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

August 02, 2014

Chase Ertzberger
CTEH
5120 North Shore Drive
North Little Rock, AR 72118

RE: Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

Dear Chase Ertzberger:
Enclosed are the analytical results for sample(s) received by the laboratory on July 29, 2014. 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. Scott Kluska, CTEH
CTEH Lab Results, CTEH
K. Scribner, CTEH
Mr. Robert Wilkinson, CTEH
gico@statoil.com, CTEH



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## CERTIFICATIONS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Pennsylvania Certification IDs**
1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP 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
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
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
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
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/PADEP Certification
Wyoming Certification #: 8TMS-Q



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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS65** **Lab ID: 30125991001** Collected: 07/28/14 10:20 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010B Preparation Method: EPA 3050B | | | | | | | |
| Sodium | ND | mg/kg | 490 | 1 | 07/30/14 10:52 | 07/31/14 13:00 | 7440-23-5 | |
| **8270 MSSV TCLP** | Analytical Method: EPA 8270C Preparation Method: EPA 3535A<br>Leachate Method/Date: EPA 1311; 07/30/14 20:40 Initial pH: 9.28; Final pH: 6.29 | | | | | | | |
| 1,4-Dichlorobenzene | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 106-46-7 | |
| 2,4-Dinitrotoluene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 121-14-2 | |
| Hexachloro-1,3-butadiene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 118-74-1 | |
| Hexachloroethane | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 67-72-1 | |
| 2-Methylphenol(o-Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | | |
| Nitrobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 98-95-3 | |
| Pentachlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 87-86-5 | |
| Pyridine | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 110-86-1 | |
| 2,4,5-Trichlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 88-06-2 | |
| ***Surrogates*** | | | | | | | | |
| Nitrobenzene-d5 (S) | 52 | % | 35-114 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 47 | % | 43-116 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 321-60-8 | |
| Terphenyl-d14 (S) | 41 | % | 33-141 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 1718-51-0 | |
| Phenol-d6 (S) | 55 | % | 10-110 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 13127-88-3 | |
| 2-Fluorophenol (S) | 57 | % | 21-110 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 56 | % | 10-123 | 1 | 07/31/14 16:15 | 08/01/14 14:11 | 118-79-6 | |
| **8260 MSV TCLP** | Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 07/31/14 23:15 | | | | | | | |
| Benzene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 71-43-2 | |
| 2-Butanone (MEK) | ND | ug/L | 5000 | 1 | | 08/01/14 23:19 | 78-93-3 | |
| Carbon tetrachloride | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 56-23-5 | |
| Chlorobenzene | ND | ug/L | 1000 | 1 | | 08/01/14 23:19 | 108-90-7 | |
| Chloroform | ND | ug/L | 500 | 1 | | 08/01/14 23:19 | 67-66-3 | |
| 1,2-Dichloroethane | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 75-35-4 | |
| Tetrachloroethene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 127-18-4 | |
| Trichloroethene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 79-01-6 | |
| Vinyl chloride | ND | ug/L | 50.0 | 1 | | 08/01/14 23:19 | 75-01-4 | |
| ***Surrogates*** | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 104 | % | 70-130 | 1 | | 08/01/14 23:19 | 17060-07-0 | |
| Toluene-d8 (S) | 98 | % | 70-130 | 1 | | 08/01/14 23:19 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 97 | % | 70-130 | 1 | | 08/01/14 23:19 | 460-00-4 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **20.2** | % | 0.10 | 1 | | 07/31/14 22:34 | | |
| **1010 Flashpoint,Closed Cup** | Analytical Method: EPA 1010 | | | | | | | |
| Flashpoint | **>200** | deg F | 60.0 | 1 | | 07/30/14 17:00 | | |

## REPORT OF LABORATORY ANALYSIS

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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS65** **Lab ID: 30125991001** Collected: 07/28/14 10:20 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **9045 pH Soil** | Analytical Method: EPA 9045C | | | | | | | |
| pH at 25 Degrees C | **7.9** | Std. Units | 1.0 | 1 | | 07/29/14 23:42 | | |
| **4500CNE Cyanide, Total** | Analytical Method: SM 4500-CN-E | | | | | | | |
| Cyanide | ND | mg/kg | 0.75 | 1 | | 07/31/14 21:39 | 57-12-5 | |
| **733C S Reactive Cyanide** | Analytical Method: SW-846 7.3.3.2 | | | | | | | |
| Cyanide, Reactive | ND | mg/kg | 1.3 | 1 | | 07/29/14 19:00 | | |
| **735S Reactive Sulfide** | Analytical Method: SW-846 7.3.4.2 | | | | | | | |
| Sulfide, Reactive | ND | mg/kg | 12.5 | 1 | | 07/29/14 19:00 | | |



