APPLICATION TO OPERATE A FACILITY

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS RESOURCES MANAGEMENT
2045 MORSE ROAD, BUILDING F-2
COLUMBUS, OHIO 43229-6693

(614) 265-6922

| | ONNIMITE A |
|---------|--|
| 1. | Name of Applicant: ATP FATEL PRICES Phone #: 607-346-2335 |
| | Address: 128 STEUBENVILLE AVE CAMBRIDGE OHIO 43725 |
| | Date: APRIL 2 2014 eMail Address: DANFITHNSUBURBAN @ YAHOO.COM |
| | For an Order or a Permit to Operate: Existing Facility New Facility |
| 2. | PURPOSE OF FACILITY: Storage Recycling Treatment |
| <u></u> | (Check all that Apply) |
| 3. | TYPE OF MATERIAL: Strine Drill Cuttings Drill Cutt |
| | ☑ Brine ☑ Drill Cuttings ☑ Drilling Mud ☐ Other Waste Substance (explain) |
| _ | |
| 4. | and the district of agent and medical depth and appointment. |
| | Name: DANIEI FITHIN Address: 48059 OUT POST Rd, CAID WEIL OHIO 43724 |
| | Address: 48059 OUT POST Rd, CAId WEIL OHIO 43724 |
| 5. | Engineer of Record: |
| | Name: // / /- |
| | Address: |
| | Ohio Professional Engineering License Number: |
| 6. | Address of Facility: |
| | Address: 48059 OUT POST Rd, CAIDWELL OH 43724 |
| | County: NOBIE COUNTY |
| | |
| | Municipal Corporation: 15 E. VANY Latitude: 37.795878 |
| | Longitude: -81.552574 |
| - | |
| 7. | Write a brief description of the facility and operations: VAC TRUCK, TANKER TRUCK, BINDS AND SUBER SUCKER WASH CENTER, WITH THE ABILITY |
| | |
| | ALSO TO MIX OFF OIL BASE MATERIAL FOR THE PURPOSE |
| | OF disposal TO A APPROVED DUMP SITE. |
| - | |
| 8. | Include all information as set forth in the "Guidelines for Application for Chief's Order". Attach Additional Documents |
| or un | undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me der my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge. |
| I cert | ify that the facility will comply with or is corrently in compliance with all provisions of Chapter 1509 ORC, Chapter 1501 OAC, and all terms and conditions of orders permits issued by the Chief, Division of Oil and Gas Resources Management. |
| | |
| Signa | ature of Authorized Agent |
| Nam | e (Type or Print) DANIEI FLING Title ATP UNLIMITED LAC MANAGER |
| Swor | n to and subscribed before me this the |
| | William Public) |
| | |
| | NOTADVDIDIO AUG |
| | INCIANT PUBLIC - OHIO |
| DNR 1 | 1509 22 (12 500) |

and the second second

201410001167

DATE: 04/10/2014 DOCUMENT ID 201410001167

DESCRIPTION ARTICLES OF ORGNZTN/DOM. PROFIT LIM.LIAB. CO. (LCP) FILING 125.00 100.00

PENALTY

CERT

COPY

Receipt

This is not a bill. Please do not remit payment.

STUBBINS, WATSON & BRYAN CO. LPA ATTN: BRENT A. STUBBINS 59 N. 4TH STREET ZANESVILLE, OH 43702

ARTICLES OF ORGNZTN/DOM. PROFIT LIM.LIAB. CO.

STATE OF OHIO CERTIFICATE

Ohio Secretary of State, Jon Husted 2285925

It is hereby certified that the Secretary of State of Ohio has custody of the business records for

ATP UNLIMITED, LLC

and, that said business records show the filing and recording of:

Document(s)

Document No(s):

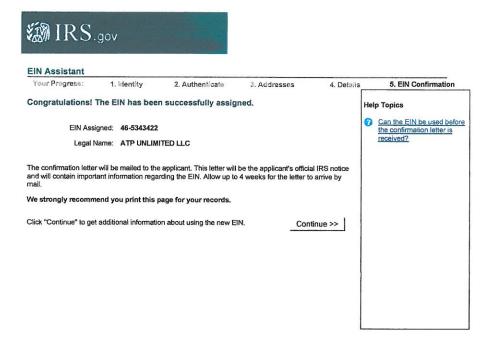
201410001167

Effective Date: 04/10/2014

CRETARY OF STATE OF THE OFFICE OF STATE OF THE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFI

United States of America State of Ohio Office of the Secretary of State Witness my hand and the seal of the Secretary of State at Columbus, Ohio this 10th day of April, A.D. 2014.

Ohio Secretary of State



The purpose of this permit is to form a truck washing facility which will facilitate washing the inside and outside of water trucks, tankers and Super Sucker models of trucks and to properly dispose of the residual waste including Water-base, Oil-base and Boring mud material. In addition, this endeavor will create jobs and business opportunities.

Phase One of the business startup is to build the property to meet the specifications required to perform the procedures. A minimum six inch concrete pad will be poured inside the existing building. In addition there will be a barrier in place to contain the material. Two separate pits will be built to facilitate disposing of waste or de-watering to process water which will be recyclable. One will be built with the dimensions of 20ft x 20ft and the second will be built with the dimensions 15ft x 20ft. Waste then will be loaded into half round bins, covered and lined to be taken to an approved EAP dump site. All material will come with a Manifest of Origin stating then bins contents and its source of origination.

All materials will be tested for our own purposes by utilizing Pace Analytical Company, to ensure the composition of the waste and that is meets the norms.

Waterbase and Boring mud will be processed independently of the Oil-based material. The water will be extracted from the solid material and processed through a Center Fusion System which is designed to separate the water and waste. The water will then go through the De-Watering Process and cleaned to meet an approved PH test level. The resultant dry waste will be removed, to dump at an approved waste dump site.

Lime AD material, that has been certified prior to use will be utilized in the mixing process of the Oil-Based Material. The resultant mixture will be removed, to dump at an approved waste dump site.

This will be a twenty-four hour operation. Our expectation is to clean 20-80 trucks per week. Each truck is expected to be carrying approximately eight barrels of material with a total of 6400 barrels per week maximum. We will utilize Frack Tanks to store Process water for re-use or waste to be dumped in an approved injection well site.

Dewatering Process

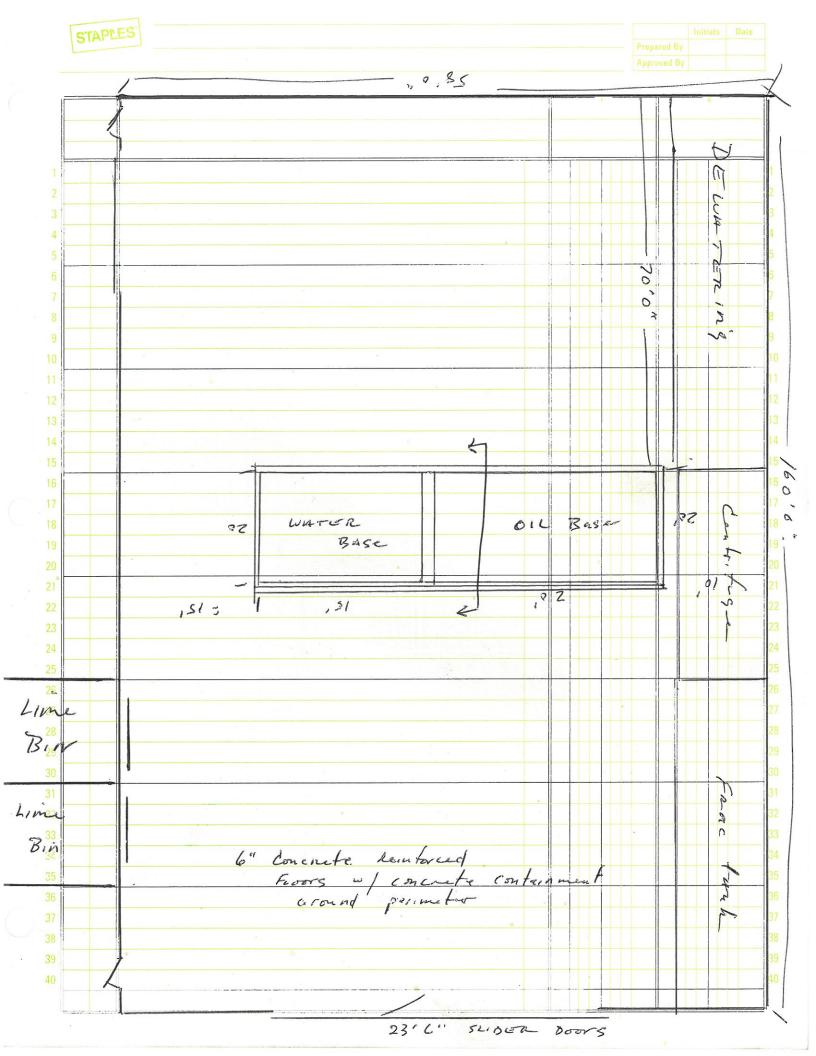
De-watering is the process of removing solids from water and returning the water to a safe Ph level that will allow the costumer to reuse or resell the product and/or dispose of the product as an environmentally safe material. We use polymer as the flocculent to actually expand the solids from the water to ensure the purest water possible with solids particles that are so small that in testing it doesn't clog sock type filters for a span of at least twenty four hours. We also use calcium nitrite as a coagulant which has a Ph of 3 to reduce or stabilize the Ph of the product so it can go to either an injection well or disposal. Calcium Nitrate is used as a Ph inhibitor to reducer of the high Ph levels that the Polymer increases in the water as an inhibitor of the solids removal process. We use these processes to insure the field recommended status of any processed water that may be reusable, resalable and/or disposable are at a Ph level of 6 to an 8 without any solids particulates.

Dewatering Surface and Mist Drilling

During Air drilling operations we process the water and mud that is use to drill with. We use a 4 by 4 trash pump to pull out of the open top cuttings tank that the operator uses to discharge the hole. Then we send the solids heavy water or mud to the Dewatering trailer to be injected with the chemical mixture of Polymer and Calcium Nitrate to start the separation process. Once this injection takes place through manifold inside the Dewatering trailer then the fluid is sent to the Centrifuge for the final separation process. After the Centrifuge process the clean water is sent back to the water holding tank to be reused for the next air drilling section.

Dewatering Dust Kill

During this section the operator will not generally use water to pump down hole. So we will pull from the water holding tank with a 3 by 3 pump to eliminate the dust that will come out the hole. This pump will run the entire section unless we are instructed to turn it off for any reason. While we are pumping water into the flow line we are also pulling it out of the open top tank that the drilling waste is being discharged to and sending it to the dewatering trailer. Once injected with the Polymer and Calcium Nitrate mixture and sent through the centrifuging process the clean water is returned to the water holding tank that we are pulling from with the 3 by 3 pump to eliminate and control the dust being unloaded from the air drilling operation.





The Subtitle



18059 Outpost Rd Caldwell, OH 4



The Disclaimer

Printed: Mar 27, 2014





The Subtitle

48059 Outpost Rd Caldwell, OH 43724

The Disclaimer



Printed: Mar 27, 2014

2001 Ball Park Road Export PA 15632

MYERS WELL SERVICE, Inc.

724-708-4642 -724-525-1442 Fax/724-327-9274

| Export PA 15632 | MARING | | OLIII | IUL, I | TICKET NO. | 92027 |
|---------------------------------------|-----------------------|---------------------------------|-----------------|------------------|-----------------------|---|
| DATE 4-9-14 | | IG NO. | | | AFE NO. | JZUZI |
| Print Driver's Name: | | 6 | | | MANIFEST NO |) |
| Truck No. My | (C) R | equested by: | | ! | WAITESTIC | · |
| # Loads of Water Lo | gcod aded | | Type of Tar | ık (Circle One): | | ling Tank Frac Tank |
| Total Gallons: | | Barrels/load | | | 40 | Frac Tank # or color |
| # Loads of Water Un Total Gallons: | Ø | Barrels/load | | nk (Circle One) | Drill Mud Frac Pit | Flow Back Fresh Production |
| VELL TIME: | TOTAL HOURS | • | | 13 A. P. | | 3 |
| 700 | shed out (Della | o get | | Customer Name | | |
| ank was | shed our losi | (mud) | Approval | Signature: | | Total Loads: |
| | | | 1:521 | . Arm | ALZ. | Ø. |
| Customer Copy | | VELLO | W = Office Copy | | | PINK = Driver Co |
| 305 Smithson S P.O. Box 103 | dba | RUCK D REN DRILL WARREN T | ING CO., I | NC. (| | 775 – OFFICE – |
| DEXTER CITY, OH | o 45727 | | | | | |
| NR REGISTRATION | No. 25-557 | | | S | TATE OF TRANS | SPORTATION: OHIO |
| TE OF 4/13/17 | 111112 01 | A.M. VEHICLE P.M. LIC.# | DVH 13 | 03 | Olli II | -100 |
| ELL OWNER | COUNTY | | LEASE NAM | E | WELL | PERMIT NO. |
| Antero | Noble | | Wilson | 1610431 | -14 | |
| | | | TE AND METHO | | | T = = = = = = = = = = = = = = = = = = = |
| LUME COLLECTED | DISPOSAL SITE | DATE OF DISPOS. | AL | TIME OF DISPOSA | IL . | |
| | COUNTY: TWP RD. #: | | | | | ☐ DUST SUPPRESSANT |
| | PRIVATE PROPERTY | 4/13 | 114 | 10:00 | | |
| | | Тург | OF FLUID | | | |
| FRESH | ☐ DRILL MUD | ☐ FRAC | | ☐ BRINE | | OTHER: Lemantoria |
| | NTED): Mark Warre | | | | DATE: 4/1 | 3/14 |
| RIVER'S NAME (SIGN | Cli. I | | | | DATE: 4/1 | 3/14 |
| DIVIED C MANNE ICICI | AIUKEI. ET E | | | | | |

TRANSPORTATION DAILY LOG

1315

| ASSIGNED TRANSPORTATION REGISTRATION NUMBER (UIC#) | STATE OF ORIGIN |
|--|--|
| 271 | OHIO - WEST VIRGINIA - PENNSYLVANIA |
| HAULER NAME | COUNTY OF ORIGIN |
| G-R CONTRACTING, INC. | |
| HAULER ADDRESS | |
| 35479 STATE ROUTE 78 PHONE 7 | 40-567-3217 |
| LEWISVILLE, OH 43754 FAX 740- | |
| | |
| LICENSE NUMBER OF MOTOR VEHICLE | TRUCK NO. |
| DRIVER NAME (FIRST & LAST) | RIG NO. |
| DATE OF PICK-UP | THE OF DOK UP |
| DATE OF PICK-UP | TIME OF PICK-UP |
| TYPE OF TANK (CHECK ONE) SWD HOLDING TANK | FRAC TANK DRILL MUD FLOW BACK FRESH |
| ☐ FRAC PIT ☐ PRODUCTION | ☐ HALF ROUNDS ☐ OTHER |
| FRAC TANK # OR COLOR | ORIGIN OF BRINE-PRODUCER (CHECK ONE) |
| 151054144 | ☐ G-R CONTRACTING, INC. ☐ ANTERO RESOURCES |
| schaffer unit | ☐ OTHER |
| API WELL PERMIT NUMBER | |
| CIVITUIG TOIL | |
| DISPOSAL LOCATION (COUNTY) | DISPOSAL LOCATION (TOWNSHIP) |
| DATE OF DISPOSAL | TIME OF DISPOSAL |
| METHOD OF DISPOSAL | |
| | |
| VOLUME OF DISPOSAL (# OF LOADS AND TOTAL GALLONS) | |
| | |
| COMPANY/CUSTOMER NAME Antero | |
| APPROVAL SIGNATURE | DATE |
| | |
| WELL TIME f | TOTAL HOURS |
| 10 | |
| ODOMETER READING | TOTAL LOADS |
| START 67565 END | and the state of t |
| NOTES TOOK TVK 20 TO GET | tank cleaned At |
| Petta Ihr there | his tank cleaning his drive |
| DRIVER'S NAME (PRINTED): Nate Woo | drum DATE: 4-13 Back |
| DRIVER'S NAME (SIGNATURE): Aut Wood | 4-13-14 |
| STREET O NAIVE (SIGNATURE) | DATE: |

NOTE: Specify Disposal site by API# if Applicable. If brine is used as a dust suppressant or for ice control, indicate County or Township road or private property. Methods of disposal indicate the appropriate disposal methods; i.e. Dust suppressant, injection well, or recycling facility. If abbreviations are used on this form please define.

REQUIRED BY CHAPTER 1509.223 (c) OF THE OHIO REVISED CODE

Material Safety Data Sheet

2001 Rankin Road Emergency Telephone: (713) 439-8900 Houston, Texas 77073 Chemtrec: 1 (800) 424-9300 I. MANUFACTURER'S INFORMATION: Manufacturer: BAKER HUGHES DRILLING FLUIDS **HMIS Hazard** Health 1 Minimal 0 Product Name: DIESEL OIL-BASED DRILLING MUD Rating and Key Flammability 2 Slight 1 Chemical Name: OIL WELL DRILLING FLUID SYSTEM Reactivity 0 Moderate 2 Chemical Description: HYDROCARBON/BRINE EMULSION Personal Serious 3 Protection H Severe 4 Proper Shipping Name: NOT REGULATED Hazard Class: NA UN Number: NA Hazard Label: NA DOT Response Guide: 128 Transportation Note: IN THE U.S., FOR SHIPMENTS IN BULK CONTAINERS (>119 GAL.), USE THE SHIPPING NAME: COMBUSTIBLE LIQUID, N.O.S. (CONTAINS DIESEL), COMBUSTIBLE LIQUID, NA1993, PGIII II. HAZARD IDENTIFICATION: Hazardous Components: ACGIH TLV: OSHA PEL: % CAS Number: Product RQ: DIESEL FUEL #2, PETROLEUM 300 PPM T 400 PPM T PROP. 68476-34-6 NA DISTILLATES (NAPHTHA)* CALCIUM CHLORIDE, AS NUISANCE 10 MG/M3 T 15 MG/M3 T PROP. 10043-52-4 NA **PARTICULATES** *MANUFACTURER'S RECOMMENDED TLV: 100 PPM T Hazards Associated with Product Use Yes Yes Yes Yes Combustible Liquid X Flammable Material Pyrophoric Material **Explosive Material** Unstable Material Water Reactive Material Oxidizer Organic Peroxide Corrosive Material Compressed Gas **Irritant** X Nuisance Particulate Skin Hazard X Eye Hazard X Toxic Agent Highly Toxic Agent Sensitizer \mathbf{X} Carcinogen Reproductive Toxin **Blood Toxin** Nervous System Toxin Х Lung Toxin Liver Toxin Kidney Toxin Community Right-to-Know (SARA Title III Section 311-312) Fire: Sudden Release Of Pressure: Reactivity: Immediate (Acute): X Delayed (Chronic): X III. PHYSICAL DATA: Boiling Point (F): Vapor Pressure (mmHg): ND pH: ND Melting Point(F): NA Vapor Density (Air=1): ND Specific Gravity: 1.74 Freezing Point(F): ND Solubility In Water: INSOLUBLE Percent Volatile By Volume: ND Odor Threshold: NA Appearance And Odor: DARK LIQUID, AROMATIC Evaporation Rate (=1): ND Material Is: MIX-LIQUID Coefficient of Water/Oil Distribution: INSOLUBLE IN WATER IV. FIRE & EXPLOSION HAZARD DATA: Flashpoint (F): 174 (TCC) Auto Ignition Temperature (F): ND Explosive Limit - Lower: ND Upper: ND Extinguishing Media: Water: CO2: X Dry Chemical Foam Fog: Hazardous Combustion Products: OXIDES OF CARBON, NITROGEN AND SULFUR, ACRID SMOKE AND TOXIC FUMES. Fire Fighting Procedures: WEAR POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING WHEN FIGHTING FIRES IN ENCLOSED OR CONFINED AREAS. TREAT AS A KEROSENE FIRE. Unusual Fire and Explosion Hazards: USE DRY CHEMICAL, FOAM OR CARBON DIOXIDE TO EXTINGUISH FIRE. WATER MAY BE INEFFECTIVE BUT SHOULD BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL, TO DISPERSE VAPORS OR TO FLUSH AWAY FROM EXPOSURE. V. REACTIVITY DATA: Chemically Stable: Yes: \mathbf{X} No: If no, Under Which Conditions? AVOID HEAT, SPARKS & OPEN FLAMES.

