

HEPACO Project No. 7420039

**BENCH-SCALE TREATABILITY TESTING
FOR
REMOVAL ACTION CONTRACT
FORMER INDUSTRIAL METAL ALLOY SITE
WINSTON-SALEM, NORTH CAROLINA**

PREPARED FOR:

NK HOLDINGS, LLC

PREPARED BY:

HEPACO™

Serious experience for serious times.™

**HEPACO, Inc.
2711 Burch Drive
Charlotte, N.C. 28269**

September 26, 2007

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1.0 INTRODUCTORY SUMMARY

On September 11, 2007 HEPACO representative, Mr. James Kessler, visited the former Industrial Metal Alloy Site (IMACO) located at 20 E. Acadia Avenue, Winston-Salem, North Carolina to collect soil samples from the site. The soil samples were specifically taken in order to conduct a bench-scale stabilization treatability study for the effectiveness of utilizing Triple Superphosphate (0-45-0) fertilizer as a possible treatment chemical for the lead impacted soils located at the site.

2.0 SELECTION AND DESCRIPTION OF TEST SAMPLES

Upon review of previous testing and analysis that had been completed at the site, HEPACO collected soil samples from areas of the site that represented the highest lead content, the lowest lead content and the average lead content. The soil from these locations were collected with a shovel from 0 to 6 inches below grade and placed into one (1) 5-gallon plastic pail to produce one composite sample from the site. The soil sample was transported to HEPACO's warehouse located in Charlotte, North Carolina for bench-scale testing.

3.0 MIX DESIGNS

Based on past experience with lead stabilization projects, HEPACO chose to perform the bench-scale treatability study using triple superphosphate (0-45-0) fertilizer. A sample of triple superphosphate was collected from Weaver Fertilizer Company located in Winston-Salem, North Carolina to perform the bench-scale testing.

The soil was tested with three different doses of the triple superphosphate. Each mix design represents the ratio on a percent basis, of the weight of reagent compared to the weight of the triple superphosphate. The treatment mix is defined as the weight of reagent plus the weight of the soil sample. Therefore, each mix design represents:

$$\frac{(\text{reagent weight})}{(\text{reagent weight} + \text{soil weight})}$$

The treatability mix designs are shown in **Table 1** below. During testing, no water was added to the treatment mixes, nor were any of the samples kiln-dried.

Table 1 - IMACO Stabilization Treatability Mix Design Summary

| Soil Sample ID | Reagent Name | Mix Ratio (reagent dose/mix weight) | Reagent Dose (g) | Soil Weight (g) | Mix Weight (g) |
|----------------|-----------------------|-------------------------------------|------------------|-----------------|----------------|
| S1-1.5 | Triple Superphosphate | 1.6% | 10 | 606 | 616 |
| S2-3 | Triple Superphosphate | 3% | 20 | 640 | 660 |
| S3-4.5 | Triple Superphosphate | 4.5% | 26 | 546 | 572 |

4.0 TREATABILITY TESTING PROCEDURES

The soil sample was removed from the 5-gallon plastic pail and placed into a stainless steel pan. The soil was thoroughly mixed and pulverized by hand to form a homogenous soil sample. Rocks and debris larger than ½-inch in diameter were removed from the sample and discarded. The remaining sample was divided into 4 equal quadrants. Equal amounts of soil was collected from each quadrant for each sample and placed into four separate stainless steel pans. The soil samples were labeled CS-0, S1-1.5, S2-3 and S3-4.5. Once each sample was collected they were prepared using the following general procedures

- 1) Aluminum muffin pan was weighed using electronic scale
- 2) Soil material was added to aluminum muffin pan and reweighed using electronic scale.
- 3) Aluminum pan was weighed using electronic scale
- 4) Reagent was added to aluminum muffin pan and weighed using an electronic scale.
- 5) Reagent was added to the soil material and thoroughly mixed by hand (using nitrile gloves) to form each treatment mix.
- 6) The muffin pans containing each treatment mix was allowed to sit at room temperature for 72 hours to cure.

