

*KELZYME<sup>®</sup> is ideally suited for general agricultural uses, landscaping & gardening.*

# **KELZYME<sup>®</sup>**

Fossilized Sea Kelp

**MICRONIZED FOR IRRIGATION SYSTEM  
and HYDROPONIC APPLICATIONS**

**100% Natural Fertilizer  
For Organic Use**

Net Weight: 50 LBS (22.68 KG)  
Net Volume: 0.3 Cu Ft

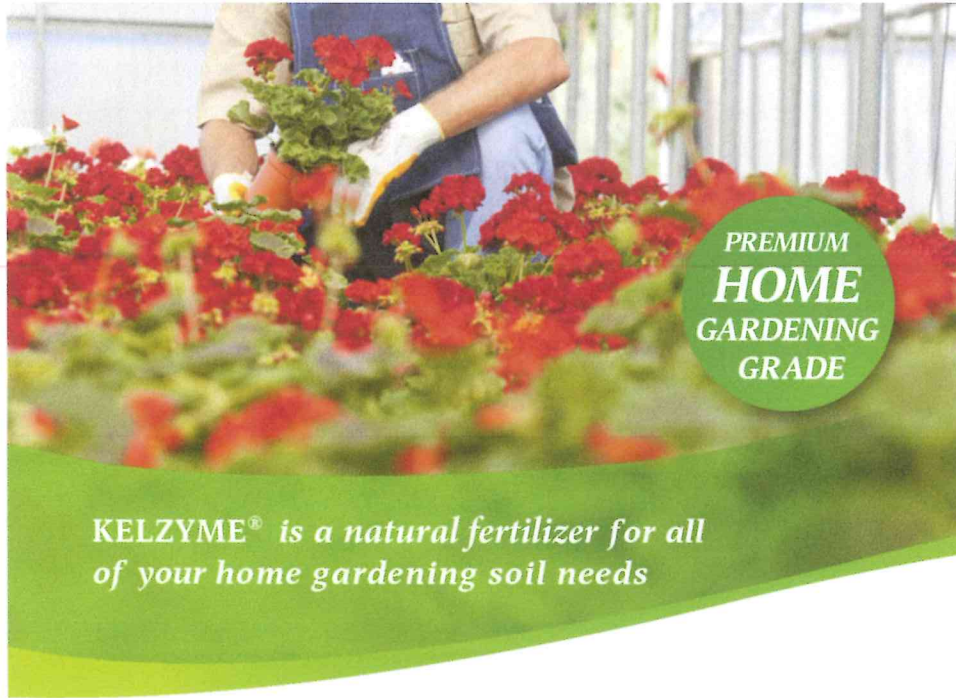
*Manure  
Free*

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# PRODUCTS

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# KELZYME®

Fossilized Sea Kelp

100% NATURAL  
FERTILIZER

Net Weight 10 LBS  
0.061 CUBIC FEET

*Manure  
Free*

*For Organic Use*



Derived from  
**Fossilized  
Sea Kelp**

**SOIL  
FERTILIZER**

### **BENEFITS**

Promotes robust soils for vineyards, orchards, row crops, vegetables, flowers, shrubs and trees  
Contains calcium which supports growth of calcium deficient plants and helps increase yields  
Aids calcium deficient soil for vineyards, orchards, and row crops

### **RECOMMENDATIONS FOR USE**

Application rates are set forth below but may vary by soil type and condition. For compacted soil double the initial application rate. May be applied by hand, machine or broadcast spreader. Newly Established Turf and Landscape: Spread 15-30 LBS. per 1000 SQ. FT.  
Established Turf and Soil: Apply 7-15 LBS. per 1000 SQ. FT. Continue to reapply every three to six months throughout the growing season, as needed.  
Field Crops: Apply 7-14 LBS. per 1,000 SQ FT. Continue to reapply to the soil as needed.  
Row Crop: root vegetables, brassicas, lettuce) : Apply 10-20 LBS. per 1,000 SQ FT. Continue to reapply no more than once a year to the soil.  
Trees, Shrubs & Flowers: Apply 1 to 2 cups to the soil near base of small plants, trees and shrubs. Increase application for larger plants. Use up to 20 LBS. per 1000 SQ. FT. Apply twice yearly in the spring and the fall.  
Vineyards: Apply 1 to 2 cups to the soil near the vine trunk/root area. Use up to 12-18 LBS. per 1,000 SQ. FT.  
For maximum results, water thoroughly after each application.

**Guaranteed Analysis: Calcium (CaCO<sub>3</sub>).....35%**

For Heavy Metals Statement Please Visit <http://www.aapfco.org/metals.htm>

**NOTICE:** Not for Human Consumption. Keep Out of Reach of Children

Buyer assumes all responsibility for safe use of this product in accordance with directions

*Store in a cool, dry place. Keep tightly sealed*

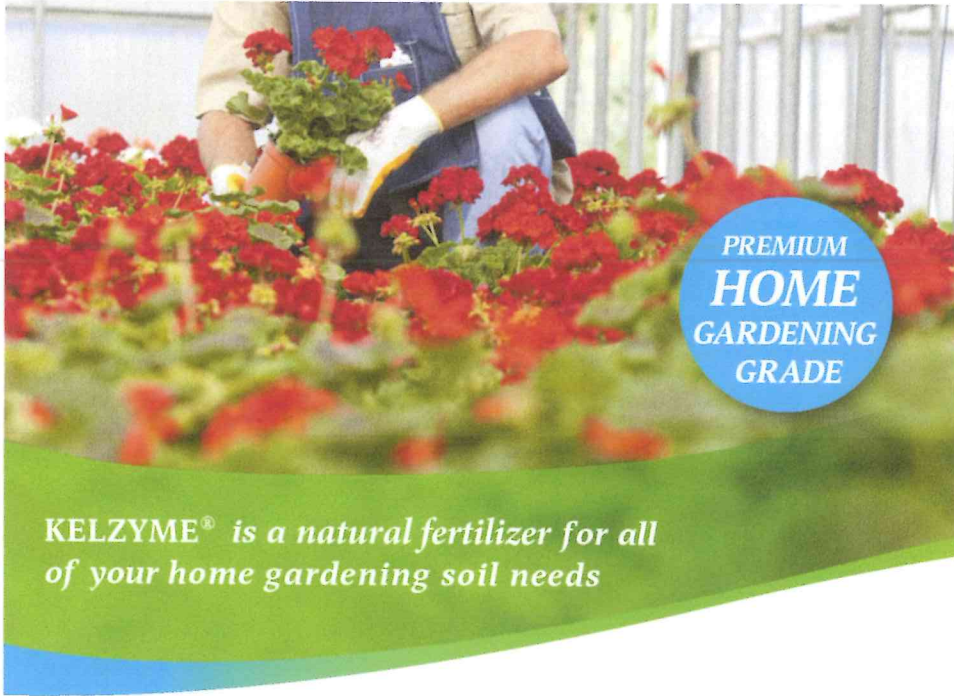
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*KELZYME® is a natural fertilizer for all of your home gardening soil needs*

# KELZYME®

Fossilized Sea Kelp

MICRONIZED FOR IRRIGATION SYSTEMS,  
AND HYDROPONIC APPLICATIONS

100% NATURAL  
FERTILIZER

Net Weight 10 LBS (4.54 KG)  
0.061 CUBIC FEET

*Manure  
Free*

*For Organic Use*



Derived from  
**Fossilized  
Sea Kelp**

**MICRONIZED  
FERTILIZER**

### **BENEFITS**

Promotes robust soils for vineyards, orchards, row crops, vegetables, flowers, shrubs and trees  
Contains calcium which supports growth of calcium deficient plants and helps increase yields  
Aids calcium deficient soil for vineyards, orchards, and row crops  
Water soluble, easy to apply and non-toxic

### **RECOMMENDATIONS FOR USE**

**Mixing Instructions:** Mix with water at a rate of 8-16 ounces per gallon of water

**Soil, Turfs and Lawn Application:** Apply in irrigation water until the ground is saturated.  
**Continue applications through the growing season as needed**  
**Hydroponic Application:**  
**Nursery & Container:** Add to sprayer (hand, backpack or power unit) and apply  
Application rates may vary by hydroponic systems

*Store in a cool, dry place. Keep tightly sealed*

**Caution:** Particle size may not be appropriate for all drip system components.

**GUARANTEED ANALYSIS:** Calcium (CaCo3).....35%

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**COMMERCIAL  
GRADE**

*KELZYME® is ideally suited for general  
agricultural uses, landscaping  
& gardening.*

# **KELZYME®**

Fossilized Sea Kelp

**100% Natural Fertilizer**

**For Organic Use**

**Net Weight 50 LBS (22.68 KG)**

**0.3 CUBIC FEET**

*Manure  
Free*





Derived from  
**Fossilized  
Sea Kelp**

**NATURAL SOIL  
FERTILIZER**

### AGRICULTURAL BENEFITS

- Promotes robust soils for vineyards, orchards, row crops, vegetables, flowers, shrubs and trees
- Contains calcium which supports growth of calcium deficient plants and helps increase yields
- Aids calcium deficient soil for vineyards, orchards, and row crops
- Water soluble, easy to apply and non-toxic

### RECOMMENDATIONS FOR USE

Application rates are set forth below but may vary by soil type and condition. For compacted soil double the initial application rate. May be applied by hand, machine or broadcast spreader.

**Newly Established Turf and Landscape:** Spread 15-30 LBS. per 1000 SQ. FT.

**Established Turf and Soil:** Apply 7-15 LBS. per 1000 SQ. FT. Continue to reapply every three to six months throughout the growing season, as needed.

**Field Crops:** Apply 7-14 LBS. per 1,000 SQ FT. Continue to reapply to the soil as needed.

**Row Crop:** root vegetables, brassicas, lettuce): Apply 10-20 LBS. per 1,000 SQ FT. Continue to reapply no more than once a year to the soil.

**Trees, Shrubs & Flowers:** Apply 1 to 2 cups to the soil near base of small plants, trees and shrubs. Increase application for larger plants. Use up to 20 LBS. per 1000 SQ. FT. Apply twice yearly in the spring and the fall.

**Vineyards:** Apply 1 to 2 cups to the soil near the vine trunk/root area. Use up to 12-18 LBS. per 1,000 SQ. FT.

For maximum results, water thoroughly after each application.

*Store in a cool, dry place. Keep tightly sealed.*

**Guaranteed Analysis: Calcium (CaCo3).....35%**

For Heavy Metals Statement Please Visit <http://www.aapfco.org/metals.htm>

**NOTICE: Not for Human Consumption. Keep Out of Reach of Children**  
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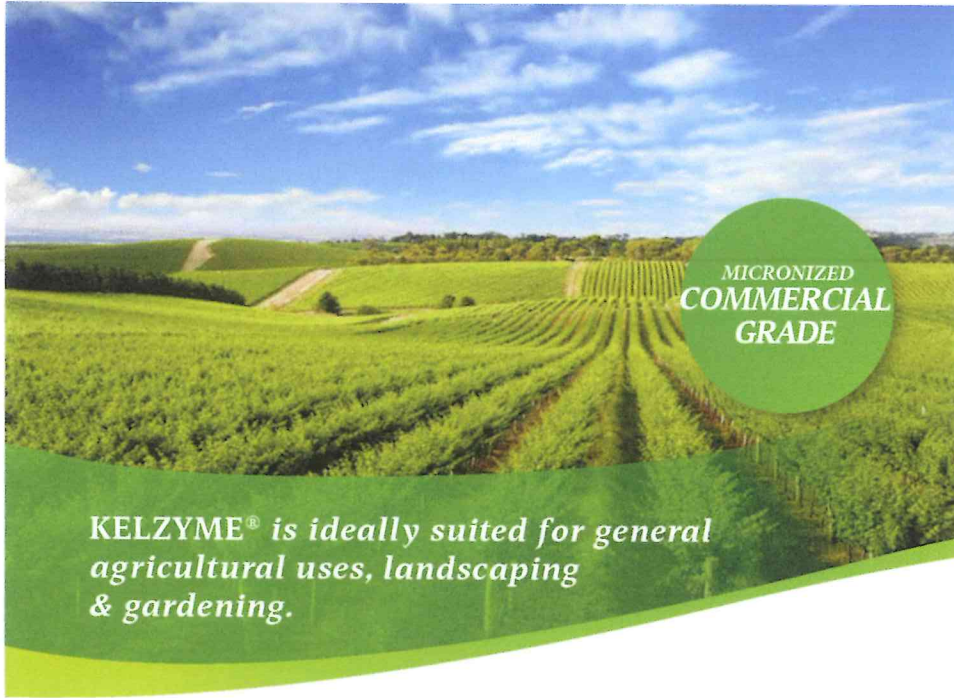
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and HYDROPONIC APPLICATIONS**

**100% Natural Fertilizer  
For Organic Use**

Net Weight 50 LBS (22.68 KG)

*Manure  
Free*



Derived from  
**Fossilized  
Sea Kelp**

**MICRONIZED NATURAL  
SOIL FERTILIZER**

### **AGRICULTURAL BENEFITS**

- Promotes robust soils for vineyards, orchards, row crops, vegetables, flowers, shrubs and trees
- Contains calcium which supports growth of calcium deficient plants and helps increase yields.
- Aids calcium deficient soil for vineyards, orchards and row crops
- Water soluble and easy to apply

### **RECOMMENDATIONS FOR USE**

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**Nursery & Container:** Add to sprayer (hand, backpack or power unit) and apply

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# KELZYME<sup>®</sup>

FOSSILIZED SEA KELP

**LIVESTOCK  
FEED SUPPLEMENT**

For all Classes of Livestock

**Net Weight 50 LBS (22.7 KGS)**

**0.3 CUBIC FEET**

*No Artificial  
or Chemical  
Additives*

*For Organic Use*



Derived from  
**Fossilized  
Sea Kelp**

**LIVESTOCK FEED  
SUPPLEMENT**

### LIVESTOCK BENEFITS

KELZYME® contains high levels of calcium and other vital trace minerals.  
High calcium content :

- Acts as a supplement to support the general health of livestock
- Supports growth
- Supports reproductive health

### FEED RATE

For best results add Kelzyme® at a ratio of 2% of feed ration dry weight.  
For best results gradually increase to 5% of the total daily ration dry weight in 60 days.