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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS66** **Lab ID: 30125991002** Collected: 07/28/14 10:30 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010B Preparation Method: EPA 3050B | | | | | | | |
| Sodium | **1520** | mg/kg | 777 | 1 | 07/30/14 10:52 | 07/31/14 13:02 | 7440-23-5 | |
| **8270 MSSV TCLP** | Analytical Method: EPA 8270C Preparation Method: EPA 3535A<br>Leachate Method/Date: EPA 1311; 07/30/14 20:40 Initial pH: 9.01; Final pH: 6.83 | | | | | | | |
| 1,4-Dichlorobenzene | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 106-46-7 | |
| 2,4-Dinitrotoluene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 121-14-2 | |
| Hexachloro-1,3-butadiene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 118-74-1 | |
| Hexachloroethane | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 67-72-1 | |
| 2-Methylphenol(o-Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | | |
| Nitrobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 98-95-3 | |
| Pentachlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 87-86-5 | |
| Pyridine | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 110-86-1 | |
| 2,4,5-Trichlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 88-06-2 | |
| ***Surrogates*** | | | | | | | | |
| Nitrobenzene-d5 (S) | 49 | % | 35-114 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 44 | % | 43-116 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 321-60-8 | |
| Terphenyl-d14 (S) | 2 | % | 33-141 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 1718-51-0 | S6 |
| Phenol-d6 (S) | 54 | % | 10-110 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 13127-88-3 | |
| 2-Fluorophenol (S) | 55 | % | 21-110 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 41 | % | 10-123 | 1 | 07/31/14 16:15 | 08/01/14 14:31 | 118-79-6 | |
| **8260 MSV TCLP** | Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 07/31/14 23:15 | | | | | | | |
| Benzene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 71-43-2 | |
| 2-Butanone (MEK) | ND | ug/L | 5000 | 1 | | 08/01/14 23:44 | 78-93-3 | |
| Carbon tetrachloride | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 56-23-5 | |
| Chlorobenzene | ND | ug/L | 1000 | 1 | | 08/01/14 23:44 | 108-90-7 | |
| Chloroform | ND | ug/L | 500 | 1 | | 08/01/14 23:44 | 67-66-3 | |
| 1,2-Dichloroethane | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 75-35-4 | |
| Tetrachloroethene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 127-18-4 | |
| Trichloroethene | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 79-01-6 | |
| Vinyl chloride | ND | ug/L | 50.0 | 1 | | 08/01/14 23:44 | 75-01-4 | |
| ***Surrogates*** | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 105 | % | 70-130 | 1 | | 08/01/14 23:44 | 17060-07-0 | |
| Toluene-d8 (S) | 100 | % | 70-130 | 1 | | 08/01/14 23:44 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 94 | % | 70-130 | 1 | | 08/01/14 23:44 | 460-00-4 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **53.4** | % | 0.10 | 1 | | 07/31/14 22:36 | | |
| **1010 Flashpoint,Closed Cup** | Analytical Method: EPA 1010 | | | | | | | |
| Flashpoint | **>200** | deg F | 60.0 | 1 | | 07/30/14 17:00 | | |

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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS66** **Lab ID: 30125991002** Collected: 07/28/14 10:30 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **9045 pH Soil** | Analytical Method: EPA 9045C | | | | | | | |
| pH at 25 Degrees C | **8.7** | Std. Units | 1.0 | 1 | | 07/29/14 23:42 | | |
| **4500CNE Cyanide, Total** | Analytical Method: SM 4500-CN-E | | | | | | | |
| Cyanide | ND | mg/kg | 1.3 | 1 | | 07/31/14 21:43 | 57-12-5 | |
| **733C S Reactive Cyanide** | Analytical Method: SW-846 7.3.3.2 | | | | | | | |
| Cyanide, Reactive | ND | mg/kg | 2.1 | 1 | | 07/29/14 19:00 | | |
| **735S Reactive Sulfide** | Analytical Method: SW-846 7.3.4.2 | | | | | | | |
| Sulfide, Reactive | ND | mg/kg | 21.4 | 1 | | 07/29/14 19:00 | | |



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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS67** **Lab ID: 30125991003** Collected: 07/28/14 10:45 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010B Preparation Method: EPA 3050B | | | | | | | |
| Sodium | **698** | mg/kg | 419 | 1 | 07/30/14 10:52 | 07/31/14 13:09 | 7440-23-5 | |
| **8270 MSSV TCLP** | Analytical Method: EPA 8270C Preparation Method: EPA 3535A<br>Leachate Method/Date: EPA 1311; 07/30/14 20:40 Initial pH: 9.64; Final pH: 6.88 | | | | | | | |
| 1,4-Dichlorobenzene | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 106-46-7 | |
| 2,4-Dinitrotoluene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 121-14-2 | |
| Hexachloro-1,3-butadiene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 118-74-1 | |
| Hexachloroethane | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 67-72-1 | |
| 2-Methylphenol(o-Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | | |
| Nitrobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 98-95-3 | |
| Pentachlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 87-86-5 | |
| Pyridine | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 110-86-1 | |
| 2,4,5-Trichlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 88-06-2 | |
| ***Surrogates*** | | | | | | | | |
| Nitrobenzene-d5 (S) | 59 | % | 35-114 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 48 | % | 43-116 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 321-60-8 | |
| Terphenyl-d14 (S) | 44 | % | 33-141 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 1718-51-0 | |
| Phenol-d6 (S) | 62 | % | 10-110 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 13127-88-3 | |
| 2-Fluorophenol (S) | 61 | % | 21-110 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 58 | % | 10-123 | 1 | 07/31/14 16:15 | 08/01/14 14:51 | 118-79-6 | |
| **8260 MSV TCLP** | Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 07/31/14 23:15 | | | | | | | |
| Benzene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 71-43-2 | |
| 2-Butanone (MEK) | ND | ug/L | 5000 | 1 | | 08/02/14 00:08 | 78-93-3 | |
| Carbon tetrachloride | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 56-23-5 | |
| Chlorobenzene | ND | ug/L | 1000 | 1 | | 08/02/14 00:08 | 108-90-7 | |
| Chloroform | ND | ug/L | 500 | 1 | | 08/02/14 00:08 | 67-66-3 | |
| 1,2-Dichloroethane | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 75-35-4 | |
| Tetrachloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 127-18-4 | |
| Trichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 79-01-6 | |
| Vinyl chloride | ND | ug/L | 50.0 | 1 | | 08/02/14 00:08 | 75-01-4 | |
| ***Surrogates*** | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 105 | % | 70-130 | 1 | | 08/02/14 00:08 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | 1 | | 08/02/14 00:08 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 99 | % | 70-130 | 1 | | 08/02/14 00:08 | 460-00-4 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **6.9** | % | 0.10 | 1 | | 07/31/14 22:37 | | |
| **1010 Flashpoint,Closed Cup** | Analytical Method: EPA 1010 | | | | | | | |
| Flashpoint | **>200** | deg F | 60.0 | 1 | | 07/30/14 17:00 | | |

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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS67** **Lab ID: 30125991003** Collected: 07/28/14 10:45 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **9045 pH Soil** | Analytical Method: EPA 9045C | | | | | | | |
| pH at 25 Degrees C | **8.7** | Std. Units | 1.0 | 1 | | 07/29/14 23:42 | | |
| **4500CNE Cyanide, Total** | Analytical Method: SM 4500-CN-E | | | | | | | |
| Cyanide | ND | mg/kg | 0.59 | 1 | | 07/31/14 21:43 | 57-12-5 | |
| **733C S Reactive Cyanide** | Analytical Method: SW-846 7.3.3.2 | | | | | | | |
| Cyanide, Reactive | ND | mg/kg | 1.1 | 1 | | 07/29/14 19:00 | | |
| **735S Reactive Sulfide** | Analytical Method: SW-846 7.3.4.2 | | | | | | | |
| Sulfide, Reactive | ND | mg/kg | 10.7 | 1 | | 07/29/14 19:00 | | |