At the end of the 72-hour curing time, samples of the treatment mixes were collected including the control mix, and were sent to Pace Analytical Laboratories for TCLP analysis for RCRA metals.

5.0 TREATABILITY TEST RESULTS

The TCLP data for the three mixes and the control sample are summarized in **Table 2** below. The laboratory data for the treated mix analysis are provided in Attachment A.

As expected, all TCLP results for the RCRA metals except lead were below their respective regulatory limits. Lead was successfully stabilized in all three of the mix designs at 1.6%, 3% and 4.5%.

Table 2 – TCLP Results for the IMACO Site Treatability Mixes

| Soil Sample ID | Reagent Name | Mix Ratio (%) | Lead (mg/l) RL-5 | Arsenic (mg/l) RL-5 | Barium (mg/l) RL-100 | Cadmium (mg/l) RL-1 | Chromium (mg/l) RL-5 | Mercury (mg/l) RL-0.2 | Selenium (mg/l) RL-1 | Silver (mg/l) RL-5 |
|----------------|-----------------------|---------------|------------------|---------------------|----------------------|---------------------|----------------------|-----------------------|----------------------|--------------------|
| CS-0 | None (control) | NA | 327 | 0.027 | 0.40 | 0.093 | ND | ND | ND | 0.10 |
| S1-1.5 | Triple Superphosphate | 1.6% | 4.3 | 0.089 | 0.098 | 0.039 | ND | ND | ND | ND |
| S2-3 | Triple Superphosphate | 3% | 1.5 | 0.16 | 0.070 | 0.028 | ND | ND | ND | ND |
| S3-4.5 | Triple Superphosphate | 4.5% | 0.70 | 0.16 | 0.054 | 0.025 | ND | ND | ND | 0.041 |

RL – Regulatory Level

Bold Results Indicate Samples That Exceed The TCLP Regulatory Limit

6.0 CONCLUSION

Bench-scale treatability testing was conducted to assess whether the lead-impacted soil at the IMACO Site could be effectively stabilized to pass TCLP test utilizing triple superphosphate (0-45-0) fertilizer. The testing indicated that the lead and other metals can be stabilized utilizing the selected reagent. HEPACO intentionally collected a soil sample to perform the treatability test that would represent what the expected average TCLP lead concentrations would actually be once full-scale treatment activities would begin at the site. The highest TCLP lead concentration reported to date at the site has been 1,150 mg/l. The TCLP lead concentration in the control sample used in the bench-scale test was 327 mg/l. Based on actual field experience we believe the TCLP lead concentration of the control sample used in the bench-scale test is representative of the average TCLP lead concentration that can be expected at the site during full-scale stabilization activities.

Based on the information gained from the bench-scale test HEPACO is proposing to utilize triple superphosphate as the reagent chemical during full-scale stabilization activities at a mix ratio of 3% by weight. Each ton of soil would require 60 pounds of triple superphosphate (0-45-0) fertilizer, assuming the average TCLP concentrations in untreated soil that were identified in this study. Specific product information for triple superphosphate (0-45-0) is included as Attachment B.

ATTACHMENT A

Laboratory Data

September 21, 2007

Mr. James Kessler
HEPACO
2711 Burch Dr.
Charlotte, NC 28269

RE: Project: IMACO 7420039
Pace Project No.: 923792

Dear Mr. Kessler:

Enclosed are the analytical results for sample(s) received by the laboratory on September 18, 2007. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

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

Sincerely,



Kevin Godwin

kevin.godwin@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: IMACO 7420039
Pace Project No.: 923792

Charlotte Certification IDs

North Carolina Wastewater Certification Number: 12
North Carolina Field Services Certification Number: 5342
South Carolina Certification Number: 990060001
South Carolina Bioassay Certification Number: 990060003
Tennessee Certification Number: 04010