**Caution:** Kelzyme® feed additive is formulated to supplement the daily ration of your livestock and should never be used as a complete feed. Never exceed 5% of the feed mixture.

Store Kelzyme in a cool, dry place. Keep tightly sealed.  
Always follow the suggested feed rates and do not exceed recommended dosages.

### INGREDIENTS

Calcium Carbonate (CaCo<sub>3</sub>)

Not for Human Consumption Buyer assumes all liability for the safe use of this product in accordance with the directions listed

#### Guaranteed Analysis:

Calcium (min) 35% (max) 40%,  
Magnesium (min) 0.2%, Potassium (min) 0.009%, Iron (min) 1000 ppm,  
Manganese (min) 200 ppm,  
Copper 5 ppm (min), Zinc (min) 5 ppm

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# KELZYME<sup>®</sup>

FOSSILIZED SEA KELP

**POULTRY FEED  
SUPPLEMENT**

For all Classes of Poultry

NET WEIGHT 50 LBS (22.68 KG)  
0.3 CUBIC FEET

*For Organic Use*

*No Artificial  
or Chemical  
Additives*



Derived from  
**Fossilized  
Sea Kelp**

**POULTRY FEED  
SUPPLEMENT**

**POULTRY BENEFITS**

KELZYME® contains high levels of calcium and other vital trace minerals.  
High calcium content:

- Acts as a supplement to support the overall health of poultry
- Supports growth
- Supports reproductive health
- Supports consistent shell quality in eggs

**FEED RATE**

For best results add Kelzyme® at a ratio of 2% of feed ration dry weight. For best results gradually increase to 5% of the total daily ration dry weight in 60 days.

**Caution:** Kelzyme® feed additive is formulated to supplement the daily ration of your poultry and should never be used as a complete feed. Never exceed 5% of the feed mixture.

Store Kelzyme in a cool, dry place. Keep tightly sealed.  
Always follow the suggested feed rates and do not exceed recommended dosages.

**INGREDIENTS:**

Calcium Carbonate (CaCo3)

Not for Human Consumption Buyer assumes all liability for the safe use of this product in accordance with the directions listed

Guaranteed Analysis:  
Calcium (min) 35% (max) 40% ,  
Magnesium (min) 0.2%, Potassium (min) 0.009%, Iron (min) 1000ppm, Manganese (min) 200 ppm, Copper 5 ppm (min), Zinc (min) 5 ppm

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# CURRENT RESEARCH

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# KELZYME® RESEARCH & DEVELOPMENT CENTER LLC

1000 Highway 400, Mill City, Nevada 89418; Phone: (775) 302-2588 Fax: (775) 302-2530

**Memo:** Summary of Denele Laboratories Study for Sheep Trials

**From:** Sam Christensen; EVP of Product Development

The main benefit determined in the initial sheep trial, where Kelzyme was added to an already complete and balanced diet of high mineral and vitamin content, was an increase in mineral content in the blood serum mineral levels of the Kelzyme treated animals. This increase demonstrates an improvement in mineral content absorbed into the bloodstream by adding the Kelzyme supplement. Sodium, potassium, calcium, magnesium and phosphorus levels were found to be higher in the Kelzyme treated animals.

The increase in protein bypass found in the manure samples further indicates a decrease in dietary protein required to meet the same weight gain for animal growth. These results may be indicative of more efficient use of protein when using the Kelzyme supplement.

The lack of disease noted in the Kelzyme treated sheep is significant. The control groups suffered three cases of pink eye and one case of pneumonia. The Kelzyme treated animals remained healthy during this study.

# **The Effect of Kelzyme on Feedlot Lambs**

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**Conducted by Denele Research and Discovery:**

**Denele Labs**

**By**

**Joe Mullinax and Krista Graham**

# The Effect of Kelzyme on Feedlot Lambs

30 Lambs that were on a feedlot ration were randomly separated into three groups.

---

Group 1 – Treatment consisting of Kelzyme free choice and standardized feedlot diet.

Group 2 – Control standardized feedlot diet

Group 3 – Control standardized feedlot diet

Weights were taken on all sheep weekly after 12 hour removal from feed. At the conclusion of the 30 day trial blood serum samples were pulled and accumulative manure samples from each group were analyzed. Lambs were evaluated for health and a famacha score for parasitism. Carcass data dress out percent's were obtained for each group.

Weekly weights performed on platform scale + or - .2 calibrated weekly lambs fasted for 12 hours pre-weight. Feed efficiency determined by amount consumed and live weight increase.

### WEEKLY WEIGHT OF DATA

T1					TOTAL GAIN		FEED EFFICENCY
	WEEK 1	WEEK 2	WEEK 3	WEEK 4			
1	72	77	81	87	15		7.728 :1
2	81	86	92	99	18		6.440 :1
3	76	81	86	92	16		7.245 :1
4	79	82	86	92	13		8.917 :1
5	75	81	86	90	15		7.728 :1
6	73	76	81	85	12		9.660 :1
7	75	80	86	91	16		7.245 :1
8	80	83	87	89	9		12.880 :1
9	80	86	91	97	17		6.819 :1
10	79	83	86	91	12	<u>AVG DAILY GAIN</u>	9.660 :1
					AVG 14.30	0.42	AVG 8.432

C1					TOTAL GAIN		FEED EFFICENCY
	WEEK 1	WEEK 2	WEEK 3	WEEK 4			
1	72	71	75	80	8		14.490 :1
2	80	83	88	93	13		8.917 :1
3	73	75	77	80	7		16.560 :1
4	75	78	83	89	14		8.280 :1
5	79	86	91	96	17		6.819 :1
6	75	83	87	94	19		6.101 :1
7	0	0	0	0	0		0
8	76	83	87	93	17		6.819 :1
9	72	80	84	91	19		6.101 :1
10	81	83	89	92	11	<u>AVG DAILY GAIN</u>	10.538 :1
					AVG 13.89	0.41	AVG 9.403

C2					TOTAL GAIN		FEED EFFICENCY
	WEEK 1	WEEK 2	WEEK 3	WEEK 4			
1	83	91	97	99	16		7.245 :1
2	80	87	94	102	22		5.269 :1
3	75	79	86	91	16		7.245 :1
4	73	77	83	89	16		7.245 :1
5	73	76	78	82	9		12.880 :1
6	74	80	86	90	16		7.245 :1
7	79	82	87	91	12		9.660 :1
8	78	82	87	92	14		8.280 :1
9	72	76	77	83	11		10.538 :1
10	76	83	86	97	21	AVG DAILY GAIN	5.520 :1
					AVG 15.30	0.45	AVG 8.113

### SUMMARY OF WEIGHT DATA

	C1	C2	C1 + C2	T1
TG AVG	13.89	15.30	14.59	14.30
ADG	0.41	0.45	0.43	0.42
FEED E	9.403	8.113	8.758	8.432

### DRESS OUT %

T1	C1	C2
48.9	49	49.1

Intake average was 1.3 oz per head per day

Taken at conclusion of trial to determine internal parasitism

**FAMACHA SCORE**

	T1	C1	C2
1	3	4	1
2	3	2	3
3	1	4	1
4	3	3	3
5	2	1	2
6	3	2	3
7	4	0	4
8	3	2	4
9	2	4	4
10	4	4	2
AVG	2.80	2.89	2.70

Pulled at conclusion of 30 day trial

**LAMB BLOOD  
SERUM LEVELS**

	30 DAY ACCUMILITIVE LEVEL		
	CONTROL	T1	% OF CONTROL
NA	322.70	337.2	1.044
K	13.66	14.83	1.085
CA	17.6	18.83	1.069
MG	2.51	2.82	1.123
P	11.63	12.28	1.055

Protein bypass in manure for treatment could indicate increase in protein efficiency since all groups had the same level of protein intake.

## MANURE SUMMARY

	CONTROL AVG	T1	T1 % CA
pH	8.500	8.60	1.01%
Nitrogen %	0.680	1.02	1.50%
Phosphorus %	0.425	0.79	1.80%
Potassium %	1.395	2.57	1.80%
Sulfur %	0.175	0.32	1.80%
Calcium %	0.740	1.29	1.70%
Magnesium %	0.345	0.52	1.50%
Sodium %	0.135	0.17	1.20%
Boron PPM	14	18	1.20%
Zinc PPM	102	135	1.30%
Iron PPM	10700	8870	0.80%
Manganese PPM	182.5	193	1.00%
Copper PPM	62.5	47	0.70%
Moisture%	11.8	13.2	1.10%

## SUMMARY

**Growth:** Total gain for the control was higher 14.59 to 14.30. ADG statistically the same. Feed efficiency was slightly lower for the treated group. Dress out percent statistically the same.

**Health:** The control groups had significantly more health issues, pink eye and pneumonia. The control groups had 3 pink eye incidences and one pneumonia, with the treatment having zero health concerns. Parasitism indicated from the famacha score was the same.

**Blood Serum:** Blood serum levels were higher in the treated group. This is significant in the fact that the controls had a high level of minerals in the balanced ration pellets.

**Manure:** The manure from the treated ad-lib Kelzyme had significantly higher mineral content, pH was higher on the treated ad-lib.

## Further Investigation

The key positive of Kelzyme from the lamb feedlot trials is the mineral nutrition support to the animal. The increase in manure protein with relatively equal gain hints to protein utilization efficiency. Further research should be conducted focusing on simple bench trials to show rumen buffering capacity. I feel this could be a big area of potential with Kelzyme having less sodium than sodium bicarbonate. As for animal health there was an obvious benefit from the treatment with Kelzyme compared to the control with three pink eye and one pneumonia. This is going to be difficult to quantify past antidotal evidence but there is definitely a trend supporting the hypothesis.

---



# LAB RESULTS

---

# SOIL CONTROL LAB

42 HANGAR WAY  
WATSONVILLE  
CALIFORNIA  
95076  
USA

Account No.:  
4090164 01 8544

Tel: 831 724-5422  
FAX: 831 724-3188

Batch  
Sept. - Oct. 2014 4

CODE:  
Fert, Lime, HA Id  
[www.controllabs.com](http://www.controllabs.com)

Warren Warnick  
Kelzyme Research & Development Center, LLC  
1000 State Route 400  
Mill City NV 89418

Date Received: 09/04/14  
Sample Id.: Kelzyme 325 Mesh  
Sample id. Number 01 4090164

## Growing Media & Fertilizer Chemical Properties of Nutrients and Metals

ALL Results as-Received	Results	Units	MDL	Method
Total Nitrogen	0.02	percent	0.005	
Ammoniac nitrogen	0.02	percent	0.01	A.O.A.C. 920.03
Nitrate nitrogen	< 0.01	percent	0.0002	EPA 300.0
Soluble Org. nitrogen	< 0.01	percent	0.01	A.O.A.C. 959.03
non-Soluble Org. nitrogen	< 0.01	percent		Calc.
Soluble Phosphorus (as-P2O5)	ND	percent	0.00094	A.O.A.C. 977.01
Available Phosphorus (as-P2O5)	ND	percent	0.0013	A.O.A.C. 960.02
Total Potassium (as-K2O)	0.024	percent	0.001204	A.O.A.C. 949.01
Soluble Potash (as-K2O)	ND	percent	0.00301	A.O.A.C. 983.02 b

ALL Results as-Received	Results	MDL	Units	Method EPA (unless stated)	
Analyte				SW846	Instrumentation
Calcium (Ca)	37	0.00100	Percent	3050B	6020
Magnesium (Mg)	0.25	0.00100	Percent	3050B	6020
Sulfur (S)	ND	0.0013	Percent	A.O.A.C. 980.02	
Boron (B)	0.00092	0.00020	Percent	3050B	6020
Chlorine (Cl)	0.018	0.00200	Percent	EPA 300.0	
Sodium (Na)	0.017	0.00100	Percent	3050B	6020
Copper (Cu)	0.00040	0.000100	Percent	3050B	6020
Iron (Fe)	0.24	0.000100	Percent	3050B	6020
Manganese (Mn)	0.020	0.000020	Percent	3050B	6020
Molybdenum (Mo)	ND	0.000120	Percent	3050B	6020
Zinc (Zn)	0.00092	0.000020	Percent	3050B	6020

