CWM COMMENT NUMBER: 82

TOPIC:

RMU-2 Waste Disposal
Department Waste Stream Review Process

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition E.3.e, Page G-30

EXISTING CONDITION:

e. Waste stream review requests for New York State remedial wastes shall include the designation "NYA" in the comments section of the request.

PROPOSED MODIFICATION:

Revise as follows:

Delete entire Condition E.3.e

REASON:

The annual waste cap for RMU-2 is established at 500,000 tons per year by Condition E.1 and does not contain an exemption for New York State remedial wastes. Therefore, the use of the designation "NYA" is not necessary in the comments section of the waste stream review request.

CWM COMMENT NUMBER: 83

TOPIC:

RMU-2 Waste Disposal
Waste Disposal Limitations
Low Strength Wastes

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition E.5.e, Page G-33 to G-34

EXISTING CONDITION:

e. Low Strength Wastes

i. For each non-containerized bulk waste stream to be disposed of in RMU-2, the Permittee must determine that the strength properties of such waste satisfy values in waste's cohesion and friction angle that were assumed in the RMU-2 design and stability analyses presented in Section 3.4.1 and Appendices C-5 through C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit.

ii. For bulk contaminated soils, and any dry bulk contaminated soil-like materials (e.g., sandblast grit, salts, etc.) as determined by the Department on a case-by- case basis, a soil identification may be performed and, based on the established strength characteristics for the soil type in terms of cohesion and friction angle, the contaminated soil or approved soil-like material may be judged to have sufficient strength using Table 9.1 from "Design Manual - Soil Mechanics, Foundations and Earth Structures", NAVFACDM-7, March 1971.

iii. For non-soil and non-soil-like (hereafter referred to collectively as "non-soil") bulk waste streams, the Permittee must perform a compressive strength analysis using either:

- a remolded sample from the waste generator ("sale sample"),
  or

- a remolded sample taken prior to placement in RMU-2 ("field mix/as received sample"). The sample must be obtained from the actual field mixing process being utilized or from "as received" wastes not requiring stabilization prior to disposal.

iv. "Non-soil" bulk waste streams which are received at a rate equal to or less than 100 tons per year may be landfilled without compressive strength analysis. The first 20 tons of "non-soil" bulk waste streams that will be landfilled at a rate of greater than 100 tons per year may be landfilled prior to completion of the compressive strength analysis (waste in excess of the 20 tons may not be landfilled until satisfactory compressive strength analysis results are obtained). The Permittee must indicate the use of either exclusion on the waste stream information it submits for Department review in accordance with **Condition E.3** of this Exhibit.

v. Any bulk waste whose "sale sample" fails to meet the required minimum strength values for RMU-2 as assumed in the RMU-2 design and stability analyses presented in Section 3.4.1 and Appendices C-5 through C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, using 75% cohesion after no more than one week of curing, shall not be accepted for disposal in RMU-2.

For any bulk (non-soil) waste load where a "field mix/as received sample" is undergoing testing in accordance with **Condition E.5.e.iii** of this Exhibit to confirm compliance with minimum strength values, but which does not require stabilization and TCLP testing to confirm compliance with Land Disposal Restrictions (LDRs), the load may be placed in Interim Storage in the landfill pending strength testing results under the following conditions:

- The load must be placed on a geosynthetic separation material or a stone layer with a minimum thickness of 2 inches, in a distinct interim storage pile, separate from other bulk waste loads and other wastes.

- Each such interim storage pile must have a flag or other marker displayed with an identifier(s) that correlates to the waste tracking information which indicates the specific waste in the pile and the date the pile was placed in the landfill.

- Daily cover must be applied to all interim storage piles on the date of their placement in the landfill and maintained for the duration of each pile's storage period.

Any bulk waste whose "field mix/as received sample" test result fails to meet the required minimum strength values for RMU-2 as assumed in the

RMU-2 design and stability analyses presented in Section 3.4.1 and Appendices C-5 through C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, using 100% cohesion after no more than one week of curing shall not be disposed in RMU-2 and must be immediately removed from landfill interim storage for re-processing or disposition by other than land disposal means. Any bulk waste load whose "field mix/as received sample" test result confirms that it meets required minimum waste strengths, may be disposed of in RMU-2. The Permittee also must not dispose of any below minimum strength bulk waste in RMU-2 by placing it in macroencapsulation boxes or other non-steel containers. Results of all testing performed pursuant to this condition, and documentation on waste quantities necessary to demonstrate compliance with the restrictions contained in this condition, must be included in the Operating Record in accordance with 6 NYCRR 373-2.5(c). The Permittee must report any failed samples to the Department promptly.

vi. The Permittee must promptly notify the Department of any bulk waste stream, which has previously passed the soil identification or compressive strength analysis, for which visual observation and/or testing indicates changed physical or chemical characteristics and is suspected of no longer being of acceptable strength. The Department may select this or any other bulk waste stream it deems appropriate for additional compressive strength analysis by the Permittee, at its discretion. The requirements of this condition do not apply to solid debris and wastes contained in steel drums or other rigid steel containers.