Virginia Certification Number: 00213
Florida/NELAP Certification Number: E87627
Kansas Certification Number: E-10364
Louisiana/LELAP Certification Number: 04034
North Carolina Drinking Water Certification Number: 37706

Asheville Certification IDs

Florida/NELAP Certification Number: E87648
Louisiana/LELAP Certification Number: 03095
New Jersey Certification Number: NC011
North Carolina Drinking Water Certification Number: 37712
North Carolina Wastewater Certification Number: 40
North Carolina Bioassay Certification Number: 9

Pennsylvania Certification Number: 68-03578
South Carolina Certification Number: 990300001
South Carolina Bioassay Certification Number: 990300002
Tennessee Certification Number: 2980
Virginia Certification Number: 00072

Eden Certification IDs

North Carolina Drinking Water Certification Number: 37738
Virginia Drinking Water Certification Number: 00424

North Carolina Wastewater Certification Number: 633

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SAMPLE SUMMARY

Project: IMACO 7420039
Pace Project No.: 923792

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-----------|-----------|--------|----------------|----------------|
| 923792001 | CS-0 | Solid | 09/11/07 15:15 | 09/18/07 08:55 |
| 923792002 | S1-1.5 | Solid | 09/17/07 16:30 | 09/18/07 08:55 |
| 923792003 | S2-3 | Solid | 09/17/07 16:35 | 09/18/07 08:55 |
| 923792004 | S3-4.5 | Solid | 09/17/07 16:40 | 09/18/07 08:55 |

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: IMACO 7420039
Pace Project No.: 923792

| Lab ID | Sample ID | Method | Analytes Reported |
|-----------|-----------|----------|-------------------|
| 923792001 | CS-0 | EPA 6010 | 7 |
| | | EPA 7470 | 1 |
| 923792002 | S1-1.5 | EPA 6010 | 7 |
| | | EPA 7470 | 1 |
| 923792003 | S2-3 | EPA 6010 | 7 |
| | | EPA 7470 | 1 |
| 923792004 | S3-4.5 | EPA 6010 | 7 |
| | | EPA 7470 | 1 |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IMACO 7420039

Pace Project No.: 923792

| Sample: CS-0 | | Lab ID: 923792001 | Collected: 09/11/07 15:15 | Received: 09/18/07 08:55 | Matrix: Solid | | | |
|---------------------------|---------|--|---------------------------|--------------------------|----------------|----------------|-----------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 6010 MET ICP, TCLP | | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | |
| Arsenic | 0.027 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 13:58 | 7440-38-2 | |
| Barium | 0.40 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 13:58 | 7440-39-3 | |
| Cadmium | 0.093 | mg/L | 0.0050 | 1 | 09/21/07 10:50 | 09/21/07 13:58 | 7440-43-9 | |
| Chromium | ND | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 13:58 | 7440-47-3 | |
| Lead | 327 | mg/L | 0.50 | 20 | 09/21/07 10:50 | 09/21/07 15:34 | 7439-92-1 | |
| Selenium | ND | mg/L | 0.050 | 1 | 09/21/07 10:50 | 09/21/07 13:58 | 7782-49-2 | |
| Silver | 0.10 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 13:58 | 7440-22-4 | |
| 7470 Mercury, TCLP | | Analytical Method: EPA 7470 Preparation Method: EPA 7470 | | | | | | |
| Mercury | ND | ug/L | 0.20 | 1 | 09/21/07 14:16 | 09/21/07 15:25 | 7439-97-6 | |