Incompatibility (Materials to Avoid):

Hazardous Decomposition on Byproducts: PRODUCT WILL NOT READILY DECOMPOSE.

STRONG OXIDIZING AGENTS, CAUSTICS & STRONG ACIDS.

Hazardous Polymerization

May Occur:

Will Not Occur:

X

Conditions to Avoid:

NA

DIESEL OIL-BASED DRILLING MUD

VI. HEALTH HAZARD INFORMATION:

Primary Exposure Route: Product Carcinogenicity -

Skin Contact: X NTP: NO

Skin Absorption: IARC: NO

Eye Contact: X Inhalation: X

Ingestion:

Acute Effects of Overexposure:

PRODUCT CAUSES EYE, SKIN, AND MUCOUS MEMBRANE IRRITATION. REPEATED SKIN EXPOSURE CAN DEFAT SKIN AND CAUSE DERMATITIS. INHALATION MAY CAUSE NERVOUS SYSTEM EFFECTS INCLUDING DROWSINESS, DIZZINESS, HEADACHES, NAUSEA, OR BLURRED VISION. ASPIRATION MAY CAUSE SERIOUS LUNG DAMAGE.

Chronic Effects of Overexposure:

MAY BE HARMFUL IF INHALED OVER A LONG PERIOD OF TIME. LIFETIME SKIN PAINTING STUDIES WITH DIESEL PRODUCED CARCINOGENIC TUMORS IN LABORATORY ANIMALS. CHRONIC EXPOSURES MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTIONS AND KIDNEY DAMAGE.

VII. EMERGENCY AND FIRST AID INSTRUCTIONS:

Eyes:

HOLD EYELIDS APART AND FLUSH WITH RUNNING WATER FOR AT LEAST 15 MINUTES.

IF IRRITATION PERSISTS REPEAT PROCEDURE AND CONTACT A PHYSICIAN.

Skin:

WASH THOROUGHLY WITH MILD SOAP AND WATER. SEEK MEDICAL ATTENTION IF RASH

OR SKIN IRRITATION PERSIST.

Ingestion:

GIVE FLUIDS TO DILUTE. CONSULT A PHYSICIAN. INDUCE VOMITING ONLY AT DIRECTION

OF A PHYSICIAN. ASPIRATION DURING VOMITING MAY CAUSE DANGEROUS LIPOID

PNEUMONIA IN THE LUNGS.

Inhalation:

REMOVE TO FRESH AIR IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING

IS DIFFICULT, GIVE OXYGEN.

VIIL ENVIRONMENTAL PROTECTION PROCEDURES:

Spill Response:

CONTAIN AREA OF SPILL. COVER WITH ABSORBENT MATERIALS SUCH AS SAND, EARTH, OR VERMICULITE. SHOVEL INTO AN APPROVED WASTE CONTAINER AND DISPOSE OF. KEEP OUT OF SEWERS AND WATERWAYS.

Waste Disposal Method:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. DISCHARGE OF THIS MATERIAL INTO U.S. WATERS MAY CAUSE A SHEEN WHICH CONSTITUTES A VIOLATION OF THE CLEAN WATER ACT. Handling:

WARNING! HARMFUL OR FATAL IF SWALLOWED. PRODUCT IS AN IRRITANT DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. AVOID INHALING VAPORS/MISTS. WEAR PROPER PROTECTIVE EQUIPMENT STATED IN THE MSDS.

STORE IN A COOL AREA AWAY FROM HEAT, SPARKS AND OPEN FLAMES. KEEP CONTAINER CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION. WHEN EMPTY, DRAIN THOROUGHLY AND REPLACE BUNGS SECURELY. DO NOT PRESSURIZE, CUT OR DRILL EMPTY CONTAINERS WITH RESIDUES.

IX. OCCUPATIONAL CONTROL MEASURES:

Respiratory Protection:

WEAR AN APPROVED ORGANIC VAPOR RESPIRATOR FOR PETROLEUM VAPORS OR MISTS.

Ventilation:

USE ADEQUATE LOCAL EXHAUST OR MECHANICAL VENTILATION THAT INSURES COMPLIANCE WITH EXPOSURE LIMITS.

Clothing:

WEAR LONG PROTECTIVE CLOTHING WITH IMPERVIOUS APRONS OR COVERALLS FOR ADDED PROTECTION.

Eyewear: Gloves:

USE SAFETY GOGGLES WITH AN OPTIONAL FACE SHIELD WHILE HANDLING THE PRODUCT.

WEAR NEOPRENE OR BUTYL RUBBER GAUNTLETS TO PREVENT CONTACT.

Footwear: WEAR RUBBER SAFETY BOOTS.

ADDITIONAL INFORMATION:

DISCLAIMER

The statements, information, and data provided in this material safety data sheet are believed reliable and accurate by Baker Hughes Drilling Fluids and its responsible personnel; however, no other guarantee, representation, warranty or responsibility is expressed or implied to any user, regardless of reliance on all or any part thereof. This includes warranties or merchantability or of fitness for a particular purpose, and Baker Hughes Drilling Fluids assumes no responsibility whatever for advice or recommendations made. Nothing contained herein should be interpreted as permission, inducement, or condonement to violate any law persuant to this product's use, conveyance or disposal.

Prepared By: Cheryl Hood

Date Prepared: 05/14/2002

Supercedes Issue Date: 01/16/97

ND - Not Determined

NA - Not Applicable

T - Total Dust

R - Respirable Fraction

C - Ceiling Limit



Material Safety Data Sheet

| HAAUED | | | mate | ilai Salety Data Sileet |
|--|---------------------------------------|-------------------------------|--------------------------------|---|
| 2001 Rankin Road Houston, Texas 77073 | | - | Emerg | gency Telephone: (713) 439-8900 Chemtrec: 1 (800) 424-9300 |
| I. MANUFACTURER'S INFORM | MATION: | | | |
| Product Name: HP WATER-BAS Chemical Name: WATER -BASED | DRILLING FLUID | HMIS Hazard Rating and Key | Flammability (Reactivity (| 1 Minimal 0 0 Slight 1 0 Moderate 2 |
| Chemical Description: WATER-BA | ASED DKILLING FLUID | | Personal | Serious 3 |
| Proper Shipping Name: NOT REGU Hazard Class: NOT REGULATE. Transportation Note: NA II. HAZARD IDENTIFICATION: | D UN Numbe | er: NA Haza | Protection (| C Severe 4 DOT Response Guide: NONE |
| | | | | W. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. |
| Hazardous Components: SODIUM ALUMINATE | ACGIH TLV: 2 MG/M3 TWA | OSHA PEL: 2 MG/M3 TWA | % CAS Nui <1 1302-42- | ~ |
| · • | Hazards Ass | ociated with Produc | | Yes |
| Combustible Liquid | Flammable Material | | Yes | |
| Unstable Material | Water Reactive Mat | | noric Material | Explosive Material Organic Peroxide |
| Corrosive Material | Compressed Gas | Eriai Oxigiz Irritant | | Nuisance Particulate |
| Skin Hazard X | - | X Toxic | | Highly Toxic Agent |
| Sensitizer | Carcinogen | | Agent ductive Toxin | Blood Toxin |
| Nervous System Toxin | Lung Toxin | Liver 3 | | Kidney Toxin |
| | | | | reditoj Tomi |
| Fire: Sudden Release (| Community Right-to-Kn Of Pressure: Re | | liate (Acute): X | Delayed (Chronic): X |
| III. PHYSICAL DATA: | | | | |
| Boiling Point (F): ND | Vapor Pressure (mmHg): | ND | pH: 10 | |
| Melting Point(F): ND | Vapor Density (Air=1): | ND | | c Gravity: 1.1-2.2 |
| Freezing Point(F): ND | Solubility In Water: | APPRECIABLI | | : Volatile By Volume(%): NA |
| Odor Threshold: NA | Appearance And Odor: | GREY- BROW | N, SLIGHT Evapor | ation Rate (= 1): ND |
| Material Is: MIX-LIQUID | Coefficient of Water/Oil D | istribution: INSOLI | UBLE IN OIL | |
| IV. FIRE & EXPLOSION HAZAI | RD DATA: | | | |
| Flashpoint (F): >200 (PMCC) | Auto Ignition Temp | erature (F): NA | Flammable Limits | - LFL: NA UFL: NA |
| Explosion - LEL: NA UEL: NA | Extinguishing Media: | Water: CO2: | Dry Chemical: | Foam: Fog: |
| Hazardous Combustion Products: PRODUCT IS NON-COMBUSTIBL | E. | | | |
| Fire Fighting Procedures: NORMAL FIRE FIGHTING PROCE EXTINGUISHING MEDIA APPROI Unusual Fire and Explosion Hazards: NONE REPORTED. | PRIATE TO SURROUNDI | | CAUTIONS NEED BE | ETAKEN, USE |
| V. REACTIVITY DATA: | | | | |
| Chemically Stable: Yes: X | No: If no, Unde | r Which Conditions | 2 NII) | |
| Incompatibility (Materials to Avoid): | • | a which Conditions. | ! ND | |
| Hazardous Decomposition on Byprod | lucts: PRODUCT WILL N | OT READILY DEC | OMPOSE. | |
| Hazardous Polymerization May | Occur: Will Not O | ccur: X | Conditions to Avoi | id: NA |

T - Total Dust

R - Respirable Fraction

C - Ceiling Limit

NA - Not Applicable

ND - Not Determined

VI. HEALTH HAZARD INFORMATION:

Primary Exposure Route: Skin Contact: X Skin Absorption: Eye Contact: X Inhalation: Ingestion: Product Carcinogenicity - NTP: NO IARC: NO

Acute Effects of Overexposure:

OVEREXPOSURE TO PRODUCT MAY CAUSE MECHANICALLY IRRITATE SKIN AND EYES. INHALATION OF VAPORS MAY DRY AND IRRITATE THE UPPER RESPIRATORY SYSTEM. INGESTION MAY BE HARMFUL.

Chronic Effects of Overexposure:

PROLONGED EXPOSURE MAY DRY SKIN LEADING TO MILD DERMATITIS OR MAY AGGRAVATE AN EXISTING ALLERGIC CONDITION.

VII. EMERGENCY AND FIRST AID INSTRUCTIONS:

Eyes: FLUSH WITH COPIUS AMOUNTS OF WATER FOR FIFTEEN MINUTES. CONTACT PHYSICIAN IF

IRRITATION PERSISTS.

Skin: WASH AREA WITH SOAP AND WATER. APPLY SKIN CONDITIONING CREAMS TO RESTORE

MOISTURE AND SKIN OILS.

Ingestion: DRINK WATER TO DILUTE. CONTACT PHYSICIAN IF ADVERSE SYMPTOMS DEVELOP.

Inhalation: REMOVE TO FRESH AIR. IF IRRITATION, CHEST TIGHTNESS, OR BREATHING DIFFICULTY

CONTINUES, CONSULT A PHYSICIAN.

VIII. ENVIRONMENTAL PROTECTION PROCEDURES:

Spill Response:

CONTAIN SPILL AND TRANSFER TO SUITABLE STORAGE CONTAINER. ABSORB RESIDUES WITH ABSORBENT MATERIAL. DO NOT ALLOW ENTRY INTO DRAINS AND WATERWAYS,

Waste Disposal Method:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS DEALING WITH OIL AND GAS EXPLORATION WATER-BASED DRILLING FLUID WASTES.

Handling:

MAY CAUSE EYES, SKIN AND MUCOUS MEMBRANE IRRITATION. WEAR PROPER PROTECTIVE EQUIPMENT. AVOID CONTACT WITH EYES AND SKIN. AVOID BREATHING MIST.

Storage:

KEEP CONTAINER CLOSED WHILE NOT IN USE. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAMES. DO NOT REUSE EMPTY CONTAINERS.

IX. OCCUPATIONAL CONTROL MEASURES:

Respiratory Protection: WEAR AN APPROVED PARTICULATE RESPIRATOR IF RECOMMENDED EXPOSURE

LIMITS ARE EXCEEDED.

Ventilation: USE MECHANICAL VENTILATION TO KEEP EXPOSURES TO VAPORS SAFE..

Clothing: WEAR LONG PROTECTIVE CLOTHING. LAUNDER AFTER USE.

Eyewear: WEAR SAFETY GLASSES WITH SIDEGUARDS.

Gloves: WEAR GLOVES.

Footwear: WEAR NORMAL SAFETY BOOTS.

X. ADDITIONAL INFORMATION:

DISCLAIMER

The statements, information, and data provided in this material safety data sheet are believed reliable and accurate by Baker Hughes Drilling Fluids and its responsible personnel; however, no other guarantee, representation, warranty or responsibility is expressed or implied to any user, regardless of reliance on all or any part thereof. This includes warranties or merchantability or of fitness for a particular purpose, and Baker Hughes Drilling Fluids assumes no responsibility whatever for advice or recommendations made. Nothing contained herein should be interpreted as permission, inducement, or condonement to violate any law persuant to this product's use, conveyance or disposal.

Prepared By: Cheryl Hood

Date Prepared: 03/19/2002

Supercedes Issue Date:



DEWATERING



MATERIAL SAFETY DATA SHEET

Page 1 of 4

Rev. Date: 7/25/2013

IDENTIFICATION OF THE PRODUCT AND THE COMPANY 1.

Product name:

NS 5

Company:

Neo Solutions, Inc.

P.O. Box 26

Beaver, PA 15009

Telephone number:

(724) 728-1847

Fax:

(724) 728-3440

Chemical description:

Silicone emulsion.

Product use:

Silicone based defoamer.

2. HAZARDOUS IDENTIFICATION

Hazardous ingredient None

Percent

TLV (units)

CAS#

Threshold limit value:

Not established.

Over exposure effects / routes of entry:

Can cause eye irritation. Prolonged or repeated contact with the undiluted product can

cause skin dryness or irritation. Swallowing this product may cause gastrointestinal

irritation, diarrhea, nausea, and vomiting.

Chronic over exposure effects:

N/A

Carcinogenicity information:

No components of this product are listed as a carcinogen by IARC, NTP, OSHA, or

ACGIH.

COMPOSITION / INFORMATION ON INGREDIENTS 3.

Identification of the preparation:

Silicone based defoamer

Regulated components:

None

Rev. Date: 7/25/2013

4. FIRST AID MEASURES

First aid procedures:

Flush eyes with clean water for at least 15 minutes and get medical attention. Remove contaminated clothing and wash affected skin areas with mild soap and water. If skin irritation is severe or continues, get medical attention. In case of intoxication, give oxygen. Avoid mouth-to-

mouth resuscitation.

5. FIRE FIGHTING MEASURES

Flashpoint:

> 200 °F (TCC)

Fire point:

N/A

Extinguishing media:

Product will not burn until water is driven off; however, use extinguishing media as appropriate

for the materials in the surrounding fire. On large fires, use dry chemical, foam, or water spray.

Special fire fighting procedures:

Water spray should be used to keep drums cool if they are involved in a fire since heat will cause

the product to expand and possibly cause the drums to explode from internal pressure

ACCIDENTAL RELEASE MEASURES 6.

Contain spill and salvage as much material as possible by pumping to a salvage tank or drum. Pick up remaining material with a suitable absorbent.

HANDLING AND STORAGE

Store at normal temperatures and conditions of warehousing. Keep container closed when not in use. Avoid allowing product to freeze. Wash contaminated clothing before re-wearing.

EXPOSURE CONTROLS / PERSONAL PROTECTION 8.

Respiratory protection:

Not normally required.

Ventilation:

Local exhaust, general mechanical.

Protection gloves:

Neoprene or other chemical resistant gloves.

Eye protection:

Chemical splash goggles.

Other protective equipment:

Safety shower / eye wash.

PHYSICAL DATA 9.

Boiling point:

212° F

pH 1% solution:

7.5 to 8.5

Solubility in water:

translucent emulsion

Specific gravity:

0.990

% moisture:

Brookfield viscosity @ 75° F:

1000 - 2000 cps

Appearance and odor:

viscous milky white pourable paste with a mild odor.

Rev. Date: 7/25/2013

10. STABILITY AND REACTIVITY

Chemical stability:

Stable. Acids will cause product to become very low in viscosity which will result in separation

of the product.

Conditions to avoid:

N/A

Incompatibility:

Strong oxidizers. Acids will cause product to become very low in viscosity which will result in

separation of the product.

Decomposition products:

Carbon dioxide, carbon monoxide, and various hydrocarbons may be released during a fire.

Hazardous polymerization:

Will not occur.

TOXICOLOGICAL INFORMATION 11.

no known applicable information

ECOLOGICAL INFORMATION 12.

Acute Toxicity

Toxicity to fish:

N/A

Toxicity to daphnia:

 LC_{50} / Daphnia (Ceriodaphnia dubia) / 48hr = 1649.4 mg / L

Toxicity to algae:

N/A

13. **DISPOSAL CONSIDERATIONS**

Dispose of only by methods approved by and used in accord with local, state, provincial and federal regulations.

14. TRANSPORT INFORMATION

not subject to DOT, IMDG, IATA regulations

REGULATORY INFORMATION 15.

HMIS codes:

Health - 0

Flammability - 0 Reactivity - 0

Personal protection - B

Rev. Date: 7/25/2013

16. OTHER INFORMATION

Person to contact:

Product Manager

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal, and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.



DEWATERING

MATERIAL SAFETY DATA SHEET

Page 1 of 3

Rev. Date: 04/04/2013

Product Name:

NS 2094

Company:

Neo Solutions, Inc.