Arsenic (As)	21	0.30	mg/kg	3050B	6020
Cadmium (Cd)	< 0.01	0.010	mg/kg	3050B	6020
Cobalt (Co)	0.78	0.50	mg/kg	3050B	6020
Mercury (Hg)	< 0.001	0.0010	mg/kg	7470A	7470A
Nickel (Ni)	< 0.1	0.10	mg/kg	3050B	6020
Lead (Pb)	< 0.2	0.20	mg/kg	3050B	6020
Selenium (Se)	< 0.5	0.50	mg/kg	3050B	6020

Moisture 0.9 percent

mg/kg = ppm

# SOIL CONTROL LABS

42 HANGAR WAY  
WATSONVILLE  
CALIFORNIA  
95076  
USA

Account No.:  
4090164 01 8544

Tel: 831 724-5422  
FAX: 831 724-3188

Batch  
Sept. - Oct. 2014 4  
CODE:  
Fert, Lime, HA Id  
[www.controllabs.com](http://www.controllabs.com)

Warren Warnick  
Kelzyme Research & Development Center, LLC  
1000 State Route 400  
Mill City NV 89418

Date Received: 09/04/14  
Sample Id.: Kelzyme 325 Mesh  
Sample id. Number 01 4090164  
Date Reported: 19-Sep-2014

### Lime Quality Test

	As Received Dry Weight	
pH Value	9.49	NA units
Moisture	0.9	0.0 %
Acid insolubles	4.4	4.5 %
Calcium (Ca)	36.9	37.2 %
Calcium (as CaCO <sub>3</sub> )	92.2	93.0 % (calculated)
Magnesium (Mg)	25.3	25.6 %
Magnesium (as MgCO <sub>3</sub> )	87.9	88.7 % (calculated)
Neutralization Value (as CaCO <sub>3</sub> )	97.2	98.1 %
Lime Equivalent		
*Carbonates (as CaCO <sub>3</sub> )	94.7	95.6 %

Size Distribution	Mesh % Passing	
% Passing	10	100.0
	20	100.0
	40	100.0
	60	100.0
	100	100.0

0.99 Moisture Factor  
98.1 Calcium Carbonate Equivalent  
1.000 Fineness Value  
97.2 Oregon Lime score

1.03 X Lime Recommendations =  
amount of this liming material to apply.

\*Dolomite and Oxides do not produce the pressure required for the test used.  
\*\* Calcium is calculated as CaCO<sub>3</sub> and Magnesium is calculated as MgCO<sub>3</sub>. Based on the ratio of the two weights their sum is calculated to equal the Neutralizing value.

Analyst: Frank Shields  
*Frank Shields*

ANALYTICAL CHEMISTS  
and  
BACTERIOLOGISTS  
Approved by State of California

# SOIL CONTROL LAB



Account No.: 4090164 01 8544 Tel: 831 724-5422  
Batch Sept. - Oct. 2014 4 FAX: 831 724-3188  
CODE:  
Fert, Lime, HA Id  
[www.controllabs.com](http://www.controllabs.com)

Warren Warnick  
Kelzyme Research & Development Center, LLC  
1000 State Route 400  
Mill City NV 89418

Date Received: 09/04/14  
Sample Id.: Kelzyme 325 Mesh  
Sample id. Number 01 4090164  
Date Reported: 19-Sep-2014

### Humic Acid

	Wet wt.	Dry wt.
Moisture	0.91	0.0 percent
Humic Acid	< 0.05	< 0.05 percent

Method: California Department of Food And Agriculture  
Humic Acid Method  
Revision 2  
Revision Date 03/11/09

Analyst: Frank Shields  
*Frank Shields*



## Elemental composition of a carbonate powder

Prepared for:

Kelzyme RD LLC  
P.O. Box 458  
Provo, Utah 84603  
United States

ATTE: Milton Christensen

About 350 mg of a white powder finely ground was digested with ~60 mL of a mixture of nitric and hydrochloric acids (Aristar Plus) at room temperature and for 12 hours in a laminar flow bench. A dilutions (1 in 20) was prepared from the digest, amounting to a total dilution from the solid ~1:3,400. 20 ppb In was added to the final dilution to be used as internal standard. An external calibration curve containing Li, Be, B, Na, Mg, Al, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Rb, Sr, Y, Mo, Ag, Cd, Sb, Cs, Ba, La, Ce, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Lu, Tl, Pb and U was run together with in the diluted sample in an ICP-MS (Agilent 7500ce) using a quartz spray chamber, PTFE nebulizer, quartz injector and platinum cones. Intensities for P, S, Ga, Ge, Br, Zr, I, Au, Hg and Bi were obtained and the concentrations estimated using a semi-quantitative method. Results are reported, in **milligrams per kilogram of powder**, in the table. To convert to percent, divide the values in the table by 10,000.

## Nanomaterials Characterization Facility



Metallurgical Engineering Department, College of Mines & Earth Science  
135 South 1460 East, WBB 0412, Salt Lake City, UT 84112

---

### Calcium oxide determination of carbonate powder

Prepared for:

Kelzyme RD LLC  
P.O. Box 458  
Provo, UT 84603

ATTN: Milton Christensen

#### Summary of Analysis:

Sample: 350 minus from bucket

Average CaO content:  $68.3 \pm 1.1$  wt.%  
Average CaCO<sub>3</sub> content:  $31.7 \pm 0.57$  wt.%

Procedure: 0.5 g of sample (standard or ore) was boiled in dilute HCl. After which, excess NH<sub>3</sub> solution was added to make the solution alkaline while boiling. A boiling solution of oxalic acid was then added to the solution and continued to boil. The as formed precipitate was then filtered, washed, and re-dissolved in dilute sulfuric acid. After heating up to ~80 °C, the solution was then titrated with KMnO<sub>4</sub> to the same color as standard samples and used to determine the CaO or CaO<sub>3</sub> content.



08-Sept-14

York R. Smith, Ph.D.  
Research Associate  
york.smith@utah.edu  
(775) 544-0771

### Elemental composition of a carbonate powder (mg/kg)

---

Li	1.5	As	6.5	Tb	0.02
Be	1.5	Se	0.04	Dy	0.09
B	3.0	Rb	0.55	Ho	0.02
Na	69.7	Sr	440	Lu	0.01
Mg	2979	Y	0.59	Tl	0.36
Al	145	Mo	0.12	Pb	0.86
K	98.2	Ag	0.05	U	1.1
Ca	376500	Cd	0.04	P	142
Ti	22.4	Sb	0.3	S	<2000
V	2.4	Cs	0.3	Ga	<20
Cr	0.8	Ba	69	Ge	<1
Mn	200	La	0.6	Br	<1
Fe	553	Ce	1.3	Zr	<1
Co	1.4	Nd	0.63	I	<1
Ni	7.4	Sm	0.12	Au	<0.1
Cu	6.0	Eu	0.04	Hg	<0.1
Zn	5.8	Gd	0.12	Bi	<0.1



Diego P. Fernandez,  
Research Associate Professor  
ICP-MS lab,  
Dept. of Geology and Geophysics  
University of Utah,  
Salt Lake City, 4/4/2014



**A & L WESTERN AGRICULTURAL LABORATORIES, INC.**  
 1311 Woodland Avenue, Suite 1 • Modesto, California 95351 • (209) 529-4080

Report No: 14-251-082

Account No: 4838-D

Send to: R3 AG CONSULTING LLC  
 1629 POLLASKY AVE., SUITE 111  
 CLOVIS, CA 93612

Submitted by: DENNIS DUNBAR

Date Received: 09/08/2014  
 Date Reported: 09/18/2014

Sample ID: KELZYME

Lab Number: 20800

**NON-NUTRITIVE METALS**

Sample Preparation Method: EPA SW846-3050B

Detection Limit mg/kg	Analyte	Level Found mg/kg	Method Reference
0.25	Arsenic	10.26	EPA SW846-6010
0.03	Cadmium	BDL	EPA SW846-6010
0.1	Cobalt	0.4	EPA SW846-6010
0.5	Lead	BDL	EPA SW846-6010
0.1	Molybdenum	0.4	EPA SW846-6010
0.1	Nickel	1.1	EPA SW846-6010
0.5	Selenium	BDL	EPA SW846-6010
0.05	Zinc	12.52	EPA SW846-6010
0.05	Mercury	0.74	EPA SW846-7471A
0.1	Copper	3.4	EPA SW846-6010

BDL - INDICATES THE LEVEL FOUND IS BELOW THE ESTABLISHED DETECTION LIMIT FOR THAT ANALYTE.  
 ANALYZED ON AN AS RECEIVED BASIS

A & L Western Agricultural Laboratories

**Robert Butterfield**  
 Laboratory Director



**A & L WESTERN AGRICULTURAL LABORATORIES, INC.**  
Report No: 14-251-082 1311 Woodland Avenue, Suite 1 • Modesto, California 95351 • (209) 529-4080  
Account No: 4838-D



Send to: R3 AG CONSULTING LLC  
1629 POLLASKY AVE., STE 111  
CLOVIS, CA 93612

Project Id: KELZYME RESEARCH & DEVELOPMENT CENTER

Submitted by: Dennis Dunbar

Lab Number: 20800

Date Received: 09/08/2014  
Date Reported: 09/12/2014

Sample Id: KELZYME

**FERTILIZER ANALYSIS**

Calcium	38.56	%
CCE CaCO <sub>3</sub>	98.01	%
Water Soluble Calcium	0.61	%
Calcium as CaO	53.95	%

A & L Western Agricultural Laboratories

Robert Butterfield  
Laboratory Director

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 www.midwestlabs.com

**KELZYME/NICK TAULBEE**  
 1000 HWY 400  
 MILL CITY NV 89418

**REPORT OF ANALYSIS**  
 For: (1234) PREPAID ACCOUNT  
 PROXIMATE ANALYSIS  
 FINISHED FEEDS

Analysis	Level Found		Reporting		Analyst- Date	Verified- Date
	As Received	Dry Weight	Units	Limit		
Sample ID: FEED	Lab Number: 12269713					
Moisture	0.28	///////	%	0.01	ddd1-2014/05/21	cde2-2014/05/22
Dry matter	99.72	////////	%	0.010	Auto-2014/05/22	Auto-2014/05/22
Protein (crude)	0.30	0.30	%	0.20	sss6-2014/05/21	cde2-2014/05/22
Fat (crude)	0.19	0.19	%	0.10	kfl0-2014/05/21	cde2-2014/05/22
Fiber (acid detergent)	n.d.	n.d.	%	0.5	sdh7-2014/05/22	cde2-2014/05/22
Ash	98.2	98.5	%	0.10	vrm7-2014/05/22	cde2-2014/05/22
Aerobic plate count	20		cfu/g	1	kej7-2014/05/24	kej7-2014/05/24
Anaerobic plate count	80		cfu/g	10	kej7-2014/05/24	kej7-2014/05/24

This report was reissued on 2014-06-02 11:33:13 by sjc9 for the following reason:  
 CORRECTED ADDRESS PER SUSIE.  
 n.d. = not detected , cfu = colony forming unit

For questions please contact:

*Heather Ramig*  
 Heather Ramig  
 Client Service Representative  
 heather.ramig@midwestlabs.com (402)829-9891

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

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**KELZYME/NICK TAULBEE**  
**1000 HWY 400**  
**MILL CITY NV 89418**

### REPORT OF ANALYSIS

For: (1234) PREPAID ACCOUNT  
 PROXIMATE ANALYSIS  
 FINISHED FEEDS

### Detailed Method Description(s)

#### AOAC 930.15

Analysis follows MWL FD PROC 16 which is based on AOAC 930.15. The sample is weighed and placed in an oven set at 135 oC for two (2) hours. The sample is reweighed and the amount of material lost is reported as moisture.

#### AOAC 990.03

Analysis follows MWL FD PROC 70 which is based on AOAC 990.03. The sample is placed in a combustion instrument and the amount of nitrogen is obtained. The nitrogen value is multiplied by a factor of 6.25 and that value reported as crude protein.

#### AOAC 945.16

Analysis follows FD PROC 26 which is based on AOAC 2003.05. The sample is extracted with drip immersion of the sample in petroleum (pet) ether. The pet ether is poured into a pre-weighed container and then evaporated. The container is re-weighed and the increase in weight is reported as crude fat

#### ANKOM Tech. Method

Analysis follows MWL FD PROC 39 which is based on AOCS Ba 6a-05. The sample is sealed in a small bag and the bag immersed in a solution that dissolves certain materials. The bag is washed and dried and re-weighed. The material remaining in the bag is reported as acid detergent fiber

#### AOAC 942.05

Analysis follows MWL FD PROC 19 which is based on AOAC 942.05. The sample is weighed and placed in a muffle furnace at 600 oC. After a period of time, the sample is removed and the remaining material weighed and reported as ash. Moisture and organic material is driven off.