| Sample: S1-1.5 | | Lab ID: 923792002 | Collected: 09/17/07 16:30 | Received: 09/18/07 08:55 | Matrix: Solid | | | |
|---------------------------|---------|--|---------------------------|--------------------------|----------------|----------------|-----------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 6010 MET ICP, TCLP | | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | |
| Arsenic | 0.089 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7440-38-2 | |
| Barium | 0.098 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7440-39-3 | |
| Cadmium | 0.039 | mg/L | 0.0050 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7440-43-9 | |
| Chromium | ND | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7440-47-3 | |
| Lead | 4.3 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7439-92-1 | |
| Selenium | ND | mg/L | 0.050 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7782-49-2 | |
| Silver | ND | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:06 | 7440-22-4 | |
| 7470 Mercury, TCLP | | Analytical Method: EPA 7470 Preparation Method: EPA 7470 | | | | | | |
| Mercury | ND | ug/L | 0.20 | 1 | 09/21/07 14:16 | 09/21/07 15:30 | 7439-97-6 | |

| Sample: S2-3 | | Lab ID: 923792003 | Collected: 09/17/07 16:35 | Received: 09/18/07 08:55 | Matrix: Solid | | | |
|---------------------------|---------|--|---------------------------|--------------------------|----------------|----------------|-----------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 6010 MET ICP, TCLP | | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | |
| Arsenic | 0.16 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7440-38-2 | |
| Barium | 0.070 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7440-39-3 | |
| Cadmium | 0.028 | mg/L | 0.0050 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7440-43-9 | |
| Chromium | ND | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7440-47-3 | |
| Lead | 1.5 | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7439-92-1 | |
| Selenium | ND | mg/L | 0.050 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7782-49-2 | |
| Silver | ND | mg/L | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:14 | 7440-22-4 | |
| 7470 Mercury, TCLP | | Analytical Method: EPA 7470 Preparation Method: EPA 7470 | | | | | | |
| Mercury | ND | ug/L | 0.20 | 1 | 09/21/07 14:16 | 09/21/07 15:34 | 7439-97-6 | |

ANALYTICAL RESULTS

Project: IMACO 7420039

Pace Project No.: 923792

| Sample: S3-4.5 | Lab ID: 923792004 | Collected: 09/17/07 16:40 | Received: 09/18/07 08:55 | Matrix: Solid | | | | |
|---------------------------|-------------------|--|--------------------------|---------------|----------------|----------------|-----------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 6010 MET ICP, TCLP | | Analytical Method: EPA 6010 Preparation Method: EPA 3010 | | | | | | |
| Arsenic | 0.16 mg/L | | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7440-38-2 | |
| Barium | 0.054 mg/L | | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7440-39-3 | |
| Cadmium | 0.025 mg/L | | 0.0050 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7440-43-9 | |
| Chromium | ND mg/L | | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7440-47-3 | |
| Lead | 0.70 mg/L | | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7439-92-1 | |
| Selenium | ND mg/L | | 0.050 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7782-49-2 | |
| Silver | 0.041 mg/L | | 0.025 | 1 | 09/21/07 10:50 | 09/21/07 14:18 | 7440-22-4 | |
| 7470 Mercury, TCLP | | Analytical Method: EPA 7470 Preparation Method: EPA 7470 | | | | | | |
| Mercury | ND ug/L | | 0.20 | 1 | 09/21/07 14:16 | 09/21/07 15:37 | 7439-97-6 | |

QUALITY CONTROL DATA

Project: IMACO 7420039

Pace Project No.: 923792

QC Batch: MERP/1069 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
 Associated Lab Samples: 923792001, 923792002, 923792003, 923792004

METHOD BLANK: 18702

Associated Lab Samples: 923792001, 923792002, 923792003, 923792004

| Parameter | Units | Blank Result | Reporting Limit | Qualifiers |
|-----------|-------|--------------|-----------------|------------|
| Mercury | ug/L | ND | 0.20 | |

LABORATORY CONTROL SAMPLE: 18703

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Mercury | ug/L | 2.5 | 2.2 | 90 | 80-120 | |

MATRIX SPIKE SAMPLE: 18704

| Parameter | Units | 923792001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|------------------|-------------|-----------|----------|--------------|------------|
| Mercury | ug/L | ND | 2.5 | 2.5 | 98 | 75-125 | |