P.O. Box 26

Beaver, PA 15009

Emergency Telephone Number:

(724) 728-1847

Fax:

(724) 728-3440

1. MATERIAL IDENTIFICATION

Chemical Name and Synonyms:

Chemical Family:

Formula:

Calcium Nitrate Trihydrate

Inorganic Salt Ca(N0₃)₂·3H₂0

2. INGREDIENTS AND HAZARDS

Non-Hazardous

Calcium Nitrate Trihydrate

100%

Calcium Nitrate

75%

Water of Crystallization

25%

C.A.S.: 15842-29-2

HMIS: 1-0-0

DOT: Not Regulated

PHYSICAL / CHEMICAL INFORMATION 3.

Boiling Point (loses water at 132° C)

Vapor Pressure at (mm Hg): 0

Vapor density (Air = 1): N/A

Water solubility: Complete

Appearance & Odor:

Bulk Density: 58-63 lbs./ft.3

Evap. Rate: Hydroscopic, Ambient

Melting Point: 51° C

Water Reactive: No pH (10%) solution: 5.7 (+/- 1)

Odorless, White Deliquescent Crystals

FIRE AND EXPOLSION HAZARD DATA 4.

Flash Point and Method Used: N/A

Autoignition Temp.: N/A

Flammability Limits in Air % by Volume: N/A

Lei: Unknown LEL: Unknown

Extinguisher Media: Product will not burn as is.

NS 2094

Page 2 of 3

Rev. Date: 04/04/2013

Special Fire Fighting Procedures:

If involved in a fire, extinguish surrounding area with water. Use self-contained breathing

apparatus.

Unusual Fire and Explosion Hazards:

Decomposition products may include toxic oxides of Nitrogen.

5. REACTIVITY HAZARD DATA

Stability:

Stable

Conditions to avoid:

Temperatures above 270° F (132° C)

Incompatibility (Materials to Avoid):

Avoid contact with strong reducing agents

Hazardous Polymerization:

Will not occur

6. REACTIVITY HAZARD DATA

Primary Routes of Entry:

Inhalation, Skin Absorption, Ingestion

Health Hazards:

Acute:

Chronic: [Oral LD50 = 4g/kg (Rat)]

Effects of Overexposure:

Slightly irritating to eyes, skin & respiratory tract

7. **EMERGENCY FIRST AID PROCEDURES**

Seek medical assistance for further treatment, observation and support if necessary.

Eye Contact:

Flush eyes for at least 15 minutes.

Skin Contact:

Wash with soap and water.

Inhalation:

Remove to fresh air.

Ingestion:

Seek medical attention immediately.

CONTROL AND PROTECTIVE MEASURES 8.

Respiratory Protection:

Use NIOSH approved dust mask

Ventilation to be Used:

Local Exhaust

Protective Gloves:

Rubber/Vinyl

Eye Protection:

Dust Goggles

Other Protective Equipment and Clothes:

Wear clothing that will prevent infiltration of dust or powder

Hygienic Work Practices:

Avoid prolonged contact; clean area; wash hands and change clothes as needed

Page 3 of 3

Rev. Date: 04/04/2013

9. PRECAUTION FOR SAFE HANDLING AND USE, LEAK PROCEDURES

Spills & Leaks:

Sweep or shovel into dry container. Wash or mop area to clean.

Waste Disposal Method:

Recycle in process if possible. Do not sewer.

Dispose of via licensed waste hauler.

Precautions to be taken

in Handling and Storage:

Avoid damage to product container. Use good transfer techniques.

Other Precautions

and/or Special Hazards:

Store in cool, dry area away from strong reducing agents.

10. OTHER INFORMATION

Person to contact:

Product Manager

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DEWATERING

MATERIAL SAFETY DATA SHEET

Page 1 of 5 Date: 04/04/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Trade name:

NS 100

Synonyms:

Citric Acid, Anhydrous

Company:

Neo Solutions, Inc.

P.O. Box 26

Beaver, PA 15009

Telephone number:

(724) 728-1847

Fax:

(724) 728-3440

COMPOSITION / INFORMATION ON INGREDIENTS 2.

Chemical Name Of The Material:

2-hydroxy-1,2,3-propane tricarboxylic acid

Chemical Formula

C6H807

Chemical Family

Organic Acid

SYNONYMS:

Citric Acid, Beta-hydroxytricarboxylic acid.

COMPOSITION:

Citric Acid Anhydrous

CAS Req. No.

100

77-92-9

EC-No. 201-069-1

European Food Additive E330

HAZARDOUS IMPURITIES None

HAZARD IDENTIFICATION 3.

Emergency Overview:

Odorless, colorless translucent crystals with strong acidic taste. Citric acid is a skin and mucous

membrane irritant and an eye irritant. It may cause allergic reactions in some individuals.

Most important Hazard:

Irritating to eyes.

Potential Health Effects:

Inhalation:

May cause mucous membrane irritation with sore throat, coughing and shortness of breath.

Eye contact:

May cause irritation with redness, pain, possible eye burns, conjunctivitis, ulceration and

permanent cloudiness.

Skin contact:

May cause irritation with swelling, redness and pain.

Ingestion:

May cause acute gastrointestinal irritation with abdominal pain.

NS 100

Page 2 of 5 Date: 04/04/2013

Chronic:

Repeated or prolonged skin contact may result in dermatitis. Prolonged or repeated eye contact may result in conjunctivitis. Long term oral overexposure may cause damage to tooth enamel.

Carcinogen status:

None

4. FIRST AID MEASURES

General advice:

Consult a physician.

Major effects of exposure:

Irritating to eyes and skin.

Inhalation:

Move to fresh air.

Skin contact:

Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

Eye contact:

Rinse immediately with plenty of water and seek medical advice.

Ingestion:

Drink plenty of water. Do not induce vomiting. Consult a physician if necessary.

Protection of first-aiders:

Use personal protective equipment.

5. FIRE-FIGHTING MEASURES

FLASH POINT

Not Applicable

FLAMMABLE LIMITS

Lower 8 gm/FT3

Upper 65 gm/FT3

Autoignition temperature:

1010 deg C / 1850 deg F

Suitable extinguishing media:

Water, water spray, dry powder, foam, carbon dioxide (CO2), remove containers if possible. Cool

container exposed to fire with water spray.

Hazardous decomposition products: Carbon oxides

Special protective equipment

for firefighters:

Use personal protective equipment including self-contained breathing apparatus when

fighting fire in enclosed area.

Specific methods:

Standard procedure for chemical fires.

6. ACCIDENTAL RELEASE MEASURES

General:

Wear dust respirator and protective clothing. Keep unnecessary personnel away. Sweep or vacuum into closed containers for disposal. Dispose in compliance with local, state / provincial, and

federal regulations.

Date: 04/04/2013

7. HANDLING AND STORAGE

Handling:

Avoid contact with eyes and prolonged contact with skin. Avoid breathing large amounts of dust.

Wash away splashes and spillages with water.

Storage Conditions:

Ambient temperatures and pressure. Store in cool dry area away from incompatible materials and

protected from moisture. Protect containers from damage.

Incompatible products:

Incompatible with strong bases and oxidizing agents

Empty Containers:

Empty containers retain product residue and vapors. Observe all label precautions even after

container is emptied. Do not reuse unless thoroughly cleaned.

EXPOSURE CONTROLS / PERSONAL PROTECTION 8.

Engineering measures:

Provide general dilute ventilation.

Exposure limit(s):

None established for this ingredient, use OSHA PEL, ACGIH TLV for Nuisance dusts of 5 mg/3

Personal protection equipment:

Respiratory protection NIOSH approved dust respirator

Hand protection:

Gloves

Eye Protection:

Safety glasses

Skin and body:

Lightweight protective clothing protection

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

PHYSICAL AND CHEMICAL PROPERTIES 9.

Form: Color:

Crystalline powder Colorless / white

Odor:

None

pH (5 % solution):

1.8

Vapor pressure:

3.70E-009mm Hg@25 deg C Not applicable

Vapor density: Boiling point:

175 deg C

Evaporation rate:

Essentially 0

Coefficient of water/oil:

-1.72 (measured)

distrib Log P (oct) Log P (oct)

-1.25 to -1.80 (calculated)

Melting point/range:

153 deg C

Decomposition temperature:

> 170 deg C 1,665 g/cm3

Relative density: Bulk density:

Solubility:

650 - 950 kg/m3 Water (25 deg C) = 576 g/kg; Solubility in other solvents = 383 g/l

Molecular weight:

192.12

10. STABILITY AND REACTIVITY

Stability:

Stable at normal conditions

Conditions to avoid:

Avoid dust formation and moisture. Take precautionary measures against static discharges.

Materials to avoid:

Incompatible with strong bases and oxidizing agents.

NS 100

Page 4 of 5 Date: 04/04/2013

Hazardous polymerization:

Does not occur.

Corrosion:

May corrode metals. 316 Stainless Steel recommended for handling.

TOXICOLOGICAL INFORMATION 11.

Acute toxicity:

LD50/p.o./rat 11,700 mg/kg

LD50/i.p./rat 885 mg/kg

LD50/p.o./mouse 5,040 mg/kg LD50/I.p./mouse 961 mg/kg

Local effects:

Irritating to eyes and skin

Chronic toxicity:

None

Human experience:

Health injuries are not known or expected under normal use.

12. **ECOLOGICAL INFORMATION**

Mobility:

Completely soluble

Persistence and degradability:

Chemical oxygen demand (COD) = 728 mg 02/g

Biological oxygen demand/5 days (BOD) = 528 mg 02/g

Readily biodegradable 98% after 2 days

Bioaccumulation:

None

Ecotoxicity effects:

Toxicity to fish (LC50/96h/goldfish) = 440-706 mg/L

Toxicity to bacteria (ECO) = >10,000 mg/L

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products:

Any disposal practice must be in compliance with local, state / provincial and federal

laws and regulations (contact local or state environmental agency for specific rules).

14. TRANSPORTATION INFORMATION

Not Regulated

Not classified as dangerous according to TDG (Transportation of Dangerous Goods) and US DOT (Department of Transportation)

15. REGULATORY INFORMATION

Citric acid is generally regarded as safe (GRAS) by USA FDA. 21 CFR 184.1033

Meets the criteria for hazardous material as defined by OSHA Hazard Communication Standard 21 CFR 1910.1200.

The material is listed on the TSCA Inventory List.

CERCLA (Comprehensive Response Compensation, and Liability Act): Not hazardous

SARA Title III (Superfund Amendments and Reauthorization Bill): Not Considered Hazardous

Foreign Inventory Status

Canadian DSL (Domestic Substance List) WHMIS Class E

IDL Citric Acid (CAS-No. 77-92-9) is listed on the Ingredient Disclosure List

DSL Citric Acid (CAS-No. 77-92-9) is listed on the Domestic Substance List

To the best of our knowledge, this Citric Acid Anhydrous does not contain any contaminants or byproducts known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act.

16. OTHER INFORMATION

HMIS* Rating:

Health = 1, Fire = 0, Reactivity =0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

*Hazardous Materials Identification System of the National Paint and Coating Association.

Person to contact:

Product Manager

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DEWATERING



MATERIAL SAFETY DATA SHEET

Page 1 of 5

Rev. Date: 01/07/2011

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name:

NS 6670

Company:

Neo Solutions, Inc.

P.O. Box 26 Beaver, PA 15009

Emergency Telephone Number:

(724) 728-1847

Fax:

(724) 728-3440

Product Use:

Process aid for industrial applications.

2. HAZARDS IDENTIFICATION

Appearance and Odor:

Form: Granular solid

Color: White

Odor: 1

None

Emergency Overview

Aqueous solutions or powders that become wet render surfaces extremely slippery.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Identification of the preparation:

Anionic water-soluble polymer.

Regulated Components:

None

4. FIRST AID MEASURES

Inhalation:

No hazards which require special first aid measures.

Skin contact:

Wash with water and soap as a precaution. In case of persistent skin irritation, consult a physician.

Eye contact:

Rinse thoroughly with plenty of water, also under the eyelids. In case of persistent eye irritation, consult a

physician.

Ingestion:

No hazards which require special first aid measures. The product is not considered toxic based on studies

on laboratory animals.

NS 6670

Page 2 of 5

Rev. Date: 01/07/2011

5. FIRE-FIGHTING MEASURES

Unsuitable extinguishing media:

None

Suitable extinguishing media:

Carbon dioxide (CO₂). Foam. Dry powder. Water. Water spray.

Special fire-fighting precautions:

Aqueous solutions or powders that become wet render surfaces extremely

slippery.

Special protective equipment for firefighters:

No special protective equipment required.

Flash point:

Not applicable

Autoignition temperature:

Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

No special precautions required.

Environmental precautions:

As with all chemical products, DO NOT flush into surface water.

Methods for cleaning up:

DO NOT flush with water. Clean up promptly by sweeping or vacuum. Keep in suitable and

closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling

Safe handling advice:

Avoid contact with skin and eyes. Avoid dust formation. DO NOT breathe dust. Wash bands before

breaks and at the end of workday.

Storage:

Keep in a dry, cool place (5 - 35° C).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

No exposure limits noted for ingredient(s).

Engineering measures:

Use local exhaust if dusting occurs. Natural ventilation is adequate in absence

of dusts.

Personal protection equipment

Respiratory protection:

Dust safety masks are recommended where concentration of total dust is more

than 10 mg/m³.

Hand protection:

Rubber gloves.

Eye protection:

Safety glasses with side-shields. Do not wear contact lenses where this product

is used.

NS 6670

Product Name:

Page 3 of 5 Rev. Date: 01/07/2011

Skin and body protection:

Chemical resistant apron or protective suit if splashing or repeated contact with solution

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands

before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:

granular solid

Color:

white

Odor:

none

pH:

4-9@5g/L

Melting point (° C):

Not applicable.

Flash point:

Not applicable.

Autoignition temperature:

Not applicable.

Vapor pressure (mm Hg):

Not applicable.

Approx. Bulk density:

0.80

Water solubility:

Completely miscible

LogPow:

10. STABILITY AND REACTIVITY

Stability:

Product is stable, no hazardous polymerization will occur.

Materials to avoid:

Oxidizing agents may cause exothermic reactions.

Hazardous decomposition products: Thermal decomposition may produce: nitrogen oxides (NOx), carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Skin:

The results of testing on rabbits showed this material to be non-toxic even at high dose levels.

Oral:

LD50 / oral / rat > 5000 mg / kg

Inhalation:

The product is not expected to be toxic by inhalation.

Irritation

Skin:

The results of testing on rabbits showed this material to be non-irritating to the skin.

Eyes:

Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjuctival effects similar to those which all granular materials have on conjuctivae.

Sensitization:

The results of testing on guinea pigs showed this material to be non-sensitizing.

Chronic toxicity: A two-year feeding study on rats did not reveal adverse health effects. A one-year feeding study on dogs did not reveal adverse health effects.

NS 6670

Page 4 of 5

Rev. Date: 01/07/2011

12. ECOLOGICAL INFORMATION

Acute aquatic toxicity

Toxicity to fish:

LC50 / 96 hours > 100 mg / L (OECD 203)

Toxicity to daphnia:

LC50 / Daphnia m. / 48 hours > 100 mg / L (OECD 202)

Toxicity to algae:

IC50 / Scenedesmus subspicatus / 72 hours > 100 mg / L (OECD 201)

Environmental fate

Persistence and degradation:

Not readily biodegradable.

Hydrolysis:

Does not hydrolyze.

LogPow:

~0

Bioaccumulation:

Does not bioaccumulate.

13. DISPOSAL CONSIDERATIONS

Disposal:

Dispose of in accordance with local, state/provincial and federal regulations.

Container:

Rinse empty containers with water and use the rinse water to prepare the working solution. Can be landfilled or incinerated, when in compliance with local, state/provincial and federal

regulations

14. TRANSPORT INFORMATION

DOT:

Remarks:

Not classified as dangerous in the meaning of DOT regulations.

IMDG / IMO:

Remarks:

Not classified as dangerous in the meaning of IMDG / IMO regulations.

ICAO/IATA:

Remarks:

Not classified as dangerous in the meaning of ICAO / IATA regulations.

15. REGULATORY INFORMATION

US SARA Reporting Requirements

SATA Title III Sections

State Regulations

California Proposition 65 Information:

The following statement is made in order to comply with the California Safe Drinking

Water and Toxic Enforcement Act of 1986. This product contains the following substance(s) known to the State of California to cause cancer: Acrylamide.

NS 6670

Page 5 of 5

Rev. Date: 01/07/2011

International Inventories

USA (TSCA):

All components of this product are either listed on the inventory or are exempt from listing.

Australia (AICS):

All components of this product are either listed on the inventory or are exempt from listing.

Canada (DSL):

All components of this product are either listed on the inventory or are exempt from listing.

China (IECSC):

All components of this product are either listed on the inventory or are exempt from listing.

Europe Union

(EINECS / ELINCS):

All components of this product are either listed on the inventory or are exempt from listing.

Japan (ENCS):

All components of this product are either listed on the inventory or are exempt from listing.

Korea (ECL):

All components of this product are either listed on the inventory or are exempt from listing.

Philippines (PICCS):

All components of this product are either listed on the inventory or are exempt from listing.

16. OTHER INFORMATION

Person to contact:

Product Manager

NFPA and HMIS Ratings:

| | | 1 A | |
|-----------------|------|------|---|
| HEALTH | NFPA | HMIS | ٦ |
| FLAMMABILITY | 1 | 1 | 1 |
| INSTABILITY | o o | 1 | 4 |
| PHYSICAL HAZARD | | 0 | 4 |

This MSDS was prepared in accordance with the following:

ISO 11014-1: Material Safety Data Sheet for Chemical Products.