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**REPORT OF ANALYSIS**

For: ( 1234) PREPAID ACCOUNT

Report Number  
14-152-2029 v4

This report supersedes all prior reports for the following reason(s): corrected CaO calculation

**Mail to:** KELZYME RESEARCH&DEVELOP  
1000 HWY 400  
MILL CITY NV 89418

Date Reported: 06/09/14  
Date Received: 05/20/14  
Date Sampled: Not Supplied  
Time Sampled: Not Supplied

Lab number: 2271438 Sample ID: KELZYME

Analysis	Level Found	Units	Detection Limit	Method	Analyst-Date	Verified-Date
Aluminum (total)	820	ppm	5.0	ICAP	akj-05/29	bab-06/01
Arsenic (total)	16	ppm	10.0	ICAP	akj-05/29	bab-06/01
Barium (total)	59	ppm	0.50	ICAP	akj-05/29	bab-06/01
Boron (total)	n.d.	ppm	5.0	ICAP	akj-05/29	bab-06/01
Cadmium (total)	n.d.	ppm	0.50	ICAP	akj-05/29	bab-06/01
Calcium (total)	370,150	ppm	1.0	ICAP	akj-05/29	bab-06/01
Chromium (total)	1.4	ppm	1.0	ICAP	akj-05/29	bab-06/01
Cobalt (total)	n.d.	ppm	1.0	ICAP	akj-05/29	bab-06/01
Copper (total)	1.82	ppm	1.00	ICAP	akj-05/29	bab-06/01
Iron (total)	1,914	ppm	5.0	ICAP	akj-05/29	bab-06/01
Lead (total)	n.d.	ppm	5.0	ICAP	akj-05/29	bab-06/01
Magnesium (total)	2,175	ppm	1.0	ICAP	akj-05/29	bab-06/01
Manganese (total)	156	ppm	1.0	ICAP	akj-05/29	bab-06/01
Molybdenum (total)	n.d.	ppm	1.0	ICAP	akj-05/29	bab-06/01
Nickel (total)	n.d.	ppm	1.0	ICAP	akj-05/29	bab-06/01
Phosphorus (total)	249	ppm	10.00	ICAP	akj-05/29	bab-06/01
Potassium (total)	162	ppm	10.0	ICAP	akj-05/29	bab-06/01
Selenium (total)	n.d.	ppm	10.0	ICAP	akj-05/29	bab-06/01
Silver (total)	n.d.	ppm	1.0	ICAP	akj-05/29	bab-06/01
Sodium (total)	98	ppm	1.0	ICAP	akj-05/29	bab-06/01
Sulfur (total)	222	ppm	50.0	ICAP	akj-05/29	bab-06/01
Zinc (total)	7.27	ppm	1.00	ICAP	akj-05/29	bab-06/01

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Account: 1234 PREPAID ACCOUNT

**REPORT OF ANALYSIS**

Report Number: 14-152-2029 v4

Analysis	Level Found	Units	Detection Limit	Method	Analyst-Date	Verified-Date
Nitrogen Total (N)	0.04	%	0.01	AOAC 993.13	jjb-05/22	mgn-05/22
Phosphate Total (P205)	< 0.10	%	0.10	AOAC 16E 957.02E/ICP	krr-05/22	mgn-05/22
Potash (K2O)	< 0.10	%	0.10	AOAC 16 ED 957.02E/ICP	krr-05/22	mgn-05/22
Iodine (total)	1.33	ppm	0.50	ICP-MS	trh-05/29	bab-06/01
Moisture	n.d.	%	0.10	AOAC15E 950.01 100C	mgn-06/05	mjs-06/05
Total Carbon	9.740	%	0.050	C ANALYZER	acm-05/29	mjs-05/29
Total Neutralizing Val(CaCO3 eq)	94.45	%	0.10	AOAC 955.01	mgn-06/04	mjs-06/05

**Notes:**

- n.d. - Not Detected.
- AOAC - Association of Official Analytical Chemists.
- ICAP - Inductively Coupled Argon Plasma.
- Calcium calculated as CaCO3 (calcium carbonate) : 92.5 %
- Calcium calculated as CaO (calcium oxide) : 51.8 %

For questions contact

*Heather Ramig*  
Heather Ramig  
Client Service Representative  
heather.ramig@midwestlabs.com (402)829-9891

**Kelzyme Research and Development Center**

COPIES TO : Warren warnech  
 CLIENT REFERENCE NO: KR2 CLEAN PILE-1 THRU THP-8  
 RECEIVED : 7-Jul-2014  
 NO. SAMPLES : 17  
 REPORTED : 22-Aug-2014  
 MAIN SAMPLE TYPE : ROCK

**COMPANY DISCLAIMER :-**

When small samples are submitted, AAL may process the sample at smaller then specified weights to retain some pulp for quality control reassay. When Values exceed upper limits, AAL will run an Over Range analysis, to establish an accurate value. Additional cost will apply. Due to USDA Soil Quarantine programs - all foreign and some domestic soil material must be decontaminated by drying @ 125c for 48 hours, which will result in loss of Mercury (Hg).

**NEVADA LEGISLATIVE DISCLAIMER :-**

The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project. Nevada State law NRS 519.130.

ANALYSIS METHOD	UNIT	Wt	Hg	Al	As	Au	B	Ba	Be	Bi	Br	Ca	Cd	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Fe	Ga	Gd	Ge	Hf	Hg
BRPZKG	kg	0.01	0.02	1	0.2	0.001	3	0.1	0.01	0.02	3	1	0.05	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	1	0.2	0.2	0.2	0.01	0.02
LOWER LIMIT																											

ANALYSIS METHOD	UNIT	Ho	I	In	Ir	K	La	Li	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni	Os	P	Pb	Pd	Pr	Pt	Rb	Re	Rh	Ru	S
ICP-2A	ppm	0.1	0.5	0.2	0.01	8	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.2	0.01	1	1	0.01	0.2	0.01	0.1	0.005	0.01	0.01	10
LOWER LIMIT																											

ANALYSIS METHOD	UNIT	Sb	Sc	Se	Si	Sm	Sn	Sr	Ta	Tb	Te	Th	Ti	Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Ca	
ICP-2A	ppm	0.1	0.1	0.5	50	0.1	0.2	1	0.1	0.2	0.03	0.1	1	0.02	0.01	0.1	0.1	0.1	0.1	0.1	1	1	10	
LOWER LIMIT																								

SI LABORATORY  
 W. W. WENDE  
 ANALYSIS

Preparation	Abbreviation	Definition
DIP	DIP	Sample Destroyed in Preparation
DIS	DIS	Sample Destroyed in Shipment
ISS	ISS	Insufficient Sample Submitted
SDI	SDI	Sample Diesel Impregnated
SHI	SHI	Sample Hydraulic Impregnated
SNR	SNR	Sample Not Received
STD - ??	STD - ??	International Reference Material Standard
STD - AAL##	STD - AAL##	AAL generated standard material
BLANK	BLANK	AAL Laboratory Silica Blank
DL	DL	Data to Follow
< or -	< or -	Detection Limit of Method
>	>	Less Than Detection Limit of Method
N/A	N/A	Greater than Upper Limit of Method
NR	NR	Not Analyzed
(R) column	(R) column	Not Reported
D or -D after Sample ID	D or -D after Sample ID	Laboratory repeat weigh, digestion, analysis from original pulp or reject resplit
-R after Sample ID	-R after Sample ID	Client submitted duplicate rig split sample
-X after Sample ID	-X after Sample ID	Repeat analysis from original pulp reweigh, digestion and analysis
	ppb	Repeat analysis from reject resplit, preparation, weigh, digestion and analysis
	ppm	Parts per Billion 0.001 ppm = 1 ppb
	OPT	Parts per Million 1 ppm = 1 mg/Kg
	Oz	Troy Ounces per Short Ton(2,000 lbs)(1 ppm= 0.02917 OPT)
	%	Troy Ounce = 31.103 grams
	g	Percent 1% = 10,000 ppm
	mg	Grams 1g = 0.001 kilogram
	Kg	Milligrams 1mg = 0.001grams
	lbs	Kilograms 1Kg = 1000grams
		Pounds 1lb = 0.454kilogram
Method	FA##	Fire Assay Lead Collection - ## sample weight in grams
	GRAV	Gravimetric (Weighed) finish
	+ ###	Plus Fraction (Retained on top of Mesh) ##Screen Size
	- ###	Minus Fraction (Passed through Mesh) ##Screen Size
	CN	Cyanide Extraction
	ORE GRADE	2g sample made to 100ml volumetric for results > upper limit of method
	Ox-H2SO4 or -HCl	Dilute acid leach for oxide fraction in copper or molybdenum analysis
	QLA	Dilute 10%H2SO4/0.5%Fe2(SO4)3 30C leach for acid soluble copper
	QLT	Dilute 15%H2SO4 30C leach for acid soluble copper
	SAP	Dilute 5%H2SO4/0.5%Fe2(SO4)3 85C leach for acid soluble & chalcocite copper
	D#A	Digestion # = 2, 3 or 4 Acids
	HCl	2A=HCl/HNO3 3A=HCl/HNO3/HClO4 4A=HCl/HNO3/HE/HClO4
	HF	Hydrochloric Acid(37%w/v) Boiling Point 109C
	HClO4	Hydrofluoric Acid(48%w/v) Boiling Point 108C Extreme Health Hazard
	HNO3	Perchloric Acid(69%w/v) Boiling Point 203C Extreme Fire/Explosion Hazard
	H2SO4	Nitric Acid(69%w/v) Boiling Point 121C
	ICP-XA or -XD	Sulfuric Acid(98% w/v) Boiling Point 338C
	LiBO2-C	ICP-OES and/or ICP-MS analysis using x=2, 3 or 4 acid digestion
	Na2O2-C	Lithium Metaborate fusion in Carbon crucible
	Na2O2-Zr	Sodium Peroxide fusion in Zirconium crucible
Technique	AAS	Atomic Absorption Spectroscopy
	ICP-OES	Inductively Coupled Plasma Optical Emission Spectroscopy
	ICP-MS	Inductively Coupled Plasma Mass Spectroscopy
	RG	Research Grade (Low detection limit ICP-OES)
	UT	Ultra Trace (ICP-OES+ICP-MS analyses)
	XRF-ED or -WD	X-Ray Fluorescence (-ED = Energy Dispersive) (-WD = Wavelength Dispersive)
	XRD	X-Ray Diffraction
	ELTRA-I	Carbon & Sulfur infrared detection analyzer inductive heating
	ELTRA-R	Carbon, Hydrogen & Sulfur infrared detection analyzer resistance furnace
	LECO-I	Nitrogen & Oxygen infra red detection analyzer inductive heating
	MW	Microwave Digestion ( -PT is at 1500psig and 300C)
	SG-WD or -HP	Specific Gravity-WD=Water Displacement -HP=Helium Pycnometer 1g/cm3=62.4lbs/ft3

**SP0107605**

**FINAL REPORT**

CLIENT : Kelzyme Research and Development Center  
 PROJECT : Kelzyme-ICP  
 REFERENCE : KRD CLEAN PILE-1 THRU THP-8  
 REPORTED : 22-Aug-2014

SAMPLES	Wt kg	BRP2KG 0.01	Aq ppm	Al ppm	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Br ppm	Ca ppm	Cd ppm	Ce ppm	Co ppm
Pile-1	2.83	0.08	0.08	571	16.3	-0.001	-3	50.5	1.08	-0.02	-3	>350000	0.05	2.2	0.5
Pile-2	4.46	0.03	0.03	586	16.2	-0.001	-3	59.0	1.12	-0.02	-3	>350000	-0.05	2.5	0.6
BLANK				34	0.5	-0.001	-3	1.1	0.01	-0.02	-3	2760	-0.05	1.8	-0.1
Pile-3	4.12	0.03	0.03	525	14.7	-0.001	-3	51.4	1.12	-0.02	-3	>350000	-0.05	2.2	0.5
Pile-4	4.19	0.04	0.04	717	16.9	-0.001	-3	56.3	1.14	-0.02	-3	>350000	-0.05	2.5	0.6
Pile-5	3.66	0.06	0.06	478	13.9	-0.001	-3	49.2	1.07	-0.02	-3	>350000	-0.05	1.8	0.4
Pile-6	3.55	0.03	0.03	540	16.7	-0.001	-3	53.2	1.09	0.03	-3	>350000	-0.05	2.0	0.4
MW-3	1.15	0.07	0.07	775	17.1	-0.001	-3	54.9	0.76	-0.02	-3	>350000	0.06	2.4	0.6
STD - CDN-ME-6		>100	>100	8560	233.0	0.135	-3	65.3	0.11	5.81	-3	4160	23.35	4.1	8.8
MW-2	1.60	-0.02	-0.02	613	18.9	-0.001	-3	48.6	0.78	0.02	-3	>350000	0.05	2.5	0.7
MW-1	0.58	0.02	0.02	770	18.8	-0.001	-3	45.9	0.76	-0.02	-3	>350000	0.06	2.7	0.7
THP-1	4.74	-0.02	-0.02	745	17.4	-0.001	-3	48.0	0.75	-0.02	-3	>350000	0.06	2.6	0.6
THP-2	5.46	0.03	0.03	794	16.8	-0.001	-3	45.0	0.75	-0.02	-3	>350000	-0.05	2.6	0.6
THP-3	4.18	0.03	0.03	773	17.2	-0.001	-3	49.7	0.75	-0.02	-3	>350000	0.06	2.9	0.6
THP-4	5.26	-0.02	-0.02	757	16.1	-0.001	-3	42.7	0.74	-0.02	-3	>350000	0.07	2.4	0.6
THP-5	4.31	0.37	0.37	1140	19.8	-0.001	-3	46.4	0.78	-0.02	-3	>350000	0.10	3.2	0.8
THP-6	3.62	0.02	0.02	357	16.7	-0.001	-3	51.4	0.75	-0.02	-3	>350000	-0.05	2.0	0.5
THP-7	2.60	-0.02	-0.02	375	16.0	-0.001	-3	50.1	0.74	-0.02	-3	>350000	0.06	1.9	0.5
THP-8	2.50	-0.02	-0.02	370	16.1	-0.001	-3	48.9	0.74	-0.02	-3	>350000	0.05	1.9	0.5
MW-1-X		-0.02	-0.02	770	18.5	-0.001	-3	44.7	0.75	-0.02	-3	>350000	-0.05	2.7	0.7
THP-6-X		-0.02	-0.02	306	15.8	-0.001	-3	48.5	0.73	-0.02	-3	>350000	0.07	1.8	0.5
STD - OKA-1															



