 0.25	< 0.25	<0.25	< 0.25	< 0.25	<0.25	<0.25	< 0.25	<0.25	< 0.25	<0.25
Toluene	1,000	µg/L		< 0.72	< 0.20	<0.20	< 0.72	< 0.20	<0.20		< 0.20	<0.20	< 0.72	< 0.20	<0.20		< 0.20	<0.20	< 0.72			< 0.20	< 0.20	<0.20	< 0.20	< 0.20	<0.20	<0.20	< 0.20	<0.20	< 0.20	<0.20
Ethylbenzene	700	µg/L		< 0.68	< 0.22	<0.22	< 0.68	< 0.22	<0.22		< 0.22	<0.22	< 0.68	< 0.22	<0.22		< 0.22	<0.22	< 0.68			< 0.22	< 0.22	<0.22	< 0.22	< 0.22	<0.22	<0.22	< 0.22	<0.22	< 0.22	<0.22
xylenes, total	10,000	µg/L		< 1.1	< 0.62	<0.62	< 1.1	< 0.62	<0.62		< 0.62	<0.62	< 1.1	< 0.62	<0.62		< 0.62	<0.62	< 1.1			1.0 J	< 0.62	<0.62	< 0.62	< 0.62	<0.62	<0.62	< 0.62	<0.62	< 0.62	<0.62
Isopropylbenzene	390	µg/L		< 1.2	< 0.25	<0.25	< 1.2	< 0.25	<0.25		< 0.25	<0.25	< 1.2	< 0.25	<0.25		< 0.25	<0.25	< 1.2			< 0.25	< 0.25	<0.25	< 0.25	< 0.25	<0.25	<0.25	< 0.25	<0.25	< 0.25	<0.25
naphthalene	1.4	µg/L		< 0.84	< 0.76	<0.76	< 0.84	< 0.76	<0.76		< 0.76	0.86 J	< 0.84	< 0.76	<0.76		< 0.76	<0.76	< 0.84			< 0.76	< 0.76	<0.76	< 0.76	< 0.76	<0.76	<0.76	< 0.76	<0.76	< 0.76	<0.76
isopropyl alcohol	NA	mg/L		< 0.48	< 0.44	N/T	< 0.48	< 0.44	<0.44		< 0.44	<0.44	< 0.48	< 0.44	<0.44		< 0.44	<0.44	N/T			< 0.48	< 0.44	<0.44	< 0.44	< 0.44	<0.44	<0.44	< 0.44	<0.44	< 0.44	<0.44
pH	6.5-8.5	S.U.		6.66	5.81	N/T	7.02	6.84	N/T		6.93	7.25	6.20	5.96	6.88		6.03	6.33	N/T			6.89	6.43	6.69	6.41	7.27	8.09	8.16	7.43	7.92	7.00	7.56
TTPC	1	µg/L		< 0.0143	< 0.0143	<0.0143/<3.04 ** <0.0143/<1.33	< 0.0143	< 0.0143	<0.0143/<2.02 ** <0.0143/<0.944		< 0.0143	<0.0143/<0.850 ** <0.0143/<0.988	0.0254 J	< 0.0143	<0.0143/<1.06 ** <0.0143/<0.966		< 0.0143	<0.0143/<0.850 ** <0.0143/<0.966	N/T			< 0.0143	< 0.0143	<0.0143/<0.850	0.778/ < 0.0143*	< 0.0143	<0.0143/<0.850	<0.0143/<0.850	< 0.0143	<0.0143/<0.850	< 0.0143	<0.0143/<0.850

J = Analyte is reported at an estimated concentation between the MDL and the RL/LOQ

N/T = Not Tested; Insufficient water present for full analytical suite

[A]Screening criteria for all analytes except for pH and TTPC were gathered from Ohio's Voluntary Action Program (OAC 3745-300-08); the pH screening level was derived from US EPA guidance; the TTPC screening level was derived via calculations

* = Parameter was re-run; both data results are reported

** = June TTPC results are reported as LCMS/HPLC; re-samples from 7/1/2015 are reported following original sample results. Original sample received to the labortory out of temperature requirements and was resampled on 7/1/2015. Both results are reported.

TABLE 12

Statoil USA Onshore Properties, Inc.

EISENBARTH WELL PAD GROUNDWATER DATA SUMMARY

TABLE 12

General Data					Pre-Development Data (12-15-14)			Post-Development Data (12-16-14)		Purge and Sample Data			
Location ID	Monitoring Point Type	Ground Surface Elevation (ft-msl)	TOC Elevation (ft-msl)	Monitoring Point Depth (ft-bgs)	Depth to Water at Installation (Boring Logs) (ft -bgs)	Depth to Water (Below TOC)	Groundwater Elevation (ft-msl)	Depth to Water (Below TOC)	Groundwater Elevation (ft-msl)	Measurement Date (Time)	Depth to Water (Below TOC)	Groundwater Elevation (ft-msl)	Comments
SB-15	Temporary Monitoring Well	1298.05	1298.78	30.10	~26	30.08	1268.70	28.44	1270.34	12/18/14 (13:40)	28.44	1270.34	Installed on pad
SB-20	Temporary Monitoring Well	1295.53	1297.20	40.00	~36	25.52	1271.68	26.23	1270.97	12/18/2014	24.86	1272.34	Installed on western edge of pad
SB-21	Temporary Monitoring Well	1295.56	1297.70	35.00	~30	31.52	1266.18	31.53	1266.17	12/18/14 (13:05)	31.36	1266.34	Installed on western edge of pad
SB-25	Temporary Monitoring Well	1296.10	1297.20	23.55	~20	Dry	<1273.65	Dry	<1273.65	12/18/2014	Dry	<1273.65	Installed on western edge of pad
SB-27	Temporary Monitoring Well	1297.07	1299.30	25.35	~18	Dry	<1273.95	Dry	<1273.95	12/18/2014	Dry	<1273.95	Installed on southwestern corner of pad
SB-31	Temporary Monitoring Well	1296.62	1297.23	30.15	~20	NM	NA	20.65	1276.58	12/18/2014	21.24	1275.99	Southern edge of pad, completed after 12-15-14
GP-1	Piezometer	1274.80	1277.66	19.50	Dry	Dry	<1258.16	Dry	<1258.16	12/17/2014	Dry	<1258.16	Installed on western slope of pad
GP-2	Piezometer	1272.49	NA	NA	NA	NA	NA	NA	NA	12/17/2014	NA	NA	Casing crushed, could not access
GP-5	Piezometer	1263.47	1266.07	34.10	Dry	Dry	< 1231.97	Dry	< 1231.97	12/17/2014	Dry	< 1231.97	Dry - no water present during measurement
GP-8	Piezometer	1253.40	1256.55	26.48	~21	22.45	1234.10	22.41	1234.14	12/17/14 (12:45)	22.41	1234.14	Installed on western slope of pad
GP-9	Piezometer	1260.25	NA	NA	NA	NA	NA	NA	NA	12/17/2014	NA	NA	Casing crushed, could not access
GP-19	Piezometer	1214.70	1216.77	24.99	~18	19.45	1197.32	21.89	1194.88	12/17/14 (12:15)	23.20	1193.57	Installed on western slope of pad
GP-21	Piezometer	1200.52	NM	29.70	Dry	Dry	NA	Dry	NA	12/17/2014	Dry	NA	Dry - no water present during measurement
GP-22	Piezometer	1196.58	1198.10	41.69	NM	NM	NA	40.63	1157.47	12/17/14 (10:55)	41.03	1157.07	Installed on western slope of pad
GP-23	Piezometer	1195.14	1196.71	39.46	NM	31.55	1165.16	31.4	1165.31	12/17/14 (10:00)	34.51	1162.20	Installed on western slope of pad
GP-24	Piezometer	1197.00	1199.71	24.75	NM	16.58	1183.13	16.64	1183.07	12/17/14 (09:15)	18.73	1180.98	Installed on western slope of pad
GP-26	Piezometer	1255.45	1258.22	29.55	NM	23.22	1235.00	22.38	1235.84	12/17/14 (08:10)	22.53	1235.69	Installed on southern slope of pad
GP-28	Piezometer	1245.06	1249.34	14.66	NM	14.23	1235.11	14.37	1234.97	12/17/14 (08:05)	14.66	1234.68	Minimal water present during measurement

NA - Not Applicable

NM - Not Measured

ft-msl - Feet Above Mean Sea Level

ft - bgs - Feet Below Ground Surface

TOC - Top of Casing

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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(724)850-5600

SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157388001	**HAOH0824SW001**	Solid	08/24/15 14:10	08/25/15 15:30
30157388002	**HAOH0824SW001 (ASTM)**	Water	09/01/15 10:45	09/01/15 10:45

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157388001	**HAOH0824SW001**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157388002	**HAOH0824SW001 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157388001	**HAOH0824SW001**					
EPA 8015B	TPH (C10-C28)	84.1	mg/kg	21.8	09/09/15 20:28	
EPA 8260B	Acetone	59.5	ug/kg	38.5	09/04/15 13:43	M5
Dry Weight	Percent Moisture	70.0	%	0.10	09/02/15 16:30	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Sample: HAOH0824SW001 **Lab ID: 30157388001** Collected: 08/24/15 14:10 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	**84.1**	mg/kg	21.8	11.5	1	08/31/15 12:30	09/09/15 20:28		
Surrogates									
o-Terphenyl (S)	55	%	20-129		1	08/31/15 12:30	09/09/15 20:28	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	**59.5**	ug/kg	38.5	18.8	1		09/04/15 13:43	67-64-1	M5
Surrogates									
Toluene-d8 (S)	105	%	73-124		1		09/04/15 13:43	2037-26-5	M5
4-Bromofluorobenzene (S)	123	%	71-124		1		09/04/15 13:43	460-00-4	M5
1,2-Dichloroethane-d4 (S)	97	%	83-138		1		09/04/15 13:43	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**70.0**	%	0.10	0.10	1		09/02/15 16:30		

Sample: HAOH0824SW001 (ASTM) **Lab ID: 30157388002** Collected: 09/01/15 10:45 Received: 09/01/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:53	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157388001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157388001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157388001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157388001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

QC Batch: WETA/21083 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 30157388002

METHOD BLANK: 945747 | Matrix: Water
Associated Lab Samples: 30157388002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 | Matrix: Water
Associated Lab Samples: 30157388002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 | Matrix: Water
Associated Lab Samples: 30157388002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 | Matrix: Water
Associated Lab Samples: 30157388002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157388

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157388001	**HAOH0824SW001**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157388001	**HAOH0824SW001**	EPA 8260B	MSV/24786		
30157388001	**HAOH0824SW001**	Dry Weight	PMST/5592		
30157388002	**HAOH0824SW001 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157388

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc.	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody & Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER____

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis: VOCs - Acetone only (8260)	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH082 4SW001	SL	G	8/24/15	1410				2	X								X	X	X	N	001
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Josh Boyda / Moody	8/24/15	1815	Josh Boyda / Moody	8/25/15	0900
Josh Boyda / Moody	8/25/15	0900	Cliff Mutty Pace	8/25/15	12:50P
Cliff Mutty Pace	8/25/15	3:30	[illegible]	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.4	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joshua L. Boyda

SIGNATURE of SAMPLER: Josh Boyda

DATE Signed (MM / DD / YY): 08/24/2015

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157388

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ None ___ Other _____

Thermometer Used 6 Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C Correction Factor: -0.2 °C Final Temp: 1.4 °C

Date and initials of person examining contents: AMC 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	Initial when completed AMC / Lot # of added preservative
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel B Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157388

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel D Christner

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157412001	**HAOH0824SW04**	Solid	08/24/15 13:10	08/25/15 15:30
30157412002	**HAOH0824SW04 (ASTM)**	Water	09/01/15 10:59	09/01/15 10:59

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157412001	**HAOH0824SW04**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157412002	**HAOH0824SW04 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157412001	**HAOH0824SW04**					
EPA 8015B	TPH (C10-C28)	10.6	mg/kg	8.3	09/09/15 21:20	1c
Dry Weight	Percent Moisture	20.6	%	0.10	09/02/15 16:35	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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/25066

1c: The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

- HAOH0824SW04 (Lab ID: 30157412001)
  - TPH (C10-C28)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Sample: HAOH0824SW04 **Lab ID: 30157412001** Collected: 08/24/15 13:10 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	**10.6**	mg/kg	8.3	4.4	1	08/31/15 12:30	09/09/15 21:20		1c
Surrogates									
o-Terphenyl (S)	75	%	20-129		1	08/31/15 12:30	09/09/15 21:20	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	8.6	4.2	1		09/04/15 15:55	67-64-1	M5
Surrogates									
Toluene-d8 (S)	99	%	73-124		1		09/04/15 15:55	2037-26-5	M5
4-Bromofluorobenzene (S)	103	%	71-124		1		09/04/15 15:55	460-00-4	M5
1,2-Dichloroethane-d4 (S)	98	%	83-138		1		09/04/15 15:55	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**20.6**	%	0.10	0.10	1		09/02/15 16:35		

Sample: HAOH0824SW04 (ASTM) **Lab ID: 30157412002** Collected: 09/01/15 10:59 Received: 09/01/15 10:59 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:55	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157412001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157412001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157412001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157412001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157412001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

QC Batch: WETA/21083 — Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E — Analysis Description: 4500 Chloride
Associated Lab Samples: 30157412002

METHOD BLANK: 945747 — Matrix: Water
Associated Lab Samples: 30157412002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 — Matrix: Water
Associated Lab Samples: 30157412002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 — Matrix: Water
Associated Lab Samples: 30157412002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 — Matrix: Water
Associated Lab Samples: 30157412002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

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.