SAMPLE DUPLICATE: 18705

| Parameter | Units | 923792002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|-----------|-------|------------------|------------|-----|---------|------------|
| Mercury | ug/L | ND | .1J | 4 | 20 | |

QUALITY CONTROL DATA

Project: IMACO 7420039
Pace Project No.: 923792

QC Batch: MPRP/1204 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 923792001, 923792002, 923792003, 923792004

METHOD BLANK: 18725

Associated Lab Samples: 923792001, 923792002, 923792003, 923792004

| Parameter | Units | Blank Result | Reporting Limit | Qualifiers |
|-----------|-------|--------------|-----------------|------------|
| Arsenic | mg/L | ND | 0.025 | |
| Barium | mg/L | ND | 0.025 | |
| Cadmium | mg/L | ND | 0.0050 | |
| Chromium | mg/L | ND | 0.025 | |
| Lead | mg/L | ND | 0.025 | |
| Selenium | mg/L | ND | 0.050 | |
| Silver | mg/L | ND | 0.025 | |

LABORATORY CONTROL SAMPLE: 18726

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|-------------|------------|-----------|--------------|------------|
| Arsenic | mg/L | 2.5 | 2.6 | 106 | 80-120 | |
| Barium | mg/L | 2.5 | 2.2 | 87 | 80-120 | |
| Cadmium | mg/L | 2.5 | 2.4 | 97 | 80-120 | |
| Chromium | mg/L | 2.5 | 2.4 | 97 | 80-120 | |
| Lead | mg/L | 2.5 | 2.3 | 93 | 80-120 | |
| Selenium | mg/L | 2.5 | 2.7 | 108 | 80-120 | |
| Silver | mg/L | 1.2 | 1.3 | 101 | 80-120 | |

MATRIX SPIKE SAMPLE: 18727

| Parameter | Units | 923792001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|-----------|-------|------------------|-------------|-----------|----------|--------------|------------|
| Arsenic | mg/L | 0.027 | 2.5 | 2.6 | 104 | 75-125 | |
| Barium | mg/L | 0.40 | 2.5 | 2.5 | 85 | 75-125 | |
| Cadmium | mg/L | 0.093 | 2.5 | 2.5 | 96 | 75-125 | |
| Chromium | mg/L | ND | 2.5 | 2.4 | 98 | 75-125 | |
| Lead | mg/L | 327 | 2.5 | 326 | -36 | 75-125 M3 | |
| Selenium | mg/L | ND | 2.5 | 2.6 | 105 | 75-125 | |
| Silver | mg/L | 0.10 | 1.2 | 1.3 | 96 | 75-125 | |

SAMPLE DUPLICATE: 18728

| Parameter | Units | 923792002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|-----------|-------|------------------|------------|-----|---------|------------|
| Arsenic | mg/L | 0.089 | 0.080 | 11 | 20 | |
| Barium | mg/L | 0.098 | 0.099 | 1 | 20 | |
| Cadmium | mg/L | 0.039 | 0.039 | .1 | 20 | |
| Chromium | mg/L | ND | .005J | 70 | 20 M3 | |
| Lead | mg/L | 4.3 | 4.3 | .6 | 20 | |

Date: 09/21/2007 05:17 PM

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IMACO 7420039
Pace Project No.: 923792

SAMPLE DUPLICATE: 18728

| Parameter | Units | 923792002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|-----------|-------|---------------------|---------------|-----|------------|------------|
| Selenium | mg/L | ND | .02J | 34 | 20 | M3 |
| Silver | mg/L | ND | .018J | 13 | 20 | |

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QUALIFIERS

Project: IMACO 7420039
Pace Project No.: 923792

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.

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.