**SP0107605**

**FINAL REPORT**

CLIENT : Keizyme Research a  
 PROJECT : Keizyme-ICP  
 REFERENCE : KRDCLEAN PILE-1  
 REPORTED : 22-Aug-2014

SAMPLES	Cr	Cs	Cu	Dy	Er	Eu	Fe	Ga	Gd	Ge	Hf	Hg	Ho	I
	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm	ICP-2A-UT ppm
Pile- 1	1.3	0.3	4.3	0.2	0.1	-0.1	2590	-0.2	0.2	-0.2	0.09	0.14	-0.1	1.5
Pile- 2	0.9	0.4	2.9	0.2	0.1	-0.1	2580	-0.2	0.2	-0.2	0.07	0.15	-0.1	2.1
BLANK	-0.2	-0.1	0.2	-0.1	-0.1	-0.1	95	-0.2	-0.2	-0.2	-0.01	-0.02	-0.1	-0.5
Pile- 3	1.0	0.3	2.7	0.2	0.1	-0.1	2550	-0.2	-0.2	-0.2	0.05	0.08	-0.1	1.1
Pile- 4	0.9	0.4	3.0	0.2	0.1	-0.1	2770	-0.2	0.2	-0.2	0.05	0.10	-0.1	1.3
Pile- 5	0.9	0.2	2.6	0.1	0.1	-0.1	2170	-0.2	-0.2	-0.2	0.04	0.10	-0.1	1.2
Pile- 6	0.8	0.2	2.8	0.2	-0.1	-0.1	2690	-0.2	-0.2	-0.2	0.05	0.08	-0.1	1.6
MW-3	0.9	0.7	4.8	0.2	0.1	-0.1	2550	-0.2	0.2	-0.2	0.05	0.71	-0.1	1.1
STD - CDN-ME-6	20.7	0.2	6360.0	1.1	0.3	0.2	52800	2.2	0.8	-0.2	0.08	1.20	0.1	-0.5
MW-2	0.8	0.5	2.4	0.2	0.1	-0.1	2950	-0.2	0.2	-0.2	0.05	0.70	-0.1	1.4
MW-1	0.8	0.9	1.9	0.2	0.1	-0.1	2880	-0.2	0.3	-0.2	0.05	0.74	-0.1	1.2
THP-1	0.8	0.8	1.8	0.2	0.1	-0.1	2640	-0.2	0.2	-0.2	0.05	0.70	-0.1	1.1
THP-2	1.0	0.8	1.8	0.2	0.1	-0.1	2830	-0.2	0.2	-0.2	0.06	0.71	-0.1	1.0
THP-3	0.8	0.9	1.8	0.2	0.1	-0.1	2740	-0.2	0.2	-0.2	0.05	0.74	-0.1	1.1
THP-4	0.8	0.7	1.6	0.2	0.1	-0.1	2670	0.2	-0.2	-0.2	0.04	0.79	-0.1	0.9
THP-5	1.0	1.0	2.3	0.2	0.2	-0.1	3480	0.2	0.3	-0.2	0.04	1.13	-0.1	0.7
THP-6	0.7	0.3	1.5	0.1	0.1	-0.1	2270	-0.2	-0.2	-0.2	0.03	0.45	-0.1	1.0
THP-7	0.7	0.3	1.5	0.1	0.1	-0.1	2220	-0.2	-0.2	-0.2	0.03	0.50	-0.1	0.9
THP-8	0.9	0.4	1.4	0.1	0.1	-0.1	2190	-0.2	-0.2	-0.2	0.21	0.40	-0.1	0.8
MW-1-X	0.8	0.9	1.7	0.2	0.1	-0.1	2790	-0.2	0.2	-0.2	0.10	0.70	-0.1	1.4
THP-6-X	0.7	0.4	1.4	0.1	0.1	-0.1	2110	-0.2	-0.2	-0.2	0.08	0.53	-0.1	1.9
STD - OKA-1														

**SP0107605**

**FINAL REPORT**

CLIENT : Kelzyme Research a  
 PROJECT : Kelzyme-ICP  
 REFERENCE : KRD CLEAN PILE-1  
 REPORTED : 22-Aug-2014

SAMPLES	In	Ir	K	La	Ii	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni	Os
	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT
	0.2	0.01	8	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.2	0.01
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Pile- 1	-0.2	-0.01	206	1.1	21.5	-0.1	2490.0	105.0	0.7	502	-0.1	1.1	1.5	-0.01
Pile- 2	-0.2	-0.01	211	1.3	20.6	-0.1	2590.0	113.0	0.7	546	-0.1	1.2	1.4	-0.01
BLANK	-0.2	-0.01	9	0.5	-0.1	23.4	4.6	0.1	-0.1	15	-0.1	0.2	-0.2	-0.01
Pile- 3	-0.2	-0.01	180	1.1	20.2	-0.1	2510.0	109.0	0.7	192	-0.1	1.1	1.3	-0.01
Pile- 4	-0.2	-0.01	249	1.3	20.4	-0.1	2570.0	118.0	0.9	256	-0.1	1.1	1.5	-0.01
Pile- 5	-0.2	-0.01	154	0.9	21.2	-0.1	2450.0	123.0	0.7	258	-0.1	0.8	1.2	-0.01
Pile- 6	-0.2	-0.01	174	1.0	20.7	-0.1	2440.0	129.0	0.8	330	-0.1	0.9	1.3	-0.01
MW-3	-0.2	-0.01	367	1.3	20.3	-0.1	2110.0	106.0	0.5	388	-0.1	1.2	1.1	-0.01
STD - CDN-ME-6	0.3	-0.01	924	2.7	7.7	-0.1	5590.0	1150.0	15.5	616	-0.1	4.8	18.8	-0.01
MW-2	-0.2	-0.01	248	1.3	19.6	-0.1	2060.0	118.0	0.6	231	-0.1	1.2	1.2	-0.01
MW-1	-0.2	-0.01	385	1.5	19.2	-0.1	2030.0	112.0	0.7	460	-0.1	1.2	1.1	-0.01
THP-1	-0.2	-0.01	353	1.4	19.7	-0.1	1960.0	111.0	0.6	498	-0.1	1.2	1.1	-0.01
THP-2	-0.2	-0.01	362	1.5	20.3	-0.1	2060.0	108.0	0.6	483	-0.1	1.3	1.1	-0.01
THP-3	-0.2	-0.01	382	1.6	19.7	-0.1	2040.0	107.0	0.6	661	-0.1	1.3	1.1	-0.01
THP-4	-0.2	-0.01	352	1.3	20.5	-0.1	2040.0	105.0	0.6	635	-0.1	1.2	1.0	-0.01
THP-5	-0.2	-0.01	525	1.8	20.4	-0.1	2050.0	112.0	0.7	795	-0.1	1.6	1.3	-0.01
THP-6	-0.2	-0.01	178	0.9	20.4	-0.1	4300.0	106.0	0.6	222	-0.1	0.9	0.9	-0.01
THP-7	-0.2	-0.01	178	0.9	20.5	-0.1	4250.0	106.0	0.6	218	-0.1	0.9	0.9	-0.01
THP-8	-0.2	-0.01	171	0.9	20.5	-0.1	3890.0	102.0	0.6	210	-0.1	0.8	1.0	-0.01
MW-1-X	-0.2	-0.01	369	1.4	20.4	-0.1	2100.0	110.0	0.6	423	-0.1	1.2	1.1	-0.01
THP-6-X	-0.2	-0.01	154	0.9	19.7	-0.1	4080.0	102.0	0.6	209	-0.1	0.9	0.9	-0.01
STD - OKA-1														

SP0107605

FINAL REPORT

CLIENT : Kelzyme Research a  
 PROJECT : Kelzyme-ICP  
 REFERENCE : KRD CLEAN PILE-1  
 REPORTED : 22-Aug-2014

SAMPLES	P	Pb	Pd	Pt	Rb	Re	Rh	Ru	S	Sb	Sc	Se	Si
	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT	ICP-2A-UT
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Pile- 1	208	5	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	298	2.5	0.4	-0.5	180
Pile- 2	232	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	311	2.4	0.5	-0.5	145
BLANK	4	2	-0.01	-0.2	-0.01	-0.005	-0.01	-0.01	-10	-0.1	-0.1	-0.5	-50
Pile- 3	206	2	-0.01	0.2	-0.01	-0.005	-0.01	-0.01	252	2.5	0.4	-0.5	195
Pile- 4	227	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	263	3.0	0.4	-0.5	258
Pile- 5	177	1	-0.01	-0.2	-0.01	-0.005	-0.01	-0.01	260	2.6	0.2	-0.5	197
Pile- 6	191	2	-0.01	0.2	-0.01	-0.005	-0.01	-0.01	268	2.8	0.3	-0.5	165
MW-3	240	6	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	409	2.7	0.3	-0.5	250
STD - CDN-ME-6	408	>10000	-0.01	0.7	-0.01	0.007	-0.01	-0.01	22100	469.5	2.0	1.5	857
MW-2	276	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	264	7.0	0.4	-0.5	184
MW-1	244	1	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	474	3.9	0.4	-0.5	247
THP-1	249	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	481	2.5	0.4	-0.5	276
THP-2	235	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	390	2.2	0.4	-0.5	263
THP-3	240	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	582	2.2	0.4	-0.5	204
THP-4	217	2	-0.01	0.3	-0.01	-0.005	-0.01	-0.01	469	2.0	0.3	-0.5	224
THP-5	259	6	-0.01	0.4	-0.01	-0.005	-0.01	-0.01	740	2.4	0.4	-0.5	387
THP-6	263	1	-0.01	-0.2	-0.01	-0.005	-0.01	-0.01	233	2.1	0.3	-0.5	182
THP-7	248	1	-0.01	-0.2	-0.01	-0.005	-0.01	-0.01	229	1.9	0.3	-0.5	171
THP-8	245	1	-0.01	0.2	-0.01	-0.005	-0.01	-0.01	227	2.0	0.3	-0.5	153
MW-1-X	238	2	-0.01	0.4	-0.01	-0.005	-0.01	-0.01	423	2.3	0.3	-0.5	256
THP-6-X	243	1	-0.01	0.2	-0.01	-0.005	-0.01	-0.01	225	2.1	0.3	-0.5	114
STD - OKA-1													

**SP0107605**

**FINAL REPORT**

CLIENT : Kelzyme Research a  
 PROJECT : Kelzyme-ICP  
 REFERENCE : KRD CLEAN PILE-1  
 REPORTED : 22-Aug-2014