ANSI Z400.1-2004; Material Safety Data Sheets - Preparation

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DEGREASER FOR CLEANING

MATERIAL SAFETY DATA SHEET

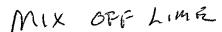
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health
Administration (Non-Mandatory Form)
Form Approved
OMB No. 12180072

| IDENTITY (A | | OMB No. 12186 | 0072 | |
|--|---------------------------------------|---|--|--|
| IDENTITY (As used on label and list) | N.A. To | | | |
| Purple Power Industrial Strength | information | re not permitted. If any it | em is not applica-l | .1- |
| Cleaner/Degreaser | modulation is availab | re not permitted. If any it ble, the space must be man | ked to indicate the | ne or no |
| Sorti | | | | ac. |
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| Alken Chemical Common | Emergency Telephone | Nembo | | <u> B</u> ariara |
| Address (Number, Street, City, State and Zip Code) | 1-800-922-111 | 7; (864) 765-735 | | |
| P.O. Box 27147 | Telephone Number fo | 7, (804) 703-735 | 9 | |
| Gramuill CC | (864)968-1250 | t 1 OOO OOO to | | |
| Greenville, SC 29616 | Date Prepared: | ; 1-800-828-186(|) | |
| 12 Shalton D.: | August 30, 2011 | Revision #: | | |
| 12 Shelter Drive, Greer, SC 29650 | Signature of Proposer | August 30, | 2011 | |
| Section II IX | o or richater (| Optional) | | ······································ |
| Hazardous Components (Specific Chemical Identity: | Ingredients / Idea | ntity Informatio | ** | |
| Common Name(s) | | Jaconatio | | |
| | OSHA PEL | ACGIH TLV | OTHER LIMITS | |
| | | | Limits | % |
| | | | | ····· |
| | NFPA | HMIS | | |
| TSCA Information: All ingredients of this product a Section III - Route | | ATTIAL | | |
| and the migreulents of this product a | re listed on the TSCA | nvento | | |
| SKIN: Can cause moderate irritation, Prolonged or | s and Effects of O | erventory. | | |
| EVES Con cause moderate irritation. Prolonged or | repeated contact | verexposure | | . Algebert is |
| SKIN: Can cause moderate irritation. Prolonged or a CYES: Can cause severe irritation. Can cause redner NGESTION: Harmful if cause leading to the control of the cause redner or the cause | es on to - | use de-fatting or den | matitis. | |
| TOLOUIC Harmini if or all | | | ······································ | |
| NHALATION: Spray mist is irritating to respirator Medical Conditions Conordly | nation to mouth, esoph | agus, and stomach. | | ······ |
| Toulcal Conditions Consult. | y tract. | | | |
| re-existing skin and respiratory problems. | osure: | ······································ | | |
| Control Problems. | | | | |
| KIN: Remove contaminated clothing. Thoroughly | ncy and First Aid | Drogoda | | · |
| sek medical attacks and an arminated clothing. Thoroughly | Wash exposed area will | rocedures | | Section of A |
| KIN: Remove contaminated clothing. Thoroughly eek medical attention immediately. YES: Remove contact lenger if | The superior area will | soap and water for | at least 15 min | utes. |
| tipe vision contact lenses if present. Immediatel | V flush evec with 1 | | | |
| YES: Remove contact lenses if present. Immediately ting upper and lower eyelids periodically to insure of the time of time of time of the time of time of the time of time | Complete forting | amounts of water fo | r at least 15 m | inutes |
| GESTION: DO NOT induce vomiting. If conscion | us dilata I | medical attention in | nmediately | , |
| WGESTION: DO NOT induce vomiting. If conscious amediately. | us, unute by giving 2-3 | glasses of water. Se | ek medical att | ention |
| HALATION: Remove individual to fresh air. If be the time that the time the time the ti | | | | Charon |
| ention immediately. | reathing has stopped, g | rive artificial respirat | ion Seek mad | ioni |
| | | | on. Beek men | icai |
| TINGUISHING MEDIA | re-Fighting Measu | rec | | |
| ECIAL PIDE PROTESTA - LOS, MICORDI TOST | n, carbon dioxide or dr | v obosis I | | <u> </u> |
| HISTIAL FIRE AND ING MEDIA: Use water to | keen fire-exposed some | y Chemical. | | |
| ECIAL FIRE-FIGHTING MEDIA: Use water to IUSUAL FIRE AND EXPLOSION HAZARDS: 1 | Neveruse a welding on | amers cool until fire | is out. | - 1 |
| chemical product containers. | a wording of | cutting torch or othe | r source of he | at on |
| The state of the s | | | | , |
| ps to be Taken in Case Material is Released on S | ientai Kelease Mei | asures | | |
| ps to be Taken in Case Material is Released or Sinaining liquid may be taken up with sand, clay, floorage containers. | puled: Stop spill at the | source, dike area to | nrevent | |
| | | | Provent spread | ing. |
| | | | | |
| er Precautions: Ween be 1 | th all local, state and fe | deral regulations | | |
| er Precautions: Wear body-covering impervious profession of face shield, chemical resistant gloves and boots. | protective clothing che | mical cofee1- | | |
| or face shield, chemical resistant gloves and boots. | · · · · · · · · · · · · · · · · · · · | var sarcty grasses | with side shiel | ds |
| | | | | |

| Handling C. II | | Section VII | - Ha | ndling | and St | Orage | |
|--|---------------------------------------|-------------------|-------------------|------------|-----------|----------------------|------------------------|
| Handling: General hand container closed. Use with and acids. Gels and general Protection | adomete. | or carning vap | or. Do | not get ir | eyes, o | n skin or clothing | Do not swallow. Keep |
| Protection. | ites heat w | hen mixed wit | th acids | s. See Sec | tion VI | II – Exposure Con | y from reactive metals |
| ammonium salts | luminum, c | copper, or galv | vanizeo | i containe | rs. Sepa | rate from acids re | Pactive motels and |
| Other Precautions: Conta | iners ever | those that | | | | | monto metals, and |
| Other Precautions: Conta | | i alose mat na | ive bee | n emptied | l, can co | ntain product and | vapors. Avoid contact |
| Sect | ion MIII | 16" | | | | | |
| Respiratory Protection (Sapproved respirator, Also | pecify Types | pe) To avoid b | oreathi | ng spray (| or vapor | s or when required | L wear NIOSH/MS A |
| | | or it ill a conti | ined sp | ace withou | ut local | or mechanical ext | naust system. |
| venthanon: | | Local Exha | | | · | | |
| Use adequate ventilation to mists and vapors. | avoid | Acceptable | | | | Special: None | |
| mists and vapors. | | Mechanical | l (Gene | eral) | | Other: | |
| Protective Gloves | | To reduce e | xposur | e limits | | None | |
| Meaning Milit B | | | | Protectio | n | INOME | |
| Neoprene, Nitrile Rubber, F | olyethylen | <u>e</u> | Chen | nical safe | v olace | e with aids alich a | s and/or face shield |
| Other Protective Clothing | or Equips | nent | | | J Brown | 25 WILL SIDE SHEID | s and/or face shield |
| To prevent skin contact, were Work Hygienic Practices | ar body-cov | vering, imperv | vious c | lothing, c | hemical | recictant alayer | _d t |
| Always use continues | | - | | | | Tosistatit gioves al | na poots. |
| Always use caution when w | orking with | chemicals. V | Vash ha | ands befor | re estino | t smoking or duit. | |
| | Section I | X – Physic | al/C | hemica | Char | S attorned of drift | king, |
| | | | Sne | cific Gra | CHAI | acteristics | |
| Vapor Pressure (mm Hg.): | Not Det | ermined | Mel | ting Poir | vity; | | 1.020 |
| Vapor Density (AIR=1): | Not Det | | Evo | Dorotion | D-4- () | | NA |
| Solubility in Water: | Complet | | pH: | horanou | Kate () | Butyl Acetate=1): | <1.0 |
| Appearance and Odor: | | quid with | LEI | | | | 11.2 |
| | characte | ristic odor. | UE | | | | Not Determined |
| lammable Limits: | Not Dete | rmined | | h Point (| Mathad | I XT IN | Not Determined |
| | | Section X | – Rea | activity | Data | Usea): | >200° F (PMCC) |
| Stability: | Unstable: | | | Conditio | ns to A | void: | |
| | Stables | Y | | Mixing o | r blendi | ng with oxidizing | or low pH solutions |
| ncompatibility (Materials t lazardous Decomposition o | o Avoid). | A24 | | | | | |
| lazardous Decomposition of | r Ryprodu | ato. Cost | With r | eactive m | etals, st | rong mineral acids | and organic acids |
| lazardous Decomposition of aclude aldehydes, ketones, or lazardous Polymenzation | manic acid | | noxide ganics. | , carbon r | nonoxid | e, various hydroca | arbons and can |
| | 1 | May Occur | | | | Conditions to A | |
| | | Will Not Occu | ır | | X | None | Void: |
| Cute health hazard : " | Section | on XI – Tox | cicolo | gical In | forma | | 1.25 |
| cute health hazard - similar | materials c | aused severe i | rritatio | n to the e | ves and | moderate irritation | n to the skin |
| | Secti | OH VII - F | colog | icai Infi | ormati | on | a to the Skin, |
| | | Not. | Detern | nined | | | |
| Section Section Section | n XIII – | Transport | Infor | mation | , Inch | ding IMDG | |
| THE PARTY OF THE P | Not D.O. | T. Regulated | | | 4 | | |
| AZARD CLASS: N/A | | | | | | | |
| NUMBER: N/A | | | | | | | |
| ACARDING N/A | · · · · · · · · · · · · · · · · · · · | | | | | | |
| ACARDING: N/A TA: N/A | | | | | | | |
| A 434 4 1 1 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | | | | | | | |

| | Section XIV - Regula isted on the Toxic Substan | Ce Control Act Chaminal C. 1 |
|---|---|---|
| Section 311 Hazard Category - Acu | ite | tory Information ce Control Act Chemical Substances Inventory |
| Section 313 Toxic Release Inventor | Tr Change to City | 10/ |
| | | |
| | | |
| reproductive harm, at levels which v | would require a sure | (i): of California to cause cancer, birth defects or other |
| rennsylvania (Worker and Com- | | die statute. |
| and/or Pennsylvania Environmen This material contains the following | tal hammel a control of the control | t): Pennsylvania Special Hazardous Substances Lie |
| This material contains the following | tai nazardous Substance | List: |
| This material contains the following Component | components that appear o | n the PA list: |
| Ethylene glycol monobutyl ether | CAS# | Amount |
| New Jersey Right to Know W. | 111-76-2 | ≤1% |
| New Jersey Right-to-Know Hazar | dous Substance List: | |
| This material contains the following Component | components that appear or | the NJ list: |
| 2 | CAS# | Amount |
| Ethylene glycol monobutyl ether | 111-76-2 | <1% |
| Massachusetts Substance List: | | |
| This material contains the following. | components that appear on | the MA list- |
| - Total | CAS# | |
| Ethylene glycol monobutyl ether | 111-76-2 | Amount ≤1% |





Material Safety Data Sheet

Material Name: Number 1 Baghouse Dust

Section 1 - Chemical Product and Company Identification

Manufacturer Information

AMG Vanadium, Inc. 60790 Southgate Rd. Cambridge, OH 43725 Phone: 740-435-4600

Emergency # CHEMTREC: 800-424-9300

Section 2 - Hazards Identification * * *

Emergency Overview

Causes irritation to skin, eyes and respiratory tract.

Potential Health Effects: Eyes

May cause eye irritation. Potential Health Effects: Skin

May cause skin irritation.

Potential Health Effects: Ingestion

Not considered a likely route of exposure under normal product use conditions. May cause gastrointestinal

irritation.

Potential Health Effects: Inhalation

Dusts may cause respiratory tract irritation. HMIS Ratings: Health: 1 Fire: 1 HMIS Reactivity 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 3 - Composition / Information on Ingredients ***

| CAS# | Component | Percent |
|-------------|-----------|---------|
| 7439-95-4 | Magnesium | 20-40 |
| 7429-90-5 | Aluminum | 0-15 |
| 7440-70-2 | Calcium | 0-10 |
| 184637-88-5 | Sodium | 0-10 |
| 7704-34-9 | Sulfur | 0-6 |
| 7440-62-2 | Vanadium | 0-5 |
| 7440-66-6 | Zinc | 0-5 |
| 7440-44-0 | Carbon | 0-4 |
| 7440-21-3 | Silicon | 0-3 |
| 7440-09-7 | Potassium | 0-3 |
| 7439-89-6 | Iron | 0-2 |
| 7439-96-5 | Manganese | 0-1 |

Section 4 - First Aid Measures

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes.

First Aid: Skin

For skin contact, flush with large amounts of water. If irritation persists, get medical attention.

First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice - Do not induce vomiting.

First Aid: Inhalation

Give artificial respiration if not breathing. Seek medical attention.

* * * Section 5 - Fire Fighting Measures

General Fire Hazards

See Section 9 for Flammability Properties.

Hazardous Combustion Products

Not Determined

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Material Safety Data Sheet

Material Name: Number 1 Baghouse Dust

Extinguishing Media

Use appropriate extinguishing media for surrounding fire.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Avoid dust generation.

Clean-Up Procedures

Sweep up and return to labeled containers. Wear proper personal protective equipment when cleaning up spills.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

No special procedures necessary.

Protective measures during repair and maintenance: clean fine dust from equipment before beginning repairs. Wear personal protective equipment to avoid inhalation of dust.

Storage Procedures

Store in tightly closed containers.

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits

Aluminum (7429-90-5)

ACGIH: 1 mg/m3 TWA (respirable fraction)

OSHA: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) NIOSH: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

Vanadium (7440-62-2)

OSHA: 0.05 mg/m3 TWA (respirable dust, as V2O5); 0.05 mg/m3 TWA (fume, as V2O5)

NIOSH: 1 mg/m3 TWA (listed under Ferrovanadium dust) 3 mg/m3 STEL (listed under Ferrovanadium dust)

Silicon (7440-21-3)

OSHA: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) NIOSH: 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

Manganese (7439-96-5)

ACGIH: 0.2 mg/m3 TWA
OSHA: 1 mg/m3 TWA (fume)

3 mg/m3 STEL (fume)

5 mg/m3 Ceiling

NIOSH: 1 mg/m3 TWA (fume)

3 mg/m3 STEL

Engineering Controls

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Use dust goggles.

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Material Name: Number 1 Baghouse Dust

Personal Protective Equipment: Skin

Use gloves and protective coveralls to minimize skin exposure.

Personal Protective Equipment: Respiratory

Use NIOSH approved dust respirators under conditions in which exposure limits are exceeded.

Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance: Light gray powder

Physical State: Solid Vapor Pressure: ND

Boiling Point: NA
Solubility (H2O): Insoluble
Evaporation Rate: NA

Octanol/H2O Coeff.: ND Flash Point Method: NA

Lower Flammability Limit NA (LFL):

Auto Ignition: NA

Odor: Odorless

pH: NA

Vapor Density: NA Melting Point: 1800°F Specific Gravity: ND

VOC: ND

Flash Point: NA Upper Flammability Limit NA

(UFL):

Burning Rate: NA

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

None

Incompatibility

Acids, strong oxidizers, strong bases and moisture.

Hazardous Decomposition

None

Possibility of Hazardous Reactions

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Dose Effects

A: General Product Information

Inhalation of dusts may cause respiratory tract irritation. Prolonged exposure may cause long term effects.

B: Component Analysis - LD50/LC50

Magnesium (7439-95-4)

Oral LD50 Rat 230 mg/kg

Sulfur (7704-34-9)

Inhalation LC50 Rat >9.23 mg/L 4 h; Oral LD50 Rat >3000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Carbon (7440-44-0)

Oral LD50 Rat >10000 mg/kg

Silicon (7440-21-3)

Oral LD50 Rat 3160 mg/kg

Iron (7439-89-6)

Oral LD50 Rat 984 mg/kg

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Material Name: Number 1 Baghouse Dust

Manganese (7439-96-5)

Oral LD50 Rat 9 g/kg

Carcinogenicity

A: General Product Information

No additional information available.

B: Component Carcinogenicity Aluminum (7429-90-5)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Sulfur (7704-34-9)

Test & Species Conditions

96 Hr LC50 Brachydanio rerio 866 mg/L [static]
96 Hr LC50 Lepomis macrochirus <14 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss >180 mg/L [static]

Zinc (7440-66-6)

Test & Species96 Hr LC50 Pimephales promelas

2.16-3.05 mg/L

96 Hr LC50 Pimephales promelas 2.16-3.05 mg/L [flow-through] 96 Hr LC50 Pimephales promelas 0.211-0.269 mg/L [semi-static]

96 Hr LC50 Pimephales promelas 2.66 mg/L [static] 96 Hr LC50 Cyprinus carpio 30 mg/L

 96 Hr LC50 Cyprinus carpio
 30 mg/L

 96 Hr LC50 Cyprinus carpio
 0.45 mg/L [semi

static]

96 Hr LC50 Cyprinus carpio 7.8 mg/L [static]
96 Hr LC50 Lepomis macrochirus 3.5 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss 0.24 mg/L [flow-

through)

96 Hr LC50 Oncorhynchus mykiss 0.59 mg/L [semistatic]

96 Hr LC50 Oncorhynchus mykiss 0.41 mg/L [static] 96 Hr EC50 Pseudokirchneriella 0.11 - 0.271 mg/L

subcapitata [static]

72 Hr EC50 Pseudokirchneriella 0.09 - 0.125 mg/L subcapitata [static]

48 Hr EC50 Daphnia magna 0.139 - 0.908 mg/L

[Static]

Iron (7439-89-6)

Test & Species Conditions

96 Hr LC50 Morone saxatilis
96 Hr LC50 Cyprinus carpio
0.56 mg/L [semi-static]

Material Name: Number 1 Baghouse Dust

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Not Regulated

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Aluminum (7429-90-5)

SARA 313: 1.0 % de minimis concentration (dust or fume only)

Vanadium (7440-62-2)

SARA 313: 1.0 % de minimis concentration (except when contained in an alloy)

Zinc (7440-66-6)

SARA 313: 1.0 % de minimis concentration (dust or fume only)

CERCLA: 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter

of the pieces of the solid metal released is larger than 100 micrometers); 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the

solid metal released is larger than 100 micrometers)

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|-----------|-----------|-----|-----|-----|-----|-----|-----|
| Magnesium | 7439-95-4 | Yes | Yes | No | Yes | Yes | Yes |
| Aluminum | 7429-90-5 | Yes | Yes | Yes | Yes | Yes | Yes |
| Calcium | 7440-70-2 | Yes | Yes | No | Yes | Yes | Yes |
| Sulfur | 7704-34-9 | Yes | Yes | No | Yes | Yes | Yes |
| Vanadium | 7440-62-2 | Yes | Yes | No | Yes | Yes | No |
| Zinc | 7440-66-6 | Yes | Yes | No | Yes | Yes | Yes |
| Carbon | 7440-44-0 | No | No | No | No | No | Yes |
| Silicon | 7440-21-3 | No | Yes | Yes | Yes | Yes | Yes |
| Potassium | 7440-09-7 | Yes | Yes | No | Yes | Yes | Yes |
| Iron | 7439-89-6 | Yes | No | No | No | No | No |
| Manganese | 7439-96-5 | Yes | Yes | Yes | Yes | Yes | Yes |

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Material Name: Number 1 Baghouse Dust

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component | CAS# | Minimum Concentration |
|-----------|-----------|-----------------------|
| Aluminum | 7429-90-5 | 1 % |
| Vanadium | 7440-62-2 | 1 % |

Additional Regulatory Information

Component Analysis - Inventory

| Component | CAS# | TSCA | CAN | EEC |
|-----------|-------------|------|-----|--------|
| Magnesium | 7439-95-4 | Yes | DSL | EINECS |
| Aluminum | 7429-90-5 | Yes | DSL | EINECS |
| Sodium | 184637-88-5 | No | No | No |
| Calcium | 7440-70-2 | Yes | DSL | EINECS |
| Sulfur | 7704-34-9 | Yes | DSL | EINECS |
| Vanadium | 7440-62-2 | Yes | DSL | EINECS |
| Zinc | 7440-66-6 | Yes | DSL | EINECS |
| Carbon | 7440-44-0 | Yes | DSL | EINECS |
| Silicon | 7440-21-3 | Yes | DSL | EINECS |
| Potassium | 7440-09-7 | Yes | DSL | EINECS |
| Iron | 7439-89-6 | Yes | DSL | EINECS |
| Manganese | 7439-96-5 | Yes | DSL | EINECS |