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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS68** **Lab ID: 30125991004** Collected: 07/28/14 11:55 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010B Preparation Method: EPA 3050B | | | | | | | |
| Sodium | **1180** | mg/kg | 417 | 1 | 07/30/14 10:52 | 07/31/14 13:12 | 7440-23-5 | |
| **8270 MSSV TCLP** | Analytical Method: EPA 8270C Preparation Method: EPA 3535A<br>Leachate Method/Date: EPA 1311; 07/30/14 20:40 Initial pH: 9.68; Final pH: 6.98 | | | | | | | |
| 1,4-Dichlorobenzene | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 106-46-7 | |
| 2,4-Dinitrotoluene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 121-14-2 | |
| Hexachloro-1,3-butadiene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 118-74-1 | |
| Hexachloroethane | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 67-72-1 | |
| 2-Methylphenol(o-Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | | |
| Nitrobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 98-95-3 | |
| Pentachlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 87-86-5 | |
| Pyridine | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 110-86-1 | |
| 2,4,5-Trichlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 88-06-2 | |
| ***Surrogates*** | | | | | | | | |
| Nitrobenzene-d5 (S) | 61 | % | 35-114 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 50 | % | 43-116 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 321-60-8 | |
| Terphenyl-d14 (S) | 41 | % | 33-141 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 1718-51-0 | |
| Phenol-d6 (S) | 65 | % | 10-110 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 13127-88-3 | |
| 2-Fluorophenol (S) | 66 | % | 21-110 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 64 | % | 10-123 | 1 | 07/31/14 16:15 | 08/01/14 15:11 | 118-79-6 | |
| **8260 MSV TCLP** | Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 07/31/14 23:15 | | | | | | | |
| Benzene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 71-43-2 | |
| 2-Butanone (MEK) | ND | ug/L | 5000 | 1 | | 08/02/14 00:33 | 78-93-3 | |
| Carbon tetrachloride | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 56-23-5 | |
| Chlorobenzene | ND | ug/L | 1000 | 1 | | 08/02/14 00:33 | 108-90-7 | |
| Chloroform | ND | ug/L | 500 | 1 | | 08/02/14 00:33 | 67-66-3 | |
| 1,2-Dichloroethane | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 75-35-4 | |
| Tetrachloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 127-18-4 | |
| Trichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 79-01-6 | |
| Vinyl chloride | ND | ug/L | 50.0 | 1 | | 08/02/14 00:33 | 75-01-4 | |
| ***Surrogates*** | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 105 | % | 70-130 | 1 | | 08/02/14 00:33 | 17060-07-0 | |
| Toluene-d8 (S) | 102 | % | 70-130 | 1 | | 08/02/14 00:33 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 102 | % | 70-130 | 1 | | 08/02/14 00:33 | 460-00-4 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **10.4** | % | 0.10 | 1 | | 07/31/14 22:38 | | |
| **1010 Flashpoint,Closed Cup** | Analytical Method: EPA 1010 | | | | | | | |
| Flashpoint | **>200** | deg F | 60.0 | 1 | | 07/30/14 17:00 | | |

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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS68** **Lab ID: 30125991004** Collected: 07/28/14 11:55 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **9045 pH Soil** | Analytical Method: EPA 9045C | | | | | | | |
| pH at 25 Degrees C | **9.1** | Std. Units | 1.0 | 1 | | 07/29/14 23:42 | | |
| **4500CNE Cyanide, Total** | Analytical Method: SM 4500-CN-E | | | | | | | |
| Cyanide | **1.4** | mg/kg | 0.54 | 1 | | 07/31/14 21:46 | 57-12-5 | |
| **733C S Reactive Cyanide** | Analytical Method: SW-846 7.3.3.2 | | | | | | | |
| Cyanide, Reactive | ND | mg/kg | 1.1 | 1 | | 07/31/14 22:21 | | |
| **735S Reactive Sulfide** | Analytical Method: SW-846 7.3.4.2 | | | | | | | |
| Sulfide, Reactive | ND | mg/kg | 11.2 | 1 | | 07/31/14 15:00 | | |



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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS69** **Lab ID: 30125991005** Collected: 07/28/14 12:10 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010B Preparation Method: EPA 3050B | | | | | | | |
| Sodium | ND | mg/kg | 357 | 1 | 07/30/14 10:52 | 07/31/14 13:15 | 7440-23-5 | |
| **8270 MSSV TCLP** | Analytical Method: EPA 8270C Preparation Method: EPA 3535A<br>Leachate Method/Date: EPA 1311; 07/30/14 20:40 Initial pH: 9.35; Final pH: 6.82 | | | | | | | |
| 1,4-Dichlorobenzene | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 106-46-7 | |
| 2,4-Dinitrotoluene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 121-14-2 | |
| Hexachloro-1,3-butadiene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 118-74-1 | |
| Hexachloroethane | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 67-72-1 | |
| 2-Methylphenol(o-Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | | |
| Nitrobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 98-95-3 | |
| Pentachlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 87-86-5 | |
| Pyridine | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 110-86-1 | |
| 2,4,5-Trichlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 88-06-2 | |
| ***Surrogates*** | | | | | | | | |
| Nitrobenzene-d5 (S) | 70 | % | 35-114 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 60 | % | 43-116 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 321-60-8 | |
| Terphenyl-d14 (S) | 46 | % | 33-141 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 1718-51-0 | |
| Phenol-d6 (S) | 75 | % | 10-110 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 13127-88-3 | |
| 2-Fluorophenol (S) | 75 | % | 21-110 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 74 | % | 10-123 | 1 | 07/31/14 16:15 | 08/01/14 15:31 | 118-79-6 | |
| **8260 MSV TCLP** | Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 07/31/14 23:15 | | | | | | | |
| Benzene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 71-43-2 | |
| 2-Butanone (MEK) | ND | ug/L | 5000 | 1 | | 08/02/14 00:57 | 78-93-3 | |
| Carbon tetrachloride | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 56-23-5 | |
| Chlorobenzene | ND | ug/L | 1000 | 1 | | 08/02/14 00:57 | 108-90-7 | |
| Chloroform | ND | ug/L | 500 | 1 | | 08/02/14 00:57 | 67-66-3 | |
| 1,2-Dichloroethane | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 75-35-4 | |
| Tetrachloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 127-18-4 | |
| Trichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 79-01-6 | |
| Vinyl chloride | ND | ug/L | 50.0 | 1 | | 08/02/14 00:57 | 75-01-4 | |
| ***Surrogates*** | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 109 | % | 70-130 | 1 | | 08/02/14 00:57 | 17060-07-0 | |
| Toluene-d8 (S) | 98 | % | 70-130 | 1 | | 08/02/14 00:57 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 94 | % | 70-130 | 1 | | 08/02/14 00:57 | 460-00-4 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **4.1** | % | 0.10 | 1 | | 07/31/14 22:40 | | |
| **1010 Flashpoint,Closed Cup** | Analytical Method: EPA 1010 | | | | | | | |
| Flashpoint | **>200** | deg F | 60.0 | 1 | | 07/30/14 17:00 | | |