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TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157412

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157412001	**HAOH0824SW04**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157412001	**HAOH0824SW04**	EPA 8260B	MSV/24786		
30157412001	**HAOH0824SW04**	Dry Weight	PMST/5592		
30157412002	**HAOH0824SW04 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157412

Section A Required Client Information:

Company: Moody and Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101
Houston, PA 15342
Email To: lmistick@moody-s.com
Phone:724-746-5200 Fax:724-746-5603
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Leah Mistick
Copy To: Josh Boyda
Purchase Order No.:
Project Name: Eisenbarth Consent Order
Project Number: 14-467-LM

Section C Invoice Information:

Attention: Leah Mistick
Company Name: Moody & Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER_____

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis: VOCs - Acetone only (8260)	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH08 24SW04	SL	G	8/24/15	1310				2	X								X	X	X	N	001, 002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Filtered (Y/N)

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moodys + Assoc.	8/24/15	1700	[signature] Moodys + Ass.	8/25/15	0900
[signature] Moodys + Ass	8/25/15	0900	[signature] Pace	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice Y/N	Custody Sealed Cooler Y/N	Samples Intact Y/N
	Y/N	Y/N	Y/N
2.3	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157412

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no Biological Tissue Is Frozen: Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ✓ None ___ Other _____

Thermometer Used 7 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 2.5 °C Correction Factor: -0.2 °C Final Temp: 2.3 °C

Date and initials of person examining contents: ARM 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☑N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No	Initial when completed: ARM Lot # of added preservative:
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel D Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157412

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

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Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157383001	**HAOH0824SW06**	Solid	08/24/15 13:28	08/25/15 15:30
30157383002	**HAOH0824SW06 (ASTM)**	Water	09/01/15 10:14	09/01/15 10:14

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157383001	**HAOH0824SW06**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157383002	**HAOH0824SW06 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157383001	**HAOH0824SW06**					
Dry Weight	Percent Moisture	29.1	%	0.10	09/02/15 16:26	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Sample: HAOH0824SW06 **Lab ID: 30157383001** Collected: 08/24/15 13:28 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	ND	mg/kg	9.3	4.9	1	08/31/15 12:30	09/09/15 18:32		
Surrogates									
o-Terphenyl (S)	73	%	20-129		1	08/31/15 12:30	09/09/15 18:32	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	13.7	6.7	1		09/04/15 14:10	67-64-1	M5
Surrogates									
Toluene-d8 (S)	100	%	73-124		1		09/04/15 14:10	2037-26-5	M5
4-Bromofluorobenzene (S)	104	%	71-124		1		09/04/15 14:10	460-00-4	M5
1,2-Dichloroethane-d4 (S)	101	%	83-138		1		09/04/15 14:10	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**29.1**	%	0.10	0.10	1		09/02/15 16:26		

Sample: HAOH0824SW06 (ASTM) **Lab ID: 30157383002** Collected: 09/01/15 10:14 Received: 09/01/15 10:14 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:44	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157383001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157383001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157383001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157383001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE SAMPLE: 944954

Parameter	Units	30157383001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	ND	91.7	90.3	95	52-126	
o-Terphenyl (S)	%				93	20-129	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157383001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

QC Batch: WETA/21083 — Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E — Analysis Description: 4500 Chloride
Associated Lab Samples: 30157383002

METHOD BLANK: 945747 — Matrix: Water
Associated Lab Samples: 30157383002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 — Matrix: Water
Associated Lab Samples: 30157383002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 — Matrix: Water
Associated Lab Samples: 30157383002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 — Matrix: Water
Associated Lab Samples: 30157383002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157383

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157383001	**HAOH0824SW06**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157383001	**HAOH0824SW06**	EPA 8260B	MSV/24786		
30157383001	**HAOH0824SW06**	Dry Weight	PMST/5592		
30157383002	**HAOH0824SW06 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157383

Section A — **Required** Client Information:

Company: Moody and Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101
Houston, PA 15342
Email To: lmistick@moody-s.com
Phone:724-746-5200 Fax:724-746-5603
Requested Due Date/TAT: Standard

Section B — **Required** Project Information:

Report To: Leah Mistick
Copy To: Josh Boyda
Purchase Order No.:
Project Name: Eisenbarth Consent Order
Project Number: 14-467-LM

Section C — Invoice Information:

Attention: Leah Mistick
Company Name: Moody & Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER_____

Section D — **Required** Client Information

SAMPLE ID
One Character per box
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis: VOCs - Acetone only (8	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH08245SW06	SL	G	8/24/15	1328				2	X								X	X	X	N	001,002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Filtered (Y/N)

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Moody + Assoc	8/24/15	1700	Moody + Assoc.	8/25/15	0900
Moody + Assoc	8/25/15	0900	Cliff Mt by Pace	8/25/15	12:50
Cliff Mt by Pace	8/25/15	3:30		8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.4	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lori Horowitz

SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY): 08/25/15

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project #30157383

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ____ Bubble Bags ____ None ____ Other _____

Thermometer Used 6 **Type of Ice:** Wet Blue None ☒ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C **Correction Factor:** -0.2 °C **Final Temp:** 1.4 °C

Date and initials of person examining contents: AMC 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: SL	☒Yes ☐No ☐N/A	12.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No ☒N/A ☐Yes ☐No	Initial when completed AMC Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157383

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	S	2																						

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157413001	**HAOH0824SW08**	Solid	08/24/15 10:15	08/25/15 15:30
30157413002	**HAOH0824SW08 (ASTM)**	Water	09/01/15 11:02	09/01/15 11:02

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157413001	**HAOH0824SW08**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157413002	**HAOH0824SW08 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157413001	**HAOH0824SW08**					
EPA 8015B	TPH (C10-C28)	28.2	mg/kg	11.0	09/09/15 21:41	1c
Dry Weight	Percent Moisture	40.9	%	0.10	09/02/15 16:36	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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/25066

1c: The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

- HAOH0824SW08 (Lab ID: 30157413001)
  - TPH (C10-C28)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Sample: HAOH0824SW08 **Lab ID: 30157413001** Collected: 08/24/15 10:15 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	**28.2**	mg/kg	11.0	5.8	1	08/31/15 12:30	09/09/15 21:41		1c
Surrogates									
o-Terphenyl (S)	71	%	20-129		1	08/31/15 12:30	09/09/15 21:41	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	19.2	9.4	1		09/04/15 16:22	67-64-1	M5
Surrogates									
Toluene-d8 (S)	104	%	73-124		1		09/04/15 16:22	2037-26-5	M5
4-Bromofluorobenzene (S)	101	%	71-124		1		09/04/15 16:22	460-00-4	M5
1,2-Dichloroethane-d4 (S)	103	%	83-138		1		09/04/15 16:22	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**40.9**	%	0.10	0.10	1		09/02/15 16:36		

Sample: HAOH0824SW08 (ASTM) **Lab ID: 30157413002** Collected: 09/01/15 11:02 Received: 09/01/15 11:02 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:56	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157413001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157413001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157413001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157413001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157413001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

QC Batch: WETA/21083 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 30157413002

METHOD BLANK: 945747 | Matrix: Water
Associated Lab Samples: 30157413002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 | Matrix: Water
Associated Lab Samples: 30157413002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 | Matrix: Water
Associated Lab Samples: 30157413002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 | Matrix: Water
Associated Lab Samples: 30157413002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

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-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.
M5	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157413

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157413001	**HAOH0824SW08**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157413001	**HAOH0824SW08**	EPA 8260B	MSV/24786		
30157413001	**HAOH0824SW08**	Dry Weight	PMST/5592		
30157413002	**HAOH0824SW08 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157413

Page: 1 of 1

Section A
Required Client Information:

Company: Moody and Associates, Inc.	
Address: 199 Johnson Road, Building 2, Suite 101	
Houston, PA 15342	
Email To: lmistick@moody-s.com	
Phone:724-746-5200	Fax:724-746-5603
Requested Due Date/TAT: Standard	

Section B
Required Project Information:

Report To: Leah Mistick
Copy To: Josh Boyda
Purchase Order No.:
Project Name: Eisenbarth Consent Order
Project Number: 14-467-LM

Section C
Invoice Information:

Attention: Leah Mistick
Company Name: Moody & Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER_____

Section D **Required** Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Requested Analysis: VOCs - Acetone only (8	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW08	SL	G	8/24/15	1015				2	X									X	X	X	N	001,002
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moodys	8/24/15	1700	[signature] Moodys	8/25/15	0900
[signature] Moodys	8/25/15	0900	Alyna R. Muchmey Pace	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
2.3	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

e-File(ALLQ020rev.3,31Mar05))22Jun2005

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157413

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ✓ None ___ Other _____

Thermometer Used 1 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 2.5 °C Correction Factor: -0.2 °C Final Temp: 2.3 °C

Date and initials of person examining contents: ARM 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☑N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: SL	☑Yes ☐No ☐N/A	12.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No	Initial when completed ARM / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel S Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Face Analytical

Project Number: 30157413

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157414001	**HAOH0824SW08DUP**	Solid	08/24/15 10:40	08/25/15 15:30
30157414002	**HAOH0824SW08 (ASTM)**	Water	09/01/15 11:06	09/01/15 11:06

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157414001	**HAOH0824SW08DUP**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157414002	**HAOH0824SW08 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157414001	**HAOH0824SW08DUP**					
EPA 8015B	TPH (C10-C28)	29.2	mg/kg	12.0	09/09/15 21:59	1c
Dry Weight	Percent Moisture	45.9	%	0.10	09/02/15 16:36	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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/25066

1c: The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

- HAOH0824SW08DUP (Lab ID: 30157414001)
  - TPH (C10-C28)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Sample: HAOH0824SW08DUP **Lab ID: 30157414001** Collected: 08/24/15 10:40 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	**29.2**	mg/kg	12.0	6.3	1	08/31/15 12:30	09/09/15 21:59		1c
Surrogates									
o-Terphenyl (S)	66	%	20-129		1	08/31/15 12:30	09/09/15 21:59	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	17.8	8.7	1		09/04/15 16:48	67-64-1	M5
Surrogates									
Toluene-d8 (S)	97	%	73-124		1		09/04/15 16:48	2037-26-5	M5
4-Bromofluorobenzene (S)	100	%	71-124		1		09/04/15 16:48	460-00-4	M5
1,2-Dichloroethane-d4 (S)	103	%	83-138		1		09/04/15 16:48	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**45.9**	%	0.10	0.10	1		09/02/15 16:36		

Sample: HAOH0824SW08 (ASTM) **Lab ID: 30157414002** Collected: 09/01/15 11:06 Received: 09/01/15 11:06 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:57	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

QC Batch: MSV/24786 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157414001

METHOD BLANK: 947761 | Matrix: Solid
Associated Lab Samples: 30157414001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157414001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157414001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157414001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

QC Batch: WETA/21083 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 30157414002

METHOD BLANK: 945747 | Matrix: Water
Associated Lab Samples: 30157414002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 | Matrix: Water
Associated Lab Samples: 30157414002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 | Matrix: Water
Associated Lab Samples: 30157414002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 | Matrix: Water
Associated Lab Samples: 30157414002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c The majority of the area quantitated as DRO for this sample is due to unresolved material eluting beyond C 20.

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157414

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157414001	**HAOH0824SW08DUP**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157414001	**HAOH0824SW08DUP**	EPA 8260B	MSV/24786		
30157414001	**HAOH0824SW08DUP**	Dry Weight	PMST/5592		
30157414002	**HAOH0824SW08 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157414

Section A
Required Client Information:

Company: Moody and Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101
Houston, PA 15342
Email To: lmistick@moody-s.com
Phone:724-746-5200 Fax:724-746-5603
Requested Due Date/TAT: Standard

Section B
Required Project Information:

Report To: Leah Mistick
Copy To: Josh Boyda
Purchase Order No.:
Project Name: Eisenbarth Consent Order
Project Number: 14-467-LM

Section C
Invoice Information:

Attention: Leah Mistick
Company Name: Moody & Associates, Inc.
Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION
☐ GA ☐ IL ☐ IN ☐ MI ☐ NC
☑ OH ☐ SC ☐ WI ☐ OTHER_____

Section D **Required** Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis: VOCs - Acetone only (8260)	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW08DUP	SL	G	8/24/15	1040				2	X								X	X	X	N	001, 002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moodys	8/24/15	1700	[signature] Moodys	8/25/15	0900
[signature] Moodys	8/25/15	0900	[signature] PACE	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y/N	Y/N	Y/N
2.3	N	N	N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY):

30157414

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # _____

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no Biological Tissue Is Frozen: Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ✓ None ___ Other _____

Thermometer Used 7 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 2.5 °C Correction Factor: -0.2 °C Final Temp: 2.3 °C

Date and initials of person examining contents: ARM 8/26/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☑N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No	Initial when completed ARM / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 8/27/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

30157414

Pace Analytical

Project Number: _____

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157410001	**HAOH0824SW15**	Solid	08/24/15 11:30	08/25/15 15:30
30157410002	**HAOH0824SW15 (ASTM)**	Water	09/01/15 10:50	09/01/15 10:50

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157410001	**HAOH0824SW15**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157410002	**HAOH0824SW15 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157410001	**HAOH0824SW15**					
EPA 8015B	TPH (C10-C28)	23.4	mg/kg	9.4	09/09/15 20:46	
Dry Weight	Percent Moisture	29.8	%	0.10	09/02/15 16:34	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Sample: HAOH0824SW15 **Lab ID: 30157410001** Collected: 08/24/15 11:30 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	**23.4**	mg/kg	9.4	4.9	1	08/31/15 12:30	09/09/15 20:46		
Surrogates									
o-Terphenyl (S)	64	%	20-129		1	08/31/15 12:30	09/09/15 20:46	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	17.7	8.7	1		09/04/15 15:02	67-64-1	M5
Surrogates									
Toluene-d8 (S)	107	%	73-124		1		09/04/15 15:02	2037-26-5	M5
4-Bromofluorobenzene (S)	116	%	71-124		1		09/04/15 15:02	460-00-4	M5
1,2-Dichloroethane-d4 (S)	98	%	83-138		1		09/04/15 15:02	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**29.8**	%	0.10	0.10	1		09/02/15 16:34		

Sample: HAOH0824SW15 (ASTM) **Lab ID: 30157410002** Collected: 09/01/15 10:50 Received: 09/01/15 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:54	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157410001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157410001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157410001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157410001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157410001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

QC Batch: WETA/21083 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 30157410002

METHOD BLANK: 945747 | Matrix: Water
Associated Lab Samples: 30157410002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 | Matrix: Water
Associated Lab Samples: 30157410002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 | Matrix: Water
Associated Lab Samples: 30157410002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 | Matrix: Water
Associated Lab Samples: 30157410002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157410

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157410001	**HAOH0824SW15**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157410001	**HAOH0824SW15**	EPA 8260B	MSV/24786		
30157410001	**HAOH0824SW15**	Dry Weight	PMST/5592		
30157410002	**HAOH0824SW15 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157410

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc.	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody & Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER____

Filtered (Y/N)

Requested Ana

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	VOCs - Acetone only (6	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW15	SL	G	8/24/15	1130				2	X								X	X	X	N	001, 002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moody's	8/24/15	1700	[signature] Moody's	8/25/15	0900
[signature] Moody's	8/25/15	0900	Cliff Mitchell by Pace	8/25/15	12:50
Cliff Mitchell by Pace	8/25/15	3:30	[signature] Muchmore Pace	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Av...	ntact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
2.3	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

e-File(ALLQ020rev.3,31Mar05)

