

Exhibit D

Trona Analysis for Determination of State Royalty

Trona from Owens Lake is consumed by U.S. Borax Inc. (Borax) at its Boron facility as a chemical reagent in the processing of borate minerals. The majority of the borate minerals produced are *sodium* borates that are more soluble and easier to process than the lesser amounts of *calcium* borates. Without the use of about 1% trona in the borate mix, the dissolved calcium reacts with the liquor to form a mineral called probertite. Probertite forms scale in the piping which is difficult to remove. The trona also improves crystal structure that is recovered in U.S. Borax’s borate products.

The formula for trona is $\text{Na}_2\text{CO}_3 \cdot \text{NaHCO}_3 \cdot 2\text{H}_2\text{O}$. The state’s royalty calculation is based upon the CO_2 content as this is the valuable component used in the processing of borate minerals. The trona dissociates with the Na ion when added to the solution with the borate minerals while the CO_2 molecule latches onto the Ca ion from the calcium borates and precipitates as a waste product in the form of Calcium Carbonates (CaCO_3), which is discharged with the tailings.

The table below shows the formulas of the chemical compounds associated with trona and the percentage by weight of both CO_2 and Na_2O .

<u>Name</u>	<u>Formula</u>	<u>Molecular Weights</u>	<u>Percent CO_2</u>	<u>Percent Na_2O</u>
Trona	$\text{Na}_2\text{CO}_3 \cdot \text{NaHCO}_3 \cdot 2\text{H}_2\text{O}$	$106+84+2 \times 18=226$	$88/226=38.9\%$	$1.5 \times 62/226=41.2\%$
Sodium Carbonate	Na_2CO_3	$23 \times 2+12+16 \times 3=106$	$44/106=41.5\%$	$62/106=58.5\%$
Sodium Bicarbonate	NaHCO_3	$23+1+12+16 \times 3=84$	$44/84=52.4\%$	$.5 \times 62/84=36.9\%$
Carbon Dioxide	CO_2	$2+16 \times 2=44$		
Sodium Oxide	Na_2O	$23 \times 2+16=62$		

Table 1-Chemical compounds of the mineral Trona

The following is a description of how the trona is prepared for a composite sample in the determination of the CO_2 percentage for State Royalty calculations.

1. Each truckload (about 26 tons) of trona shipped from Owens Lake is sampled at the Lone Pine laboratory.
2. Composite samples are prepared that represent 24 truckloads (10 loads minimum, 29 loads maximum). The sampling periods are typically the 1st to the 15th of each month, and the 16th to the end of each month. The trucks are weighed at the Boron plant, and those weights are correlated to the delivery tickets. Two invoices are typically prepared each month, and they are used to assemble the quarterly royalty report.
3. The composite samples are typically analyzed using a Mettler T-50 titrimer. The samples are weighed, dissolved, filtered and titrated with hydrochloric acid. The titration has dual endpoints.
4. The samples once dissolved have a pH greater than ten due to the alkaline chemistry of the trona. Hydrochloric acid (HCl) is added until a pH of about 8.3 is achieved. $\text{Na}_2\text{CO}_3 + \text{HCl} \rightarrow \text{NaHCO}_3 + \text{NaCl}$ **pH 10 → pH 8.3 (first end point)**. At this point all of the sodium carbonate has been converted to sodium bicarbonate.
5. Then the titration continues to a pH of about 4. $\text{NaHCO}_3 + \text{HCl} \rightarrow \text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$ **pH 8.3 → pH 4 (second end point)**
6. By measuring the amount of HCl required of reach each endpoint the ratio of sodium carbonate and sodium bicarbonate is determined. It takes two molecules of HCl to neutralize each sodium carbonate molecule and one molecule of HCl for the sodium bicarbonate molecule.

The pure mineral trona is composed of 38.9% Sodium Carbonate (Na₂CO₃), 41.2% Sodium Bicarbonate (NaHCO₃), with the remainder being Water. However on Owens Lake, the trona contains impurities such as NaCl, NaSO₄ and other minerals, listed below, that render the percent of CO₂ and Na₂O. Below is an example of the detailed laboratory analysis that is required to determine the purity, value and State royalty.

Month	<u>A</u> <u>USB #</u>	<u>B</u> <u>Tons</u>	<u>C</u> <u>%Na₂CO₃</u>	<u>D</u> <u>%NaHCO₃</u>	<u>E</u> <u>%NaCl</u>	<u>F</u> <u>%Na₂SO₄</u>	<u>G</u> <u>%Insols</u>	<u>H</u> <u>%H₂O</u>	<u>I</u> <u>Na₂O</u>	<u>J</u> <u>CO₂</u>	<u>CO₂</u> <u>Tons</u> <u>(J x B)</u>	<u>Na₂O</u> <u>Tons</u> <u>(I x B)</u>
January	4721	645.89	35.36	25.86	5.57	3.87	6.41		30.23	28.22		
	4722	631.42	35.00	25.66	6.20	4.70	4.88		29.94	27.97		
	4723	775.32	36.20	26.89	5.66	3.01	5.82		31.10	29.11		
	4724	645.62	34.67	25.41	6.19	3.03	6.78		29.66	27.70		
	4725	649.75	32.93	24.52	3.51	2.59	6.67		28.31	26.51		
	4726	531.49	33.43	24.84	4.52	3.95	5.32		28.72	26.89		
	4727	291.96	31.56	23.10	2.65	2.00	7.77		26.98	25.20		
Total wt avg.		4171.45	34.46%	25.42%	5.12	3.39	6.12	25.49	29.54%	27.62%	1152.20	1232.23

Table 2: Laboratory analysis

To calculate the total amount of CO₂ in a shipment of trona, the following mathematical operations are performed, using the above CO₂ percentages and the laboratory sample percentages.

1. Multiply the percentage of sampled Na₂CO₃ (34.46%) by the percentage of CO₂ above (41.5%). $34.46\% \times 41.5\% = 14.31\%$
2. Multiply the percentage of samples NaHCO₃ (25.42%) by the percentage of CO₂ above (52.4%). $25.42\% \times 52.4\% = 13.31\%$
3. Add the products of (1) and (2) for total CO₂ percentage. $14.3\% + 13.3\% = 27.62\%$
4. Total tons of CO₂ = Total Gross Tonnage x % CO₂. $4171.45 \text{ tons} \times 27.62\% = 1152.20 \text{ tons}$

If in the future, U.S. Borax sells trona products on the open market, then the trona may be valued for its Na₂O content, and the same process would be used to determine the Na₂O $(34.43\% \times 58.5\%) + (25.42\% \times 36.9\%) = 29.54\%$.

For the lease quarter beginning August 1, 2009, U.S. Borax will pay the State \$167.72/short ton of CO₂. \$167.72 per ton of CO₂ will be adjusted in accordance with the Bureau of Labor Statistics Producer Price Index, Series ID WPU06130301 for natural sodium carbonate and sulfate. Therefore, for the example cited above for the month of January, **1152.20 tons** of CO₂ (Table 2: JxB) were produced from unprocessed product. Unprocessed product bears a royalty of 10% of the gross. Therefore, the example royalty to the State for the month of January would be:

$1152.20 \text{ tons of CO}_2 \times \$167.72/\text{short ton CO}_2 = \$193,246.98$

The State's 10% royalty for this month would be $\$193,246.98 \times 10\% = \underline{\$19,324.69}$.