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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS69** **Lab ID: 30125991005** Collected: 07/28/14 12:10 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **9045 pH Soil** | Analytical Method: EPA 9045C | | | | | | | |
| pH at 25 Degrees C | **8.2** | Std. Units | 1.0 | 1 | | 07/29/14 23:42 | | |
| **4500CNE Cyanide, Total** | Analytical Method: SM 4500-CN-E | | | | | | | |
| Cyanide | ND | mg/kg | 0.52 | 1 | | 07/31/14 21:46 | 57-12-5 | |
| **733C S Reactive Cyanide** | Analytical Method: SW-846 7.3.3.2 | | | | | | | |
| Cyanide, Reactive | ND | mg/kg | 1.0 | 1 | | 07/31/14 22:21 | | |
| **735S Reactive Sulfide** | Analytical Method: SW-846 7.3.4.2 | | | | | | | |
| Sulfide, Reactive | ND | mg/kg | 10.4 | 1 | | 07/31/14 15:00 | | |



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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS70** **Lab ID: 30125991006** Collected: 07/28/14 12:20 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010B Preparation Method: EPA 3050B | | | | | | | |
| Sodium | ND | mg/kg | 467 | 1 | 07/30/14 10:52 | 07/31/14 13:17 | 7440-23-5 | |
| **8270 MSSV TCLP** | Analytical Method: EPA 8270C Preparation Method: EPA 3535A<br>Leachate Method/Date: EPA 1311; 07/30/14 20:40 Initial pH: 9.18; Final pH: 6.67 | | | | | | | |
| 1,4-Dichlorobenzene | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 106-46-7 | |
| 2,4-Dinitrotoluene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 121-14-2 | |
| Hexachloro-1,3-butadiene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 118-74-1 | |
| Hexachloroethane | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 67-72-1 | |
| 2-Methylphenol(o-Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/L | 2000 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | | |
| Nitrobenzene | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 98-95-3 | |
| Pentachlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 87-86-5 | |
| Pyridine | ND | ug/L | 500 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 110-86-1 | |
| 2,4,5-Trichlorophenol | ND | ug/L | 5000 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/L | 100 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 88-06-2 | |
| ***Surrogates*** | | | | | | | | |
| Nitrobenzene-d5 (S) | 62 | % | 35-114 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 52 | % | 43-116 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 321-60-8 | |
| Terphenyl-d14 (S) | 26 | % | 33-141 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 1718-51-0 | S6 |
| Phenol-d6 (S) | 64 | % | 10-110 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 13127-88-3 | |
| 2-Fluorophenol (S) | 65 | % | 21-110 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 61 | % | 10-123 | 1 | 07/31/14 16:15 | 08/01/14 15:51 | 118-79-6 | |
| **8260 MSV TCLP** | Analytical Method: EPA 8260B Leachate Method/Date: EPA 1311; 07/31/14 23:15 | | | | | | | |
| Benzene | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 71-43-2 | |
| 2-Butanone (MEK) | ND | ug/L | 5000 | 1 | | 08/02/14 01:21 | 78-93-3 | |
| Carbon tetrachloride | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 56-23-5 | |
| Chlorobenzene | ND | ug/L | 1000 | 1 | | 08/02/14 01:21 | 108-90-7 | |
| Chloroform | ND | ug/L | 500 | 1 | | 08/02/14 01:21 | 67-66-3 | |
| 1,2-Dichloroethane | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 75-35-4 | |
| Tetrachloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 127-18-4 | |
| Trichloroethene | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 79-01-6 | |
| Vinyl chloride | ND | ug/L | 50.0 | 1 | | 08/02/14 01:21 | 75-01-4 | |
| ***Surrogates*** | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 105 | % | 70-130 | 1 | | 08/02/14 01:21 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | % | 70-130 | 1 | | 08/02/14 01:21 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 99 | % | 70-130 | 1 | | 08/02/14 01:21 | 460-00-4 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **18.9** | % | 0.10 | 1 | | 07/31/14 22:40 | | |
| **1010 Flashpoint,Closed Cup** | Analytical Method: EPA 1010 | | | | | | | |
| Flashpoint | **>200** | deg F | 60.0 | 1 | | 07/30/14 17:00 | | |

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# ANALYTICAL RESULTS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

**Sample: HAOH0728SS70** **Lab ID: 30125991006** Collected: 07/28/14 12:20 Received: 07/29/14 13:34 Matrix: Solid

***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **9045 pH Soil** | Analytical Method: EPA 9045C | | | | | | | |
| pH at 25 Degrees C | **8.4** | Std. Units | 1.0 | 1 | | 07/29/14 23:42 | | |
| **4500CNE Cyanide, Total** | Analytical Method: SM 4500-CN-E | | | | | | | |
| Cyanide | ND | mg/kg | 0.59 | 1 | | 07/31/14 21:51 | 57-12-5 | |
| **733C S Reactive Cyanide** | Analytical Method: SW-846 7.3.3.2 | | | | | | | |
| Cyanide, Reactive | ND | mg/kg | 1.2 | 1 | | 07/31/14 22:24 | | |
| **735S Reactive Sulfide** | Analytical Method: SW-846 7.3.4.2 | | | | | | | |
| Sulfide, Reactive | ND | mg/kg | 12.3 | 1 | | 07/31/14 15:00 | | |