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157410

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no **Biological Tissue Is Frozen:** Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ✓ None ___ Other _____

Thermometer Used 7 **Type of Ice:** (Wet) Blue None ☑ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: 2.5 °C **Correction Factor:** -0.2 °C **Final Temp:** 2.3 °C

Date and initials of person examining contents: ARM 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☑N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:.	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No	Initial when completed ARM Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157410

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157385001	**HAOH0824SW17**	Solid	08/24/15 12:01	08/25/15 15:30
30157385002	**HAOH0824SW17 (ASTM)**	Water	09/01/15 10:29	09/01/15 10:29

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157385001	**HAOH0824SW17**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157385002	**HAOH0824SW17 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157385001	**HAOH0824SW17**					
Dry Weight	Percent Moisture	23.2	%	0.10	09/02/15 16:29	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Sample: HAOH0824SW17 **Lab ID: 30157385001** Collected: 08/24/15 12:01 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	ND	mg/kg	8.5	4.5	1	08/31/15 12:30	09/09/15 19:29		
Surrogates									
o-Terphenyl (S)	59	%	20-129		1	08/31/15 12:30	09/09/15 19:29	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	11.3	5.5	1		09/04/15 12:23	67-64-1	M5
Surrogates									
Toluene-d8 (S)	101	%	73-124		1		09/04/15 12:23	2037-26-5	M5
4-Bromofluorobenzene (S)	107	%	71-124		1		09/04/15 12:23	460-00-4	M5
1,2-Dichloroethane-d4 (S)	94	%	83-138		1		09/04/15 12:23	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**23.2**	%	0.10	0.10	1		09/02/15 16:29		

Sample: HAOH0824SW17 (ASTM) **Lab ID: 30157385002** Collected: 09/01/15 10:29 Received: 09/01/15 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:47	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

QC Batch: MSV/24786 | Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B | Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157385001

METHOD BLANK: 947761 | Matrix: Solid
Associated Lab Samples: 30157385001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157385001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157385001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157385001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

QC Batch: WETA/21083 — Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E — Analysis Description: 4500 Chloride
Associated Lab Samples: 30157385002

METHOD BLANK: 945747 — Matrix: Water
Associated Lab Samples: 30157385002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 — Matrix: Water
Associated Lab Samples: 30157385002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 — Matrix: Water
Associated Lab Samples: 30157385002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 — Matrix: Water
Associated Lab Samples: 30157385002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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(724)850-5600

QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157385

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157385001	**HAOH0824SW17**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157385001	**HAOH0824SW17**	EPA 8260B	MSV/24786		
30157385001	**HAOH0824SW17**	Dry Weight	PMST/5592		
30157385002	**HAOH0824SW17 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157385

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc.	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody & Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION

☐ GA ☐ IL ☐ IN ☐ MI ☐ NC
☑ OH ☐ SC ☐ WI ☐ OTHER_____

Filtered (Y/N)

Requested Ana

Section D Required Client Information

SAMPLE ID
One Character per box
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	VOCs - Acetone only (8	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW17	SL	G	8/24/15	1201				2	X								X	X	X	N	001, 002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moody & Assoc	8/24/15	1700	[signature] Moody & Assoc	8/25/15	0900
[signature] Moody & Assoc	8/25/15	0900	Cliff Mtsloy Pace	8/25/15	12:50P
Cliff Mtsloy Pace	8/25/15	3:30	[signature]	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.4	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lori Horowitz

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY): 08/25/15

e-File(ALLQ020rev.3,31Mar05))22Jun2005

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157385

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ None ___ Other _____

Thermometer Used 6 Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C Correction Factor: -0.2 °C Final Temp: 1.4 °C

Date and initials of person examining contents: AMC 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: SL	☒Yes ☐No ☐N/A	12.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No ☒N/A ☐Yes ☐No	Initial when completed AMC Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Renee Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157385

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

SCURF Back (C016-4 15May2012).xls

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Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel D Christner

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157384001	**HAOH0824SW18**	Solid	08/24/15 10:58	08/25/15 15:30
30157384002	**HAOH0824SW18 (ASTM)**	Water	09/01/15 10:25	09/01/15 10:25

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157384001	**HAOH0824SW18**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157384002	**HAOH0824SW18 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157384001	**HAOH0824SW18**					
Dry Weight	Percent Moisture	23.3	%	0.10	09/02/15 16:27	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Sample: HAOH0824SW18 **Lab ID: 30157384001** Collected: 08/24/15 10:58 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	ND	mg/kg	8.5	4.5	1	08/31/15 12:30	09/09/15 19:10		
Surrogates									
o-Terphenyl (S)	63	%	20-129		1	08/31/15 12:30	09/09/15 19:10	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	11.8	5.8	1		09/04/15 14:36	67-64-1	M5
Surrogates									
Toluene-d8 (S)	100	%	73-124		1		09/04/15 14:36	2037-26-5	M5
4-Bromofluorobenzene (S)	102	%	71-124		1		09/04/15 14:36	460-00-4	M5
1,2-Dichloroethane-d4 (S)	101	%	83-138		1		09/04/15 14:36	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**23.3**	%	0.10	0.10	1		09/02/15 16:27		

Sample: HAOH0824SW18 (ASTM) **Lab ID: 30157384002** Collected: 09/01/15 10:25 Received: 09/01/15 10:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:46	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157384001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157384001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157384001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157384001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157384001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

QC Batch: WETA/21083 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 30157384002

METHOD BLANK: 945747 | Matrix: Water
Associated Lab Samples: 30157384002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 | Matrix: Water
Associated Lab Samples: 30157384002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 | Matrix: Water
Associated Lab Samples: 30157384002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 | Matrix: Water
Associated Lab Samples: 30157384002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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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(724)850-5600

QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157384

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157384001	**HAOH0824SW18**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157384001	**HAOH0824SW18**	EPA 8260B	MSV/24786		
30157384001	**HAOH0824SW18**	Dry Weight	PMST/5592		
30157384002	**HAOH0824SW18 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157384

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody & Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER____

Section D Required Client Information

SAMPLE ID: One Character per box. (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analyses Test: VOCs - Acetone only (8260)	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
1	HAOH08245SW18	SL	G	8/24/15	1058				2	X								X	X	X	N	001, 002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Moody & Assoc.	8/24/15	1700	Moody & Assoc	8/25/15	0900
Moody & Assoc	8/25/15	0900	Cliff Mt by Pace	8/25/15	12:50P
Cliff Mt by Pace	8/25/15	3:30		8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.4	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lori Horowitz

SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY): 08/25/15

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157384

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ None ___ Other _____

Thermometer Used 6 Type of Ice: (Wet) Blue None ☒ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C Correction Factor: -0.2 °C Final Temp: 1.4 °C

Date and initials of person examining contents: AMC 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No ☒N/A	Initial when completed AMC / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Donna L Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157384

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

SCURF Back (C016-4 15May2012).xls

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(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157411001	**HAOH0824SW20**	Solid	08/24/15 14:10	08/25/15 15:30
30157411002	**HAOH0824SW20 (ASTM)**	Water	09/01/15 10:55	09/01/15 10:55

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157411001	**HAOH0824SW20**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157411002	**HAOH0824SW20 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157411001	**HAOH0824SW20**					
Dry Weight	Percent Moisture	30.8	%	0.10	09/02/15 16:35	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Sample: HAOH0824SW20 **Lab ID: 30157411001** Collected: 08/24/15 14:10 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	ND	mg/kg	9.4	5.0	1	08/31/15 12:30	09/09/15 21:04		
Surrogates									
o-Terphenyl (S)	76	%	20-129		1	08/31/15 12:30	09/09/15 21:04	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	ND	ug/kg	13.2	6.4	1		09/04/15 15:29	67-64-1	M5
Surrogates									
Toluene-d8 (S)	100	%	73-124		1		09/04/15 15:29	2037-26-5	M5
4-Bromofluorobenzene (S)	104	%	71-124		1		09/04/15 15:29	460-00-4	M5
1,2-Dichloroethane-d4 (S)	97	%	83-138		1		09/04/15 15:29	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**30.8**	%	0.10	0.10	1		09/02/15 16:35		

Sample: HAOH0824SW20 (ASTM) **Lab ID: 30157411002** Collected: 09/01/15 10:55 Received: 09/01/15 10:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:55	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157411001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157411001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157411001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157411001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157411001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

QC Batch: WETA/21083 — Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E — Analysis Description: 4500 Chloride
Associated Lab Samples: 30157411002

METHOD BLANK: 945747 — Matrix: Water
Associated Lab Samples: 30157411002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 — Matrix: Water
Associated Lab Samples: 30157411002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 — Matrix: Water
Associated Lab Samples: 30157411002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 — Matrix: Water
Associated Lab Samples: 30157411002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157411

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157411001	**HAOH0824SW20**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157411001	**HAOH0824SW20**	EPA 8260B	MSV/24786		
30157411001	**HAOH0824SW20**	Dry Weight	PMST/5592		
30157411002	**HAOH0824SW20 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157411

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody & Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER_____

Filtered (Y/N)

Requested Ana

Section D Required Client Information

SAMPLE ID
One Character per box
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	VOCs - Acetone only (&	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW20	SL	G	8/24/15	1410				2	X								X	X	X	N	001,002
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moodys + Associate	8/24/15	1700	[signature] Moodys + Ass	8/25/15	0900
[signature] Moodys + Associates	8/25/15	0900			
			Cliff Mt by Pace	8/25/15	12:50P
Cliff Mt by Pace	8/25/15	3:30	Alyma R Muchanoy	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
2.3	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

8/25/15

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Pace

SIGNATURE of SAMPLER:

DATE Signed (MM / DD / YY)

e-File(ALLQ020rev.3,31Mar05))22Jun2005

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157411

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ✓ None ____ Other _____

Thermometer Used 7 Type of Ice: (Wet) Blue None ☑ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: 2.5 °C Correction Factor: -0.2 °C Final Temp: 2.3 °C

Date and initials of person examining contents: ARM 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☑N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No	Initial when completed ARM / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel B Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

30157411

Project Number: _____

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2015 and September 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157386001	**HAOH0824SW25**	Solid	08/24/15 12:51	08/25/15 15:30
30157386002	**HAOH0824SW25 (ASTM)**	Water	09/01/15 10:34	09/01/15 10:34

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157386001	**HAOH0824SW25**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JEW	4	PASI-PA
		Dry Weight	TAW	1	PASI-PA
30157386002	**HAOH0824SW25 (ASTM)**	SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157386001	**HAOH0824SW25**					
EPA 8015B	TPH (C10-C28)	355	mg/kg	57.0	09/10/15 13:18	
EPA 8260B	Acetone	40.4	ug/kg	21.2	09/04/15 12:50	M5
Dry Weight	Percent Moisture	42.2	%	0.10	09/02/15 16:29	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Method: **EPA 8015B**
Description: 8015 TPH Microwave
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was 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:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Method: **EPA 8260B**
Description: 8260 MSV 5030 Low Level
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for EPA 8260B. 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.

QC Batch: MSV/24786

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
1 sample was analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Sample: HAOH0824SW25 **Lab ID: 30157386001** Collected: 08/24/15 12:51 Received: 08/25/15 15:30 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
8015 TPH Microwave	Analytical Method: EPA 8015B Preparation Method: EPA 3546								
TPH (C10-C28)	**355**	mg/kg	57.0	30.1	5	08/31/15 12:30	09/10/15 13:18		
Surrogates									
o-Terphenyl (S)	72	%	20-129		5	08/31/15 12:30	09/10/15 13:18	84-15-1	
8260 MSV 5030 Low Level	Analytical Method: EPA 8260B								
Acetone	**40.4**	ug/kg	21.2	10.4	1		09/04/15 12:50	67-64-1	M5
Surrogates									
Toluene-d8 (S)	90	%	73-124		1		09/04/15 12:50	2037-26-5	M5
4-Bromofluorobenzene (S)	95	%	71-124		1		09/04/15 12:50	460-00-4	M5
1,2-Dichloroethane-d4 (S)	100	%	83-138		1		09/04/15 12:50	17060-07-0	M5
Percent Moisture	Analytical Method: Dry Weight								
Percent Moisture	**42.2**	%	0.10	0.10	1		09/02/15 16:29		

Sample: HAOH0824SW25 (ASTM) **Lab ID: 30157386002** Collected: 09/01/15 10:34 Received: 09/01/15 10:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	ND	mg/L	3.0	0.70	1		09/01/15 12:52	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

QC Batch: MSV/24786
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV 5035 Low
Associated Lab Samples: 30157386001

METHOD BLANK: 947761
Matrix: Solid
Associated Lab Samples: 30157386001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/kg	ND	10.0	09/04/15 11:30	M5
1,2-Dichloroethane-d4 (S)	%	99	83-138	09/04/15 11:30	M5
4-Bromofluorobenzene (S)	%	102	71-124	09/04/15 11:30	M5
Toluene-d8 (S)	%	102	73-124	09/04/15 11:30	M5

LABORATORY CONTROL SAMPLE: 947762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/kg	20	16.3	82	12-183	M5
1,2-Dichloroethane-d4 (S)	%			106	83-138	M5
4-Bromofluorobenzene (S)	%			103	71-124	M5
Toluene-d8 (S)	%			99	73-124	M5

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.