SAMPLES	Sm ICP-2A-UT ppm	Sn ICP-2A-UT ppm	Sr ICP-2A-UT ppm	Ta ICP-2A-UT ppm	Tb ICP-2A-UT ppm	Te ICP-2A-UT ppm	Th ICP-2A-UT ppm	Ti ICP-2A-UT ppm	Tl ICP-2A-UT ppm	Tm ICP-2A-UT ppm	U ICP-2A-UT ppm	V ICP-2A-UT ppm	W ICP-2A-UT ppm	Y ICP-2A-UT ppm
Pile- 1	0.8	-0.2	428	-0.1	-0.2	0.05	0.6	10	0.21	0.01	1.2	4.2	0.7	0.7
Pile- 2	0.8	-0.2	448	-0.1	-0.2	0.04	0.6	9	0.24	0.01	1.2	4.6	0.8	0.8
BLANK	-0.1	-0.2	2	-0.1	-0.2	-0.03	0.2	1	-0.02	-0.01	-0.1	-0.1	-0.1	-0.1
Pile- 3	0.8	-0.2	430	-0.1	-0.2	-0.03	0.4	9	0.18	0.01	1.0	3.8	0.7	0.7
Pile- 4	0.7	-0.2	430	-0.1	-0.2	-0.03	0.5	11	0.19	0.01	1.2	4.7	0.8	0.8
Pile- 5	0.8	-0.2	415	-0.1	-0.2	-0.03	0.4	8	0.20	-0.01	1.0	3.7	0.7	0.5
Pile- 6	0.7	-0.2	401	-0.1	-0.2	-0.03	0.4	9	0.21	-0.01	1.1	4.7	0.9	0.6
MW-3	0.7	-0.2	360	-0.1	-0.2	0.03	0.7	15	0.24	0.01	0.9	2.7	0.7	0.8
STD - CDN-ME-6	0.8	1.6	19	-0.1	-0.2	0.92	0.4	164	0.18	0.05	0.5	3.5	-0.1	3.6
MW-2	0.8	-0.2	375	-0.1	-0.2	0.04	0.4	10	0.28	0.01	0.9	2.3	0.7	0.8
MW-1	0.8	-0.2	344	-0.1	-0.2	0.03	0.5	16	0.29	0.01	0.9	3.0	0.7	0.9
THP-1	0.7	-0.2	343	-0.1	-0.2	0.03	0.5	15	0.30	0.01	0.9	3.0	0.7	0.8
THP-2	0.7	-0.2	349	-0.1	-0.2	-0.03	0.5	16	0.25	0.01	0.9	3.0	0.7	0.9
THP-3	0.8	-0.2	343	-0.1	-0.2	-0.03	0.5	16	0.26	0.01	0.8	3.1	0.7	0.9
THP-4	0.7	-0.2	332	-0.1	-0.2	-0.03	0.4	14	0.21	-0.01	0.8	2.9	0.7	0.8
THP-5	0.7	-0.2	325	-0.1	-0.2	-0.03	0.6	21	0.26	0.01	0.9	4.0	0.7	1.1
THP-6	0.7	-0.2	390	-0.1	-0.2	-0.03	0.2	8	0.22	-0.01	0.8	2.0	0.6	0.6
THP-7	0.7	-0.2	375	-0.1	-0.2	-0.03	0.2	8	0.21	-0.01	0.8	2.0	0.6	0.6
THP-8	0.7	-0.2	369	-0.1	-0.2	0.04	0.3	8	0.24	-0.01	0.6	1.9	0.6	0.5
MW-1-X	0.7	-0.2	355	-0.1	-0.2	-0.03	0.4	15	0.25	0.01	0.7	2.8	0.7	0.8
THP-6-X	0.7	-0.2	362	-0.1	-0.2	-0.03	0.2	7	0.26	-0.01	0.6	1.9	0.6	0.5
STD - OKA-1														

**SP0107605**

**FINAL REPORT**

CLIENT : Kelzyme Research a  
 PROJECT : Kelzyme-ICP  
 REFERENCE : KRD CLEAN PILE-1  
 REPORTED : 22-Aug-2014

SAMPLES	Yb		Zn		Zr		Ca	
	ICP-2A-UT	ppm	ICP-2A-UT	ppm	ICP-2A-UT	ppm	ORE GRADE	ppm
Pile- 1	-0.1	1	3	1	2	10	387100	
Pile- 2	-0.1	1	3	1	2	10	361700	
BLANK	-0.1	1	-1	1	-1	10		
Pile- 3	-0.1	1	1	1	2	10	389400	
Pile- 4	-0.1	1	1	1	2	10	380200	
Pile- 5	-0.1	1	2	1	2	10	407000	
Pile- 6	-0.1	1	1	1	2	10	395900	
MW-3	-0.1	1	4	1	2	10	390400	
STD - CDN-ME-6	0.1	1	5197	1	3	10		
MW-2	-0.1	1	2	1	2	10	395000	
MW-1	-0.1	1	3	1	2	10	381100	
THP-1	-0.1	1	2	1	2	10	345500	
THP-2	-0.1	1	2	1	2	10	379250	
THP-3	-0.1	1	2	1	2	10	396800	
THP-4	-0.1	1	-1	1	2	10	398700	
THP-5	-0.1	1	2	1	2	10	391300	
THP-6	-0.1	1	1	1	1	10	414400	
THP-7	-0.1	1	4	1	1	10	377400	
THP-8	-0.1	1	3	1	1	10	403300	
MW-1-X	-0.1	1	2	1	2	10		
THP-6-X	-0.1	1	-1	1	1	10		
STD - OKA-1	-0.1	1		1		10	321900	

**FORAGE TESTING LABORATORY**
**DAIRY ONE, INC.**
**730 WARREN ROAD**
**ITHACA, NEW YORK 14850**
**607-257-1272 (fax 607-257-1350)**

Sampled	Recvd	Printed	ST	CO
	10/20/14	10/30/14		

R-170  
 GHC LABS  
 PO BOX 1210  
 OOLOGAH, OK 74053

**COMMENTS:**

1. THIS SAMPLE WAS TESTED TWICE FOR ACID DETERGENT FIBER AND CALCIUM TO CONFIRM THE VALUES LISTED.

Sample Description	Farm Code	Sample
MINERAL MIX, Dry	459	20974540
KELZYME FOSSILIZED SEA KELP FINE POWDE		
Analysis Results		
Components	As Fed	DM
% Dry Matter	99.9	
% Crude Protein	.0	.0
% Acid Detergent Fiber	1.4	1.4
% Neutral Detergent Fiber	1.6	1.6
% Calcium	39.32	39.36
% Phosphorus	.02	.02
% Magnesium	.20	.20
% Potassium	.02	.02
% Sodium	.002	.002
PPM Iron	1,990	1,990
PPM Zinc	7	7
PPM Copper	1	1
PPM Manganese	173	173
% Moisture	.1	
% Adjusted Crude Protein	.0	.0
PPM Molybdenum	.7	.7

# STUKENHOLTZ LABORATORY, INC.

2924 Addison Ave. E., P.O. Box 353 Twin Falls, ID 83303  
208.734.3050, Fax: 734.3919 www.stukenholtz.com

## FEED ANALYSIS

208/284-1930

BULKLEY, KYLE  
404 VANBUREN

TWIN FALLS ID 83301

Report No.: 66518  
Account No.: 2450  
Date Received: 9/17/14  
Date Reported: 9/17/14

Sampled for: BULKLEY, KYLE  
Sample Type: KELZYM

Sample ID: KELZYM

	Lab Analysis Dry Weight Basis	Lab Analysis As Received Basis
Crude Protein, %	4.4	4.40
ADF, %		
NDF, %		
Ash, %		
Dry Matter, %	100.0	99.90
Moisture, %	0.0	0.10
Total Digestible Nutrients (TDN), %		
Nitrate-N, ppm		
Phosphorus, %	0.12	0.12
Potassium, %	0.12	0.12
Calcium, %	36.27	36.23
Magnesium, %	0.26	0.26
Sulfur, %	0.13	0.13
Zinc, ppm	17	16.98
Iron, ppm	448	447.55
Manganese, ppm	153	152.85
Copper, ppm	3	3.00
Boron, ppm	1	1.00
Sodium, %	0.03	0.03
TCN (TOTAL N)%	0.04	0.04

Supervised by: Paul Stukenholtz

Our reports are for the exclusive use of our clients and may not be used in advertising, etc., without our written permission.

**PLANT ANALYSIS**

NAME: Rocky Mountain Agronomics/ Ryan Hoyt  
 1912 West Main Street  
 Burley, ID 83318 (208) 670-0167  
 FIELD: Unionville, NV  
 CROP: Oats

**Texas Plant & Soil Lab**  
 5115 W. Monte Cristo Rd., Edinburg, TX 78541 Phone (956) 383-0739  
**ASK THE PLANT!**  
 TO GET THE MOST FROM YOUR PLANTS

Critical Marginal Desired Excess

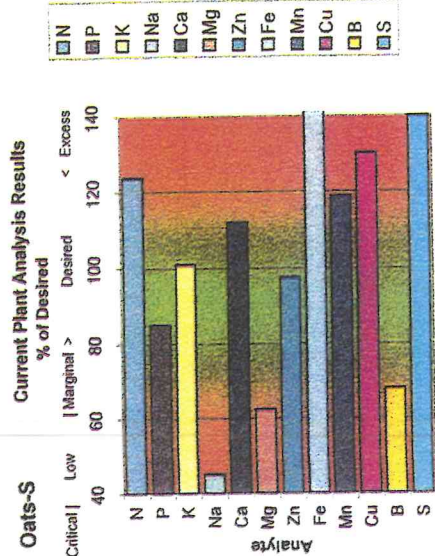
OWNER #: 2437  
 LAB #: 9882-83  
 e-mail: rockymountainag@gmail.com

Sample ID	Sample Date	PARTS PER MILLION - PPM											
		% N	% P	% K	% Na	% Ca	% Mg	Zn	Fe	Mn	Cu	B	% S
		Nitrogen	Phosphorous	Potassium	Sodium	Calcium	Magnesium	Zinc	Iron	Manganese	Copper	Boron	Sulfur
Oats-S	06/03/14	3.71	0.34	4.04	0.18	0.56	0.25	39	267	95	13	34	0.35
Oats-N	06/03/14	3.07	0.32	3.83	0.13	0.54	0.23	27	431	96	11	32	0.28

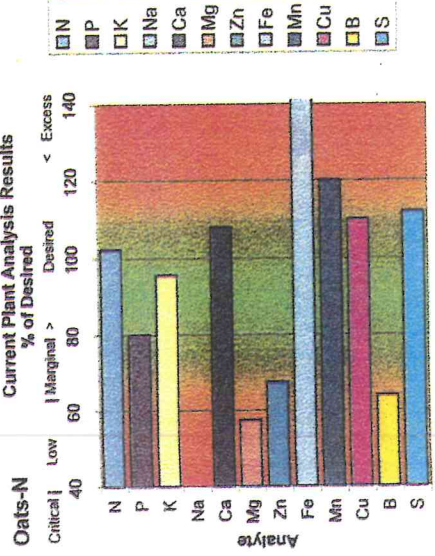
**INTERPRETATIONS & RECOMMENDATIONS:**

N - P & K all in optimum range.  
 Ca unusually good.  
 Mg tests low - use 0.25 lbs/ac.  
 Zn - Fe - Mn - Cu - S all on target,  
 Boron use 0.20 lbs/ac

**Oats-S**



**Oats-N**





# RESOURCES

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# OMRI Listed®

The following product is OMRI Listed. It may be used in certified organic production or food processing and handling according to the USDA National Organic Program Rule.

## Product

Kelzyme® Soil Conditioner & Plant Stimulator

## Company

Environmental Health Science, LLC  
Mr. Milton Christensen  
P.O. Box 548  
Provo, UT 84603

## Status

Allowed

## Category

NOP: Mined Minerals – unprocessed

## Issue date

27-May-98

## Product number

ehs-8028

## Class

Crop Fertilizers and Soil Amendments

## Expiration date

01-Jun-2015

## Restrictions

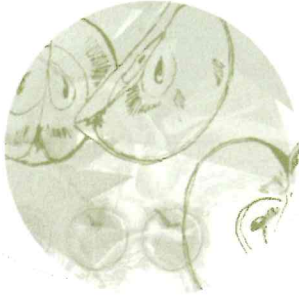
Not Applicable.

Executive Director

Product review is conducted according to the policies in the current *OMRI Policy Manual*® and based on the standards in the current *OMRI Standards Manual*®. To verify the current status of this or any OMRI Listed product, view the most current version of the *OMRI Products List*® at [OMRI.org](http://OMRI.org). OMRI listing is not equivalent to organic certification and is not a product endorsement. It cannot be construed as such. Final decisions on the acceptability of a product for use in a certified organic system are the responsibility of a USDA accredited certification agent. It is the operator's responsibility to properly use the product, including following any restrictions.



Organic Materials Review Institute  
P.O. Box 11558, Eugene, OR 97440-3758, USA  
541.343.7600 • fax 541.343.8971 • [info@omri.org](mailto:info@omri.org) • [www.omri.org](http://www.omri.org)



# OMRI Listed®

The following product is OMRI Listed. It may be used in certified organic production or food processing and handling according to the USDA National Organic Program Rule.

## Product

Kelzyme® (For Large Animals)

## Company

Environmental Health Science, LLC  
Mr. Milton Christensen  
P.O. Box 548  
Provo, UT 84603

## Status

Allowed with Restrictions

## Category

NOP: Minerals – feed

## Issue date

22-Sep-06

## Product number

ehs-0381

## Class

Livestock Feed Ingredients

## Expiration date

01-Jun-2015

## Restrictions

May not be fed in amounts above those needed for adequate nutrition and health maintenance for the species at its specific stage in life.

Executive Director

Product review is conducted according to the policies in the current *OMRI Policy Manual*® and based on the standards in the current *OMRI Standards Manual*®. To verify the current status of this or any OMRI Listed product, view the most current version of the *OMRI Products List*® at [OMRI.org](http://OMRI.org). OMRI listing is not equivalent to organic certification and is not a product endorsement. It cannot be construed as such. Final decisions on the acceptability of a product for use in a certified organic system are the responsibility of a USDA accredited certification agent. It is the operator's responsibility to properly use the product, including following any restrictions.