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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: MPRP/13539 Analysis Method: EPA 6010B
QC Batch Method: EPA 3050B Analysis Description: 6010 MET
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

METHOD BLANK: 766361 Matrix: Solid
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Sodium | mg/kg | ND | 500 | 07/31/14 12:10 | |

LABORATORY CONTROL SAMPLE: 766362

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Sodium | mg/kg | 500 | 485J | 97 | 80-120 | |

MATRIX SPIKE SAMPLE: 766364

| Parameter | Units | 30125882001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Sodium | mg/kg | ND | 449 | 366J | 70 | 75-125 | |

SAMPLE DUPLICATE: 766363

| Parameter | Units | 30125882001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Sodium | mg/kg | ND | 59.8J | | |

**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: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: MSV/20520 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

METHOD BLANK: 767954 Matrix: Water
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| 1,2-Dichloroethane | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| 2-Butanone (MEK) | ug/L | ND | 5000 | 08/01/14 22:55 | |
| Benzene | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| Carbon tetrachloride | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| Chlorobenzene | ug/L | ND | 1000 | 08/01/14 22:55 | |
| Chloroform | ug/L | ND | 500 | 08/01/14 22:55 | |
| Tetrachloroethene | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| Trichloroethene | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| Vinyl chloride | ug/L | ND | 50.0 | 08/01/14 22:55 | |
| 1,2-Dichloroethane-d4 (S) | % | 104 | 70-130 | 08/01/14 22:55 | |
| 4-Bromofluorobenzene (S) | % | 99 | 70-130 | 08/01/14 22:55 | |
| Toluene-d8 (S) | % | 103 | 70-130 | 08/01/14 22:55 | |

LABORATORY CONTROL SAMPLE: 767955

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | ug/L | 200 | 182 | 91 | 57-127 | |
| 1,2-Dichloroethane | ug/L | 200 | 178 | 89 | 62-125 | |
| 2-Butanone (MEK) | ug/L | 200 | 197J | 98 | 48-136 | |
| Benzene | ug/L | 200 | 168 | 84 | 66-122 | |
| Carbon tetrachloride | ug/L | 200 | 182 | 91 | 55-126 | |
| Chlorobenzene | ug/L | 200 | 166J | 83 | 70-121 | |
| Chloroform | ug/L | 200 | 172J | 86 | 62-126 | |
| Tetrachloroethene | ug/L | 200 | 170 | 85 | 62-125 | |
| Trichloroethene | ug/L | 200 | 164 | 82 | 62-125 | |
| Vinyl chloride | ug/L | 200 | 192 | 96 | 52-145 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 101 | 70-130 | |
| 4-Bromofluorobenzene (S) | % | | | 96 | 70-130 | |
| Toluene-d8 (S) | % | | | 100 | 70-130 | |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: OEXT/20222 Analysis Method: EPA 8270C
QC Batch Method: EPA 3535A Analysis Description: 8270 TCLP MSSV
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

METHOD BLANK: 767370 Matrix: Water
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | ug/L | ND | 500 | 08/01/14 09:29 | |
| 2,4,5-Trichlorophenol | ug/L | ND | 5000 | 08/01/14 09:29 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 100 | 08/01/14 09:29 | |
| 2,4-Dinitrotoluene | ug/L | ND | 100 | 08/01/14 09:29 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 2000 | 08/01/14 09:29 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 2000 | 08/01/14 09:29 | |
| Hexachloro-1,3-butadiene | ug/L | ND | 100 | 08/01/14 09:29 | |
| Hexachlorobenzene | ug/L | ND | 100 | 08/01/14 09:29 | |
| Hexachloroethane | ug/L | ND | 500 | 08/01/14 09:29 | |
| Nitrobenzene | ug/L | ND | 100 | 08/01/14 09:29 | |
| Pentachlorophenol | ug/L | ND | 5000 | 08/01/14 09:29 | |
| Pyridine | ug/L | ND | 500 | 08/01/14 09:29 | |
| 2,4,6-Tribromophenol (S) | % | 86 | 10-123 | 08/01/14 09:29 | |
| 2-Fluorobiphenyl (S) | % | 76 | 43-116 | 08/01/14 09:29 | |
| 2-Fluorophenol (S) | % | 88 | 21-110 | 08/01/14 09:29 | |
| Nitrobenzene-d5 (S) | % | 81 | 35-114 | 08/01/14 09:29 | |
| Phenol-d6 (S) | % | 86 | 10-110 | 08/01/14 09:29 | |
| Terphenyl-d14 (S) | % | 49 | 33-141 | 08/01/14 09:29 | |

METHOD BLANK: 767374 Matrix: Water
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | ug/L | ND | 500 | 08/01/14 12:50 | |
| 2,4,5-Trichlorophenol | ug/L | ND | 5000 | 08/01/14 12:50 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 100 | 08/01/14 12:50 | |
| 2,4-Dinitrotoluene | ug/L | ND | 100 | 08/01/14 12:50 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 2000 | 08/01/14 12:50 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 2000 | 08/01/14 12:50 | |
| Hexachloro-1,3-butadiene | ug/L | ND | 100 | 08/01/14 12:50 | |
| Hexachlorobenzene | ug/L | ND | 100 | 08/01/14 12:50 | |
| Hexachloroethane | ug/L | ND | 500 | 08/01/14 12:50 | |
| Nitrobenzene | ug/L | ND | 100 | 08/01/14 12:50 | |
| Pentachlorophenol | ug/L | ND | 5000 | 08/01/14 12:50 | |
| Pyridine | ug/L | ND | 500 | 08/01/14 12:50 | |
| 2,4,6-Tribromophenol (S) | % | 86 | 10-123 | 08/01/14 12:50 | |
| 2-Fluorobiphenyl (S) | % | 68 | 43-116 | 08/01/14 12:50 | |
| 2-Fluorophenol (S) | % | 90 | 21-110 | 08/01/14 12:50 | |
| Nitrobenzene-d5 (S) | % | 81 | 35-114 | 08/01/14 12:50 | |