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(724)850-5600

QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

QC Batch: OEXT/25066 | Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 | Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157386001

METHOD BLANK: 944952 | Matrix: Solid
Associated Lab Samples: 30157386001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	ND	6.7	08/31/15 22:08	
o-Terphenyl (S)	%	63	20-129	08/31/15 22:08	

LABORATORY CONTROL SAMPLE: 944953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.7	53.5	80	52-126	
o-Terphenyl (S)	%			82	20-129	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944954 944955

Parameter	Units	30157383001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	ND	91.7	92.7	90.3	73.0	95	76	52-126	21	25	
o-Terphenyl (S)	%						93	83	20-129			

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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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

QC Batch: PMST/5592
QC Batch Method: Dry Weight
Analysis Method: Dry Weight
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30157386001

SAMPLE DUPLICATE: 946453

Parameter	Units	30157383001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.1	28.8	1	20	

SAMPLE DUPLICATE: 946454

Parameter	Units	30157384001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	23.8	2	20	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

QC Batch: WETA/21083 — Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E — Analysis Description: 4500 Chloride
Associated Lab Samples: 30157386002

METHOD BLANK: 945747 — Matrix: Water
Associated Lab Samples: 30157386002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:36	

METHOD BLANK: 945749 — Matrix: Water
Associated Lab Samples: 30157386002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:37	

METHOD BLANK: 945750 — Matrix: Water
Associated Lab Samples: 30157386002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

METHOD BLANK: 945751 — Matrix: Water
Associated Lab Samples: 30157386002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	09/01/15 12:38	

LABORATORY CONTROL SAMPLE: 945748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	40.7	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945752 945753

Parameter	Units	30157383002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.3	19.0	91	90	85-115	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/24786

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

M5 A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157386

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157386001	**HAOH0824SW25**	EPA 3546	OEXT/25066	EPA 8015B	GCSV/8546
30157386001	**HAOH0824SW25**	EPA 8260B	MSV/24786		
30157386001	**HAOH0824SW25**	Dry Weight	PMST/5592		
30157386002	**HAOH0824SW25 (ASTM)**	SM 4500-Cl-E	WETA/21083		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157386

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody & Associates, Inc
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA 15342
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER____

Section D Required Client Information

SAMPLE ID
One Character per box
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis: VOCs - Acetone only (8260)	TPH - DRO (8015)	Chloride (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH08245SW25	SL	G	8/24/15	1251				2	X								X	X	X	N	001
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(2) 4 oz. glass jars

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Moody & Assoc	08/24/15	1700	Moody & Assoc	8/25/15	0900
Moody & Assoc	08/25/15	0900	Cliff Mt Joy Pace	8/25/15	12:50P
Cliff Mt Joy Pace	8/25/15	3:30		8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.4	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lori Harowitz

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 08/25/15

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157386

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ None ___ Other _____

Thermometer Used 6 Type of Ice: Wet Blue None ☒ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C Correction Factor: -0.2 °C Final Temp: 1.4 °C

Date and initials of person examining contents: AMC 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: SL	☒Yes ☐No ☐N/A	12.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenols	☐Yes ☐No ☒N/A ☐Yes ☐No	Initial when completed AMC Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

page 2

30157386

Project Number: _____

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	2																						

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory on August 25, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157381001	**HAOH0824SW001**	Water	08/24/15 14:10	08/25/15 15:30
30157381002	**HAOH0824SW24**	Water	08/24/15 11:40	08/25/15 15:30
30157381003	**HAOH0824PD03**	Water	08/24/15 10:50	08/25/15 15:30
30157381004	**HAOH0824PD07**	Water	08/24/15 12:30	08/25/15 15:30

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157381001	**HAOH0824SW001**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157381002	**HAOH0824SW24**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157381003	**HAOH0824PD03**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157381004	**HAOH0824PD07**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157381001	**HAOH0824SW001**					
SM 4500-Cl-E	Chloride	46.6	mg/L	3.0	08/28/15 11:41	
30157381002	**HAOH0824SW24**					
SM 4500-Cl-E	Chloride	49.4	mg/L	3.0	08/28/15 11:42	
30157381003	**HAOH0824PD03**					
SM 4500-Cl-E	Chloride	41.4	mg/L	3.0	08/28/15 11:47	
30157381004	**HAOH0824PD07**					
SM 4500-Cl-E	Chloride	82.0	mg/L	3.0	08/28/15 11:48	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Method: **EPA 8015B**
Description: 8015 TPH
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
4 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.

QC Batch: OEXT/25072

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

Additional Comments:

Analyte Comments:

QC Batch: OEXT/25072

1c: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- HAOH0824PD03 (Lab ID: 30157381003)
  - TPH (C10-C28)
- HAOH0824PD07 (Lab ID: 30157381004)
  - TPH (C10-C28)
- HAOH0824SW001 (Lab ID: 30157381001)
  - TPH (C10-C28)
- HAOH0824SW24 (Lab ID: 30157381002)
  - TPH (C10-C28)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Method: **EPA 8015B**
Description: 8015 TPH
Client: Moody and Associates, Inc.
Date: September 10, 2015

Analyte Comments:

QC Batch: OEXT/25072

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 945004)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824PD03 (Lab ID: 30157381003)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824PD07 (Lab ID: 30157381004)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW001 (Lab ID: 30157381001)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW24 (Lab ID: 30157381002)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- LCS (Lab ID: 945005)
  - TPH (C10-C28)
  - o-Terphenyl (S)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Method: **EPA 8260B**
Description: 8260 MSV
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
4 samples were analyzed for EPA 8260B. 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: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
4 samples were analyzed for SM 4500-Cl-E. 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:

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

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Sample: HAOH0824SW001 **Lab ID: 30157381001** Collected: 08/24/15 14:10 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.11	0.028	1	08/31/15 13:20	09/09/15 23:00		1c,N2
Surrogates									
o-Terphenyl (S)	80	%	42-125		1	08/31/15 13:20	09/09/15 23:00	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 18:41	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	113	%	84-113		1		08/31/15 18:41	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	84-124		1		08/31/15 18:41	17060-07-0	
Toluene-d8 (S)	113	%	79-118		1		08/31/15 18:41	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**46.6**	mg/L	3.0	0.70	1		08/28/15 11:41	16887-00-6	

Sample: HAOH0824SW24 **Lab ID: 30157381002** Collected: 08/24/15 11:40 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/09/15 23:08		1c,N2
Surrogates									
o-Terphenyl (S)	72	%	42-125		1	08/31/15 13:20	09/09/15 23:08	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 19:06	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	100	%	84-113		1		08/31/15 19:06	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	84-124		1		08/31/15 19:06	17060-07-0	
Toluene-d8 (S)	99	%	79-118		1		08/31/15 19:06	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**49.4**	mg/L	3.0	0.70	1		08/28/15 11:42	16887-00-6	

Sample: HAOH0824PD03 **Lab ID: 30157381003** Collected: 08/24/15 10:50 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.027	1	08/31/15 13:20	09/09/15 23:16		1c,N2
Surrogates									
o-Terphenyl (S)	75	%	42-125		1	08/31/15 13:20	09/09/15 23:16	84-15-1	N2

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Sample: HAOH0824PD03 **Lab ID: 30157381003** Collected: 08/24/15 10:50 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 19:32	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	112	%	84-113		1		08/31/15 19:32	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	84-124		1		08/31/15 19:32	17060-07-0	
Toluene-d8 (S)	101	%	79-118		1		08/31/15 19:32	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**41.4**	mg/L	3.0	0.70	1		08/28/15 11:47	16887-00-6	

Sample: HAOH0824PD07 **Lab ID: 30157381004** Collected: 08/24/15 12:30 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/09/15 23:25		1c,N2
Surrogates									
o-Terphenyl (S)	74	%	42-125		1	08/31/15 13:20	09/09/15 23:25	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 19:57	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	98	%	84-113		1		08/31/15 19:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	84-124		1		08/31/15 19:57	17060-07-0	
Toluene-d8 (S)	105	%	79-118		1		08/31/15 19:57	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**82.0**	mg/L	3.0	0.70	1		08/28/15 11:48	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

QC Batch: MSV/24733 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

METHOD BLANK: 945185 Matrix: Water
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	08/31/15 17:24	
1,2-Dichloroethane-d4 (S)	%	104	84-124	08/31/15 17:24	
4-Bromofluorobenzene (S)	%	110	84-113	08/31/15 17:24	
Toluene-d8 (S)	%	103	79-118	08/31/15 17:24	

LABORATORY CONTROL SAMPLE: 945186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	20	11.6	58	56-142	
1,2-Dichloroethane-d4 (S)	%			100	84-124	
4-Bromofluorobenzene (S)	%			107	84-113	
Toluene-d8 (S)	%			100	79-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945614 945615

Parameter	Units	30157381001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetone	ug/L	ND	20	20	20.7	16.6	103	83	56-142	22	30	
1,2-Dichloroethane-d4 (S)	%						109	99	84-124			
4-Bromofluorobenzene (S)	%						109	93	84-113			
Toluene-d8 (S)	%						98	94	79-118			

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

QC Batch: OEXT/25072 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

METHOD BLANK: 945004 Matrix: Water
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/L	ND	0.10	09/09/15 22:16	N2
o-Terphenyl (S)	%	78	42-125	09/09/15 22:16	N2

LABORATORY CONTROL SAMPLE: 945005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/L	1	0.89	89	50-121	N2
o-Terphenyl (S)	%			87	42-125	N2

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

QC Batch: WETA/21048 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Analysis Description: 4500 Chloride
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

METHOD BLANK: 944114 Matrix: Water
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	08/28/15 11:33	

METHOD BLANK: 944116 Matrix: Water
Associated Lab Samples: 30157381001, 30157381002, 30157381003, 30157381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	08/28/15 11:33	

LABORATORY CONTROL SAMPLE: 944115

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	41.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944117 944118

Parameter	Units	30157076002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.8	19.8	93	93	85-115	0	20	

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/25072

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

N2 The lab does not hold TNI accreditation for this parameter.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157381

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157381001	**HAOH0824SW001**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157381002	**HAOH0824SW24**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157381003	**HAOH0824PD03**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157381004	**HAOH0824PD07**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157381001	**HAOH0824SW001**	EPA 8260B	MSV/24733		
30157381002	**HAOH0824SW24**	EPA 8260B	MSV/24733		
30157381003	**HAOH0824PD03**	EPA 8260B	MSV/24733		
30157381004	**HAOH0824PD07**	EPA 8260B	MSV/24733		
30157381001	**HAOH0824SW001**	SM 4500-Cl-E	WETA/21048		
30157381002	**HAOH0824SW24**	SM 4500-Cl-E	WETA/21048		
30157381003	**HAOH0824PD03**	SM 4500-Cl-E	WETA/21048		
30157381004	**HAOH0824PD07**	SM 4500-Cl-E	WETA/21048		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157381

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc.	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody and Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER____

Section D Required Client Information

SAMPLE ID
One Character per box
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis: VOCs - Acetone only (8260)	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW001	WT	G	8/24/15	1410				5	X			X					x	x	x	N	001
2	HAOH0824SW02	WT	G	8/24/15														DRY - NO SAMPLE				
3	HAOH0824SW24	WT	G	8/24/15	1140				5	X			X					x	x	x	N	002
4	HAOH0824PD03	WT	G	8/24/15	1050				5	X			X					x	x	x	N	003
5	HAOH0824PD07	WT	G	8/24/15	1230				5	X			X					x	x	x	N	004
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(3) 40 ml VOA Vials (HCL)

(1) Amber Glass L

(1) 250 ml Plastic

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
[signature] / Moody	8/24/2015	1815	[signature] / Moody	8/25/15	0900		Y/N	Y/N	Y/N
[signature] / Moody	8/25/15	0900	Cliff Mitchell by Pace	8/25/15	12:50P		Y/N	Y/N	Y/N
Cliff Mitchell by Pace	8/25/15	3:30	[signature]	8/25/15	1530	1.4	N	N	N
							Y/N	Y/N	Y/N
						Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joshua L. Boyda

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY): 08/24/15

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157381

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue is Frozen: Yes No

Packing Material: ~~Bubble Wrap~~ ____ Bubble Bags ____ None ____ Other _____

Thermometer Used 6 Type of Ice: (Wet) Blue None ☒ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C Correction Factor: -0.2 °C Final Temp: 1.4 °C

Date and Initials of person examining contents: AMC 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☒Yes ☐No	Initial when completed AMC / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☐Yes ☒No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157381

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml / 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WT			1	1									3										
004	WT			1	1									3										

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
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Greensburg, PA 15601
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September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory on August 25, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157390001	**HOAH0824SW04**	Water	08/24/15 13:10	08/25/15 15:30
30157390002	**HOAH0824SW08**	Water	08/24/15 10:15	08/25/15 15:30
30157390003	**HOAH0824SW08DUP**	Water	08/24/15 10:40	08/25/15 15:30
30157390004	**HOAH0824SW15**	Water	08/24/15 11:30	08/25/15 15:30
30157390005	**HOAH0824SW20**	Water	08/24/15 14:10	08/25/15 15:30

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157390001	**HOAH0824SW04**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157390002	**HOAH0824SW08**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157390003	**HOAH0824SW08DUP**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157390004	**HOAH0824SW15**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157390005	**HOAH0824SW20**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157390001	**HOAH0824SW04**					
SM 4500-Cl-E	Chloride	7.0	mg/L	3.0	08/28/15 11:56	
30157390002	**HOAH0824SW08**					
SM 4500-Cl-E	Chloride	40.9	mg/L	3.0	08/28/15 11:59	
30157390003	**HOAH0824SW08DUP**					
SM 4500-Cl-E	Chloride	40.6	mg/L	3.0	08/28/15 11:59	
30157390004	**HOAH0824SW15**					
SM 4500-Cl-E	Chloride	4.2	mg/L	3.0	08/28/15 12:00	
30157390005	**HOAH0824SW20**					
SM 4500-Cl-E	Chloride	7.3	mg/L	3.0	08/28/15 12:01	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Method: **EPA 8015B**
Description: 8015 TPH
Client: Moody and Associates, Inc.
Date: September 10, 2015

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.

QC Batch: OEXT/25072

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

Additional Comments:

Analyte Comments:

QC Batch: OEXT/25072

1c: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- HOAH0824SW04 (Lab ID: 30157390001)
  - TPH (C10-C28)
- HOAH0824SW08 (Lab ID: 30157390002)
  - TPH (C10-C28)
- HOAH0824SW08DUP (Lab ID: 30157390003)
  - TPH (C10-C28)
- HOAH0824SW15 (Lab ID: 30157390004)
  - TPH (C10-C28)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Method: **EPA 8015B**
Description: 8015 TPH
Client: Moody and Associates, Inc.
Date: September 10, 2015

Analyte Comments:

QC Batch: OEXT/25072

1c: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- HOAH0824SW20 (Lab ID: 30157390005)
  - TPH (C10-C28)

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 945004)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HOAH0824SW04 (Lab ID: 30157390001)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HOAH0824SW08 (Lab ID: 30157390002)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HOAH0824SW08DUP (Lab ID: 30157390003)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HOAH0824SW15 (Lab ID: 30157390004)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HOAH0824SW20 (Lab ID: 30157390005)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- LCS (Lab ID: 945005)
  - TPH (C10-C28)
  - o-Terphenyl (S)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Method: **EPA 8260B**
Description: 8260 MSV
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
5 samples were analyzed for EPA 8260B. 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.

QC Batch: MSV/24757

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- BLANK (Lab ID: 946932)
  - 4-Bromofluorobenzene (S)
- HOAH0824SW04 (Lab ID: 30157390001)
  - 4-Bromofluorobenzene (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.