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

ANALYTE QUALIFIERS

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Section B Required Project Information: Section C Invoice Information:

Company: **EMACO** Report To: **HEPARO, Inc** Attention: **HEPARO, Inc**
 Address: **20 E Acadia St.** Copy To: **HEPARO, Inc** Company Name: **NA James Kessler**
 Email To: **James Kessler @ heparo.com** Purchase Order No.: **NA 28227** Address: **2711 South Bog Street**
 Phone: **204 538 7871** Fax: **204 538 9224** Project Name: **EMACO** Reference: **NA 28227**
 Requested Due Date/TAT: **7/2 RA** Project Number: **7420039** Page Profile #: **1825-1**

REGULATORY AGENCY: NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location STATE: **NC**

| ITEM # | Section D Required Client Information | Matrix Codes MATRIX / CODE | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED | | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives | | | | | | Analysis Test | Requested Analysis Filtered (Y/N) | Residual Chlorine (Y/N) | Pace Project No./Lab ID. |
|--------|---------------------------------------|----------------------------|---------------------------------------|-----------------------------|-----------|------|---------------------------|-----------------|---------------|------|--------------------------------|------------------|-----|------|---------------|-----------------------------------|-------------------------|--------------------------|
| | | | | | DATE | TIME | | | DATE | TIME | H ₂ SO ₄ | HNO ₃ | HCl | NaOH | | | | |
| 1 | CS-0 | | SLC | G | 9/11/07 | 1500 | 9/11/07 | 1515 | 1 | ✓ | | | | | | | | 923792 |
| 2 | SI-1.5 | | SLC | G | 9/11/07 | 1520 | 9/11/07 | 1630 | 1 | ✓ | | | | | | | | 923792 |
| 3 | SI-3 | | SLC | G | 9/11/07 | 1525 | 9/11/07 | 1635 | 1 | ✓ | | | | | | | | 923792 |
| 4 | SI-4.5 | | SLC | G | 9/11/07 | 1530 | 9/11/07 | 1640 | 1 | ✓ | | | | | | | | 923792 |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | |

ADDITIONAL COMMENTS: **Relinquished by / Affiliation** **182907 8:00 J Moore**

RELIQUISHED BY / AFFILIATION: **182907 8:00 J Moore**

ACCEPTED BY / AFFILIATION: **9118 855 Ble W U**

DATE: **9/17/07**

DATE Signed (MM/DD/YY): **9/17/07**

SAMPLER NAME AND SIGNATURE: **James B Kessler**

PRINT Name of SAMPLER: **James B Kessler**

SIGNATURE OF SAMPLER: **[Signature]**

Temp in °C: _____

Received on Ice (Y/N): _____

Custody Sealed Cooler (Y/N): _____

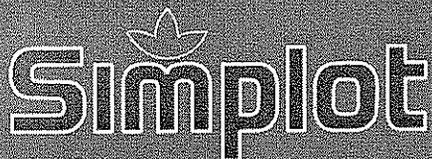
Samples Intact (Y/N): _____

Important Note: Re-sampling this form may create additional charges. MUST be filled out accurately.

ORIGINAL

ATTACHMENT B

Product Information for Triple Superphosphate (0-45-0)



TRIPLE SUPERPHOSPHATE 0-45-0

GUARANTEED ANALYSIS

Available Phosphate (P_2O_5) 45.0%
Calcium (Ca) 15.5%

Derived from Monocalcium Phosphate and Dicalcium Phosphate.

Warning: This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, requires notification of potential exposure to substances identified by the State of California as causing cancer, birth defects or other reproductive harm.

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.regulatory-info-jr.com>

PHYSICAL CHARACTERISTICS

| | | |
|-------------------------------|-------------------------|--|
| Lbs. of Nutrients/Ton: | Phosphate (P_2O_5) | 900 |
| | Calcium (Ca) | 340 |
| | Magnesium (Mg) | 12 |
| | Sulfur (S) | <u>16</u> |
| | Combined Nutrient Total | 1268 |
| Angle of Repose: | | 30° |
| Bulk Density: | | 59.4 lbs. per cubic foot (poured) 62.7 lbs. per cubic foot (packed) |
| pH (20% solution): | | 3.1 |
| Solubility in Water: | | 90% (% of total P_2O_5) |
| Granule Size: | | 87% passes through a 4.00mm (5 Tyler) and is retained by a 2.00mm (9 Tyler) screen. 100% retained by a 1.18mm (14 Tyler) screen. Average granule size 2.37mm. |