* * * Section 16 - Other Information * * *

Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

End of Sheet



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

November 07, 2013

Mr. Dan Flynn Petta Enterprises 128 Stubenville Ave Cambridge, OH 43725

RE: Project: Drill Cutting

Pace Project No.: 5088925

Dear Mr. Flynn:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2013. 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,

Tina Sayer

Tina

tina.sayer@pacelabs.com Project Manager

Enclosures





Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

CERTIFICATIONS

Project:
Pace Project No.:

Drill Cutting 5088925

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268 Illinois Certification #: 200074 Indiana Certification #: C-49-06 Kansas Certification #: E-10247 Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076 Ohio VAP Certification #: 101170-0 Pennsylvania Certification #: 68-04991 West Virginia Certification #: 330



Date Received

10/24/13 14:57

Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

SAMPLE SUMMARY

10/24/13 13:00

Solid

Project:

5088925001

Drill Cutting

Pace Project No.:

5088925

PIT#110/24/13

| Lab ID | Sample ID | Matrix | Date Collected |
|--------|-----------|--------|----------------|
| | | | |



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

SAMPLE ANALYTE COUNT

Project:

Drill Cutting

Pace Project No.:

5088925

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|------------|---------------|----------|----------|----------------------|
| 5088925001 | PIT#110/24/13 | EPA 6010 | FRW | 7 |
| | | EPA 7470 | LLB | 1 |
| | | EPA 8270 | KES | 18 |
| | | EPA 8260 | JLZ | 13 |
| | | EPA 9045 | TPD | 1 |
| | | EPA QNQ5 | SIR | 4 |



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

ANALYTICAL RESULTS

Project:

Drill Cutting

Pace Project No.: 5088925 Sample: PIT#110/24/13

Date: 11/07/2013 12:01 PM

Lab ID: 5088925001

Collected: 10/24/13 13:00

Received: 10/24/13 14:57 Matrix: Solid

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua | |
|-----------------------------|--|---------------|---------------------|---------|------------------|----------------|-----------|-----|--|
| 5010 MET ICP, TCLP | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | | | |
| | Leachate Met | hod/Date: EPA | A 1311; 10/28/13 12 | 2:30 | | | | | |
| Arsenic | ND m | g/L | 0.10 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7440-38-2 | | |
| Barium | ND m | g/L | 5.0 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7440-39-3 | | |
| Cadmium | ND m | g/L | 0.050 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7440-43-9 | | |
| Chromium | ND m | g/L | 0.10 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7440-47-3 | | |
| ead | ND m | g/L | 0.10 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7439-92-1 | | |
| Selenium | ND m | g/L | 0.10 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7782-49-2 | | |
| Silver | ND m | g/L | 0.50 | 1 | 10/30/13 08:44 | 10/31/13 10:35 | 7440-22-4 | | |
| 470 Mercury, TCLP | Analytical Met | hod: EPA 747 | 0 Preparation Meth | nod: EP | 'A 7470 | | | | |
| | Leachate Met | hod/Date: EPA | A 1311; 10/28/13 12 | :30 | | | | | |
| lercury | ND ug | g/L | 2.0 | 1 | 10/29/13 12:30 | 10/30/13 10:11 | 7439-97-6 | | |
| 270 MSSV TCLP Sep Funnel | Analytical Met | hod: EPA 827 | 0 Preparation Meth | nod: EP | A 3510 | | | | |
| | Leachate Met | hod/Date: EPA | A 1311; 10/28/13 12 | :30 | | | | | |
| ,4-Dichlorobenzene | ND ug | g/L | 100 | 1 | 10/30/13 10:02 | 10/31/13 15:36 | 106-46-7 | | |
| ,4-Dinitrotoluene | ND ug | a/L | 100 | 1 | 10/30/13 10:02 | 10/31/13 15:36 | 121-14-2 | | |
| exachloro-1,3-butadiene | ND ug | ą/L | 100 | 1 | 10/30/13 10:02 | 10/31/13 15:36 | 87-68-3 | | |
| exachlorobenzene | ND ug | - | 100 | 1 | | 10/31/13 15:36 | | | |
| exachloroethane | ND ug | - | 100 | 1 | | 10/31/13 15:36 | | | |
| -Methylphenol(o-Cresol) | ND ug | | 100 | 1 | | 10/31/13 15:36 | | | |
| &4-Methylphenol(m&p Cresol) | ND ug | • | 200 | 1 | | 10/31/13 15:36 | 00 40 7 | | |
| itrobenzene | ND ug | | 100 | 1 | | 10/31/13 15:36 | 98-95-3 | | |
| entachiorophenol | ND ug | = | 500 | 1 | | 10/31/13 15:36 | | | |
| yridine | ND up | • | 100 | 1 | | 10/31/13 15:36 | | | |
| 4,5-Trichlorophenol | ND ug | • | 500 | 1 | | 10/31/13 15:36 | | | |
| 4,6-Trichlorophenol | ND ug | - | 100 | 1 | | 10/31/13 15:36 | | | |
| urrogates | | ,, <u> </u> | 100 | • | 10/50/15 10:02 | 10/01/10 10:00 | 00-00-2 | | |
| itrobenzene-d5 (S) | 59 % | | 29-126 | 1 | 10/30/13 10:02 | 10/31/13 15:36 | 4165-60-0 | | |
| -Fluorobiphenyl (S) | 56 % | _ | 31-118 | 1 | | 10/31/13 15:36 | | | |
| -Terphenyl-d14 (S) | 65 % | | 28-129 | 1 | | 10/31/13 15:36 | | | |
| henol-d5 (S) | 14 % | | 10-47 | 1 | | 10/31/13 15:36 | | | |
| -Fluorophenol (S) | 25 % | | 10-67 | 1 | | 10/31/13 15:36 | | | |
| 4,6-Tribromophenol (S) | 74 % | | 31-161 | 1 | | 10/31/13 15:36 | | | |
| 260 MSV TCLP | Analytical Met | hod: EPA 826(| Leachate Method | l/Date: | EPA 1311; 10/29/ | 13 12:45 | | | |
| enzene | ND ug | | 50.0 | 1 | | 11/06/13 21:32 | 71-43-2 | | |
| -Butanone (MEK) | ND ug | ı/L | 1000 | 1 | | 11/06/13 21:32 | 78-93-3 | | |
| arbon tetrachloride | ND ug | ı/L | 50.0 | 1 | | 11/06/13 21:32 | 56-23-5 | | |
| hlorobenzene | ND ug | ı/L | 50.0 | 1 | | 11/06/13 21:32 | 108-90-7 | | |
| hloroform | ND ug | | 50.0 | 1 | | 11/06/13 21:32 | | | |
| 2-Dichloroethane | ND ug | ı/L | 50.0 | 1 | | 11/06/13 21:32 | | | |
| 1-Dichloroethene | ND ug | | 50.0 | 1 | | 11/06/13 21:32 | | | |
| etrachloroethene | ND ug | | 50.0 | 1 | | 11/06/13 21:32 | | | |
| richloroethene | ND ug | | 50.0 | 1 | | 11/06/13 21:32 | | | |



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

Matrix: Solid

ANALYTICAL RESULTS

Project:

Drill Cutting

Pace Project No.:

5088925

| Sample: | PIT#110/24/13 |
|---------|---------------|

Date: 11/07/2013 12:01 PM

Lab ID: 5088925001 Collected: 10/24/13 13:00 Received: 10/24/13 14:57

Results reported on a "wet-weight" basis

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|-------------------------------|-----------------|--------------|-------------------|-----------|-----------------|----------------|-----------|------|
| 8260 MSV TCLP | Analytical Met | nod: EPA 826 | 0 Leachate Method | d/Date: B | EPA 1311; 10/29 | 9/13 12:45 | | |
| Vinyl chloride Surrogates | ND ug | /L | 20.0 | 1 | | 11/06/13 21:32 | 75-01-4 | |
| Toluene-d8 (S) | 99 %. | | 81-110 | 1 | | 11/06/13 21:32 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 99 %. | | 80-114 | 1 | | 11/06/13 21:32 | 460-00-4 | |
| Dibromofluoromethane (S) | 97 %. | | 79-116 | 1 | | 11/06/13 21:32 | 1868-53-7 | |
| 9045 pH Soil | Analytical Meth | nod: EPA 904 | 5 | | | | | |
| pH at 25 Degrees C | 9.2 St | d. Units | 0.10 | 1 | | 10/29/13 11:01 | | |
| 9095 Paint Filter Liquid Test | Analytical Meth | nod: EPA 909 | 5 | | | | | |
| Free Liquids | PASS no | units | | 1 | | 10/28/13 09:20 | | |



Mercury

Date: 11/07/2013 12:01 PM

Pace Analytical Services, Inc. 1233 Dublin Road Columbus, OH 43215 (614)486-5421 Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALITY CONTROL DATA

Project: **Drill Cutting** Pace Project No.: 5088925 QC Batch: MERP/5000 Analysis Method: EPA 7470 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP Associated Lab Samples: 5088925001 METHOD BLANK: 1004472 Matrix: Water Associated Lab Samples: 5088925001 Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Mercury ug/L ND 2.0 10/30/13 09:55 LABORATORY CONTROL SAMPLE: 1004473 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 15 92 13.8 80-120 MATRIX SPIKE SAMPLE: 1004474 5088773001 Spike MS MS % Rec Parameter Units Result Conc. Result % Rec Limits Qualifiers Mercury ug/L ND 15 14.2 94 75-125 MATRIX SPIKE SAMPLE: 1004475 Spike 5088829001 MS MS % Rec Parameter Units Result Conc. Result % Rec Limits Qualifiers ND Mercury ug/L 15 13.8 92 75-125 MATRIX SPIKE SAMPLE: 1004476 5088925001 MS MS % Rec Spike Parameter Units Result Conc. Result % Rec Limits Qualifiers ND Mercury ug/L 95 15 14.2 75-125 MATRIX SPIKE SAMPLE: 1004477 5088949001 Spike MS MS % Rec Parameter Units Result Conc. Result % Rec Limits Qualifiers

REPORT OF LABORATORY ANALYSIS

ND

15

14.0

93

75-125

ug/L

Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

5088925

QC Batch:

MPRP/12353

EPA 3010

Analysis Method:

EPA 6010

QC Batch Method:

Analysis Description:

6010 MET TCLP

Associated Lab Samples:

5088925001

Matrix: Water

Associated Lab Samples:

Date: 11/07/2013 12:01 PM

METHOD BLANK: 1004751

5088925001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|-----------|-------|-----------------|--------------------|----------------|------------|
| Arsenic | mg/L | ND | 0.10 | 10/31/13 10:06 | |
| Barium | mg/L | ND | 5.0 | 10/31/13 10:06 | |
| Cadmium | mg/L | ND | 0.050 | 10/31/13 10:06 | |
| Chromium | mg/L. | ND | 0.10 | 10/31/13 10:06 | |
| Lead | mg/L | ND | 0.10 | 10/31/13 10:06 | |
| Selenium | mg/L | ND | 0.10 | 10/31/13 10:06 | |
| Silver | mg/L | ND | 0.50 | 10/31/13 10:06 | |

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|----------------|---------------|--------------|-----------------|------------|
| Arsenic | mg/L | 10 | 10.3 | 103 | 80-120 | **** |
| Barium | mg/L | 10 | 9.9 | 99 | 80-120 | |
| Cadmium | mg/L | 10 | 9.8 | 98 | 80-120 | |
| Chromium | mg/L | 10 | 9.9 | 99 | 80-120 | |
| Lead | mg/L | 10 | 9.7 | 97 | 80-120 | |
| Selenium | mg/L | 10 | 10.0 | 100 | 80-120 | |
| Silver | mg/L | 5 | 5.3 | 106 | 80-120 | |

| MATRIX SPIKE SAMPLE: | 1004753 | | | | | | ······ |
|----------------------|---------|----------------------|----------------|--------------|-------------|-----------------|------------|
| Parameter | Units | 5088989001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
| Arsenic | mg/L | ND | 10 | 10.6 | 106 | 50-150 | ··· |
| Barium | mg/L | ND | 10 | 10.6 | 101 | 50-150 | |
| Cadmium | mg/L | ND | 10 | 10.0 | 100 | 50-150 | |
| Chromium | mg/L | ND | 10 | 10 | 100 | 50-150 | |
| Lead | mg/L | ПD | 10 | 9.8 | 98 | 50-150 | |
| Selenium | mg/L | ND | 10 | 10.2 | 102 | 50-150 | |
| Silver | mg/L | ND | 5 | 5.4 | 108 | 50-150 | |

| MATRIX SPIKE SAMPLE: | 1004754 | | | · | | | |
|----------------------|---------|----------------------|----------------|--------------|-------------|-----------------|------------|
| Parameter | Units | 5089016001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
| Arsenic | mg/L | ND | 10 | 10.5 | 105 | 50-150 | ····· |
| Barium | mg/L | 0.41J | 10 | 10.4 | 99 | 50-150 | |
| Cadmium | mg/L | ND | 10 | 9.9 | 99 | 50-150 | |
| Chromium | mg/L | ND | 10 | 9.8 | 98 | 50-150 | |
| Lead | mg/L | ND | 10 | 9.7 | 97 | 50-150 | |

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QUALITY CONTROL DATA

Project:

Drill Cutting

Date: 11/07/2013 12:01 PM

| Pace Project No.: 5088925 | | | | | | | |
|---------------------------|-----------|------------|-------|--------|-------|--------|------------|
| MATRIX SPIKE SAMPLE: | 1004754 | | | | | | * |
| D | 1 f = 2 = | 5089016001 | Spike | MS | MS | % Rec | - 115 |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| Selenium | mg/L | ND | 10 | 10.1 | 101 | 50-150 | |
| Silver | mg/L | ND | 5 | 5.3 | 105 | 50-150 | |
| MATRIX SPIKE SAMPLE: | 1004755 | | | | | | |
| | | 5088829001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| Arsenic | mg/L | ND | 10 | 10.7 | 107 | 50-150 | |
| Barium | mg/L | ND | 10 | 10.5 | 102 | 50-150 | |
| Cadmium | mg/L | ND | 10 | 10.1 | 101 | 50-150 | |
| Chromium | mg/L | ND | 10 | 10.2 | 102 | 50-150 | |
| _ead | mg/L | ND | 10 | 10.0 | 100 | 50-150 | |
| Selenium | mg/L | ND | 10 | 10.3 | 103 | 50-150 | |
| Silver | mg/L | ND | 5 | 5.4 | 108 | 50-150 | |
| MATRIX SPIKE SAMPLE: | 1004756 | | | | | | |
| | | 5088925001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| Arsenic | mg/L | ND | 10 | 10.7 | 107 | 50-150 | |
| Barium | mg/L | ND | 10 | 11.4 | 101 | 50-150 | |
| Cadmium | mg/L | ND | 10 | 10.0 | 100 | 50-150 | |
| Chromium | mg/L | ND | 10 | 10.0 | 100 | 50-150 | |
| .ead | mg/L | ND | 10 | 9.9 | 99 | 50-150 | |
| Selenium | mg/L | ND | 10 | 10.3 | 103 | 50-150 | |
| Silver | mg/L | ND | 5 | 5.4 | 107 | 50-150 | |
| MATRIX SPIKE SAMPLE: | 1004757 | | | | | · | |
| | | 5088949001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| rsenic | mg/L | ND | 10 | 10.6 | 106 | 50-150 | |
| arium | mg/L | ND | 10 | 11.0 | 99 | 50-150 | |
| Cadmium | mg/L | ND | 10 | 9.9 | 99 | 50-150 | |
| Chromium | mg/L | ND | 10 | 9.9 | 99 | 50-150 | |
| ead | mg/L | ND | 10 | 9.8 | 98 | 50-150 | |
| Selenium | mg/L | ND | 10 | 10.2 | 102 | 50-150 | |
| | | | | | | | |



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

5088925

QC Batch:

MSV/58925

Analysis Method:

EPA 8260

QC Batch Method:

EPA 8260

Analysis Description:

8260 MSV TCLP

Associated Lab Samples:

5088925001

Associated Lab Samples:

Date: 11/07/2013 12:01 PM

METHOD BLANK: 1006681

5088925001

Matrix: Water

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|-----------------|--------------------|----------------|------------|
| *************************************** | 1-11-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2- | | | | |
| 1,1-Dichloroethene | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| 1,2-Dichloroethane | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| 2-Butanone (MEK) | ug/L | ND | 1000 | 11/06/13 14:34 | |
| Benzene | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| Carbon tetrachloride | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| Chlorobenzene | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| Chloroform | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| Tetrachloroethene | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| Trichloroethene | ug/L | ND | 50.0 | 11/06/13 14:34 | |
| Vinyl chloride | ug/L | ND | 20.0 | 11/06/13 14:34 | |
| 4-Bromofluorobenzene (S) | %. | 99 | 80-114 | 11/06/13 14:34 | |
| Dibromofluoromethane (S) | %. | 99 | 79-116 | 11/06/13 14:34 | |
| Toluene-d8 (S) | %. | 99 | 81-110 | 11/06/13 14:34 | |
| | | | | | |

| ABORATORY CONTROL SAMPLE | : 1006682 | | | | | |
|--------------------------|-----------|----------------|---------------|-------|--------|------------|
| Parameter | Units | Spike Conc. | LCS Beauth | LCS | % Rec | O |
| raidineter | Units | Conc. | Result | % Rec | Limits | Qualifiers |
| ,1-Dichloroethene | ug/L | 500 | 452 | 90 | 68-127 | |
| 2-Dichloroethane | ug/L | 500 | 500 | 100 | 75-128 | |
| Butanone (MEK) | ug/L | 2500 | 2550 | 102 | 58-139 | |
| nzene | ug/L | 500 | 480 | 96 | 74-122 | |
| bon tetrachloride | ug/L | 500 | 507 | 101 | 56-137 | |
| orobenzene | ug/L | 500 | 516 | 103 | 78-123 | |
| proform | ug/L | 500 | 486 | 97 | 78-126 | |
| achloroethene | ug/L | 500 | 505 | 101 | 69-130 | |
| hloroethene | ug/L | 500 | 495 | 99 | 76-126 | |
| d chloride | ug/L | 500 | 379 | 76 | 59-126 | |
| romofluorobenzene (S) | %. | | | 100 | 80-114 | |
| omofluoromethane (S) | %. | | | 100 | 79-116 | |
| uene-d8 (S) | %. | | | 101 | 81-110 | |

| MATRIX SPIKE SAMPLE: | 1006683 | | | | | | |
|----------------------|---------|----------------------|----------------|--------------|-------------|-----------------|------------|
| Parameter | Units | 5088925001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
| 1,1-Dichloroethene | ug/L | ND | 500 | 483 | 97 | 55-145 | |
| 1,2-Dichloroethane | ug/L | ND | 500 | 549 | 110 | 62-138 | |
| 2-Butanone (MEK) | ug/L | ND | 2500 | 3720 | 149 | 37-156 | |
| Benzene | ug/L | ND | 500 | 489 | 98 | 62-129 | |
| Carbon tetrachloride | ug/L | ND | 500 | 468 | 94 | 46-142 | |
| Chlorobenzene | ug/L | ND | 500 | 443 | 89 | 49-136 | |