QC Batch: MSV/24757

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

Additional Comments:

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
5 samples were analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Sample: HOAH0824SW04 **Lab ID: 30157390001** Collected: 08/24/15 13:10 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/10/15 00:30		1c,N2
Surrogates									
o-Terphenyl (S)	71	%	42-125		1	08/31/15 13:20	09/10/15 00:30	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		09/03/15 13:37	67-64-1	M5
Surrogates									
4-Bromofluorobenzene (S)	121	%	84-113		1		09/03/15 13:37	460-00-4	M5,S3
1,2-Dichloroethane-d4 (S)	107	%	84-124		1		09/03/15 13:37	17060-07-0	M5
Toluene-d8 (S)	107	%	79-118		1		09/03/15 13:37	2037-26-5	M5
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**7.0**	mg/L	3.0	0.70	1		08/28/15 11:56	16887-00-6	

Sample: HOAH0824SW08 **Lab ID: 30157390002** Collected: 08/24/15 10:15 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/10/15 00:39		1c,N2
Surrogates									
o-Terphenyl (S)	68	%	42-125		1	08/31/15 13:20	09/10/15 00:39	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		09/03/15 14:02	67-64-1	M5
Surrogates									
4-Bromofluorobenzene (S)	111	%	84-113		1		09/03/15 14:02	460-00-4	M5
1,2-Dichloroethane-d4 (S)	109	%	84-124		1		09/03/15 14:02	17060-07-0	M5
Toluene-d8 (S)	105	%	79-118		1		09/03/15 14:02	2037-26-5	M5
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**40.9**	mg/L	3.0	0.70	1		08/28/15 11:59	16887-00-6	

Sample: HOAH0824SW08DUP **Lab ID: 30157390003** Collected: 08/24/15 10:40 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/10/15 00:47		1c,N2
Surrogates									
o-Terphenyl (S)	67	%	42-125		1	08/31/15 13:20	09/10/15 00:47	84-15-1	N2

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Sample: HOAH0824SW08DUP **Lab ID: 30157390003** Collected: 08/24/15 10:40 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		09/03/15 14:28	67-64-1	M5
Surrogates									
4-Bromofluorobenzene (S)	110	%	84-113		1		09/03/15 14:28	460-00-4	M5
1,2-Dichloroethane-d4 (S)	110	%	84-124		1		09/03/15 14:28	17060-07-0	M5
Toluene-d8 (S)	93	%	79-118		1		09/03/15 14:28	2037-26-5	M5
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**40.6**	mg/L	3.0	0.70	1		08/28/15 11:59	16887-00-6	

Sample: HOAH0824SW15 **Lab ID: 30157390004** Collected: 08/24/15 11:30 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.11	0.029	1	08/31/15 13:20	09/10/15 00:55		1c,N2
Surrogates									
o-Terphenyl (S)	78	%	42-125		1	08/31/15 13:20	09/10/15 00:55	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		09/03/15 14:54	67-64-1	M5
Surrogates									
4-Bromofluorobenzene (S)	112	%	84-113		1		09/03/15 14:54	460-00-4	M5
1,2-Dichloroethane-d4 (S)	118	%	84-124		1		09/03/15 14:54	17060-07-0	M5
Toluene-d8 (S)	104	%	79-118		1		09/03/15 14:54	2037-26-5	M5
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**4.2**	mg/L	3.0	0.70	1		08/28/15 12:00	16887-00-6	

Sample: HOAH0824SW20 **Lab ID: 30157390005** Collected: 08/24/15 14:10 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/10/15 01:03		1c,N2
Surrogates									
o-Terphenyl (S)	71	%	42-125		1	08/31/15 13:20	09/10/15 01:03	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		09/03/15 15:19	67-64-1	M5
Surrogates									
4-Bromofluorobenzene (S)	99	%	84-113		1		09/03/15 15:19	460-00-4	M5
1,2-Dichloroethane-d4 (S)	106	%	84-124		1		09/03/15 15:19	17060-07-0	M5

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Sample: HOAH0824SW20 **Lab ID: 30157390005** Collected: 08/24/15 14:10 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Surrogates									
Toluene-d8 (S)	99	%	79-118		1		09/03/15 15:19	2037-26-5	M5
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**7.3**	mg/L	3.0	0.70	1		08/28/15 12:01	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

QC Batch: MSV/24757 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV
Associated Lab Samples: 30157390001, 30157390002, 30157390003, 30157390004, 30157390005

METHOD BLANK: 946932 Matrix: Water
Associated Lab Samples: 30157390001, 30157390002, 30157390003, 30157390004, 30157390005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	09/03/15 10:37	M5
1,2-Dichloroethane-d4 (S)	%	105	84-124	09/03/15 10:37	M5
4-Bromofluorobenzene (S)	%	116	84-113	09/03/15 10:37	M5,S3
Toluene-d8 (S)	%	101	79-118	09/03/15 10:37	M5

LABORATORY CONTROL SAMPLE: 946933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	20	15.4	77	56-142	M5
1,2-Dichloroethane-d4 (S)	%			99	84-124	M5
4-Bromofluorobenzene (S)	%			103	84-113	M5
Toluene-d8 (S)	%			99	79-118	M5

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

QC Batch: OEXT/25072 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157390001, 30157390002, 30157390003, 30157390004, 30157390005

METHOD BLANK: 945004 Matrix: Water
Associated Lab Samples: 30157390001, 30157390002, 30157390003, 30157390004, 30157390005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/L	ND	0.10	09/09/15 22:16	N2
o-Terphenyl (S)	%	78	42-125	09/09/15 22:16	N2

LABORATORY CONTROL SAMPLE: 945005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/L	1	0.89	89	50-121	N2
o-Terphenyl (S)	%			87	42-125	N2

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

QC Batch: WETA/21049 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Analysis Description: 4500 Chloride
Associated Lab Samples: 30157390001, 30157390002, 30157390003, 30157390004, 30157390005

METHOD BLANK: 944119 Matrix: Water
Associated Lab Samples: 30157390001, 30157390002, 30157390003, 30157390004, 30157390005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	08/28/15 11:56	

LABORATORY CONTROL SAMPLE: 944120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	43.1	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944121 944123

Parameter	Units	30157390001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7.0	20	20	27.8	28.4	104	107	85-115	2	20	

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

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-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/25072

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/24757

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
M5	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
N2	The lab does not hold TNI accreditation for this parameter.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157390

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157390001	**HOAH0824SW04**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157390002	**HOAH0824SW08**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157390003	**HOAH0824SW08DUP**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157390004	**HOAH0824SW15**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157390005	**HOAH0824SW20**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157390001	**HOAH0824SW04**	EPA 8260B	MSV/24757		
30157390002	**HOAH0824SW08**	EPA 8260B	MSV/24757		
30157390003	**HOAH0824SW08DUP**	EPA 8260B	MSV/24757		
30157390004	**HOAH0824SW15**	EPA 8260B	MSV/24757		
30157390005	**HOAH0824SW20**	EPA 8260B	MSV/24757		
30157390001	**HOAH0824SW04**	SM 4500-Cl-E	WETA/21049		
30157390002	**HOAH0824SW08**	SM 4500-Cl-E	WETA/21049		
30157390003	**HOAH0824SW08DUP**	SM 4500-Cl-E	WETA/21049		
30157390004	**HOAH0824SW15**	SM 4500-Cl-E	WETA/21049		
30157390005	**HOAH0824SW20**	SM 4500-Cl-E	WETA/21049		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157390

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc.	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody and Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER_____

Filtered (Y/N)

Requested Ana

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	VOCs - Acetone only (6	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW04	WT	G	8/24/15	1310				5	X			X					x	x	x	N	001
2	HAOH0824SW08	WT	G	8/24/15	1015				5	X			X					x	x	x	N	002
3	HAOH0824SW08DUP	WT	G	8/24/15	1040				5	X			X					x	x	x	N	003
4	HAOH0824SW15	WT	G	8/24/15	1130				5	X			X					x	x	x	N	004
5	HAOH0824SW20	WT	G	8/24/15	1410				5	X			X					x	x	x	N	005
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(3) 40 ml VOA Vials (HCL)

(1) Amber Glass L

(1) 250 ml Plastic

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
[signature] Moodys + Associates	8/24/15	1700	[signature] Moodys	8/25/15	0900		Y/N	Y/N	Y/N
[signature] Moodys + Assoc.	8/25/15	0900	Alyna R. Muchner Pace	8/25/15	1530	2.3	Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
						Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

e-File(ALLQ020rev.3,31Mar05))22Jun2005

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157390

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ✓ Bubble Bags ✓ None ___ Other _____

Thermometer Used 7 Type of Ice: Wet Blue None ☑ Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: 2.5 °C Correction Factor: -0.2 °C Final Temp: 2.3 °C

Date and Initials of person examining contents: ARM 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☑Yes ☐No	Initial when completed ARM / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☑No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☑No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel D Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 30157390

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml, 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WT			1	1									3										
005	WT			1	1									3										

SCURF Back (C016-4 15May2012).xls

Pace Analytical Services, Inc.
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September 10, 2015

Leah Mistick
Moody and Associates, Inc.
199 Johnson Road
Building 2, Suite 101
Houston, PA 15342

RE: Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Dear Leah Mistick:
Enclosed are the analytical results for sample(s) received by the laboratory on August 25, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Rachel Christner
rachel.christner@pacelabs.com
Project Manager

Enclosures

cc: Mr. Josh Boyda, Moody and Associates, Inc.
Mr. Brendan Poffenbaugh, Moody and Associates, Inc.

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CERTIFICATIONS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Pennsylvania Certification IDs
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30157382001	**HAOH0824SW06**	Water	08/24/15 13:28	08/25/15 15:30
30157382002	**HAOH0824SW17**	Water	08/24/15 12:01	08/25/15 15:30
30157382003	**HAOH0824SW18**	Water	08/24/15 10:58	08/25/15 15:30
30157382004	**HAOH0824SW21**	Water	08/24/15 13:56	08/25/15 15:30
30157382005	**HAOH0824SW25**	Water	08/24/15 12:51	08/25/15 15:30

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SAMPLE ANALYTE COUNT

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30157382001	**HAOH0824SW06**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157382002	**HAOH0824SW17**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157382003	**HAOH0824SW18**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157382004	**HAOH0824SW21**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA
30157382005	**HAOH0824SW25**	EPA 8015B	CWB	2	PASI-PA
		EPA 8260B	JAS	4	PASI-PA
		SM 4500-Cl-E	EHW	1	PASI-PA

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SUMMARY OF DETECTION

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
30157382001	**HAOH0824SW06**					
SM 4500-Cl-E	Chloride	8.5	mg/L	3.0	08/28/15 11:48	
30157382002	**HAOH0824SW17**					
SM 4500-Cl-E	Chloride	8.9	mg/L	3.0	08/28/15 11:49	
30157382003	**HAOH0824SW18**					
SM 4500-Cl-E	Chloride	7.4	mg/L	3.0	08/28/15 11:50	
30157382004	**HAOH0824SW21**					
SM 4500-Cl-E	Chloride	12.6	mg/L	3.0	08/28/15 11:51	
30157382005	**HAOH0824SW25**					
SM 4500-Cl-E	Chloride	6.2	mg/L	3.0	08/28/15 11:51	

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Method: **EPA 8015B**
Description: 8015 TPH
Client: Moody and Associates, Inc.
Date: September 10, 2015

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.

QC Batch: OEXT/25072

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

Additional Comments:

Analyte Comments:

QC Batch: OEXT/25072

1c: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- HAOH0824SW06 (Lab ID: 30157382001)
  - TPH (C10-C28)
- HAOH0824SW17 (Lab ID: 30157382002)
  - TPH (C10-C28)
- HAOH0824SW18 (Lab ID: 30157382003)
  - TPH (C10-C28)
- HAOH0824SW21 (Lab ID: 30157382004)
  - TPH (C10-C28)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Method: **EPA 8015B**
Description: 8015 TPH
Client: Moody and Associates, Inc.
Date: September 10, 2015

Analyte Comments:

QC Batch: OEXT/25072

1c: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- HAOH0824SW25 (Lab ID: 30157382005)
  - TPH (C10-C28)

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 945004)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW06 (Lab ID: 30157382001)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW17 (Lab ID: 30157382002)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW18 (Lab ID: 30157382003)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW21 (Lab ID: 30157382004)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- HAOH0824SW25 (Lab ID: 30157382005)
  - TPH (C10-C28)
  - o-Terphenyl (S)
- LCS (Lab ID: 945005)
  - TPH (C10-C28)
  - o-Terphenyl (S)

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PROJECT NARRATIVE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Method: **EPA 8260B**
Description: 8260 MSV
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
5 samples were analyzed for EPA 8260B. 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: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Method: **SM 4500-Cl-E**
Description: 4500 Chloride
Client: Moody and Associates, Inc.
Date: September 10, 2015

General Information:
5 samples were analyzed for SM 4500-Cl-E. 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:

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

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Sample: HAOH0824SW06 **Lab ID: 30157382001** Collected: 08/24/15 13:28 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/09/15 23:42		1c,N2
Surrogates									
o-Terphenyl (S)	74	%	42-125		1	08/31/15 13:20	09/09/15 23:42	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 20:23	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	105	%	84-113		1		08/31/15 20:23	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	84-124		1		08/31/15 20:23	17060-07-0	
Toluene-d8 (S)	102	%	79-118		1		08/31/15 20:23	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**8.5**	mg/L	3.0	0.70	1		08/28/15 11:48	16887-00-6	

Sample: HAOH0824SW17 **Lab ID: 30157382002** Collected: 08/24/15 12:01 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/09/15 23:50		1c,N2
Surrogates									
o-Terphenyl (S)	75	%	42-125		1	08/31/15 13:20	09/09/15 23:50	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 20:48	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	105	%	84-113		1		08/31/15 20:48	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	84-124		1		08/31/15 20:48	17060-07-0	
Toluene-d8 (S)	99	%	79-118		1		08/31/15 20:48	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**8.9**	mg/L	3.0	0.70	1		08/28/15 11:49	16887-00-6	

Sample: HAOH0824SW18 **Lab ID: 30157382003** Collected: 08/24/15 10:58 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/09/15 23:58		1c,N2
Surrogates									
o-Terphenyl (S)	77	%	42-125		1	08/31/15 13:20	09/09/15 23:58	84-15-1	N2

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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Sample: HAOH0824SW18 **Lab ID: 30157382003** Collected: 08/24/15 10:58 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 21:14	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	105	%	84-113		1		08/31/15 21:14	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	84-124		1		08/31/15 21:14	17060-07-0	
Toluene-d8 (S)	105	%	79-118		1		08/31/15 21:14	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**7.4**	mg/L	3.0	0.70	1		08/28/15 11:50	16887-00-6	