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Greensburg, PA 15601
(724)850-5600

# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

METHOD BLANK: 767374 Matrix: Water
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Phenol-d6 (S) | % | 91 | 10-110 | 08/01/14 12:50 | |
| Terphenyl-d14 (S) | % | 55 | 33-141 | 08/01/14 12:50 | |

LABORATORY CONTROL SAMPLE: 767371

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | ug/L | 500 | 298J | 60 | 25-108 | |
| 2,4,5-Trichlorophenol | ug/L | 500 | 426J | 85 | 49-130 | |
| 2,4,6-Trichlorophenol | ug/L | 500 | 409 | 82 | 49-133 | |
| 2,4-Dinitrotoluene | ug/L | 500 | 380 | 76 | 31-135 | |
| 2-Methylphenol(o-Cresol) | ug/L | 500 | 406J | 81 | 42-132 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | 1000 | 842J | 84 | 42-132 | |
| Hexachloro-1,3-butadiene | ug/L | 500 | 268 | 54 | 19-107 | |
| Hexachlorobenzene | ug/L | 500 | 260 | 52 | 21-105 | |
| Hexachloroethane | ug/L | 500 | 286J | 57 | 21-105 | |
| Nitrobenzene | ug/L | 500 | 411 | 82 | 38-142 | |
| Pentachlorophenol | ug/L | 500 | 401J | 80 | 32-139 | |
| Pyridine | ug/L | 500 | 85.1J | 17 | 10-61 | |
| 2,4,6-Tribromophenol (S) | % | | | 80 | 10-123 | |
| 2-Fluorobiphenyl (S) | % | | | 65 | 43-116 | |
| 2-Fluorophenol (S) | % | | | 80 | 21-110 | |
| Nitrobenzene-d5 (S) | % | | | 77 | 35-114 | |
| Phenol-d6 (S) | % | | | 77 | 10-110 | |
| Terphenyl-d14 (S) | % | | | 47 | 33-141 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 767372 767373

| Parameter | Units | 30125967001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | ug/L | ND | 500 | 500 | 343J | 303J | 69 | 61 | 25-108 | | |
| 2,4,5-Trichlorophenol | ug/L | ND | 500 | 500 | 425J | 354J | 85 | 71 | 49-130 | | |
| 2,4,6-Trichlorophenol | ug/L | ND | 500 | 500 | 410 | 332 | 82 | 66 | 49-133 | 21 | |
| 2,4-Dinitrotoluene | ug/L | ND | 500 | 500 | 393 | 320 | 79 | 64 | 31-135 | 20 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 500 | 500 | 420J | 353J | 84 | 71 | 42-132 | | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 1000 | 1000 | 875J | 716J | 88 | 72 | 42-132 | | |
| Hexachloro-1,3-butadiene | ug/L | ND | 500 | 500 | 306 | 281 | 61 | 56 | 19-107 | 9 | |
| Hexachlorobenzene | ug/L | ND | 500 | 500 | 222 | 190 | 44 | 38 | 21-105 | 15 | |
| Hexachloroethane | ug/L | ND | 500 | 500 | 335J | 288J | 67 | 58 | 21-105 | | |
| Nitrobenzene | ug/L | ND | 500 | 500 | 400 | 343 | 80 | 69 | 38-142 | 15 | |
| Pentachlorophenol | ug/L | ND | 500 | 500 | 409J | 341J | 82 | 68 | 32-139 | | |
| Pyridine | ug/L | ND | 500 | 500 | 230J | 188J | 46 | 38 | 10-61 | | |
| 2,4,6-Tribromophenol (S) | % | | | | | | 82 | 64 | 10-123 | | |

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## QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 767372 767373

| Parameter | Units | 30125967001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Fluorobiphenyl (S) | % | | | | | | 73 | 60 | 43-116 | | |
| 2-Fluorophenol (S) | % | | | | | | 81 | 66 | 21-110 | | |
| Nitrobenzene-d5 (S) | % | | | | | | 79 | 61 | 35-114 | | |
| Phenol-d6 (S) | % | | | | | | 79 | 63 | 10-110 | | |
| Terphenyl-d14 (S) | % | | | | | | 43 | 34 | 33-141 | | |

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## QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: PMST/4699 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

SAMPLE DUPLICATE: 767509

| Parameter | Units | 30125991001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Percent Moisture | % | 20.2 | 22.3 | 10 | |

SAMPLE DUPLICATE: 767510

| Parameter | Units | 30126093015 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Percent Moisture | % | 27.3 | 25.0 | 9 | |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WET/24535 Analysis Method: EPA 1010
QC Batch Method: EPA 1010 Analysis Description: 1010 Flash Point, Closed Cup
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

METHOD BLANK: 766683 Matrix: Water
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Flashpoint | deg F | >200 | 60.0 | 07/30/14 17:00 | |

SAMPLE DUPLICATE: 766684

| Parameter | Units | 30125197001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Flashpoint | deg F | 121 | 121.2 | | |

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## QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WET/24515 Analysis Method: EPA 9045C
QC Batch Method: EPA 9045C Analysis Description: 9045 pH
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

SAMPLE DUPLICATE: 766169

| Parameter | Units | 30125991006 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| pH at 25 Degrees C | Std. Units | 8.4 | 8.4 | 0 | |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WETA/17330 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

METHOD BLANK: 767046 Matrix: Solid
Associated Lab Samples: 30125991001, 30125991002, 30125991003, 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Cyanide | mg/kg | ND | 0.57 | 07/31/14 21:38 | |

LABORATORY CONTROL SAMPLE: 767047

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Cyanide | mg/kg | 5.7 | 5.8 | 101 | 90-110 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 767048 767049

| Parameter | Units | 30125991001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cyanide | mg/kg | ND | 3 | 3.8 | 2.9 | 3.6 | 84 | 86 | 90-110 | 22 | M2 |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WETA/17295 Analysis Method: SW-846 7.3.3.2
QC Batch Method: SW-846 7.3.3.2 Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 30125991001, 30125991002, 30125991003