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QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

Date: 11/07/2013 12:01 PM

5088925

| MATRIX SPIKE SAMPLE: | 1006683 | | · " | | | | |
|--------------------------|---------|------------|-------|--------|-------|-----------------|------------|
| <u></u> | | 5088925001 | Spike | MS | MS | % Rec Limits | |
| Parameter | Units | Result | Conc. | Result | % Rec | | Qualifiers |
| Chloroform | ug/L | ND | 500 | 514 | 103 | 54-150 | |
| Tetrachloroethene | ug/L | ND | 500 | 403 | 81 | 33-151 | |
| Trichloroethene | ug/L | ND | 500 | 462 | 92 | 50-143 | |
| Vinyl chloride | ug/L | ND | 500 | 422 | 84 | 44-145 | |
| 4-Bromofluorobenzene (S) | %. | | | | 99 | 80-114 | |
| Dibromofluoromethane (S) | %. | | | | 99 | 79-116 | |
| Toluene-d8 (S) | %. | | | | 100 | 81-110 | |

| MATRIX SPIKE SAMPLE: | 1006684 | | | | | | |
|--------------------------|---------|------------|-------|--------|-------|--------|------------|
| | | 5088949001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| 1,1-Dichloroethene | ug/L | ND | 500 | 499 | 100 | 55-145 | |
| 1,2-Dichloroethane | ug/L | ND | 500 | 573 | 115 | 62-138 | |
| 2-Butanone (MEK) | ug/L | ND | 2500 | 2770 | 111 | 37-156 | |
| Benzene | ug/L | ND | 500 | 515 | 103 | 62-129 | |
| Carbon tetrachloride | ug/L | ND | 500 | 513 | 103 | 46-142 | |
| Chlorobenzene | ug/L | ND | 500 | 470 | 94 | 49-136 | |
| Chloroform | ug/L | ND | 500 | 543 | 109 | 54-150 | |
| Tetrachloroethene | ug/L | ND | 500 | 444 | 89 | 33-151 | |
| Trichloroethene | ug/L | ND | 500 | 500 | 100 | 50-143 | |
| Vinyl chloride | ug/L | ND | 500 | 450 | 90 | 44-145 | |
| 4-Bromofluorobenzene (S) | %. | | | | 99 | 80-114 | |
| Dibromofluoromethane (S) | %. | | | | 98 | 79-116 | |
| Toluene-d8 (S) | %. | | | | 97 | 81-110 | |



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QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

5088925

QC Batch:

OEXT/34246

QC Batch Method:

EPA 3510

Analysis Method:

EPA 8270

Analysis Description:

8270 TCLP MSSV

Associated Lab Samples:

Date: 11/07/2013 12:01 PM

5088925001

METHOD BLANK: 1004728

Matrix: Water

Associated Lab Samples: 5088925001

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|------------------------------|-------|-----------------|--------------------|----------------|------------|
| 1,4-Dichlorobenzene | ug/L | ND | 100 | 10/31/13 13:35 | |
| 2,4,5-Trichlorophenol | ug/L | ND | 500 | 10/31/13 13:35 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 100 | 10/31/13 13:35 | |
| 2,4-Dinitrotoluene | ug/L | ND | 100 | 10/31/13 13:35 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 100 | 10/31/13 13:35 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 200 | 10/31/13 13:35 | |
| lexachloro-1,3-butadiene | ug/L | ND | 100 | 10/31/13 13:35 | |
| -lexachlorobenzene | ug/L | ND | 100 | 10/31/13 13:35 | |
| -lexachloroethane | ug/L | ND | 100 | 10/31/13 13:35 | |
| Nitrobenzene | ug/L | ND | 100 | 10/31/13 13:35 | |
| Pentachlorophenol | ug/L | ND | 500 | 10/31/13 13:35 | |
| Pyridine | ug/L | ND | 100 | 10/31/13 13:35 | |
| 2,4,6-Tribromophenol (S) | %. | 81 | 31-161 | 10/31/13 13:35 | |
| 2-Fluorobiphenyl (S) | %. | 64 | 31-118 | 10/31/13 13:35 | |
| 2-Fluorophenol (S) | %. | 31 | 10-67 | 10/31/13 13:35 | |
| Nitrobenzene-d5 (S) | %. | 66 | 29-126 | 10/31/13 13:35 | |
| o-Terphenyl-d14 (S) | %. | 108 | 28-129 | 10/31/13 13:35 | |
| Phenol-d5 (S) | %. | 17 | 10-47 | 10/31/13 13:35 | |

| LABORATORY CONTROL SAMPLE: | 1004729 | | | | | |
|------------------------------|---------|-------|--------|-------|--------|------------|
| | | Spike | LCS | LCS | % Rec | |
| Parameter | Units | Conc. | Result | % Rec | Limits | Qualifiers |
| 1,4-Dichlorobenzene | ug/L | 1000 | 642 | 64 | 29-102 | |
| 2,4,5-Trichlorophenol | ug/L | 1000 | 853 | 85 | 42-125 | |
| 2,4,6-Trichlorophenol | ug/L | 1000 | 801 | 80 | 44-122 | |
| 2,4-Dinitrotoluene | ug/L | 1000 | 943 | 94 | 36-126 | |
| 2-Methylphenol(o-Cresol) | ug/L | 1000 | 560 | 56 | 30-85 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | 2000 | 1020 | 51 | 22-76 | |
| Hexachloro-1,3-butadiene | ug/L | 1000 | 623 | 62 | 26-102 | |
| Hexachlorobenzene | ug/L | 1000 | 683 | 68 | 36-115 | |
| Hexachloroethane | ug/L | 1000 | 625 | 63 | 24-101 | |
| Nitrobenzene | ug/L | 1000 | 756 | 76 | 36-114 | |
| Pentachlorophenol | ug/L | 1000 | 877 | 88 | 31-125 | |
| Pyridine | ug/L | 1000 | 236 | 24 | 10-41 | |
| 2,4,6-Tribromophenol (S) | %. | | | 94 | 31-161 | |
| 2-Fluorobiphenyl (S) | %. | | | 73 | 31-118 | |
| 2-Fluorophenol (S) | %. | | | 37 | 10-67 | |
| Nitrobenzene-d5 (S) | %. | | | 74 | 29-126 | |
| p-Terphenyl-d14 (S) | %. | | | 116 | 28-129 | |
| Phenol-d5 (S) | %. | | | 21 | 10-47 | |

Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

Date: 11/07/2013 12:01 PM

5088925

| MATRIX SPIKE SAMPLE: | 1004730 | | | | | | |
|--|--------------|----------------------|----------------|--------------|-------------|------------------|------------|
| | | 5088989001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| ,4-Dichlorobenzene | ug/L. | ND | 1000 | 508 | 51 | 39-91 | |
| 2,4,5-Trichlorophenol | ug/L. | ND | 1000 | 750 | 75 | 41-125 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 1000 | 684 | 68 | 42-120 | |
| 2,4-Dinitrotoluene | ug/L | ND | 1000 | 809 | 81 | 34-124 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 1000 | 457 | 46 | 21-101 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 2000 | 839 | 42 | 10-104 | |
| lexachloro-1,3-butadiene | ug/L | ND | 1000 | 518 | 52 | 36-97 | |
| dexachlorobenzene | ug/L | ND | 1000 | 618 | 62 | 37-115 | |
| -lexachloroethane | ug/L | ND | 1000 | 492 | 49 | 31-93 | |
| Nitrobenzene | ug/L | ND | 1000 | 562 | 56 | 42-114 | |
| Pentachlorophenol | ug/L | ND | 1000 | 783 | 78 | 30-128 | |
| Pyridine | ug/L | ND | 1000 | 227 | 23 | 10-46 | |
| 2,4,6-Tribromophenol (S) | %. | .,_ | | | 85 | 31-161 | |
| 2-Fluorobiphenyl (S) | %. | | | | 62 | 31-118 | |
| 2-Fluorophenol (S) | %. | | | | 29 | 10-67 | |
| Vitrobenzene-d5 (S) | %. | | | | 59 | 29-126 | |
| o-Terphenyl-d14 (S) | %. | | | | 99 | 28-129 | |
| Phenol-d5 (S) | %. | | | | 16 | 10-47 | |
| | | | | | | | |
| MATRIX SPIKE SAMPLE: | 1004731 | | | | | | |
| | | 5088947001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifier |
| .4-Dichlorobenzene | ug/L | ND | 1000 | 572 | 57 | 39-91 | |
| 2,4,5-Trichlorophenol | ug/L | ND | 1000 | 822 | 82 | 41-125 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 1000 | 775 | 77 | 42-120 | |
| 2,4-Dinitrotoluene | ug/L | ND | 1000 | 872 | 87 | 34-124 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 1000 | 498 | 50 | 21-101 | |
| 8&4-Methylphenol(m&p Cresol) | ug/L | ND | 2000 | 890 | 44 | 10-104 | |
| Hexachloro-1,3-butadiene | ug/L | ND | 1000 | 580 | 58 | 36-97 | |
| lexachlorobenzene | ug/L | ND | 1000 | 662 | 66 | 37-115 | |
| lexachloroethane | ug/L | ND | 1000 | 564 | 56 | 31-93 | |
| Vitrobenzene | ug/L | ND | 1000 | 730 | 73 | 42-114 | |
| Pentachlorophenol | ug/L. | ND | 1000 | 815 | 73 81 | 30-128 | |
| Pyridine | ug/L ug/L | ND | 1000 | 230 | 23 | 10-46 | |
| 2,4,6-Tribromophenol (S) | %. | ND | 1000 | 200 | 94 | 31-161 | |
| 2-Fluorobiphenyl (S) | %. | | | | 70 | 31-118 | |
| !-Fluorophenol (S) | %. | | | | 32 | 10-67 | |
| i-riuoroprienoi (3) Nitrobenzene-d5 (S) | %. | | | | | 29-126 | |
| ittrobenzene-do (S) ⊢Terphenyl-d14 (S) | %. %. | | | | 70 402 | 29-126 28-129 | |
| Phenol-d5 (S) | %. %. | | | | 102 18 | 10-47 | |
| monos do (w) | 701 | | | | 10 | 10-47 | |
| MATRIX SPIKE SAMPLE: | 1004732 | | | | | | |
| | | | | | | 44.5 | |
| Parameter | Unîts | 5088925001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifier |



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

Date: 11/07/2013 12:01 PM

5088925

| MATRIX SPIKE SAMPLE: | 1004732 | | | | | | |
|------------------------------|---------|------------|-------|--------|-------|--------|------------|
| | | 5088925001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| 2,4,5-Trichlorophenol | ug/L | ND | 1000 | 1000 | 100 | 41-125 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 1000 | 911 | 91 | 42-120 | |
| 2,4-Dinitrotoluene | ug/L | ND | 1000 | 920 | 92 | 34-124 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 1000 | 608 | 61 | 21-101 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 2000 | 1100 | 55 | 10-104 | |
| fexachloro-1,3-butadiene | ug/L | ND | 1000 | 680 | 68 | 36-97 | |
| -lexachlorobenzene | ug/L | ND | 1000 | 667 | 67 | 37-115 | |
| lexachloroethane | ug/L | ND | 1000 | 665 | 66 | 31-93 | |
| litrobenzene | ug/L | ND | 1000 | 816 | 82 | 42-114 | |
| Pentachlorophenol | ug/L | ND | 1000 | 990 | 99 | 30-128 | |
| Pyridine | ug/L | ND | 1000 | 304 | 30 | 10-46 | |
| 2,4,6-Tribromophenol (S) | %. | | | | 103 | 31-161 | |
| ?-Fluorobiphenyl (S) | %. | | | | 75 | 31-118 | |
| 2-Fluorophenol (S) | %. | | | | 39 | 10-67 | |
| Vitrobenzene-d5 (S) | %. | | | | 75 | 29-126 | |
| o-Terphenyl-d14 (S) | %. | | | | 103 | 28-129 | |
| Phenol-d5 (S) | %. | | | | 22 | 10-47 | |

| MATRIX SPIKE SAMPLE: | 1004733 | | | • | | | |
|------------------------------|---------|------------|-------|--------|-------|--------|------------|
| | | 5088949001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| 1,4-Dichlorobenzene | ug/L | ND | 1000 | 639 | 64 | 39-91 | |
| 2,4,5-Trichlorophenol | ug/L | ND | 1000 | 882 | 88 | 41-125 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 1000 | 807 | 81 | 42-120 | |
| 2,4-Dinitrotoluene | ug/L | ND | 1000 | 864 | 86 | 34-124 | |
| 2-Methylphenol(o-Cresol) | ug/L | ND | 1000 | 531 | 53 | 21-101 | |
| 3&4-Methylphenol(m&p Cresol) | ug/L | ND | 2000 | 943 | 47 | 10-104 | |
| Hexachloro-1,3-butadiene | ug/L | ND | 1000 | 621 | 62 | 36-97 | |
| Hexachlorobenzene | ug/L | ND | 1000 | 628 | 63 | 37-115 | |
| Hexachloroethane | ug/L | ND | 1000 | 636 | 64 | 31-93 | |
| Nitrobenzene | ug/L | ND | 1000 | 695 | 70 | 42-114 | |
| Pentachlorophenol | ug/L | ND | 1000 | 918 | 92 | 30-128 | |
| Pyridine | ug/L | ND | 1000 | 205 | 20 | 10-46 | |
| 2,4,6-Tribromophenol (S) | %. | | | | 94 | 31-161 | |
| 2-Fluorobiphenyl (S) | %. | | | | 69 | 31-118 | |
| 2-Fluorophenol (S) | %. | | | | 34 | 10-67 | |
| Nitrobenzene-d5 (S) | %. | | | | 71 | 29-126 | |
| p-Terphenyl-d14 (S) | %. | | | | 104 | 28-129 | |
| Phenol-d5 (S) | %. | | | | 19 | 10-47 | |



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QUALITY CONTROL DATA

Project:

Drill Cutting

Pace Project No.:

5088925

QC Batch:

WET/13593

EPA 9045

Analysis Method:

EPA 9045

QC Batch Method:

Parameter

Analysis Description:

9045 pH

Associated Lab Samples: SAMPLE DUPLICATE:

5088925001

1003832

5088917011

Result

Dup Result

Max RPD

pH at 25 Degrees C

Std. Units

Units

7.6

RPD

Qualifiers

SAMPLE DUPLICATE: 1003833

5088949001 Result

Dup Result

RPD

Max RPD

Qualifiers

Parameter

Std. Units

Units

7.1

7.1

7.7

1

pH at 25 Degrees C

Date: 11/07/2013 12:01 PM

20

20

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALIFIERS

Project: Drill Cutting
Pace Project No.: 5088925

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.

PRL - Pace Reporting 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.

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

TNI - The NELAC Institute.

Date: 11/07/2013 12:01 PM



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)875-5894

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

Drill Cutting

Pace Project No.:

Date: 11/07/2013 12:01 PM

5088925

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|------------|---------------|-----------------|------------|-------------------|---------------------|
| 5088925001 | PIT#110/24/13 | EPA 3010 | MPRP/12353 | EPA 6010 | ICP/13660 |
| 5088925001 | PIT#110/24/13 | EPA 7470 | MERP/5000 | EPA 7470 | MERC/5329 |
| 5088925001 | PIT#110/24/13 | EPA 3510 | OEXT/34246 | EPA 8270 | MSSV/13823 |
| 5088925001 | PIT#110/24/13 | EPA 8260 | MSV/58925 | | |
| 5088925001 | PIT#110/24/13 | EPA 9045 | WET/13593 | | |
| 5088925001 | PIT#110/24/13 | EPA 9095 | WET/13586 | | |

Pace Analytical"

CHAIN-OF-CUSTODY / Analytical Request Document

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

Pace Project No./ Lab I.D. (V/V) bies iuo DRINKING WATER SAMPLE CONDITIONS F-ALL-Q-020rev.07, 15-May-2001 1686710T OTHER (NW) Custody sled Cooler GROUND WATER | ICO (Y/N) Received on Residual Chlorine (Y/N) Site Location Combuits 19/2/18 1457 2.9 Temp in *C REGULATORY AGENCY T RORA Requested Analysis Filtered (Y/N) TIME DATE Signed 10/24/13 STATE NPDES DATE T. UST MarkeStAnban ACCEPTED BY / AFFILIATION 7441 t isof sisylenAt N.A lonsitieN Same Preservatives Section C. Invelce Information: ONH Company Name: 10/24/4 14:53 OS H Reference: Pece Project Meriager; Pace Prefile #: sroe Circle Пррезегуей themtion: E # OF CONTAINERS SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SAMPLE TEMP AT COLLECTION . ::: PATE TIME . : COMPOSITE END/GRAB DATE COLLECTED RELINGUISHED BY LAFFILLATION W COMPOSITE START DATE Required Project Information. Report To: Brian 8611. (G=CHAB C=COMP) SAMPLE TYPE Purchase Order No. Project Number MATRIX CODE roject Name: Section B ORIGINAL Copy To: Matrix Codes Drinking Water
Water
Waste Waster
Product
Soil/Soild
Oil
Wipe
Alir
Tiesue
Other Drill Cutting Email To: Bart Ta SI & Jahmen (0/14/13 iddress: DS Stylenville Aw ADDITIONAL COMMENTS (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE Company Rett EN SAMPLE ID comes Soms DIT # / Cisclal Section A Required Client Information: Section D Required Clent Information Requested Due Date/TAT AST 722-10 A 18 of 20 化连帆 勒 10