USES

1. Highly effective in eliminating phosphorus deficiencies in all crops, under all soil conditions. It is uniformly sized and blends well with most fertilizers. It is a preferred source of P_2O_5 in high analysis bulk blends.
2. Most effective when applied preplant in bands or broadcast incorporated to alfalfa and other legumes. However, it can be applied effectively as a topdressing on established stands anytime during the year that soil and weather conditions permit. For annual crops it is most effective when tilled in prior to planting.
3. For specific crop recommendations, see your local distributor.

ADVANTAGES

1. Its high concentration of P_2O_5 in uniform, free-flowing granules assures even applications to the field. It stores exceptionally well.

SAFETY

Triple Superphosphate-Simplot 0-45-0. Slight abrasion may result from eye contact or prolonged skin contact. Not generally considered toxic. Nonflammable. 0-45-0 is not regulated by DOT.

Material Safety Data Sheet
J. R. Simplot Company
AgriBusiness

Trade Name: Triple Superphosphate
Registration No: None

M12030

SECTION 1

CHEMICAL PRODUCT AND COMPANY INFORMATION

| | | | |
|------------------------------------|---|-----------------------|-------------------------------|
| Manufacturer or Formulator: | J.R. Simplot Company P.O. Box 70013 Boise, ID 83707 | Product Name: | Triple Superphosphate |
| Emergency Phone - Chemtrec: | 1-800-424-9300 | Common Name: | 0-45-0 |
| | | Chemical Type: | Inorganic Chemical Fertilizer |

SECTION 2

COMPOSITION INFORMATION

| Chemical Name and Synonyms | C.A.S. No. | Chemical Formula | WT% Hazardous | TLV | PEL |
|--|------------|---|----------------------|------------------------------------|------------------------------------|
| None listed | | | | | |
| This is a homogeneous granular product derived from: | | | Non-Hazardous | | |
| | | | 100% | | |
| Mono-calcium Phosphate | 7758-23-8 | Ca ₂ H ₃ O ₄ P | | 10 mg/m ³ Nuisance Dust | 15 mg/m ³ Nuisance Dust |
| Mono-dicalcium Phosphate | N/A | N/A | | Not listed | Not available |

SECTION 3

HAZARDS IDENTIFICATION

Ingestion: Minimal hazard under normal conditions and use. Ingestion of large quantities may cause gastrointestinal discomfort, vomiting, weakness or other medically related problems.

Inhalation: Dusty conditions may cause mechanical aggravation to respiratory mucous membranes.

Eye Contact: Dust from this product may cause particulate discomfort to eyes.

Skin Absorption: Not normally absorbed through the skin.

Skin Contact: Slight dermal abrasion is possible with prolonged contact, especially around cuffs and collars.

Effects of Overdose: Ingestion of large doses may cause diarrhea, nausea, abdominal cramps or formation of methemoglobinemia. Seek medical attention.

SECTION 4

FIRST AID MEASURES

Ingestion: If large amount is ingested, give 2-3 glasses of water and induce vomiting. Seek medical attention.

Inhalation: Remove to fresh air. Seek medical attention if condition persists.

Eyes: Flush eyes with running water for at least 15 minutes. Seek medical attention if condition persists.

Skin: Wash with soap and water. Seek medical attention if condition persists.

Notes to Physician: Consult standard literature. Treatment based on the sound judgment of the physician and the individual reactions.

SECTION 5

FIRE FIGHTING MEASURES

Extinguishing Media: Use media suitable to extinguish source of fire.

Special Fire Fighting Procedures: Product is not combustible.