Sample: HAOH0824SW21 **Lab ID: 30157382004** Collected: 08/24/15 13:56 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/10/15 00:06		1c,N2
Surrogates									
o-Terphenyl (S)	74	%	42-125		1	08/31/15 13:20	09/10/15 00:06	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 21:40	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	108	%	84-113		1		08/31/15 21:40	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	84-124		1		08/31/15 21:40	17060-07-0	
Toluene-d8 (S)	104	%	79-118		1		08/31/15 21:40	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**12.6**	mg/L	3.0	0.70	1		08/28/15 11:51	16887-00-6	

Sample: HAOH0824SW25 **Lab ID: 30157382005** Collected: 08/24/15 12:51 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH	Analytical Method: EPA 8015B Preparation Method: EPA 3510C								
TPH (C10-C28)	ND	mg/L	0.10	0.026	1	08/31/15 13:20	09/10/15 00:14		1c,N2
Surrogates									
o-Terphenyl (S)	75	%	42-125		1	08/31/15 13:20	09/10/15 00:14	84-15-1	N2
8260 MSV	Analytical Method: EPA 8260B								
Acetone	ND	ug/L	10.0	2.3	1		08/31/15 22:05	67-64-1	
Surrogates									
4-Bromofluorobenzene (S)	96	%	84-113		1		08/31/15 22:05	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	84-124		1		08/31/15 22:05	17060-07-0	

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ANALYTICAL RESULTS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Sample: HAOH0824SW25 **Lab ID: 30157382005** Collected: 08/24/15 12:51 Received: 08/25/15 15:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Surrogates									
Toluene-d8 (S)	98	%	79-118		1		08/31/15 22:05	2037-26-5	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**6.2**	mg/L	3.0	0.70	1		08/28/15 11:51	16887-00-6	

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

QC Batch: MSV/24733 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

METHOD BLANK: 945185 Matrix: Water
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acetone	ug/L	ND	10.0	08/31/15 17:24	
1,2-Dichloroethane-d4 (S)	%	104	84-124	08/31/15 17:24	
4-Bromofluorobenzene (S)	%	110	84-113	08/31/15 17:24	
Toluene-d8 (S)	%	103	79-118	08/31/15 17:24	

LABORATORY CONTROL SAMPLE: 945186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetone	ug/L	20	11.6	58	56-142	
1,2-Dichloroethane-d4 (S)	%			100	84-124	
4-Bromofluorobenzene (S)	%			107	84-113	
Toluene-d8 (S)	%			100	79-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945614 945615

Parameter	Units	30157381001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetone	ug/L	ND	20	20	20.7	16.6	103	83	56-142	22	30	
1,2-Dichloroethane-d4 (S)	%						109	99	84-124			
4-Bromofluorobenzene (S)	%						109	93	84-113			
Toluene-d8 (S)	%						98	94	79-118			

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.

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

QC Batch: OEXT/25072 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015 TPH
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

METHOD BLANK: 945004 Matrix: Water
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH (C10-C28)	mg/L	ND	0.10	09/09/15 22:16	N2
o-Terphenyl (S)	%	78	42-125	09/09/15 22:16	N2

LABORATORY CONTROL SAMPLE: 945005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/L	1	0.89	89	50-121	N2
o-Terphenyl (S)	%			87	42-125	N2

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QUALITY CONTROL DATA

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

QC Batch: WETA/21048 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Analysis Description: 4500 Chloride
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

METHOD BLANK: 944114 Matrix: Water
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	08/28/15 11:33	

METHOD BLANK: 944116 Matrix: Water
Associated Lab Samples: 30157382001, 30157382002, 30157382003, 30157382004, 30157382005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	3.0	08/28/15 11:33	

LABORATORY CONTROL SAMPLE: 944115

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	40	41.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 944117 944118

Parameter	Units	30157076002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	19.8	19.8	93	93	85-115	0	20	

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QUALIFIERS

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

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-PA Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: OEXT/25072

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

N2 The lab does not hold TNI accreditation for this parameter.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-467-LM Eisenbarth Consent O
Pace Project No.: 30157382

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30157382001	**HAOH0824SW06**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157382002	**HAOH0824SW17**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157382003	**HAOH0824SW18**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157382004	**HAOH0824SW21**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157382005	**HAOH0824SW25**	EPA 3510C	OEXT/25072	EPA 8015B	GCSV/8567
30157382001	**HAOH0824SW06**	EPA 8260B	MSV/24733		
30157382002	**HAOH0824SW17**	EPA 8260B	MSV/24733		
30157382003	**HAOH0824SW18**	EPA 8260B	MSV/24733		
30157382004	**HAOH0824SW21**	EPA 8260B	MSV/24733		
30157382005	**HAOH0824SW25**	EPA 8260B	MSV/24733		
30157382001	**HAOH0824SW06**	SM 4500-Cl-E	WETA/21048		
30157382002	**HAOH0824SW17**	SM 4500-Cl-E	WETA/21048		
30157382003	**HAOH0824SW18**	SM 4500-Cl-E	WETA/21048		
30157382004	**HAOH0824SW21**	SM 4500-Cl-E	WETA/21048		
30157382005	**HAOH0824SW25**	SM 4500-Cl-E	WETA/21048		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30157382

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Moody and Associates, Inc.	Report To: Leah Mistick	Attention: Leah Mistick
Address: 199 Johnson Road, Building 2, Suite 101	Copy To: Josh Boyda	Company Name: Moody and Associates, Inc.
Houston, PA 15342		Address: 199 Johnson Road, Building 2, Suite 101, Houston, PA
Email To: lmistick@moody-s.com	Purchase Order No.:	Pace Quote Reference:
Phone:724-746-5200 Fax:724-746-5603	Project Name: Eisenbarth Consent Order	Pace Project Manager:
Requested Due Date/TAT: Standard	Project Number: 14-467-LM	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER_____

SITE LOCATION: ☐ GA ☐ IL ☐ IN ☐ MI ☐ NC ☑ OH ☐ SC ☐ WI ☐ OTHER_____

Filtered (Y/N)

Requested Ana

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	VOCs - Acetone only (8	TPH - DRO (8015)	Chlorides (4500)	Residual Chlorine (Y/N)	Pace Project No. Lab I.D.
1	HAOH0824SW06	WT	G	8/24/15	1328				5	X			X					x	x	x	N	001
2	HAOH0824SW17	WT	G	8/24/15	1201				5	X			X					x	x	x	N	002
3	HAOH0824SW18	WT	G	8/24/15	1058				5	X			X					x	x	x	N	003
4	HAOH0824SW21	WT	G	8/24/15	1356				5	X			X					x	x	x	N	004
5	HAOH0824SW25	WT	G	8/24/15	1251				5	X			X					x	x	x	N	005
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Additional Comments:

(3) 40 ml VOA Vials (HCL)

(1) Amber Glass L

(1) 250 ml Plastic

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] Moody + Assoc	8/24/15	1700	[signature] Moody & Assoc.	8/25/15	0900
[signature] Moody + Assoc	8/25/15	0900	Cliff Mt Joy Page	8/25/15	12:50P
Cliff Mt Joy Page	8/25/15	3:30	[signature]	8/25/15	1530

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1-9	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Lori Horowitz

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY): 08/25/15

e-File(ALLQ020rev.3,31Mar05))22Jun2005

Sample Condition Upon Receipt

Pace Analytical

Client Name: Moody

Project # 30157382

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no Biological Tissue Is Frozen: Yes No

Packing Material: ~~Bubble Wrap~~ ___ ~~Bubble Bags~~ ___ None ___ Other _____

Thermometer Used 6 Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: 1.6 °C Correction Factor: -0.2 °C Final Temp: 1.4 °C

Date and Initials of person examining contents: AWL 8/25/15

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, Phenols	☒Yes ☐No	Initial when completed AWL Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☐Yes ☒No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Rachel D Christner **Date:** 8/26/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

30157382

page 2

Pace Analytical

Project Number: _____

Client Name: Moody

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WT			1	1									3										
005	WT			1	1									3										

SCURF Back (C016-4 15May2012).xls

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 09/08/2015

GCAL Report 215082613

Project Eisenbarth Consent Order

Deliver To Leah Mistick Moody & Associates, Inc. 199 S. Johnson Rd Bldg 2, Ste 101 Houston, PA 15342 724-746-5200

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
N	Metals Matrix Spike or Matrix Spike Duplicate Recovery is outside control limits
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____
Authorized Signature
GCAL Report 215082613

Case Narrative

Client: Moody & Associates, Inc. **Report:** 215082613

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES MASS SPECTROMETRY

In the GCAL SOP LCMS-001 analysis, samples 21508261303 (HAOH0824SW18), 21508261305 (HAOH0824SW17), 21508261306 (HAOH0824SW25), 21508261307 (HAOH0824SW04), 21508261308 (HAOH0824SW06) 21508261309 (HAOH0824SW21), and 21508261311 (HAOH0824SW20) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. This is reflected in elevated detection limits.

In the GCAL SOP LCMS-001 analysis for prep batch 566470, the MS/MSD exhibited recovery and RPD failures. It is suspected that TTPC is non-homogeneous in the sample matrix. The LCS/LCSD recoveries and RPD are acceptable.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the EPA 8015 analysis of prep batch 566775, the %D is outside ±20% for Isopropyl Alcohol in the closing CCV. The response is high and this analyte was not detected in the associated samples.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21508261301	HAOH0824SW08	Solid	08/24/2015 10:15	08/26/2015 10:07
21508261302	HAOH0824SW08DUP	Solid	08/24/2015 10:40	08/26/2015 10:07
21508261303	HAOH0824SW18	Solid	08/24/2015 10:58	08/26/2015 10:07
21508261304	HAOH0824SW15	Solid	08/24/2015 11:30	08/26/2015 10:07
21508261305	HAOH0824SW17	Solid	08/24/2015 12:01	08/26/2015 10:07
21508261306	HAOH0824SW25	Solid	08/24/2015 12:51	08/26/2015 10:07
21508261307	HAOH0824SW04	Solid	08/24/2015 13:10	08/26/2015 10:07
21508261308	HAOH0824SW06	Solid	08/24/2015 13:28	08/26/2015 10:07
21508261309	HAOH0824SW21	Solid	08/24/2015 13:56	08/26/2015 10:07
21508261310	HAOH0824SW001	Solid	08/24/2015 14:10	08/26/2015 10:07
21508261311	HAOH0824SW20	Solid	08/24/2015 14:10	08/26/2015 10:07

Summary of Compounds Detected

HAOH0824SW08

Collect Date	08/24/2015 10:15	**GCAL ID**	21508261301
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	10900	69.5	504	ng/Kg

HAOH0824SW08DUP

Collect Date	08/24/2015 10:40	**GCAL ID**	21508261302
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	5790	68.8	498	ng/Kg

HAOH0824SW18

Collect Date	08/24/2015 10:58	**GCAL ID**	21508261303
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	3940000	24900	181000	ng/Kg

HAOH0824SW15

Collect Date	08/24/2015 11:30	**GCAL ID**	21508261304
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	83.8J	54.5	395	ng/Kg

HAOH0824SW17

Collect Date	08/24/2015 12:01	**GCAL ID**	21508261305
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	8070000	97500	707000	ng/Kg

Summary of Compounds Detected

HAOH0824SW25

Collect Date	08/24/2015 12:51	**GCAL ID**	21508261306
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	94600000	571000	4140000	ng/Kg

HAOH0824SW04

Collect Date	08/24/2015 13:10	**GCAL ID**	21508261307
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	10300	463	3360	ng/Kg

HAOH0824SW06

Collect Date	08/24/2015 13:28	**GCAL ID**	21508261308
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	1040000	100000	727000	ng/Kg

HAOH0824SW21

Collect Date	08/24/2015 13:56	**GCAL ID**	21508261309
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	29700000	237000	1710000	ng/Kg

HAOH0824SW001

Collect Date	08/24/2015 14:10	**GCAL ID**	21508261310
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	306J	131	950	ng/Kg

Summary of Compounds Detected

HAOH0824SW20	Collect Date	08/24/2015 14:10	GCAL ID	21508261311
	Receive Date	08/26/2015 10:07	Matrix	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	1760000	24700	179000	ng/Kg

Sample Results

HAOH0824SW08	Collect Date	08/24/2015 10:15	GCAL ID	21508261301
	Receive Date	08/26/2015 10:07	Matrix	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	1	09/03/2015 02:44	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**10900**	**69.5**	**504**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 08:25	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	606U	606	2290	ug/Kg
67-63-0	Isopropyl Alcohol	1030U	1030	2290	ug/Kg

HAOH0824SW08DUP	Collect Date	08/24/2015 10:40	GCAL ID	21508261302
	Receive Date	08/26/2015 10:07	Matrix	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	1	09/03/2015 03:21	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**5790**	**68.8**	**498**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 08:39	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	677U	677	2560	ug/Kg
67-63-0	Isopropyl Alcohol	1150U	1150	2560	ug/Kg

Sample Results

HAOH0824SW18

Collect Date	08/24/2015 10:58	**GCAL ID**	21508261303
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	500	09/03/2015 03:34	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**3940000**	**24900**	**181000**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 08:53	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	456U	456	1720	ug/Kg
67-63-0	Isopropyl Alcohol	774U	774	1720	ug/Kg

GCAL SOP HPLC-009 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/28/2015 14:30	566414	GCAL SOP HPLC-009	1	08/31/2015 10:11	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	74.5U	74.5	121	ug/Kg

HAOH0824SW15

Collect Date	08/24/2015 11:30	**GCAL ID**	21508261304
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	1	09/03/2015 03:46	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**83.8J**	**54.5**	**395**	**ng/Kg**

Sample Results

HAOH0824SW15

Collect Date	08/24/2015 11:30	**GCAL ID**	21508261304
Receive Date	08/26/2015 10:07	**Matrix**	Solid

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 09:07	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	498U	498	1880	ug/Kg
67-63-0	Isopropyl Alcohol	845U	845	1880	ug/Kg

HAOH0824SW17

Collect Date	08/24/2015 12:01	**GCAL ID**	21508261305
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	2000	09/03/2015 03:59	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**8070000**	**97500**	**707000**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 09:21	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	435U	435	1640	ug/Kg
67-63-0	Isopropyl Alcohol	739U	739	1640	ug/Kg

HAOH0824SW25

Collect Date	08/24/2015 12:51	**GCAL ID**	21508261306
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	10000	09/03/2015 04:12	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**94600000**	**571000**	**4140000**	**ng/Kg**