Sample Condition Upon Receipt

| Face Analytical Client Name | : PeHa | Ent | | Project # | 5088945 |
|--|--|------------------|--|------------------|---------------------------------------|
| Courier: Fed Ex UPS USPS Client | t Comme | rcial 🗅 | ace Other | **** | |
| Custody Seal on Cooler/Box Present: Yes | no | Seals intac | t: // yes | □ no | Date/Time 5035A kits |
| Packing Material: Bubble Wrap Bubble I | Bags [No | ne Dot | her | | placed in freezer |
| Thermometer Used 12346 ABCD | Type of Ice | : Wet Bl | ue None | Samples on ice | , cooling process has begun |
| Cooler Temperature 2.4 | ice Visibí | In Sample | Containers: | • | no |
| (Corrected, If applicable) Temp should be above freezing to 6°C | | | | Date and I | nitials of person examining |
| Chain of Custody Present: | ZYes □No | □N/A 1, | nments: | contents | 10/25/13 35 |
| Chain of Custody Filled Out: | ZYes DNo | □N/A 2. | | | |
| Chain of Custody Relinquished: | ZYes DNo | □N/A 3. | | | |
| Sampler Name & Signature on COC: | Yes □No | □N/A 4. | | | |
| Short Hold Time Analysis (<72hr): | □Yes □No | □N/A 5. | ····· | | |
| Rush Turn Around Time Requested: | ☐Yes ZÍNo | □N/A 6. | | | · · · · · · · · · · · · · · · · · · · |
| Containers Intact: | ZYes DNo | □N/A 7. | | | |
| Sample Labels match COC: | DYes □No | □N/A 8. | | | |
| -includes date/time/iD/Analysis | | | | | |
| All containers needing acid/base pres. have been checked? | □Yes □No | LINA 9. | (Circle) HNO3 | H2SO4 1 | VaOH HCI |
| exceptions: VOA, coliform, TOC, O&G | | | | | |
| All containers needing preservation are found to be in compliance with EPA recommendation. | □Yes □No | ZNIA | | | |
| Headspace in VOA Vials (>6mm): | □Yes ☑No | □N/A 10. | | | |
| Trip Blank Present: | □Yes ZNo | □N/A 11. | | | |
| Trip Blank Custody Seals Present | □Yes INo | □n/a | | | |
| Project Manager Review | | | | in the grade and | 2 |
| Samples Arrived within Hold Time: | ¶Yes □No | □N/A 12. | | | |
| Sufficient Volume: | □Yes □No | □N/A 13. | *** | • | |
| Correct Containers Used: | □Үөв □№ | □N/A 14. | | | |
| Cilent Notification/ Resolution: | ł | | | Fleld Data Requ | lired? Y / N |
| Person Contacted: Comments/ Resolution: | ************************************** | Date/Time: | | | |
| Comments/ Resolution. | | | | | |
| | | | | | |
| | | | ······································ | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | . , . | | | |
| Project Manager Review: | | Alna | <i>t</i> | | 10/2/12 |
| Jose mendon Marion. | | | | Date: | 10/07/13 |

Sample Container Count

Face Analytical"

CLIENT: Petter Ent

#GI 000

Sample Line Item

Project #

Comments DG9H AG1U WGFU AG0U R 4/6 BP2N BP2U BP2S BP3N BP3U BP3S AG3S AG1H 9 = 5 2 ო 5 ග œ O

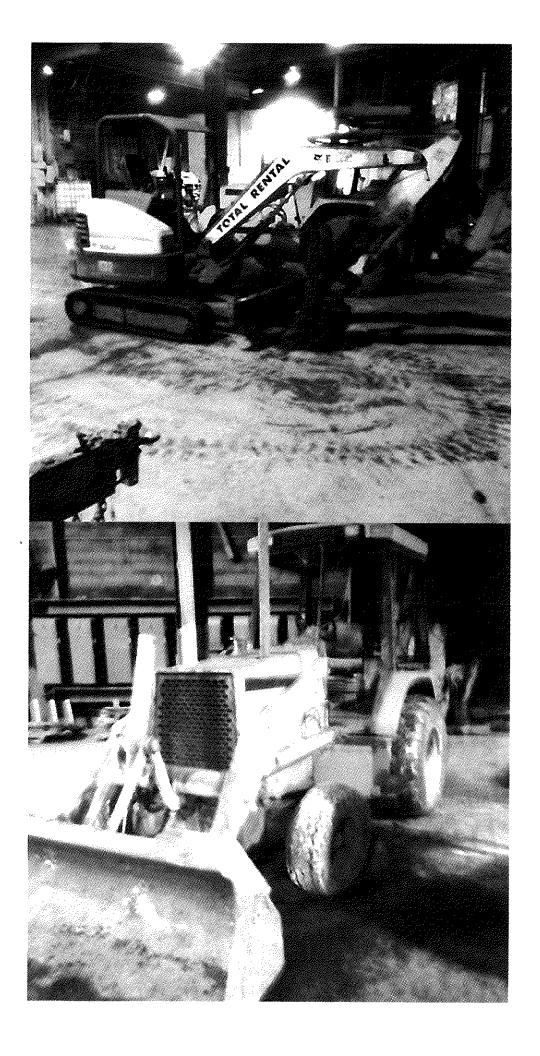
| | Container Codes | | | |
|------|----------------------------------|---|-----------------------------------|------------------------------------|
| H690 | DG9H 40mL HCL amber voa vial | AG0U 100mL unpreserved amber class | BP1N 1 lifer HNO3 plastic | DGGD A0ml TCD amborvial |
| AG1U | 1liter unpreserved amber glass | Titter unpreserved amber glass AG1H 1 liter HCL amber glass | BP1S 1 Ifter H2SO4 plastic | Digos domi Lipson combandar |
| WGFU | WGFU 4oz clear soil jar | AG1S 1 liter H2SO4 amber class | BP1U 1 liter unpreserved plastic | DGGT A0ml No This amportant |
| œ | R terra core kit | AG1T 1 liter Na Thiosulfate amber of | BP1Z 1 liter NaOH Zn. Ac. | DG0f1 40ml unmeconical contraction |
| BP2N | 500ml, HNO3 plastic | AG2N 500mL HNO3 amber class | BP2A 500ml NaOH Asc Acid plastic | Wina/Swah |
| BP2U | BP2U 500mL unpreserved plastic | AG2S 500mL H2SO4 amber glass | BP20 500ml NaOH plastic | GE 407 innrecented comparation |
| BP2S | BP2S 500mL H2SO4 plasfic | AG2U 500mL unpreserved amber gla | BP2Z 500ml NaOH Zn Ac | Simma Can |
| BP3N | BP3N 250ml. HNO3 plastic | AG3U 250mL unpreserved amber gla | AF Air Filter | VGOL Ann HCI destries |
| BP3U | BP3U 250mL unpreserved plastic | BG1H 1 liter HCL clear glass | BP3C 250mL NaOH plastic | VG9T 40ml Na Thin clear vist |
| BP3S | BP3S 250ml, H2SO4 plastic | BG1S 1 liter H2SO4 clear glass | BP3Z 250mL NaOH. Zn Ac plastic | VG9U 40ml inneserved clear vial |
| AG3S | AG3S 250mL H2SO4 glass amber | BG1T 1 liter Na Thiosulfate clear gla | C Air Cassettes | VSG Headspace sents visi & HCI |
| AG1S | AG1S 1 liter H2SO4 amber glass | BG1U 1 liter unpreserved glass | DG9B 40mL Na Bisulfate amber vial | WGFX 4oz wlde iar w/hexane wine |
| BP1U | BP1U 1 liter unpreserved plastic | BP1A 1 liter NaOH, Asc Acid plastic | T | ZPLC Zloloc Bao |
| | | | | 2 |

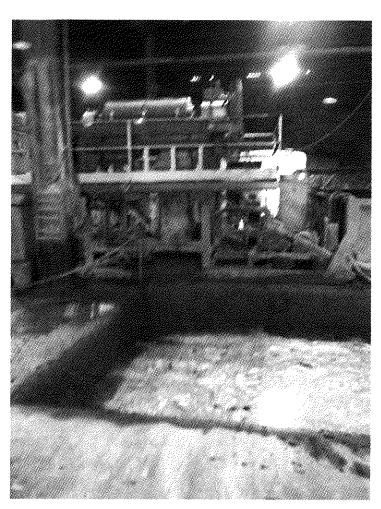


EXAMPLE EQUIPMENT PICTURES



PRESSURE WASHER





CENTRIFUGE







OPERATING AGREEMENT

OF

ATP Unlimited, LLC

THE MEMBERSHIP INTERESTS EVIDENCED BY THIS DOCUMENT ARE SUBJECT TO RESTRICTIONS ON ASSIGNMENT AND TRANSFER SET FORTH HEREIN. THE INTERESTS HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 OR ANY STATE SECURITIES LAW AND MAY NOT BE SOLD OR OTHERWISE TRANSFERRED UNTIL IT HAS BEEN SO REGISTERED OR UNTIL THE BOARD OF MANAGERS HAVE RECEIVED AN OPINION OF LEGAL COUNSEL, OR OTHER ASSURANCES SATISFACTORY TO THAT BOARD, THAT THE INTEREST MAY LEGALLY BE SOLD OR OTHERWISE TRANSFERRED WITHOUT SUCH REGISTRATION, ALL AS PROVIDED IN THIS DOCUMENT.

THIS OPERATING AGREEMENT (this "Agreement") is entered into as of April 1, 2014, by and among **ATP Unlimited**, **LLC** and **William John Petta** (the "Initial Members"). Unless the context otherwise requires, terms which are capitalized and not otherwise defined in context shall have the meanings set forth or cross-referenced in Article 2 of this Agreement.

In consideration of the mutual covenants and subject to the terms and conditions of this Agreement, the Members do agree as set forth below.

ARTICLE 1. ORGANIZATIONAL MATTERS

- 1.1FORMATION OF THE COMPANY; CONTINUED EXISTENCE. The Company will be formed as a limited liability company under the Act upon the execution and filing with the Secretary of State of Ohio of the Articles of Organization of the Company. The Company continues in perpetuity unless dissolved, wound up, and liquidated as provided in this Agreement.
 - 1.2 NAME. The name of the Company is: ATP Unlimited, LLC.
- 1.3 PURPOSE OF THE COMPANY. The Company is being formed (i) to be a construction company and (ii) to perform all things necessary, incidental to, connected with, or growing out of those activities.
- 1.4 PRINCIPAL PLACE OF BUSINESS, OFFICE, AND AGENT. The principal place of business and mailing address of the Company and office where the records described in Section 6.3(j) are kept is at 128 Steubanville Avenue, Cambridge, Ohio 43725, or at such other location as shall be specified from time to time by the Managers. The registered office of the Company in the State of Ohio is at the offices of the statutory agent of the Company in Ohio. The statutory agent of the Company in Ohio is William John Petta. The Managers, from time to time, may change the

statutory agent in Ohio or the principal place of business of the Company. The Company also may establish additional places of business or offices for maintenance of records as he may determine are necessary or appropriate. This Section of the Agreement is to be amended by the Managers to reflect each change in the identity or address of the registered agent in Ohio.

1.5 FICTITIOUS BUSINESS NAME STATEMENT; OTHER CERTIFICATES. The Managers are required, from time to time, to register the Company as a foreign limited liability company and file such fictitious or trade name statements or certificates in such jurisdictions and offices as the Managers consider necessary or appropriate. The Company may do business under any fictitious business names selected by the Managers. The Managers will, from time to time, file or cause to be filed such certificates of amendment, certificates of cancellation, or other certificates as the Managers reasonably deem necessary under the Act or under the laws of any jurisdiction in which the Company is doing business to establish and continue the Company as a limited liability company or to protect the limited liability of the Members.

ARTICLE 2. DEFINITIONS

ACT means the limited liability company law set forth in Chapter 1705 of the Ohio Revised Code, as amended from time to time. Any reference to the Act automatically includes a reference to any subsequent or successor limited liability company law in Ohio.

AFFILIATE means, with respect to any Person, any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with the specified person. A Person controls another Person if that Person possesses, directly or indirectly, the power to direct or cause the direction of the management and policies of the "controlled" Person, whether through ownership of voting securities, by contract, or otherwise.

AGREEMENT means this Agreement as amended from time to time.

BANKRUPTCY means, with respect to any Person, that Person's filing a petition or otherwise voluntarily commencing a case, or proceeding, or filing an answer not denying the material allegations of a complaint in any proceeding seeking relief under any federal or state bankruptcy, insolvency, or debtors' reorganization law; being the voluntary or involuntary subject of an order for relief by any court under any such law; or being adjudicated a "bankrupt," "debtor," or "insolvent" under any such law; or there being appointed under any such law a "trustee," "receiver," or "custodian" to manage his, her, or its business or properties; or there being commenced under any such law a case or proceeding proposing such an order for relief, adjudication, or appointment with respect to that Person or his, her, or its business, which proceeding is consented to by that Person or that is not dismissed within ninety days after being commenced.

BOOK means the method of accounting prescribed for compliance with the capital account maintenance rules, as distinguished from any accounting method which the Company may adopt for financial reporting or other purposes.

BYLAWS means the bylaws of the Company, as adopted and amended from time to time.

CAPITAL ACCOUNT means the capital account of a Member.

CODE means the Internal Revenue Code of 1986, as amended. References to specific sections of the Code include references to corresponding provisions of any succeeding internal revenue law of the United States of America.

COMPANY means ATP Unlimited, LLC.

FISCAL YEAR means the fiscal year of the Company as determined by the Managers from time to time, and, initially, means a fiscal year ending on December 31.

INTEREST means a membership interest in the Company, including any and all benefits to which a Member is entitled under this Agreement and the obligations of a Member under this Agreement.

MEMBER VOTE means the unanimous vote of the Members, unless otherwise provided.

MEMBERS mean all of the Initial Members and their successors in interest, and other Persons who are admitted as Members. Reference to a "Member" means any one of the Members and any Member that was or is its predecessor or successor in interest.

PERSON or PERSON means any natural person and any corporation, firm, partnership, trust, estate, limited liability company, or other entity resulting from any form of association.

SERVICE means the Internal Revenue Service, or its successor administrative agency, under the laws of the United States.

SHARE means each Member's share of income and loss as set forth in Section 3.1.

TAX MATTERS PARTNER means NAME or another Member appointed to that office by a Member Vote who has the rights and powers set forth in the Bylaws.

TRANSFER means any sale, assignment, pledge, hypothecation, encumbrance, disposition, transfer (including, without limitation, a transfer by will or intestate distribution), gift, or attempt to create or grant a security interest in any Interest or interest therein or portion thereof, whether voluntary or involuntary, by operation of law or otherwise.

ARTICLE 3. CAPITALIZATION

3.1 ORIGINAL AND ADDITIONAL OR SUCCESSOR MEMBERS. Upon the

formation of the Company, the following are the initial Members:

MEMBER

SHARE (%)

William John Petta

100%

This Company shall be Managed by Manager(s). The Managers shall act in their official role as Managers, and not as individuals or Members, to operate the Company.

- 3.2 CAPITAL CONTRIBUTIONS. The Members may, from time to time, unanimously agree to make capital contributions. Unless a Member otherwise agrees, the capital contributions can be called only upon three business days advance notice. Unless the Members otherwise agree, all contributions are to be made in cash. Each Member is to contribute his, her, or its Share of the capital that the Members agree to contribute. The Company is an express beneficiary of the contribution commitment(s) of each member and is entitled to enforce the obligation. Except as may be required under this Section 3.2, no Member is obligated or entitled to make any additional capital contribution to the Company.
- 3.3 INTEREST. No Member is entitled to interest on capital contributions to the Company.
- 3.4 WITHDRAWAL. No Member is entitled to withdraw any portion of his paid-in capital contribution and no Member has any right to a return of capital except through distributions as provided in Article 5.

ARTICLE 4. BOOKS, CAPITAL ACCOUNTS, AND ALLOCATIONS

- 4.1 FINANCIAL REPORTING AND NONFINANCIAL REPORTING BOOKS. The Company is required to maintain financial reporting books in accordance with generally accepted accounting principles, applied on a basis consistent with prior periods. The Company will also maintain nonfinancial reporting books and Capital Accounts as required by Section 4.2 that are to be the basis for liquidating distributions pursuant to Section 9.3. The Company is also to maintain the additional records contemplated by Section 6.3.
 - 4.2 CAPITAL ACCOUNTS. Each Member is to have a Capital Account.
- 4.3 ALLOCATIONS OF BOOK INCOME AND LOSS. Subject to the provisions of Article 3.
 - (a) Book Income: The Company's Book income for any Fiscal Year is to be allocated to each Member in proportion to its Share.
 - (b) Book Loss: The Company's Book loss for any Fiscal Year is to be allocated to each Member in proportion to its Share.

4.4 TAX ALLOCATIONS. Except as otherwise provided, all items of income, gain, loss, and deduction are to be allocated for federal income tax purposes in the same way as the corresponding allocation for Book purposes.

ARTICLE 5. DISTRIBUTIONS

- 5.1 LIMITATIONS ON DISTRIBUTIONS. The Company is not to make any distribution of cash, except to the extent that the Company then has cash available in excess of the sum of (a) amounts required to pay or make provision for all Company expenses, plus (b) all reserves that the Managers consider necessary or appropriate. To the extent that the Managers reasonably foresee that the Company will receive cash or other consideration to satisfy liabilities not yet due and payable, the Company is not required to establish reserves or make other provision to satisfy such liabilities prior to making distributions under this Article 5. Distributions of cash are only to be made to the extent cash is available to the Company without requiring (i) the sale of Company assets or the pledge of Company assets at a time or on terms that the Manager believes are not in the best interests of the Company or (ii) a reduction in reserves that the Manager believes are necessary or desirable for working capital or other Company purposes.
- 5.2 DISTRIBUTIONS. Subject to Section 5.1, prior to the commencement of liquidation and winding up, the Managers may, in his/her/their sole discretion, make distributions of cash or property to the Members in proportion to their positive Capital Account balances. Unless the Members otherwise agree with respect to a specific distribution, any distributions of property other than cash are to be made pro rata in kind as well as value to the Members.
- 5.3 SET-OFF. The Company is entitled to set off against any distribution by the Company to any Member any amounts due and owing by such Member to the Company.

ARTICLE 6. MANAGEMENT BY MANAGERS.

- 6.1 MANAGERS. William John Petta and Dan Flynn are the initial Managers of the Company (the "Managers"). Either Manager can act on behalf of the Company.
 - A. Each Manager shall serve until the earlier of his or her death, resignation, or removal.
 - B. A Manager may be removed at any time by a Member Vote, but only for good cause and by a vote of 75% of the Members.
 - C. A Manager may resign at any time by delivering written resignation to the Members.
 - D. When one of the initial Manager's is no longer a Manager, the Members may

select another Manager or decide the Company will have only one Manager.