METHOD BLANK: 765971 Matrix: Solid
Associated Lab Samples: 30125991001, 30125991002, 30125991003

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Cyanide, Reactive | mg/kg | ND | 0.99 | 07/29/14 19:00 | |

SAMPLE DUPLICATE: 765972

| Parameter | Units | 30125629001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Cyanide, Reactive | mg/kg | ND | ND | | |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WETA/17329 Analysis Method: SW-846 7.3.3.2
QC Batch Method: SW-846 7.3.3.2 Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 30125991004, 30125991005, 30125991006

METHOD BLANK: 767044 Matrix: Solid
Associated Lab Samples: 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Cyanide, Reactive | mg/kg | ND | 1.0 | 07/31/14 22:13 | |

SAMPLE DUPLICATE: 767045

| Parameter | Units | 30126142001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Cyanide, Reactive | mg/kg | ND | ND | | |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WETA/17296 Analysis Method: SW-846 7.3.4.2
QC Batch Method: SW-846 7.3.4.2 Analysis Description: 734S Reactive Sulfide
Associated Lab Samples: 30125991001, 30125991002, 30125991003

METHOD BLANK: 765975 Matrix: Solid
Associated Lab Samples: 30125991001, 30125991002, 30125991003

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Sulfide, Reactive | mg/kg | ND | 9.9 | 07/29/14 19:00 | |

SAMPLE DUPLICATE: 765976

| Parameter | Units | 30125629001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Sulfide, Reactive | mg/kg | ND | ND | | |

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# QUALITY CONTROL DATA

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

QC Batch: WETA/17328 Analysis Method: SW-846 7.3.4.2
QC Batch Method: SW-846 7.3.4.2 Analysis Description: 734S Reactive Sulfide
Associated Lab Samples: 30125991004, 30125991005, 30125991006

METHOD BLANK: 767042 Matrix: Solid
Associated Lab Samples: 30125991004, 30125991005, 30125991006

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Sulfide, Reactive | mg/kg | ND | 10 | 07/31/14 15:00 | |

SAMPLE DUPLICATE: 767043

| Parameter | Units | 30126142001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Sulfide, Reactive | mg/kg | ND | ND | | |

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# QUALIFIERS

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

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 (8270 listed analyte) decomposes to Azobenzene.

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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## BATCH QUALIFIERS

Batch: MSV/20520

[1] A matrix spike/matrix spike duplicate was not performed for this batch.

## ANALYTE QUALIFIERS

M2 Matrix spike recovery was below QC limits due to sample dilution. Data acceptance based on laboratory control sample (LCS) recovery.

S6 Surrogate recovery outside control limits. Data accepted based on valid recovery of applicable surrogates (no analytes associated with this surrogate)



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# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **30125991001** | **HAOH0728SS65** | EPA 3050B | MPRP/13539 | EPA 6010B | ICP/12837 |
| **30125991002** | **HAOH0728SS66** | EPA 3050B | MPRP/13539 | EPA 6010B | ICP/12837 |
| **30125991003** | **HAOH0728SS67** | EPA 3050B | MPRP/13539 | EPA 6010B | ICP/12837 |
| **30125991004** | **HAOH0728SS68** | EPA 3050B | MPRP/13539 | EPA 6010B | ICP/12837 |
| **30125991005** | **HAOH0728SS69** | EPA 3050B | MPRP/13539 | EPA 6010B | ICP/12837 |
| **30125991006** | **HAOH0728SS70** | EPA 3050B | MPRP/13539 | EPA 6010B | ICP/12837 |
| **30125991001** | **HAOH0728SS65** | EPA 3535A | OEXT/20222 | EPA 8270C | MSSV/6619 |
| **30125991002** | **HAOH0728SS66** | EPA 3535A | OEXT/20222 | EPA 8270C | MSSV/6619 |
| **30125991003** | **HAOH0728SS67** | EPA 3535A | OEXT/20222 | EPA 8270C | MSSV/6619 |
| **30125991004** | **HAOH0728SS68** | EPA 3535A | OEXT/20222 | EPA 8270C | MSSV/6619 |
| **30125991005** | **HAOH0728SS69** | EPA 3535A | OEXT/20222 | EPA 8270C | MSSV/6619 |
| **30125991006** | **HAOH0728SS70** | EPA 3535A | OEXT/20222 | EPA 8270C | MSSV/6619 |
| **30125991001** | **HAOH0728SS65** | EPA 8260B | MSV/20520 | | |
| **30125991002** | **HAOH0728SS66** | EPA 8260B | MSV/20520 | | |
| **30125991003** | **HAOH0728SS67** | EPA 8260B | MSV/20520 | | |
| **30125991004** | **HAOH0728SS68** | EPA 8260B | MSV/20520 | | |
| **30125991005** | **HAOH0728SS69** | EPA 8260B | MSV/20520 | | |
| **30125991006** | **HAOH0728SS70** | EPA 8260B | MSV/20520 | | |
| **30125991001** | **HAOH0728SS65** | ASTM D2974-87 | PMST/4699 | | |
| **30125991002** | **HAOH0728SS66** | ASTM D2974-87 | PMST/4699 | | |
| **30125991003** | **HAOH0728SS67** | ASTM D2974-87 | PMST/4699 | | |
| **30125991004** | **HAOH0728SS68** | ASTM D2974-87 | PMST/4699 | | |
| **30125991005** | **HAOH0728SS69** | ASTM D2974-87 | PMST/4699 | | |
| **30125991006** | **HAOH0728SS70** | ASTM D2974-87 | PMST/4699 | | |
| **30125991001** | **HAOH0728SS65** | EPA 1010 | WET/24535 | | |
| **30125991002** | **HAOH0728SS66** | EPA 1010 | WET/24535 | | |
| **30125991003** | **HAOH0728SS67** | EPA 1010 | WET/24535 | | |
| **30125991004** | **HAOH0728SS68** | EPA 1010 | WET/24535 | | |
| **30125991005** | **HAOH0728SS69** | EPA 1010 | WET/24535 | | |
| **30125991006** | **HAOH0728SS70** | EPA 1010 | WET/24535 | | |
| **30125991001** | **HAOH0728SS65** | EPA 9045C | WET/24515 | | |
| **30125991002** | **HAOH0728SS66** | EPA 9045C | WET/24515 | | |
| **30125991003** | **HAOH0728SS67** | EPA 9045C | WET/24515 | | |
| **30125991004** | **HAOH0728SS68** | EPA 9045C | WET/24515 | | |
| **30125991005** | **HAOH0728SS69** | EPA 9045C | WET/24515 | | |
| **30125991006** | **HAOH0728SS70** | EPA 9045C | WET/24515 | | |
| **30125991001** | **HAOH0728SS65** | SM 4500-CN-E | WETA/17330 | | |
| **30125991002** | **HAOH0728SS66** | SM 4500-CN-E | WETA/17330 | | |
| **30125991003** | **HAOH0728SS67** | SM 4500-CN-E | WETA/17330 | | |
| **30125991004** | **HAOH0728SS68** | SM 4500-CN-E | WETA/17330 | | |
| **30125991005** | **HAOH0728SS69** | SM 4500-CN-E | WETA/17330 | | |
| **30125991006** | **HAOH0728SS70** | SM 4500-CN-E | WETA/17330 | | |
| **30125991001** | **HAOH0728SS65** | SW-846 7.3.3.2 | WETA/17295 | | |
| **30125991002** | **HAOH0728SS66** | SW-846 7.3.3.2 | WETA/17295 | | |
| **30125991003** | **HAOH0728SS67** | SW-846 7.3.3.2 | WETA/17295 | | |