Sample Results

HAOH0824SW25

Collect Date	08/24/2015 12:51	**GCAL ID**	21508261306
Receive Date	08/26/2015 10:07	**Matrix**	Solid

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 09:35	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	562U	562	2120	ug/Kg
67-63-0	Isopropyl Alcohol	954U	954	2120	ug/Kg

HAOH0824SW04

Collect Date	08/24/2015 13:10	**GCAL ID**	21508261307
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	10	09/03/2015 04:24	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**10300**	**463**	**3360**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 09:49	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	456U	456	1720	ug/Kg
67-63-0	Isopropyl Alcohol	774U	774	1720	ug/Kg

GCAL SOP HPLC-009 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/28/2015 14:30	566414	GCAL SOP HPLC-009	1	08/31/2015 10:25	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	69.1U	69.1	112	ug/Kg

Sample Results

HAOH0824SW06

Collect Date	08/24/2015 13:28	**GCAL ID**	21508261308
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	2000	09/03/2015 17:40	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**1040000**	**100000**	**727000**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 10:03	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	448U	448	1690	ug/Kg
67-63-0	Isopropyl Alcohol	761U	761	1690	ug/Kg

GCAL SOP HPLC-009 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/28/2015 14:30	566414	GCAL SOP HPLC-009	1	08/31/2015 10:38	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	74.9U	74.9	121	ug/Kg

HAOH0824SW21

Collect Date	08/24/2015 13:56	**GCAL ID**	21508261309
Receive Date	08/26/2015 10:07	**Matrix**	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	5000	09/03/2015 04:49	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**29700000**	**237000**	**1710000**	**ng/Kg**

Sample Results

HAOH0824SW21	Collect Date	08/24/2015 13:56	GCAL ID	21508261309
	Receive Date	08/26/2015 10:07	Matrix	Solid

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 10:17	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	363U	363	1370	ug/Kg
67-63-0	Isopropyl Alcohol	617U	617	1370	ug/Kg

HAOH0824SW001	Collect Date	08/24/2015 14:10	GCAL ID	21508261310
	Receive Date	08/26/2015 10:07	Matrix	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	1	09/03/2015 16:05	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**306J**	**131**	**950**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 10:32	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	1170U	1170	4420	ug/Kg
67-63-0	Isopropyl Alcohol	1990U	1990	4420	ug/Kg

GCAL SOP HPLC-009 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/28/2015 14:30	566414	GCAL SOP HPLC-009	1	08/31/2015 10:52	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	196U	196	317	ug/Kg

Sample Results

HAOH0824SW20	Collect Date	08/24/2015 14:10	GCAL ID	21508261311
	Receive Date	08/26/2015 10:07	Matrix	Solid

GCAL SOP LCMS-001 *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/31/2015 10:30	566470	EPA 3550C	500	09/03/2015 16:18	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**1760000**	**24700**	**179000**	**ng/Kg**

EPA 8015C *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/02/2015 10:46	SDD	566775

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	452U	452	1710	ug/Kg
67-63-0	Isopropyl Alcohol	768U	768	1710	ug/Kg

LC/MS QC Summary

Analytical Batch	Client ID	MB566470		RLC566470			
566986	GCAL ID	1481542		1481545			
Prep Batch	Sample Type	MB		RLC			
566470	Prep Date	08/31/2015 10:30		08/31/2015 10:30			
Prep Method	Analysis Date	09/03/2015 01:53		09/03/2015 17:08			
EPA 3550C	Matrix	Solid		Solid			
GCAL SOP LCMS-001		Units Result	ng/Kg DL	Spike Added	Result	%R	Control Limits%R
TTPC	81741-28-8	34.5U	34.5	250	325	130	60 - 140

Analytical Batch	Client ID	MB566470		LCS566470				LCSD566470				
566986	GCAL ID	1481542		1481543				1481544				
Prep Batch	Sample Type	MB		LCS				LCSD				
566470	Prep Date	08/31/2015 10:30		08/31/2015 10:30				08/31/2015 10:30				
Prep Method	Analysis Date	09/03/2015 01:53		09/03/2015 02:18				09/03/2015 02:31				
EPA 3550C	Matrix	Solid		Solid				Solid				
GCAL SOP LCMS-001		Units Result	ng/Kg DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
TTPC	81741-28-8	34.5U	34.5	2500	1840	74	60 - 140	2500	2030	81	10	30

Analytical Batch	Client ID	HAOH0824SW08		1480554MS				1480554MSD				
566986	GCAL ID	21508261301		1481546				1481547				
Prep Batch	Sample Type	SAMPLE		MS				MSD				
566470	Prep Date	08/31/2015 10:30		08/31/2015 10:30				08/31/2015 10:30				
Prep Method	Analysis Date	09/03/2015 02:44		09/03/2015 02:56				09/03/2015 03:09				
EPA 3550C	Matrix	Solid		Solid				Solid				
GCAL SOP LCMS-001		Units Result	ng/Kg DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
TTPC	81741-28-8	10900	69.5	5040	12000	23*	60 - 140	5040	8720	-43*	32*	30

GC Semi-Volatiles QC Summary

Analytical Batch 566775	Client ID	MB566775		LCS566775			
	GCAL ID	1482709		1482710			
	Sample Type	MB		LCS			
	Prep Date	NA		NA			
	Analysis Date	09/02/2015 07:28		09/02/2015 07:42			
	Matrix	Solid		Solid			
EPA 8015C		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R
Acetone	67-64-1	301U	301	55600	53900	97	50 - 150
Isopropyl Alcohol	67-63-0	511U	511	55600	50800	91	50 - 150

Analytical Batch 566775	Client ID	HAOH0824SW08		1480554MS				1480554MSD				
	GCAL ID	21508261301		1482711				1482712				
	Sample Type	SAMPLE		MS				MSD				
	Prep Date	NA		NA				NA				
	Analysis Date	09/02/2015 08:25		09/02/2015 07:57				09/02/2015 08:11				
	Matrix	Solid		Solid				Solid				
EPA 8015C		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Acetone	67-64-1	0.00	620	117000	107000	91	50 - 150	120000	105000	88	2	40
Isopropyl Alcohol	67-63-0	0.00	1050	117000	103000	88	50 - 150	120000	101000	84	2	40

General Chromatography QC Summary

Analytical Batch	Client ID	MB566414		LCS566414				LCSD566414				
566696	GCAL ID	1481247		1481248				1481249				
Prep Batch	Sample Type	MB		LCS				LCSD				
566414	Prep Date	08/28/2015 14:30		08/28/2015 14:30				08/28/2015 14:30				
Prep Method	Analysis Date	08/31/2015 09:17		08/31/2015 09:31				08/31/2015 09:44				
GCAL SOP HPLC-009	Matrix	Solid		Solid				Solid				
GCAL SOP HPLC-009		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
TTPC	81741-28-8	51.5U	51.5	16700	8030	48	40 - 120	16700	6730	40	18	30

GCAL ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4896 - Moody & Associates, Inc.
SDG: 215082613

Report To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

Bill To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

Custody Seal:
Used: ☑ Yes ☐ No
Intact: ☑ Yes ☐ No
Temperature: 0.8 E24

P.O. Number: 14-467-LM
Project Name/Number: Eisenbarth Consent Order
Sampled By: [signature]

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1015		X	HAOH0824SW08	1	x		x	x		1

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900	[signature]	8/26/15 1000
Fedex KF UPS	8/26/15 1007	[signature]	8/26 1007

Notes: KF

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*-Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Drive | Baton Rouge, LA 70820-7402

225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

Bill To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By: [signature]

Custody Seal: Used: ☐ Yes ☐ No Intact: ☐ Yes ☐ No

Temperature: 0.8 E24

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None						← Preservative / Notes ↓	GCAL ID
S	08/24/15	1040		X	HAOH0824SW08DUP	1	x		x	x							2

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
Fedex	8/25/15 0900		
Fedex UPS	8/26 1005	[signature]	8/26 1005

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Drive | Baton Rouge, LA 70820-7402

225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd	Address:	199 South Johnson Rd
	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By:

Analytical Requests & Method

Custody Seal: Used: ☐ Yes ☐ No Intact: ☐ Yes ☐ No

Temperature: 0.8 E24

☐ Dissolved Analysis Requested ☐ Field Filtered ☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1058		X	HAOH0824SW18	1	x	x	x	x		3

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	8/24/15 1700		8/25/15 900
	8/25/15 900		
Fedex 117 UPS	8/26/15 1007		8-26 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. * Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
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	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By: [signature]

Analytical Requests & Method

Custody Seal: Used: ☐ Yes ☐ No; Intact: ☐ Yes ☐ No

Temperature: 0.8 EDY

☐ Dissolved Analysis Requested ☐ Field Filtered ☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1130		X	HAOH0824SW15	1	x		x	x		4

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900		
Fedex UPS	8/26 1007	[signature]	8/26 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECORD

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd	Address:	199 South Johnson Rd
	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

Custody Seal: Used: ☐ Yes ☐ No Intact: ☐ Yes ☐ No

Temperature: 0.8 E24

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By:

☐ Dissolved Analysis Requested ☐ Field Filtered ☐ Lab Filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1201		X	HAOH0824SW17	1	x		x	x		5

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900		
OPS	8/24/15 1000	[signature]	8/24/15 1000

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd	Address:	199 South Johnson Rd
	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By:

Analytical Requests & Method

Custody Seal: Used: ☐ Yes ☐ No; Intact: ☐ Yes ☐ No

Temperature: 0.8 EDY

☐ Dissolved Analysis Requested ☐ Field Filtered ☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1251		X	HAOH0824SW25	1	X		X	X		6

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900		
UPS	8/26 1007	[signature]	8/26 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.
SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd Houston, PA 15342	Address:	199 South Johnson Rd Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

Custody Seal:
Used: ☒ Yes ☐ No
Intact: ☒ Yes ☐ No
Temperature: 0.8 E24

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

P.O. Number: 14-467-LM
Project Name/Number: Eisenbarth Consent Order
Sampled By: [signature]

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1310		X	HAOH0824SW04	1	x	x	x	x		7

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900		
~~Fedex~~ UPS	8-26-15 1007	[signature]	8-26-15 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. SO

* - Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd	Address:	199 South Johnson Rd
	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By:

Analytical Requests & Method

Custody Seal: Used: ☐ Yes ☐ No; Intact: ☐ Yes ☐ No

Temperature: 0.8 E24

☐ Dissolved Analysis Requested ☐ Field Filtered ☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1328		X	HAOH0824SW06	1	x	x	x	x		8

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900		
OPS	8/26 1007	[signature]	8/26 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

Bill To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By:

Analytical Requests & Method

Custody Seal:
Used: ☐ Yes ☐ No
Intact: ☐ Yes ☐ No

Temperature: 0.8 EZY

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1356		X	HAOH0824SW21	1	X		X	X		9

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	8/24/15 1700		8/25/15 0900
	8/25/15 0900		
	8/26 1007		8/26 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Drive | Baton Rouge, LA 70820-7402

225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECOR

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082613

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd	Address:	199 South Johnson Rd
	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

Custody Seal:
Used: ☐ Yes ☐ No
Intact: ☐ Yes ☐ No
Temperature: 0.8 EJA

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By: Josh Boyda

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None							← Preservative / Notes ↓	GCAL ID
S	08/24/15	1410		X	HAOH0824SW001	1	X	X	X	X								10

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:	Notes:
[signature]	1515 8/24/2015	[signature]	0900 8/24/2015	
[signature]	0900 8/25/2015	Received by: (Signature)	Date/Time:	
UPS	8/26 1007	[signature]	8/26 1007	

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECOR

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Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

Custody Seal:
Used: ☐ Yes ☐ No
Intact: ☐ Yes ☐ No
Temperature: 0.8 EDY

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By: [signature]

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
S	08/24/15	1410		X	HAOH0824SW20	1	x		x	x		11

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1700	[signature]	8/25/15 0900
[signature]	8/25/15 0900		
[signature]	8/26 1007	[signature]	8/26 1007

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

215082613

SAMPLE DELIVERY GROUP 215082613	
Client PM KBL 4896 - Moody & Associates, Inc.	**Transport Method** UPS
Profile Number 251668	**Received By** Lofton, Katie E.
Line Item(s) 1 - Solids	**Receive Date(s)** 08/26/15

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☐	☐	☑
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☐	☐	☑
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☐	☑	☐

COOLERS

Airbill	Thermometer ID: E24	Temp(°C)
		0.8

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES *No "Received By" signature/date/time listed on COC*

Revision 1.4

Page 1 of 1

NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 09/08/2015

GCAL Report 215082614

Project Eisenbarth Consent Order

Deliver To Leah Mistick Moody & Associates, Inc. 199 S. Johnson Rd Bldg 2, Ste 101 Houston, PA 15342 724-746-5200

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
N	Metals Matrix Spike or Matrix Spike Duplicate Recovery is outside control limits
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

_____
Authorized Signature
GCAL Report 215082614

Case Narrative

Client: Moody & Associates, Inc. **Report:** 215082614

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES MASS SPECTROMETRY

In the TTPC analysis for prep batch 566469, the RLC recovery is slightly the upper control limit. The LCS/LCSD recoveries are acceptable.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21508261401	HAOH0824SW04	Water	08/24/2015 13:10	08/26/2015 10:07
21508261402	HAOH0824SW08	Water	08/24/2015 10:15	08/26/2015 10:07
21508261403	HAOH0824SW08DUP	Water	08/24/2015 10:40	08/26/2015 10:07
21508261404	HAOH0824SW15	Water	08/24/2015 11:30	08/26/2015 10:07
21508261405	HAOH0824SW20	Water	08/24/2015 14:10	08/26/2015 10:07
21508261406	HAOH0824SW001	Water	08/24/2015 14:10	08/26/2015 10:07
21508261407	HAOH0824SW24	Water	08/24/2015 11:40	08/26/2015 10:07
21508261408	HAOH0824PD03	Water	08/24/2015 10:50	08/26/2015 10:07
21508261409	HAOH0824PD07	Water	08/24/2015 12:30	08/26/2015 10:07
21508261410	HAOH0824SW06	Water	08/24/2015 13:28	08/26/2015 10:07
21508261411	HAOH0824SW17	Water	08/24/2015 12:01	08/26/2015 10:07
21508261412	HAOH0824SW18	Water	08/24/2015 10:58	08/26/2015 10:07
21508261413	HAOH0824SW21	Water	08/24/2015 13:56	08/26/2015 10:07
21508261414	HAOH0824SW25	Water	08/24/2015 12:51	08/26/2015 10:07