6.2 AUTHORITY OF THE MANAGERS.

- (a) Except as specifically reserved to the Members this Agreement, the Managers, shall have all power and authority to manage, and direct the management of, the business and affairs of the Company. Approval by or action taken by the Managers in accordance with this Agreement constitutes approval or action by the Company and is binding on each Member.
- (b) Subject to the limitations imposed by the Act and this Agreement, the Managers have the power to conduct, manage, and control both the ordinary business of the Company and extraordinary transactions including, without limitation, the power to:
- (1) approve the acquisition, disposition, purchase, sale, exchange, or liquidation, in whole or in part, of the business, assets, real or personal property of the Company;
- (2) authorize the making, modification, amendment, or termination of any agreement with any Member or an Affiliate of a Member;
- (3) authorize any distribution to Members;
- (4) change the Fiscal Year of the Company or make or modify any tax elections as the Managers believe to be in the best interests of the Company and the Members;
- (5) make any determination to indemnify any Person as contemplated by the Bylaws, or recommend to the Members that the Company indemnify a Person as contemplated by the Bylaws;
- (6) approve any change of the location of the headquarters of the Company;
- (7) open, conduct, and close checking, savings, custodial, and other accounts on behalf of the Company in such banks or other financial institutions as the Managers may select from time to time;
- (8) negotiate, enter into, execute, and exercise the Company's rights under any and all contracts necessary, desirable, or convenient with respect to the business and affairs of the Company;
- (9) execute any notifications, statements, reports, returns, registrations, or other filings that are necessary or desirable to be filed with any local, state, or Federal agency, commission, or authority, including, without limitation, any registration of securities with any state or Federal securities commission, and appear before such agency, commission, or authority on behalf of the Company;

- (10) purchase or bear the cost of any insurance covering the potential liabilities of the Company, Members, the Managers, any Officer or employee of the Company, and any other Person acting on behalf of the Company;
- (11) commence, defend, or settle litigation pertaining to the Company, its business or assets, provided that the Company is not to bear the expenses of any litigation brought against any Member or Manager acting in that capacity, any Officer or employee of the Company or any other Person acting on behalf of the Company except as permitted by the Bylaws;
- (12) employ accountants, attorneys, contractors, brokers, investment managers, engineers, consultants or other persons, firms, corporations, or entities on such terms and for such compensation as it determines is proper, including, without limitation, persons and entities who may be Members or Affiliates, or who perform services for, or have business, financial, family, or other relationships with, any Member, Manager, Officer, or employee;
- (13) determine the fair market value of all Company property upon a Revaluation Event, when a Member wishes no longer to be a Member, when the Company is dissolved, and/or when a creditor seeks a charging order, or otherwise as provided by law;
- (14) enter into, make, and perform such contracts, agreements, and other undertakings, to execute, acknowledge, and deliver such instruments, and to do such other acts, as it may deem necessary or advisable for, or as may be incidental to, the conduct of the business contemplated by this Section 6.2(b), including, without limitation, contracts, agreements, undertakings, and transactions with any Member or manager or with any other person, firm, or corporation which is an Affiliate or which performs services for or has any business, financial, family, or other relationship with any Member or manager; and
- (c) Confirmation of Power to Convey Title. The signature of all the Managers shall be necessary and sufficient to convey title to any real property owned by the Company or to execute any promissory notes, trust deeds, mortgages, or other instruments of hypothecation.
- (d) None of the powers granted in Section 6.2 broaden or extend powers that are specifically limited by Section 6.2 or other provisions of this Agreement, and the Managers may not admit additional Members, or approve any transfer of an Interest in accordance with this Agreement without the consent of all Members;
- 6.3 DUTIES OF THE MANAGERS. In addition to obligations imposed by other provisions of this Agreement, the Managers are to devote to the Company such time as is reasonably necessary

to carry out the business of the Company in order to accomplish its purposes. The Managers, on behalf of the Company and at the expense of the Company, are to:

- (a) execute, acknowledge, and certify all documents and instruments and take or cause to be taken all actions that may be necessary or appropriate (i) for the continuation of the Company's valid existence as a limited liability company under the laws of the State of Ohio and of each other jurisdiction in which such existence is necessary to protect the limited liability of the Members, (ii) to effectuate the provisions of this Agreement, or (iii) to enable the Company to conduct its business;
- (b) to the extent reasonably deemed necessary or appropriate by the Managers, cause all persons dealing with the Company, the Managers, or any agent or employee of the Company acting on behalf of the Company, to be aware of the character of the Company as a limited liability company;
- (c) conduct the affairs of the Company in compliance with applicable laws and in the best interests of the Company and the Members;
- (d) not permit the use of Company funds or assets for other than the benefit of the Company and the Members;
- (e) furnish to each Member (i) as soon as practicable, but in no event later than 180 days after the end of each Fiscal Year, financial statements of the Company audited or reviewed by a firm of certified public accountants (including, without limitation, a balance sheet and statements of income and Members' equity); (ii) as promptly as reasonably practicable for each Fiscal Year all information required for federal and state income tax reporting purposes with respect to the Company, including without limitation a copy of Schedule K-1 to the Company's federal income tax return for the Fiscal Year most recently ended;
- (f) arrange for the preparation of all necessary informational federal income tax forms on behalf of the Company and for the preparation and filing of any and all state and local income and franchise tax returns required to be filed by the Company;
- (g) obtain and maintain on behalf of the Company such all-risk, public liability, workers' compensation, Officers' liability, fidelity, forgery, and other insurance, if any, as may be available on commercially reasonable terms and as may be deemed necessary or appropriate by the Managers;
- (h) hold all Company property in the Company name or, in the case of cash or cash equivalents, in one or more depository accounts as to which the Company is a beneficial owner;
- (i) use reasonable efforts not to cause the Company to incur debts or other liabilities

- obligations beyond the Company's ability to pay such liabilities; and
- (j) maintain and preserve during the term of the Company and for five years thereafter, or for such longer time as is necessary to determine the cost basis of the Company assets, at the Company's office designated pursuant to Section 1.4 (or, if the Company has been terminated, at the location designated by the Board in a written notice to the Members), complete and accurate books of account in accordance with the provisions of this Agreement, a list of the names and addresses of each Member, copies of the Articles of Organization, this Agreement, the Bylaws, and copies of all financial statements and tax returns of the Company for the most recent five-year period during the term of the Company.
- 6.4 STANDARD OF CARE. (a) The Managers of the Company, and any trustee, director, Manager, officer, or employee of the Managers in the performance of his, her, or its duties, is to be fully protected in relying in good faith on information, opinions, reports, or statements, including financial statements, books of account, and other financial data, if prepared or presented by: (i) one or more Officers or employees of the Company; or (ii) legal counsel, public accountants, or other persons that he, she, or it reasonably believes have professional or expert competence.
- (b) The Managers are to perform his, her, or their duties on behalf of the Company in a manner he, she, or it reasonably believes to be in or not opposed to the best interests of the Company, and with the care that an ordinarily prudent person in a similar position would use under the circumstances.
- (c) Neither the Managers, nor any trustee, director, Manager, or officer of the Managers is to be liable for damages to the Company or any Member with respect to claims relating to his, her, or its conduct for or on behalf of the Company, except that any of the foregoing persons is to be liable to the Company for damages to the extent that it is proved by clear and convincing evidence (i) that his, her, or its conduct was not taken (A) in good faith, (B) in a manner reasonably believed to be in or not opposed to the best interests of the Company, or (C) with the care that an ordinarily prudent person in a like position would use under similar circumstances; or (ii) with respect to any criminal action, proceeding, or investigation, he, she, or it had no reasonable cause to believe his, her, or its conduct was unlawful.
- (d) The Company shall indemnify any person who was or is a party defendant or is threatened to be made a party defendant, pending or completed action, suit or proceeding, whether civil, criminal, administrative, or investigative (other than an action by or in the right of the Company) by reason of the fact that he is or was a Member of the Company, Manager, employee or agent of the Company, or is or was serving at the request of the Company, against expenses (including reasonable and necessarily incurred attorney's fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if the Members determine that he, she or it acted in good faith and in a manner reasonably believed to be in or not opposed to the best interest of the Company, and with respect

to any criminal action proceeding, has no reasonable cause to believe his/her/its conduct was unlawful. The termination of any action, suit, or proceeding by judgment, order, settlement, conviction, or upon a plea of "nolo Contendere" or its equivalent shall not in itself create a presumption that the person did or did not act in good faith and in a manner which he reasonably believed to be in the best interest of the Company, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his/her/its conduct was lawful.

ARTICLE 7. POWERS AND DUTIES OF AND LIMITATIONS ON THE MEMBERS

- 7.1 RIGHTS OF THE MEMBERS. Each Member is entitled:
- (i) to receive the financial statements and tax reporting information referred to at Section 6.3(e);
- (ii) to have such additional rights as are elsewhere provided in this Agreement or by mandatory requirements of applicable law, including the rights under 6.2(s) as to the Company's real estate.
- 7.2 LIMITATIONS ON THE RIGHTS OF THE MEMBERS. Subject to any mandatory requirements of applicable law, no Member (in his, her, or its capacity as a Member) has the right to take any part whatsoever in the management and control of the ordinary business of the Company, sign for or bind the Company, compel a sale or appraisal of Company assets, or sell or assign its Interest in the Company except as provided in this Agreement.
- 7.3 LIMITED LIABILITY OF THE MEMBERS. Except for contributions specifically required under Section 3.2 of this Agreement, the Members (solely in their capacity as Members) have no obligation to contribute to the Company and no liability for any Company obligations. Any liability to return distributions from the Company is limited to mandatory requirements of the Act or of any other applicable law.

ARTICLE 8. TRANSFERS OF INTERESTS

- 8.1 GENERAL RESTRICTION. No Member is to make a Transfer of all or part of his, her, or its Interest or any interest therein, except as set forth in this Agreement. The Company is not to recognize any Transfer of an Interest in the Company otherwise than in accordance with the terms and provisions of this Agreement and the Bylaws.
- 8.2 RESTRICTED INTERESTS. No Member is to make any Transfer or any attempted Transfer of any Interest, or of any portion of, or any interest in, his, her, or its Interest except in accord with this Operating Agreement, see 3.1 Original Members.
- 8.3 GENERAL TRANSFER PROVISIONS. Transfers that have received the consent required by this Operating Agreement are subject to the following:

- (a) No portion of or interest in an Interest may be the subject of a Transfer without assurances to the Company that are satisfactory to the Company/Members/Managers that the proposed Transfer does not violate any law applicable to the Company/Members/Managers.
- (b) The transferee will, for the express benefit of the Company/Members/Managers, agree to be bound by all of the terms of this Agreement and make such representations and warranties as the Manager reasonably request.
- (c) If the Company/Members/Managers determines that a proposed Transfer would, alone or in conjunction with one or more other Transfers, terminate the partnership that is the Company for federal income tax purposes, the proposed Transfer can be delayed until the earliest time, as determined by the Company/Members/Managers that the Transfer may occur without causing a termination of the Company for federal income tax purposes. If at any time more than one Transfer is being delayed under this paragraph (d), the Transfers are to be made in the order in which the Company/Members/Managers received notice of the proposed Transfer.
- (d) If a Transfer or attempted Transfer causes a termination of the partnership that is the Company for federal income tax purposes, the Member making the Transfer or attempted Transfer is to be liable to the Company and each of the other Members for any taxes, fines, penalties, damages, or losses which may be due as a result of the termination, including, without limitation, costs of enforcement of the Company's power to void or otherwise prohibit the Transfer or attempted transfer.
- 8.4 SUBSTITUTED MEMBERS; ASSIGNEES. Upon any Transfer of a Member's Interest in compliance with this Operating Agreement, the transferee is to be admitted as a Member unless the instruments of Transfer indicate that the transferee is not to be admitted as a Member but is to be a mere assignee. The Interest that was the subject of the Transfer to an assignee remains subject to all of the restrictions of this Agreement, but the transferee has none of the powers or rights of a Member except to make a Transfer in accordance with this Operating Agreement.
- 8.5 UNAUTHORIZED TRANSFERS VOID. Any Transfer not made in compliance with this Article 8 is void and of no effect.

ARTICLE 9. DISSOLUTION OF THE COMPANY AND DISTRIBUTIONS UPON DISSOLUTION

- 9.1 DISSOLUTION. The Company is dissolved upon the occurrence of any of the following events, whether or not the event would cause a dissolution under the Act:
 - (a) The Bankruptcy of any Member:

- (b) A Transfer or attempted Transfer of an Interest;
- (c) The dissolution followed by the winding-up or liquidation of any Member;
- (d) A unanimous Member Vote in favor of dissolution of the Company; or
- (e) The entry of a decree of judicial dissolution; or
- (f) The death of a member.
- 9.2 NO WITHDRAWAL. No Member has any right to withdraw from the Company. Except as specifically stated in Section 9.1, no event that would constitute withdrawal of a Member under the Act constitutes a withdrawal under this Agreement or causes a dissolution of the Company.
- 9.3 ELECTION TO CONTINUE THE COMPANY. Upon an event of dissolution described in Section 9.1, the Company is <u>not</u> to be dissolved, wound up, and liquidated pursuant to Section 9.4, unless the Managers, within 90 days after the event, elect <u>not</u> to continue the Company. If the Managers elect to continue the Company, the continuing Company will operate and carry on the business of the Company under this Agreement. The continuing Company succeeds to all rights and assets of the Company and by this Agreement (and without the need for any further act or instrument) assumes the Company's liabilities.
 - 9.4 WINDING-UP AND LIQUIDATION OF THE COMPANY.
 - (a) Upon an event of dissolution described in Section 9.1, the Managers will (i) deliver to the Secretary of State of Ohio for filing a certificate of dissolution in accordance with the Act, and (ii) diligently proceed to wind up the affairs of the Company, liquidate its assets, and distribute the assets in accordance with this Agreement. During the time prior to liquidation, the Company is continued as a continuing limited liability Company bound by the terms of this Agreement, the continuing limited liability company succeeds to all Company assets and liabilities, the business of the Company is continued, and the Managers continues to have all rights and powers granted by this Agreement and the right to do all acts authorized by law for the purpose of continuing the business to maximize its value during the period that the Managers are winding up the affairs of the Company.
 - (b) In the event of liquidation of the Company, the Managers are to take the following steps:
 - (i) first, dispose of all Company assets at the best price obtainable therefor;
 - (ii) second, apply Company property to the payment of the debts and liabilities of the Company, the expenses of liquidation and the establishment of any reserves

deemed necessary by the Managers;

- (iii) third, repay any loans and advances (other than capital contributions) by Members and all accrued interest thereon; and
- (iv) fourth, distribute any remaining Company assets to the Members in accordance with their positive Capital Account balances as determined pursuant to Section 4.1.

If any reserves are established in connection with the foregoing, the Managers may pay over the amounts reserved to an escrow agent to be held by it for the purposes of disbursing the reserves in payment of any contingencies which may arise and, at the expiration of any period as the Managers consider advisable, for distribution of the balance of the funds in the same manner and with the same priorities as are provided in clause 9.4(b)(iv). The Members are to look solely to the assets of the Company for the return of their capital contributions.

- 9.5 TIME FOR WINDING-UP. Unless a shorter period is required to avoid registration of the Company under the Investment Company Act, a reasonable time, up to 3 years, is to be allowed for the orderly liquidation of assets of the Company and the discharge of liabilities to creditors so as to enable the Managers to minimize the normal losses attendant upon a liquidation.
- 9.6 FINAL ACCOUNTING. Each of the Members is to be furnished with a statement setting forth the assets and liabilities, if any, of the Company as of the date of the complete liquidation which is to be audited and certified to by the Company's independent public accountants. Upon the compliance by the Managers with the distribution provisions of this Agreement, the Members cease to be members and the Company ceases to exist.

ARTICLE 10. AMENDMENT OF AGREEMENT

- 10.1 AMENDMENT BY MANAGERS. Except as otherwise specifically provided in this Agreement, the Managers can adopt an amendment to this Agreement or to the Bylaws to do any one or more of the following:
 - (a) to implement or effectuate the provisions of any part of this Agreement or the Bylaws or to continue the Company for the term provided herein under the laws of the State of Ohio and of any state or jurisdiction in which it does business;
 - (b) to take any action, on the advice of counsel to the Company, as may be necessary or appropriate to satisfy then current requirements of the Code with respect to partnerships or limited liability companies that have been structured to be classified as partnerships under the Code or any other applicable law or regulation; or
 - (c) to cure any ambiguity, defect, or inconsistency.

All Members are to be furnished with a copy of the amendment prior to its adoption. No amendment that is proposed to become effective under this Section 10.1 is effective without approval if Members holding more than 50% of the issued or outstanding Membership Interests deliver to the Company within ten calendar days following delivery of the amendment to the Members their written objection to the amendment, in which case the propriety of the Amendment will be determined by Arbitration under the Rules of the American Arbitration Association.

ARTICLE 11. MISCELLANEOUS PROVISIONS

- 11.1 NOTICES. All notices to the Company are to be sent registered or certified mail, return receipt requested, addressed to the Managers of the Company at the Company's principal place of business. All notices to a Member are to be sent addressed to such Member at the address as may be specified by the Member from time to time in a notice to the Company. All notices are given or served 5 days after deposit in the United States mail, postage prepaid, properly addressed and return receipt requested.
- 11.2 WAIVER. Each of the Members hereby irrevocably waives any and all rights, duties, obligations, and benefits with respect to any action for partition of Company property or to compel any sale or appraisal thereof or any deceased Member's interest therein. Further, all rights, duties, benefits and obligations including inventory and appraisal of the Company assets or sale of a deceased Member's interest therein, provision for which is made in the laws of Ohio, or on account of the operation of any other rule or law of any other jurisdiction to compel any sale or appraisal of Company assets or sale or appraisal of a deceased Member's interest therein, are hereby waived and dispensed with and the Interest of a deceased Member is subject to the provisions of this Agreement.
- 11.3 NOTICE OF TAX EXAMINATIONS. Any Member receiving advice that the Service intends to examine any income tax return of the Company is to promptly notify the Company, and the Company is to notify the other Members.
- 11.4 WHOLE AGREEMENT. This Agreement contains the entire understanding between the parties and supersedes any prior understanding and agreements between them respecting the within subject matter. There are no agreements, arrangements, or understandings, oral or written, between and among the parties hereto relating to the subject matter of this Agreement that are not set forth or expressly referred to herein.
- 11.5 GOVERNING LAW. This Agreement is governed and is to be construed in accordance with the laws of the State of Ohio without giving effect to its principles of conflicts of laws.
- 11.6 BINDING NATURE. Except as otherwise provided in this Agreement, this Agreement is binding upon and inures to the benefit of the Members and their successors,

personal representatives, heirs, devisees, guardians, and assigns.

- 11.7 INVALIDITY. In the event that any provision of this Agreement is held to be invalid, the validity of the remaining provisions of the Agreement is not in any way to be affected thereby.
- 11.8 COUNTERPARTS. This Agreement and any amendment may be executed in multiple counterparts, each of which is an original and all of which constitute one agreement or amendment, as the case may be, notwithstanding that all of the parties are not signatories to the original or the same counterpart, or that signature pages from different counterparts are combined. The signature of any party to any counterpart is a signature to and may be appended to any other counterpart.
- 11.9 CONSTRUCTION. The headings contained in this Agreement are for reference purposes only and do not affect the meaning or interpretation of this Agreement. All personal pronouns used in this Agreement, whether used in the masculine, feminine, or neuter gender, include all other genders; the singular includes the plural and vice versa. Unless otherwise specifically stated, references to Sections, Subsections, or Articles, refer to the Sections, Subsections, and Articles of this Agreement.

IN WITNESS WHEREOF, the undersigned have duly executed this Agreement as of the date first above written.

| Ву: | | |
|----------|--------------------|--|
| Name: | William John Petta | |
| Title: N | Aanager/Member | |