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

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 106393 Statoil @ Hannibal, OH
Pace Project No.: 30125991

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **30125991004** | **HAOH0728SS68** | SW-846 7.3.3.2 | WETA/17329 | | |
| **30125991005** | **HAOH0728SS69** | SW-846 7.3.3.2 | WETA/17329 | | |
| **30125991006** | **HAOH0728SS70** | SW-846 7.3.3.2 | WETA/17329 | | |
| **30125991001** | **HAOH0728SS65** | SW-846 7.3.4.2 | WETA/17296 | | |
| **30125991002** | **HAOH0728SS66** | SW-846 7.3.4.2 | WETA/17296 | | |
| **30125991003** | **HAOH0728SS67** | SW-846 7.3.4.2 | WETA/17296 | | |
| **30125991004** | **HAOH0728SS68** | SW-846 7.3.4.2 | WETA/17328 | | |
| **30125991005** | **HAOH0728SS69** | SW-846 7.3.4.2 | WETA/17328 | | |
| **30125991006** | **HAOH0728SS70** | SW-846 7.3.4.2 | WETA/17328 | | |



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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.

Page: 1 of 4

1846227

**Section A** Required Client Information:

Company: CTEH
Address: 5120 North Shore Dr
North Little Rock, Ar 72118
Email To: labresults@cteh.com
Phone: Fax:
Requested Due Date/TAT: 24 hr

**Section B** Required Project Information:

Report To: Robert Wilkinson
Copy To: Chase Entzinger
Purchase Order No.:
Project Name: Hannibal, OH 106393
Project Number:

**Section C** Invoice Information:

Attention: Accounts Rec.
Company Name: CTEH
Address: 5120 North Shore Dr
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

**REGULATORY AGENCY**

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Ohio

**Section D** Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

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

Requested Analysis Filtered (Y/N)

| ITEM # | SAMPLE ID | MATRIX CODE (see valid codes to left) | 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 | Analysis Test (Y/N) | TCLP VOCs | TCLP SVOCs | TCLP | Reactivity | Sodium | Cyanide | Residual Chlorine (Y/N) | Pace Project No./ Lab I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HAOH 0728 SS65 | SL | G | | | 7/28/14 | 1020 | | 4 | 4 | | | | | | | | | X | X | X | X | X | X | | 001 |
| 2 | HAOH 0728 SS66 | SL | G | | | 7/28/14 | 1030 | | 4 | 4 | | | | | | | | | X | X | X | X | X | X | | 002 |
| 3 | HAOH 0728 SS67 | SL | G | | | 7/28/14 | 1045 | | 4 | 4 | | | | | | | | | X | X | X | X | X | X | | 003 |
| 4 | HAOH 0728 SS68 | SL | G | | | 7/28/14 | 1155 | | 4 | 4 | | | | | | | | | X | X | X | X | X | X | | 004 |
| 5 | HAOH 0728 SS69 | SL | G | | | 7/28/14 | 1210 | | 4 | 4 | | | | | | | | | X | X | X | X | X | X | | 005 |
| 6 | HAOH 0728 SS70 | SL | G | | | 7/28/14 | 1220 | | 4 | 4 | | | | | | | | | X | X | X | X | X | X | | 006 |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Robert Wilkinson CTEH | 7/29/14 | 0855 | [signature] | 7/29 | 0858 | | | | |
| | [signature] | 7/29/14 | 0957 | [signature] PACE | 7/29 | 958 | | | | |
| | [signature] PACE | 7/29/14 | 1150 | [signature] PACE | 7/29 | 1150 | | | | |
| | [signature] PACE | 7/29/14 | 1334 | [signature] | 7-29-14 | 1334 | 4.2 | Y | Y | Y |
| | | | | | | | Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N) |

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Robert Wilkinson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 07/28/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007



EPA-R5-2017-003770_0000487

# Sample Condition Upon Receipt

Pace Analytical

Client Name: CTEH

Project # 30125991

**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 ziploc

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

**Cooler Temp.: Observed Temp.:** 4.3 °C **Correction Factor:** -0.1 °C **Final Temp:** 4.2 °C

Temp should be above freezing to 6°C

**Date and Initials of person examining contents:** AML 7-29-14

| | | 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, WI-DRO (water) | ☐ Yes ☑ No | Initial when completed AML / 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:** [signature] **Date:** 7/30/14

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:** 30125991

**Client Name:** CTEH

| 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 | 4 | | | | | | | | | | | | | | | | | | | | | | |
| 006 | SL | 4 | | | | | | | | | | | | | | | | | | | | | | |
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SCURF Back (C016-4 15May2012).xls

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