Summary of Compounds Detected

HAOH0824SW04	Collect Date	08/24/2015 13:10	GCAL ID	21508261401
	Receive Date	08/26/2015 10:07	Matrix	Water

GCAL SOP LCMS-001

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	43.8J	14.3	100	ng/L

HAOH0824SW08	Collect Date	08/24/2015 10:15	GCAL ID	21508261402
	Receive Date	08/26/2015 10:07	Matrix	Water

GCAL SOP LCMS-001

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	18.5J	14.3	100	ng/L

HAOH0824SW06	Collect Date	08/24/2015 13:28	GCAL ID	21508261410
	Receive Date	08/26/2015 10:07	Matrix	Water

GCAL SOP LCMS-001

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	52.3J	14.3	100	ng/L

HAOH0824SW17	Collect Date	08/24/2015 12:01	GCAL ID	21508261411
	Receive Date	08/26/2015 10:07	Matrix	Water

GCAL SOP LCMS-001

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	43.8J	14.3	100	ng/L

HAOH0824SW21	Collect Date	08/24/2015 13:56	GCAL ID	21508261413
	Receive Date	08/26/2015 10:07	Matrix	Water

GCAL SOP LCMS-001

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	112	14.3	100	ng/L

Summary of Compounds Detected

HAOH0824SW25	Collect Date	08/24/2015 12:51	GCAL ID	21508261414
	Receive Date	08/26/2015 10:07	Matrix	Water

GCAL SOP LCMS-001

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	33.9J	14.3	100	ng/L

Sample Results

HAOH0824SW04

Collect Date	08/24/2015 13:10	**GCAL ID**	21508261401
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 19:41	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**43.8J**	**14.3**	**100**	**ng/L**

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 15:34	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

GCAL SOP HPLC-009

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/27/2015 11:00	566317	GCAL SOP HPLC-009	1	08/31/2015 08:23	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	0.850U	0.850	2.50	ug/L

HAOH0824SW08

Collect Date	08/24/2015 10:15	**GCAL ID**	21508261402
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 20:19	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**18.5J**	**14.3**	**100**	**ng/L**

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 15:48	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L

Sample Results

HAOH0824SW08

Collect Date	08/24/2015 10:15	**GCAL ID**	21508261402
Receive Date	08/26/2015 10:07	**Matrix**	Water

EPA 8015C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 15:48	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824SW08DUP

Collect Date	08/24/2015 10:40	**GCAL ID**	21508261403
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 20:31	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 16:03	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824SW15

Collect Date	08/24/2015 11:30	**GCAL ID**	21508261404
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 20:44	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

Sample Results

HAOH0824SW15

Collect Date	08/24/2015 11:30	**GCAL ID**	21508261404
Receive Date	08/26/2015 10:07	**Matrix**	Water

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 16:17	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824SW20

Collect Date	08/24/2015 14:10	**GCAL ID**	21508261405
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 20:56	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 16:32	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824SW001

Collect Date	08/24/2015 14:10	**GCAL ID**	21508261406
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 21:09	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

Sample Results

HAOH0824SW001

Collect Date	08/24/2015 14:10	**GCAL ID**	21508261406
Receive Date	08/26/2015 10:07	**Matrix**	Water

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 16:46	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

GCAL SOP HPLC-009

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/27/2015 11:00	566317	GCAL SOP HPLC-009	1	08/31/2015 08:37	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	0.850U	0.850	2.50	ug/L

HAOH0824SW24

Collect Date	08/24/2015 11:40	**GCAL ID**	21508261407
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 21:47	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 17:01	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

Sample Results

HAOH0824PD03

Collect Date	08/24/2015 10:50	**GCAL ID**	21508261408
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 21:59	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 17:15	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824PD07

Collect Date	08/24/2015 12:30	**GCAL ID**	21508261409
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 22:12	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 17:30	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

Sample Results

HAOH0824SW06

Collect Date	08/24/2015 13:28	**GCAL ID**	21508261410
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 21:22	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**52.3J**	**14.3**	**100**	**ng/L**

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 17:44	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

GCAL SOP HPLC-009

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/27/2015 11:00	566317	GCAL SOP HPLC-009	1	08/31/2015 08:50	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	0.850U	0.850	2.50	ug/L

HAOH0824SW17

Collect Date	08/24/2015 12:01	**GCAL ID**	21508261411
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 22:25	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**43.8J**	**14.3**	**100**	**ng/L**

Sample Results

HAOH0824SW17

Collect Date	08/24/2015 12:01	**GCAL ID**	21508261411
Receive Date	08/26/2015 10:07	**Matrix**	Water

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 17:58	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824SW18

Collect Date	08/24/2015 10:58	**GCAL ID**	21508261412
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 21:34	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	14.3U	14.3	100	ng/L

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 18:13	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

GCAL SOP HPLC-009

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
08/27/2015 11:00	566317	GCAL SOP HPLC-009	1	08/31/2015 09:04	DLB	566696

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	TTPC	0.850U	0.850	2.50	ug/L

Sample Results

HAOH0824SW21

Collect Date	08/24/2015 13:56	**GCAL ID**	21508261413
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 22:37	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**112**	**14.3**	**100**	**ng/L**

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 18:27	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

HAOH0824SW25

Collect Date	08/24/2015 12:51	**GCAL ID**	21508261414
Receive Date	08/26/2015 10:07	**Matrix**	Water

GCAL SOP LCMS-001

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
09/01/2015 10:30	566469	GCAL SOP LCMS-001	1	09/02/2015 22:50	CEK	566986

CAS#	Parameter	Result	DL	LOQ	Units
81741-28-8	**TTPC**	**33.9J**	**14.3**	**100**	**ng/L**

EPA 8015C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	09/01/2015 18:41	SDD	566736

CAS#	Parameter	Result	DL	LOQ	Units
67-64-1	Acetone	0.270U	0.270	1.00	mg/L
67-63-0	Isopropyl Alcohol	0.231U	0.231	1.00	mg/L

LC/MS QC Summary

Analytical Batch	Client ID	MB566469		RLC566469			
566986	GCAL ID	1481534		1481537			
Prep Batch	Sample Type	MB		RLC			
566469	Prep Date	09/01/2015 10:30		09/01/2015 10:30			
Prep Method	Analysis Date	09/02/2015 18:51		09/03/2015 16:43			
GCAL SOP LCMS-001	Matrix	Water		Water			
GCAL SOP LCMS-001		Units Result	ng/L DL	Spike Added	Result	%R	Control Limits%R
TTPC	81741-28-8	14.3U	14.3	100	132	**132***	70 - 130

Analytical Batch	Client ID	MB566469		LCS566469				LCSD566469				
566986	GCAL ID	1481534		1481535				1481536				
Prep Batch	Sample Type	MB		LCS				LCSD				
566469	Prep Date	09/01/2015 10:30		09/01/2015 10:30				09/01/2015 10:30				
Prep Method	Analysis Date	09/02/2015 18:51		09/02/2015 19:16				09/02/2015 19:28				
GCAL SOP LCMS-001	Matrix	Water		Water				Water				
GCAL SOP LCMS-001		Units Result	ng/L DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
TTPC	81741-28-8	14.3U	14.3	2000	1740	87	56 - 99	2000	1820	91	5	30

Analytical Batch	Client ID	HAOH0824SW04		1480555MS				1480555MSD				
566986	GCAL ID	21508261401		1481538				1481539				
Prep Batch	Sample Type	SAMPLE		MS				MSD				
566469	Prep Date	09/01/2015 10:30		09/01/2015 10:30				09/01/2015 10:30				
Prep Method	Analysis Date	09/02/2015 19:41		09/02/2015 19:54				09/02/2015 20:06				
GCAL SOP LCMS-001	Matrix	Water		Water				Water				
GCAL SOP LCMS-001		Units Result	ng/L DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
TTPC	81741-28-8	43.8	14.3	2000	1740	85	56 - 99	2000	1910	93	9	30

GC Semi-Volatiles QC Summary

Analytical Batch 566736	Client ID	MB566736		LCS566736			
	GCAL ID	1482599		1482600			
	Sample Type	MB		LCS			
	Prep Date	NA		NA			
	Analysis Date	09/01/2015 14:36		09/01/2015 14:50			
	Matrix	Water		Water			
EPA 8015C		Units Result	mg/L DL	Spike Added	Result	%R	Control Limits%R
Acetone	67-64-1	0.270U	0.270	25.0	22.9	92	50 - 150
Isopropyl Alcohol	67-63-0	0.231U	0.231	25.0	21.3	85	50 - 150

Analytical Batch 566736	Client ID	HAOH0824SW04		1480555MS				1480555MSD				
	GCAL ID	21508261401		1482601				1482602				
	Sample Type	SAMPLE		MS				MSD				
	Prep Date	NA		NA				NA				
	Analysis Date	09/01/2015 15:34		09/01/2015 15:05				09/01/2015 15:19				
	Matrix	Water		Water				Water				
EPA 8015C		Units Result	mg/L DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Acetone	67-64-1	0.00	0.270	25.0	23.6	94	50 - 150	25.0	23.4	94	1	40
Isopropyl Alcohol	67-63-0	0.00	0.231	25.0	22.8	91	50 - 150	25.0	26.2	105	14	40

General Chromatography QC Summary

Analytical Batch	Client ID	MB566317		LCS566317				LCSD566317				
566696	GCAL ID	1480703		1480704				1480705				
Prep Batch	Sample Type	MB		LCS				LCSD				
566317	Prep Date	08/27/2015 11:00		08/27/2015 11:00				08/27/2015 11:00				
Prep Method	Analysis Date	08/31/2015 07:43		08/31/2015 07:56				08/31/2015 08:10				
GCAL SOP HPLC-009	Matrix	Water		Water				Water				
GCAL SOP HPLC-009		Units Result	ug/L DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
TTPC	81741-28-8	0.850U	0.850	1000	620	62	40 - 120	1000	543	54	13	30

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Drive | Baton Rouge, LA 70820-7402

225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082614

Report To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

Bill To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By: [illegible]

Analytical Requests & Method

Custody Seal:
Used: ☐ Yes ☐ No
Intact: ☑ Yes ☐ No

Temperature: 0.8E24

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
W	08/24/15	1310		X	HAOH0824SW04	5	X	X	X	X		1
W	08/24/15	1015		X	HAOH0824SW08	4	X		X	X		2
W	08/24/15	1040		X	HAOH0824SW08DUP	4	X		X	X		3
W	08/24/15	1130		X	HAOH0824SW15	4	X		X	X		4
W	08/24/15	1410		X	HAOH0824SW20	4	X		X	X		5

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[illegible]	8/24/15 1700	[illegible]	8/25/15 0900
[illegible]	8/25/15 0900		
VPS	8/26/15 10:07	Dirk McCune	8/26/15 10:07

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4896 - Moody & Associates, Inc.
SDG: 215082614

Report To:		Bill To:	
Client:	Moody & Associates, Inc.	Client:	Moody & Associates, Inc.
Address:	199 South Johnson Rd	Address:	199 South Johnson Rd
	Houston, PA 15342		Houston, PA 15342
Contact:	Leah Mistick	Contact:	Leah Mistick
Phone:	724-746-5200	Phone:	724-746-5200
Email:	lmistick@moody-s.com	Email:	lmistick@moody-s.com

Custody Seal:
Used: ☑ Yes ☐ No
Intact: ☑ Yes ☐ No
Temperature: 0.8E24

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

P.O. Number: 14-467-LM
Project Name/Number: **Eisenbarth Consent Order**
Sampled By: Josh Boyda

Analytical Requests & Method

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) HCl	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) HCl	Acetone (8015 Method) HCl	← Preservative / Notes ↓	GCAL ID
W	08/24/15	1410		X	HAOH0824SW001	5	x	x	x	x		6
W	08/24/15			X	HAOH0824SW02						DRY *	
W	08/24/15	1140		X	HAOH0824SW24	4	x		x	x		7
W	08/24/15	1050		X	HAOH0824PD03	4	x		x	x		8
W	08/24/15	1230		X	HAOH0824PD07	4	x		x	x		9

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
[signature]	8/24/15 1815	[signature]	8/24/15 0900
[signature]	8/25/15 0900		
VPS	8-26-15	10:07 Dodie McCune	8-26-15 10:07

Notes: * No sample received. KBL 8-26-15.

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue. *- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Drive | Baton Rouge, LA 70820-7402

225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4896 - Moody & Associates, Inc.

SDG: 215082614

Report To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

Bill To:
Client: Moody & Associates, Inc.
Address: 199 South Johnson Rd
Houston, PA 15342
Contact: Leah Mistick
Phone: 724-746-5200
Email: lmistick@moody-s.com

P.O. Number: 14-467-LM

Project Name/Number: Eisenbarth Consent Order

Sampled By:

Analytical Requests & Method

Custody Seal:
Used: ☐ Yes ☐ No
Intact: ☐ Yes ☐ No

Temperature: 0.8E24

☐ Dissolved Analysis Requested
☐ Field Filtered
☐ Lab Filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	TTPC (MS/LC/LC Method) None	TTPC (HPLC Method) None	Isopropyl Alcohol (8015 Method) None	Acetone (8015 Method) None	← Preservative / Notes ↓	GCAL ID
W	08/24/15	1328		X	HAOH0824SW06	5	X	X	X	X		10
W	08/24/15	1201		X	HAOH0824SW17	4	X		X	X		11
W	08/24/15	1058		X	HAOH0824SW18	5	X	X	X	X		12
W	08/24/15	1356		X	HAOH0824SW21	4	X		X	X		13
W	08/24/15	1251		X	HAOH0824SW25	4	X		X	X		14

Airbill Number:

Turn Around Time(Business Days): ☐ 24 hr* ☐ 48 hr* ☐ 3 days* ☐ 5 days* ☑ Standard (per contract/quote)

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	8/24/15 1700		8/25/15 0900
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	8/25/15 0900		
Relinquished by: (Signature) UPS	Date/Time: 8-26-15	Received by: (Signature) 10:07 Dodie McCune	Date/Time: 8-26-15 10:07

Notes:

[1]Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.

*- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

215082614

SAMPLE DELIVERY GROUP 215082614	
Client PM KBL 4896 - Moody & Associates, Inc.	**Transport Method** UPS
Profile Number 251668	**Received By** McCune, Dodie N.
Line Item(s) 2 - Waters	**Receive Date(s)** 08/26/15

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☑	☐	☐
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☐	☑	☐

COOLERS

Airbill	Thermometer ID: E24	Temp(°C)
		0.8

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.4

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