1.0 Purpose

The purpose of this procedure is to explain how Batch and Lot numbers are assigned and used at Giles. Stability and reserve sampling is based on this Batch / Lot number assignment. Product is released upon issuance of CoAs using Lot numbers as described in this procedure. A well defined Batch / Lot numbering system ensures traceability is maintained from Manufacturing through Repackaging.

2.0 Scope

This procedure applies to both USP and Tech grade products in the Manufacturing and Repackaging facilities.

3.0 Responsibility

Quality Assurance is responsible for proper assignment of Batch and Lot numbers, release of product, and collection of reserve and stability samples.

Production employees are responsible for understanding and following the Batch / Lot numbering system.

4.0 Safety Considerations

PPE required in designated areas shall be donned.

Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or community.

5.0 Materials/Equipment

N/A

6.0 Procedure

Manufacturing:

The process at Manufacturing is recognized and accepted as a continuous process (See *Continuous Process Control Q13-PL-100-001)*. Therefore, Batch and Lot designations are defined by time. The product produced during the timeframe between discontinuation or change of flow, equipment cycles, interruptions, shut down, etc. are examples.

- *Batch #* - is assigned for bulk product produced during the time period between January 1 and December 31 of a given calendar year regardless of interruptions to the continuous flow process. A batch consists of one year's worth of bulk product. The Batch # will be represented by the last two digits of the four digits on the CoA for approved and released product.

- *Lot #* - is assigned for bulk product produced during the time period between any discontinuation, change of flow or interruption to the process. Routinely the Lot # will change on weekly clean days when production is idled for several hours; weekly clean days typically occur at the end of the week. The Lot number designation represents approximately one week's worth of product. If the system is idled for anything else before the next scheduled clean day, a new Lot number will be assigned using the same numerical designation. For example, Annual Shutdown has been replaced with a Phased Shutdown; product produced after each phase will be assigned a new Lot #. The Lot # will be represented by the first two digits of the four digits on the CoA for approved and released product.

- *Daily Affirmation Lot #* - is assigned for bulk product produced during an approximate 24 hour time period (7 am to 7 am – morning shift change). This number designation represents the number of days since clean day or any other significant idle condition. Salt produced after coming up from clean day or idling is designated as 01. Therefore, if this occurs on Thursday, Thursday (after idling) would be 01, Friday would be 02, Saturday would be 03…….. and so on until the next clean day or idle condition. The Daily Affirmation Lot # will be represented by the digit(s) in front of the four digit Lot/Batch # printed on approved and released product.

Example: Daily affirmation Lot # on product would appear as **05 1513**.

05 = fifth day of week since clean day or other interruption to process flow; this is the ***Daily Affirmation Lot*** number

15 = the number of times since January 1 that there were interruptions to the continuous process due to clean day or other planned or unplanned circumstances; the Lot # combined with the annual Batch # comprises the product Lot # on the CoA.

13 = current calendar 2013 year; this is the annual ***Batch*** number

The Lot# on the CoA would appear as **1513.**

- *Release of Lots* – Two USP samples are collected on clean day (or for any other interruption) for Lot change from each packaging line that is running; one at the beginning and one at the end of the production cycle. One sample (affirmation sample for the previous Lot) is collected just before idling the plant for weekly clean day or any other interruption and the second sample (new Lot) is collected when flow resumes and the process has stabilized. Samples are collected by QA and taken to the QA Lab for testing for release using the USP monograph. The new Lot number is assigned to product when production resumes; however, product is not released until USP testing has been successfully completed and a CoA issued by QA. Announcement of release is made electronically and the CoA is available on the Doc System.

  The daily affirmation Lot sample is collected from the sampling port every day at 7:00 am (shift change) and the affirmation Lot number is changed on product at this time. Product is not held pending daily USP results because it is released based on the Lot # USP testing results and CoA. This is only an affirmation of the Lot # USP test results from the continuous process.

  In the event that product fails a USP test, the *Out of Specification Investigation* procedure *(Q13-PR-100-025)* will be followed.

- *Stability Requirements* – Stability samples from each applicable packaging material will be collected each year during the first week of January representing the new Batch #. Samples will be collected for real time and accelerated studies. Accelerated stability samples must be kept at the correct temperature and humidity in a calibrated, temperature mapped chamber (T=40±2 and H=75± 5%). Industry practice defines 3 months of accelerated stability studies to be equivalent to 2 years and 6 months to 4 years. (See *USP Stability L12-PR-100-010*)

- *Reserve Sample Requirements* – Reserve samples are only required to be collected for each Lot, however, reserve samples will be collected daily by QA. Reserve samples will be securely stored by QA for at least one year beyond the three year expiration date (or 4 years). (See *Reserve Samples -Manufacturing L13-PR-100-042*)

Repackaging:

The process at Repackaging fits more of the traditional definition of a Batch /Lot process. There is a definitive starting and end point that defines a Lot. The change from the previous Lot to the next Lot occurs daily during the morning shift change. This is the only time period that the lines will either idle or shut down.

- *Batch #* - Repackaging retains the same annual Batch number as Manufacturing; Batches are not mixed within final product.

- *Lot #* - Repackaging assigns daily Lot numbers based on the Julian day + year. Daily Lot number assignment is required because packaging lines actually shut down and start up daily. Using this scheme allows for more than one Manufacturing Lot to be used in Repackaging final product. However, different Manufacturing Batches may not be combined in Repackaging final product.

- *Release of Lots* – Three samples are collected for each daily Lot from each packaging line that is running USP product; one at the beginning, one in the middle, and one at the end of the day. Samples (pouch, carton, etc.) are collected at the end of the day (Lot affirmation samples) before the lines are shut down and then again in the morning after the lines have started and stabilized (new Lot samples). The actual number of samples depends on which packaging lines are running on a particular day. Samples are picked up by QA in the morning and taken to the QA Lab to begin USP testing on the beginning and end samples. The middle sample will be kept as a reserve sample and tested later if deemed necessary. The Lot number will have already been assigned at start-up based on the Julian date. Product will not be released until USP testing has been successfully completed and a CoA issued by QA. However, product will be released "at risk" to PLDevelopments (see contract) until USP test results are available and the CoA issued by QA. Announcement of release is made electronically and the CoA is available on the Doc System.

- *Stability Requirements* – Only one stability study per Batch is required. Therefore, one of each representative packaging (pouch, carton, etc.) per year (Batch) will be collected to put on stability.

- *Reserve Samples Requirements* – Reserve samples are collected for each Lot (daily). The reserve samples are collected in the middle of the day and consist of each representative packaging (pouch, carton, etc.). This sample serves as the 'middle of a Lot' sample required for the beginning-middle-end sampling strategy. (See *Reserve Samples - Repackaging R12-PR-100-008*)

7.0 Reference Documents

USP Stability	*(L12-PR-100-010)*
Out of Specification Investigation	*(Q13-PR-100-025)*
Reserve Samples - Manufacturing	*(L13-PR-100-042)*
Reserve Samples - Repackaging	*(R12-PR-100-008)*

8.0 Change Information

Defined how the Batch/Lot Numbering system will be affected by the Manufacturing process changing from an annual shutdown to an annual phased shutdown.