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STATE OF CALIFORNIA  
DEPARTMENT OF FOOD AND AGRICULTURE  
FEED, FERTILIZER, AND LIVESTOCK DRUGS REGULATORY SERVICES  
1220 N STREET  
SACRAMENTO, CA 95814

**CERTIFICATE OF REGISTRATION FOR  
ORGANIC INPUT MATERIALS**

NON TRANSFERABLE



**FIRM NO.**

295256

**Firm**

KELZYME RESEARCH & DEVELOPMENT CENTER LLC  
1000 HIGHWAY 400  
MILL CITY, NV 89418

is authorized to manufacture, deliver or sell in California the products listed below. Registration is not an endorsement by the Department of Food and Agriculture of any product or any claim made for it. No reference may be made to the State of California Department of Food and Agriculture in labeling or advertisements. Registration may be canceled after hearing at any time for just cause. The composition of each product and the label used on it must be the same as those submitted by the registrant.

**Organic Input Material**

1. 100% NATURAL FERTILIZER. Issued: Nov 7, 2014. Expires: Dec 31, 2015.
2. MICRONIZED 100% NATURAL FERTILIZER. Issued: Nov 7, 2014. Expires: Dec 31, 2015.



STATE OF CALIFORNIA  
DEPARTMENT OF FOOD AND AGRICULTURE  
FEED, FERTILIZER, AND LIVESTOCK DRUGS REGULATORY SERVICES  
1220 N STREET  
SACRAMENTO, CA 95814

## CERTIFICATE OF REGISTRATION FOR FERTILIZING MATERIALS

NON TRANSFERABLE

**FIRM NO.**

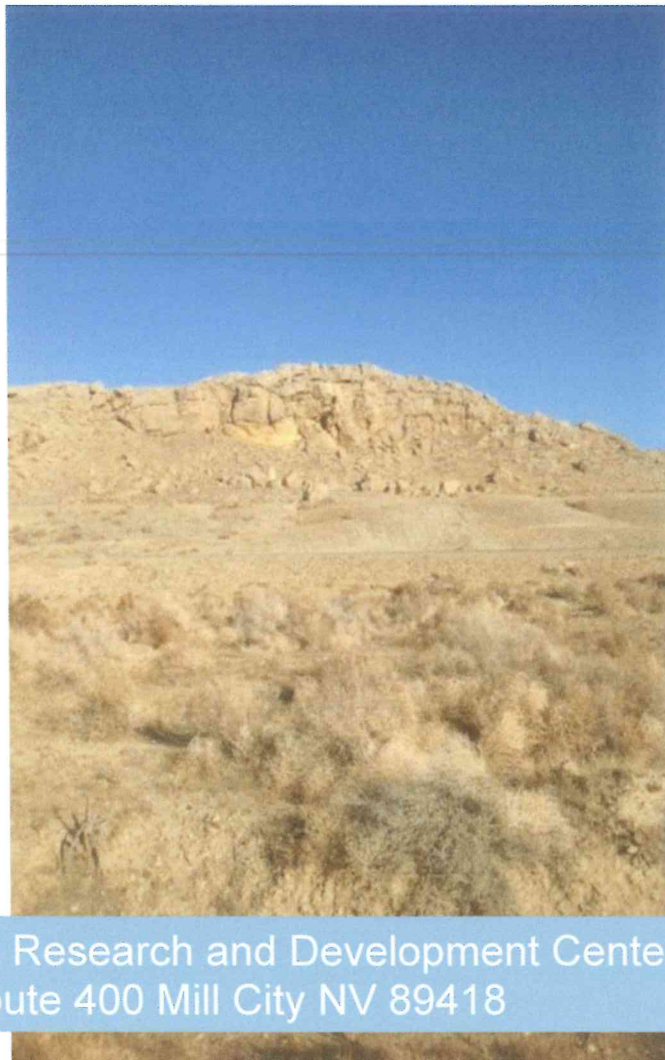
295256

### **Firm**

KELZYME RESEARCH & DEVELOPMENTCENTER LLC  
1000 HIGHWAY 400  
MILL CITY, NV 89418

is authorized to manufacture, deliver or sell in California the products listed below. Registration is not an endorsement or approval by the Department of Food and Agriculture of any product or any claim made for it. No reference may be made to the State of California Department of Food and Agriculture in labeling or advertisements. Registration may be canceled after hearing at any time for just cause. The composition of each product and the label used on it must be the same as those submitted by the registrant.

Please note that Bulk Agricultural Mineral and Commercial Fertilizer product labels that may be listed below are NOT registered, but have been reviewed, and their labeling is in accordance with the requirements of Section 14631 of the Food and Agricultural Code and Sections 2300 through 2312 of the California Code of Regulations.



10/10/2014

Kelzyme Research and Development Center LLC 1000  
State Route 400 Mill City NV 89418

An overview of the mining practices and processes in extracting and packaging Kelzyme@ at the mine site in Mill City Nevada

**DESCRIPTION OF DEPOSIT:**

The deposit holding the aggregate marketed as Kelzyme is approximately 80 million years old, deposited during the period of an inland sea. The deposit known as Kelzyme contains high levels of calcium and trace minerals. The deposit occurs in layers of varying thicknesses directly related to the evaporative cycles of the ancient inland sea. The deposit of Kelzyme contains fossilized sea kelp. The deposit known as Kelzyme also contains evidence of volcanic hydrothermic activity in the form of mineralized vents and fissures inside the formation. The surface area of the deposit currently under development encompasses approximately 900 meters square and extends in depth to approximately

500 meters.

### DESCRIPTION OF MINING PROCEDURE:

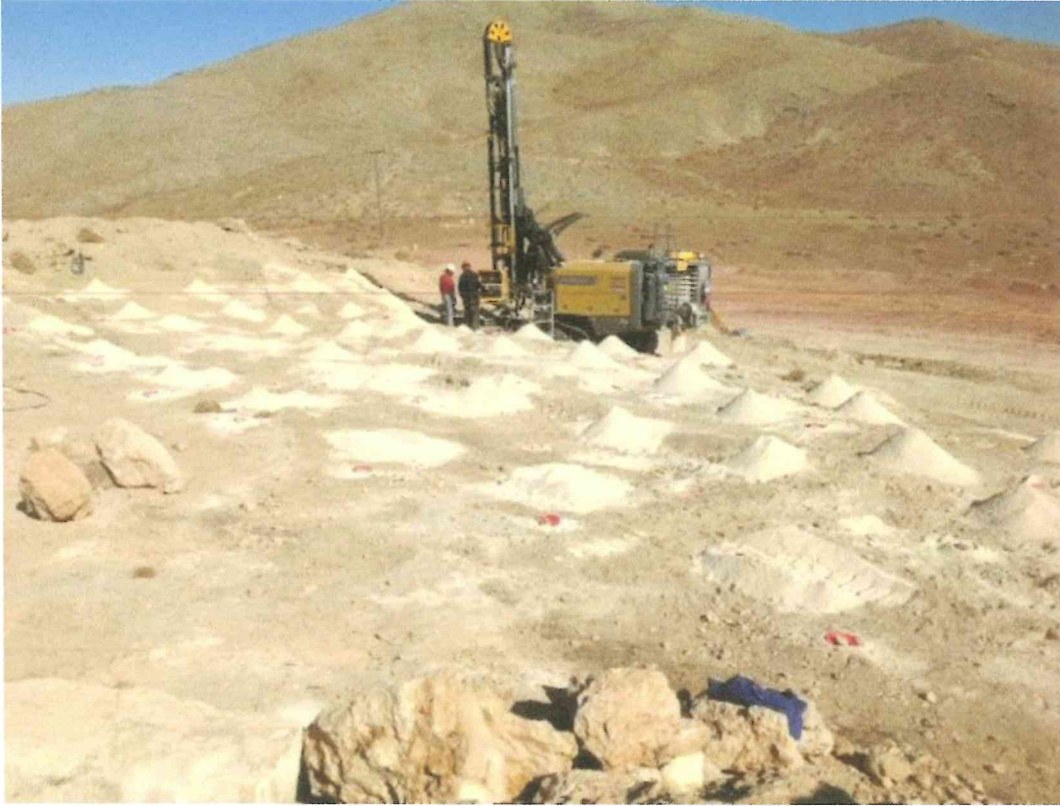
Kelzime is a mined aggregate product. The Kelzime Research and Development Center LLC is located at 1000 State Route 400 approximately 2.33 km E of the Mill City, Nevada (town site as surveyed in 1862).

Kelzime is extracted in a standard surface mining operation in which soil and rock overlying the mineral deposit (the overburden) are removed. It is the opposite of underground mining, in which the overlying rock is left in place, and the mineral removed through shafts or tunnels. The exact method of extracting Kelzime would be called contour stripping which involves removing the overburden above the mineral seam near the outcrop in hilly terrain, where the mineral outcrop usually follows the contour of the land. Contour stripping is often followed by auger mining into the hillside, to remove more of the mineral. This method commonly leaves behind terraces in mountainsides.

The order of the processes in extracting Kelzime are as follows:

**DRILLING:**

The 6 x 6 drill pattern used for extracting Kelzyme was found to be optimum for the hardness and stratification of the material. 4" holes were bored to 20' in depth.



**BLASTING:**

The above described bores are then loaded with a series of blue sausage like explosive packs. The packs contain approximately 25 lbs of Fortrell Pro X blasting agent which consists of Ammonium Nitrate. Once loaded these charges are electronically detonated using high explosive caps. This detonation initiates the rapid oxidation of the blasting agent which shatters the rock into manageable sizes of approximately 2' minus. With an Ammonium Nitrate only blasting agent there is no residue left over from the oxidation process.

**MUCKING:**

The process of removing the aggregate after the blast and moving it away from the high-wall is called mucking. During the initial crushing run at the Kelzyme mine site this was done with a Komatsu PC 220 excavator.





**TRAMMING:**

The process of moving the mucked material from the muck pile to the crusher for processing is called "Tramming". During the initial run at Kelzyme Research and Development Center this was performed using a CAT 980 C Loader with an 8 cubic yard bucket.



**CRUSHING:**

Once trammed to the crusher ore bin the 2' minus material is gravity fed from the wheel loader bucket into a rotary type crusher where it is reduced to 2" minus. The specific machine used in the initial production of Kelzyme was a diesel powered Terex 7100.



**FINE CRUSHING:**

The Terex Model crusher that feeds the 2" Minus aggregate to a cone crusher via conveyor belt for reduction to 3/16" minus. The Model of Cone Crusher used in the initial production run of Kelzyme was a Terex Pegson 1300 Max Trax.



**CLASSIFICATION:**

Once processed by the Terex Pegson 1400 Cone Crusher the 3/16" minus aggregate is classified according to size using a Terex Powerscreen. The specific model used during this process was a Terex Powerscreen Chieftan 1400 S. During the initial production run of Kelzyme only two classifications of aggregate were produced on the mine site. These were 3/16" minus and 3/8" screen reject which is commonly referred to as fractured pea gravel.



### STOCKPILING:

The 3/16" minus aggregate used in Kelzyme is transported by the discharge belt of the Power Screen 1400 and then gravity fed onto a secondary discharge conveyor commonly referred to as a stacker. The material then accumulates a height 7 feet below the head pulley of the stacker per MSHA regulations. When this elevation has been attained the stacker is moved away from the accumulated pile and the process begins anew. Once the full width of the stacker footprint is used the aggregate is pushed into a singular pile via Dozer. The machine used during the initial production run of Kelzyme was a CAT D9H. The screen reject IE: 3/8" pea gravel was transported to a secondary stockpile using the CAT 980 C wheel loader. Once the initial production run was completed the 3/16" minus stockpile was covered for protection from the elements and to avoid contamination with a poly tarp at the Kelzyme Research and Development mine site.



**OFF-SITE PROCESSING:**

220 Tons of the 3/16" minus aggregate was loaded into 20 cubic yard end dump trailers using the CAT 980 C wheel loader. The material was then transported via Interstate 80 by semi-truck approximately 30 miles east to Winnemucca, NV where it was stockpiled. It was then reduced to 325 mesh by a milling contractor and packaged the 325 mesh material into poly bulk bags for storage. A Raymond milling process was used to reduce the Kelzime to 325 mesh. At this time the 325 material is stored in 2000 lb poly bulk bags awaiting distribution or packaging into smaller sized bags.

The material bagged in 2000 lb Poly bags was then transported to a storage facility at 6066 Old Jungo Rd in Winnemucca, Nevada.

It was offloaded by forklift on pallets and carried inside the warehouse for storage until the product is distributed or packaged into smaller sized bags. Currently there is no system in place to package Kelzime. Kelzime does not degrade in storage and there is no pre-determined time the product is stored inside the warehouse. It is stored until sold. There are no other products stored in the warehouse with the bagged Kelzime.

## 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. 1218-0072



IDENTITY (As Used on Label and List)  
Kelzyme

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

### Section I

Manufacturer's Name Kelzyme Research and Development Center LLC	Emergency Telephone Number 801-368-7822
Address (Number, Street, City, State, and ZIP Code) 1000 400 Unionville Road	Telephone Number for Information 801-368-7822
Imlay, Nevada 89418	Date Prepared 10/28/2013
	Signature of Preparer (optional)

### Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%(optional)
No hazardous components				
Calcium mineral	N/A	N/A	N/A	98%

### Section III - Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H <sub>2</sub> O = 1)	2.5
Vapor Pressure (mm Hg)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water			
Appearance and Odor	White/tan odorless material.		

## Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) N/A	Flammable Limits N/A	LEL N/A	UEL N/A
Extinguishing Media N/A			
Special Fire Fighting Procedures: None			
Unusual Fire and Explosion Hazards: None			

(Reproduce locally)

OSHA 174, Sept. 1985

## Section V - Reactivity Data

Stability	Stable	Conditions to Avoid: None
Incompatibility ( <i>Materials to Avoid</i> ):		None
Hazardous Decomposition or Byproducts:		None
Hazardous Polymerization	Will Not Occur	Conditions to Avoid: None

## Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation? N/A	Skin? N/A	Ingestion? N/A
Health Hazards ( <i>Acute and Chronic</i> ): None			
Carcinogenicity:	NTP? N/A	IARC Monographs? N/A	OSHA Regulated? N/A
Signs and Symptoms of Exposure: None			
Medical Conditions Generally Aggravated by Exposure: None			
Emergency and First Aid Procedures: None			

## Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: No special requirements
Precautions to Be taken in Handling and Storing: No special requirements. Keep material dry for product quality.
Other Precautions: No special Precautions

## Section VIII - Control Measures

Respiratory Protection ( <i>Specify Type</i> ):	No special requirements		
Ventilation: N/A	Local Exhaust: N/A	Special: N/A	
Mechanical ( <i>General</i> ): N/A		Other: N/A	
Protective Gloves: No special requirements	Eye Protection: No special requirements		
Other Protective Clothing or Equipment: No special equipment required			
Work/Hygienic Practices: No special requirements			

\* U.S.G.P.O.: 1986 - 491 - 529/45775

## Gross Alpha/Beta Case Narrative

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### **Kelzyme Research and Development Ctr LLC** Kelzyme Mine Site Rad Test -- KELZYME070214-1

Work Order Number: 1407114

1. This report consists of the analytical results for five solid samples received by ALS on 07/08/14.
2. These samples were prepared according to the current revision of SOP 702.
3. The samples were analyzed for gross alpha and beta activity by gas flow proportional counting according to the current revision of SOP 724. The analyses were completed on 07/16/14. Gross alpha results are referenced to  $^{241}\text{Am}$ . Gross beta results are referenced to  $^{90}\text{Sr/Y}$ .
4. The analysis results for these samples are reported on an 'As Received' basis in units of pCi/gram.
5. The samples and the associated QC samples were flamed, as prescribed in the current revision of SOP 702 for solid sample analyses. This could reduce the beta activity if the samples contained  $^{137}\text{Cs}$ , or other beta emitters, that may be volatile under the conditions associated with flaming.
6. No anomalous situations were encountered during the preparation or analysis of these samples. All quality control criteria were met.



The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

\_\_\_\_\_  
Linda Arend  
Radiochemistry Primary Data Reviewer

\_\_\_\_\_  
7/18/14  
Date

\_\_\_\_\_  
Radiochemistry Final Data Reviewer

\_\_\_\_\_  
Date



# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

---

**OrderNum:** 1407114

**Client Name:** Kelzyme Research and Development Ctr LLC

**Client Project Name:** Kelzyme Mine Site Rad Test

**Client Project Number:** KELZYME070214-1

**Client PO Number:** SK070214

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1BOHSE	1407114-1		SOLID	02-Jul-14	13:48
2TOHSW	1407114-2		SOLID	02-Jul-14	14:57
3TOHNE	1407114-3		SOLID	02-Jul-14	15:15
4TOHNW	1407114-4		SOLID	02-Jul-14	16:32
5WWHPACK	1407114-5		SOLID	02-Jul-14	18:48



**ALS Laboratory Group**

225 Commerce Drive, Fort Collins, Colorado 80524  
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

**Chain-of-Custody**

Form 2028b

WORKORDER # **1407114**

PROJECT NAME	Kelzyme Mine Site Rad Test	SAMPLER	Warren Wamick	DATE	70214	PAGE	1	of	1	Return to Client
PROJECT No.	KELZYME070214-1	SITE ID	1006SR40089418	TURNAROUND		DISPOSAL				
COMPANY NAME	Kelzyme Research and Development Ctr LLC	EDD FORMAT								
SEND REPORT TO	Susie Kassal	PURCHASE ORDER	SK070214							
ADDRESS	250 Greenpoint	BILL TO COMPANY	COD Call for Payment							
CITY / STATE / ZIP	Brooklyn, NY 11222	INVOICE ATTN TO	Susie							
PHONE	516-770-4996	ADDRESS	250 Greenpoint Ave							
FAX		CITY / STATE / ZIP	Brooklyn, NY 89418							
E-MAIL	susie@kelzyme.com	PHONE	516-770-4996							
		FAX								
		E-MAIL	susie@kelzyme.com							

Gross Alpha/Beta

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles
①	1BOHSE	S	70214	13:48:00	1
②	2TOHSW	S	70214	14:57:00	1
③	3TOHNE	S	70214	15:15:00	1
④	4TOHNW	S	70214	16:32:00	1
⑤	5WWHPACK	S	70214	18:48:00	1

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)
LEVEL II (Standard QC)
LEVEL III (Std QC + forms)
LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

SIGNATURE	PRINTED NAME	DATE	TIME
<i>Warren Wamick</i>	Warren Wamick	7/2/14	3:50 PM
<i>Jacob Roddy</i>	Jacob Roddy	7-8-14	12:30



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Kelzync

Workorder No: 1407114

Project Manager: JME

Initials: JCR Date: 7-8-14

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ___ dusting ___ moderate ___ heavy	Amount <input checked="" type="radio"/> N/A	YES	NO
16. Were the samples shipped on ice?		YES	<input checked="" type="radio"/> NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	<input checked="" type="radio"/> RAD ONLY	YES	<input checked="" type="radio"/> NO
Cooler #: <u>1</u>			
Temperature (°C): <u>AMB</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>12</u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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If applicable, was the client contacted? YES / NO /  NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: JME 7/9/14

1407114

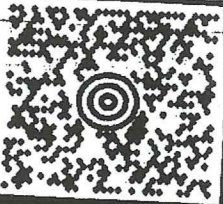
KELZYME RESEARCH & DEVELOPMENT 1 LBS  
7753022588  
KELZYME RESEARCH AND DEVELOPME  
1000 HIGHWAY 400  
MILL CITY, NV 89418

DWT: 8,8,6

1 OF 1

SHIP TO:  
ALS LABORATORY GROUP  
225 COMMERCE DR.  
FORT COLLINS CO 80524-2762

230  
230  
230

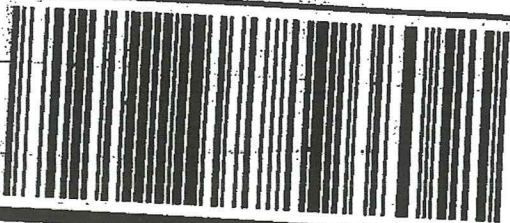


CO 805 0-01



UPS GROUND

TRACKING #: 1Z R73 707 03 9076 6962



BILLING: P/P

UIS 16.2.03. WNTNVS0 51.0A 04/2014



1Z R73 707 03 9076 6962  
15 8:59 HTP 14.5.1 JIN4420

FOLD HERE

3. GETTING YOUR SHIPMENT TO UPS

... completely with clear plastic label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

UPS locations include the UPS Store®, UPS drop boxes, UPS customer centers, authorized retail outlets and UPS drivers.

Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages.

Hand the package to any UPS driver in your area.

Take your package to any location of The UPS Store®, UPS Drop Box, UPS Customer Center, UPS Alliances (Office Depot® or Staples®) or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.

Customers with a Daily Pickup

Your driver will pickup your shipment(s) as usual.

# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Method Blank Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Lab ID: AB140714-1MB

Sample Matrix: SOLID  
Prep SOP: PAI 702 Rev 20

Prep Batch: AB140714-1  
QCBatchID: AB140714-1-4

Final Aliquot: 2.00 g  
Result Units: pCi/g

Date Collected: 14-Jul-14

Run ID: AB140714-1A

File Name: ABC0716A

Date Prepared: 14-Jul-14

Count Time: 60 minutes

Date Analyzed: 16-Jul-14

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.05 +/- 0.15	0.35	3	U
12587-47-2	GROSS BETA	0.13 +/- 0.19	0.42	4	U

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: AB1407114-1

# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Laboratory Control Sample(s)

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Lab ID: AB140714-1LCS

Sample Matrix: SOLID

Prep Batch: AB140714-1

Final Aliquot: 2.00 g

Prep SOP: PAI 702 Rev 20

QCBatchID: AB140714-1-4

Result Units: pCi/g

Date Collected: 14-Jul-14

Run ID: AB140714-1A

File Name: ABC0716A

Date Prepared: 14-Jul-14

Count Time: 60 minutes

Date Analyzed: 16-Jul-14

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	15.9 +/- 2.8	0.4	13.78	116	70 - 130	P
12587-47-2	GROSS BETA	16.5 +/- 2.8	0.7	14.35	115	70 - 130	P

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

Data Package ID: *AB1407114-1*

# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Field ID: 1BOHSE

Lab ID: 1407114-1

Sample Matrix: SOLID

Prep SOP: PAI 702 Rev 20

Date Collected: 02-Jul-14

Date Prepared: 14-Jul-14

Date Analyzed: 16-Jul-14

Prep Batch: AB140714-1

QCBatchID: AB140714-1-4

Run ID: AB140714-1A

Count Time: 60 minutes

Report Basis: As Received

Final Aliquot: 0.514 g

Prep Basis: As Received

Moisture(%): NA

Result Units: pCi/g

File Name: ABC0716

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.12 +/- 0.54	1.37	3	U
12587-47-2	GROSS BETA	0.81 +/- 0.80	1.71	4	U

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

**Data Package ID: AB1407114-1**

# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Field ID: 2TOHSW

Lab ID: 1407114-2

Sample Matrix: SOLID

Prep SOP: PAI 702 Rev 20

Date Collected: 02-Jul-14

Date Prepared: 14-Jul-14

Date Analyzed: 16-Jul-14

Prep Batch: AB140714-1

QCBatchID: AB140714-1-4

Run ID: AB140714-1A

Count Time: 60 minutes

Report Basis: As Received

Final Aliquot: 0.517 g

Prep Basis: As Received

Moisture(%): NA

Result Units: pCi/g

File Name: ABC0716

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.27 +/- 0.60	1.40	3	U
12587-47-2	GROSS BETA	0.49 +/- 0.79	1.76	4	U

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

**Data Package ID: AB1407114-1**



# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Field ID: 3TOHNE

Lab ID: 1407114-3

Sample Matrix: SOLID  
Prep SOP: PAI 702 Rev 20  
Date Collected: 02-Jul-14  
Date Prepared: 14-Jul-14  
Date Analyzed: 16-Jul-14

Prep Batch: AB140714-1  
QCBatchID: AB140714-1-4  
Run ID: AB140714-1A  
Count Time: 60 minutes  
Report Basis: As Received

Final Aliquot: 0.501 g  
Prep Basis: As Received  
Moisture(%): NA  
Result Units: pCi/g  
File Name: ABC0716

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.50 +/- 0.69	1.45	3	U
12587-47-2	GROSS BETA	0.80 +/- 0.84	1.81	4	U

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

**Data Package ID: AB1407114-1**

# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Field ID: 4TOHNW

Lab ID: 1407114-4

Sample Matrix: SOLID

Prep SOP: PAI 702 Rev 20

Date Collected: 02-Jul-14

Date Prepared: 14-Jul-14

Date Analyzed: 16-Jul-14

Prep Batch: AB140714-1

QCBatchID: AB140714-1-4

Run ID: AB140714-1A

Count Time: 60 minutes

Report Basis: As Received

Final Aliquot: 0.520 g

Prep Basis: As Received

Moisture(%): NA

Result Units: pCi/g

File Name: ABC0716

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.49 +/- 0.70	1.48	3	U
12587-47-2	GROSS BETA	0.26 +/- 0.75	1.72	4	U

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

**Data Package ID: AB1407114-1**

# Gross Alpha/Beta Analysis by GFPC

PAI 724 Rev 11

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1407114

Client Name: Kelzyme Research and Development Ctr LLC

ClientProject ID: Kelzyme Mine Site Rad Test KELZYME070214-1

Field ID: 5WWHPACK	Sample Matrix: SOLID	Prep Batch: AB140714-1	Final Aliquot: 0.505 g
Lab ID: 1407114-5	Prep SOP: PAI 702 Rev 20	QCBatchID: AB140714-1-4	Prep Basis: As Received
	Date Collected: 02-Jul-14	Run ID: AB140714-1A	Moisture(%): NA
	Date Prepared: 14-Jul-14	Count Time: 60 minutes	Result Units: pCi/g
	Date Analyzed: 16-Jul-14	Report Basis: As Received	File Name: ABC0716

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.03 +/- 0.54	1.47	3	U
12587-47-2	GROSS BETA	0.46 +/- 0.78	1.75	4	U

### Comments:

#### Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

#### Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

**Data Package ID: AB1407114-1**