Unusual Fire and Explosion Hazards: During extremely high temperature fire conditions, the product may reach melting point and decompose to release NH₃, SO_x, PO_x or CN.

SECTION 6

ACCIDENTAL RELEASE MEASURES

Environmental Precautions: Keep out of water supplies, lakes, ponds, streams and rivers. This product is a fertilizer and may promote algae growth.

Steps to be taken in case material is released or spilled:
Keep from entering waterways. Sweep up material and place in suitable container for use as a fertilizer or for disposal.

SECTION 7

HANDLING AND STORAGE

Precautions to be taken in handling and storing:
Store in a cool, dry area. Prevent spillage and separate from strong oxidizers. Use normal safety procedures and good personal hygiene. Keep out of the reach of children.

SECTION 8

EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation Protection: Adequate ventilation.

Respiratory Protection: Approved dust respirator when necessary.

Protective Clothing: Normal clean work clothing.

Eye Protection: In dusty conditions, safety glasses with side shields or goggles may be necessary.

Trade Name: Triple Superphosphate
Registration No: None

M12030

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------|--|--------------------------|----------------|
| Boiling Point: | Not applicable | Solubility in Water: | Soluble |
| Density: | 68 lbs/ft ³ | % Volatiles (by volume): | Not applicable |
| Flashpoint: | Non-flammable | Vapor Pressure, mm Hg: | Not applicable |
| pH: | 1 g to 10 g H ₂ O: 2.3-3 | Reaction with Water: | None |
| Appearance: | Off-white granules. | | |
| Extinguishing Media: | Use media suitable to extinguish source of fire. | | |

SECTION 10

STABILITY AND REACTIVITY

Stability (Normal Conditions): Stable
Conditions to Avoid: Extremely high temperatures.
Incompatibility (Material to Avoid): Strong oxidizing agents. Prolonged contact may cause oxidation of unprotected metals.
Hazardous Decomposition Products: During extremely high temperature fire conditions, the product may reach melting point and decompose to release NH₃, SO_x, PO_x or CN.
Hazardous Polymerization: Will not occur

SECTION 11

TOXICOLOGY INFORMATION

Acute Oral Toxicity: LD₅₀ (rat) is 5,000-6,000 mg/kg (ppm); not acutely toxic by oral exposure. (TFI Product Testing Results, OECD Guideline 425)
Acute Aquatic Toxicity: Fish 96-hour LC₅₀ is 1,560-5,900 mg/L (ppm); daphnia 24-hour EC₅₀: 1,790-1,825 mg/L; algae no toxicity up to 87.6 mg/L. Non-toxic to aquatic organisms. (TFI Product Testing Results)

SECTION 12

ECOLOGICAL INFORMATION

None listed.

SECTION 13

DISPOSAL CONSIDERATIONS

Waste Disposal Procedures: Pick up with a shovel and broom and use as a fertilizer by applying to soil using good agricultural and soil management.

SECTION 14

TRANSPORT INFORMATION

| | | | |
|---------------------------|----------------------|----------------|-----------|
| Shipping name: | Not regulated by DOT | C.A.S. Number: | 7758-23-8 |
| Hazard Class: | None | D.O.T. Number: | None |
| Reportable Quantity (RQ): | None | Haz Waste No: | None |
| Labels Required: | None | EPA Regist No: | None |
| Placard: | None | | |

SECTION 15

REGULATORY INFORMATION

Carcinogenicity: by IARC?: Yes () No (X) by NTP?: Yes () No (X)

Not on the 302 list of SARA reportable quantities.

SECTION 16

OTHER INFORMATION

| | | | | |
|----------------------------|----------------|------------------|-------|-------|
| Flash Point (Test Method): | Non-flammable | Flammable Limits | LOWER | UPPER |
| Autoignition Temperature: | Not applicable | (% BY VOLUME) | N/A | N/A |

MSDS Version Number: 7

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. **NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED.** It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

Reviewed by: The Environmental Health & Safety Department
March 2007 (208) 389-7394