PROPOSED MODIFICATION:

Revise as follows:

e. Low Strength Wastes

i. ~~For each non-containerized bulk waste stream to be disposed of in RMU-2, the Permittee must determine that the strength properties of such waste satisfy values in waste's cohesion and friction angle that were assumed~~ *At least ninety (90) days prior to the receipt of waste in the initial cell, the Permittee must submit for Department approval, an RMU-2 Operations & Maintenance (O&M) Manual in accordance with Condition F.1.a of this Exhibit. The RMU-2 O&M Manual must contain a Low Strength Waste Management Plan which shall include the testing and operational elements*

for the management and disposal of Low Strength Waste. The Low Strength Management Plan shall be developed based on the assumptions in the RMU-2 design and stability analyses presented in Section 3.4.1 and Appendices C-5 through C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit.

ii. For bulk contaminated soils, and any dry bulk contaminated soil-like materials (e.g., sandblast grit, salts, etc.) as determined by the Department on a case-by- case basis, a soil identification may be performed and, based on the established strength characteristics for the soil type in terms of cohesion and friction angle, the contaminated soil or approved soil-like material may be judged to have sufficient strength using Table 9.1 from "Design Manual - Soil Mechanics, Foundations and Earth Structures", NAVFACDM-7, March 1971.

iii. For non-soil and non-soil-like (hereafter referred to collectively as "non-soil") bulk waste streams, the Permittee must perform a ~~compressive~~ strength ~~analysis using either:~~ *assessment using tests such as liquid limit, plastic limit, direct shear test, etc. as outlined in the RMU-2 Operations & Maintenance Manual.*

~~- a remolded sample from the waste generator ("sale sample"),~~
~~or~~

~~- a remolded sample taken prior to placement in RMU-2 ("field mix/as received sample"). The sample must be obtained from the actual field mixing process being utilized or from "as received" wastes not requiring stabilization prior to disposal.~~

iv. "Non-soil" bulk waste streams which are received at a rate equal to or less than 100 tons per year may be landfilled without ~~compressive~~ strength analysis. The first 20 tons of "non-soil" bulk waste streams that will be landfilled at a rate of greater than 100 tons per year may be landfilled prior to completion of the ~~compressive~~ strength analysis (waste in excess of the 20 tons may not be landfilled until satisfactory ~~compressive~~ strength analysis results are obtained). The Permittee must indicate the use of either exclusion on the waste stream information it submits for Department review in accordance with **Condition E.3** of this Exhibit.

v. Any bulk waste whose "sale sample" fails to meet the required ~~minimum~~ strength ~~values~~ *criteria* for RMU-2 as ~~assumed in the RMU-2 design and stability analyses presented in Section 3.4.1 and Appendices C-5 through~~

~~C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit~~ *established in the RMU-2 O&M Manual/Low Strength Management Plan*, ~~using 75% cohesion after no more than one week of curing, shall not be accepted for disposal in RMU-2~~ *will not be approved for unrestricted direct landfill disposal.*

For any bulk (non-soil) waste load where a "field mix/as received sample" is undergoing testing in accordance with **Condition E.5.e.iii** of this Exhibit to confirm ~~compliance with minimum~~ *that it meets the* strength *criteria* ~~values~~, but which does not require stabilization and TCLP testing to confirm compliance with Land Disposal Restrictions (LDRs), the load may be placed in Interim Storage in the landfill pending strength ~~testing~~ *evaluation* results under the following conditions:

- The load must be placed on a geosynthetic separation material or a stone layer with a minimum thickness of 2 inches, in a distinct interim storage pile, separate from other bulk waste loads and other wastes.

- Each such interim storage pile must have a flag or other marker displayed with an identifier(s) that correlates to the waste tracking information which indicates the specific waste in the pile and the date the pile was placed in the landfill.

- Daily cover must be applied to all interim storage piles on the date of their placement in the landfill and maintained for the duration of each pile's storage period.

Any bulk waste whose "field mix/as received sample" test result fails to meet the required ~~minimum~~ strength *criteria* ~~values~~ for RMU-2 as ~~assumed in the RMU-2 design and stability analyses presented in Section 3.4.1 and Appendices C-5 through C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit~~ *indicated in the RMU-2 O&M Manual*, ~~using 100% cohesion~~ after no more than one week of curing shall not be disposed in RMU-2. ~~and~~ *It* must be ~~immediately~~ removed from landfill interim storage for re-processing or ~~disposition by other than land disposal means~~ *off-site disposal*. Any bulk waste load whose "field mix/as received sample" test result confirms that it meets required ~~minimum~~ waste strength~~s~~ *criteria*, may be disposed of in RMU-2. The Permittee also must not dispose of any ~~below minimum strength~~ bulk

waste *that does not meet the strength criteria* in RMU-2 by placing it in macroencapsulation boxes or other non-steel containers. Results of all testing performed pursuant to this condition, and documentation ~~on waste quantities~~ necessary to demonstrate compliance with the restrictions contained in this condition, must be included in the Operating Record in accordance with 6 NYCRR 373-2.5(c). The Permittee must report any failed samples to the Department promptly.

vi. The Permittee must promptly notify the Department of any bulk waste stream, which has previously passed the soil identification or ~~compressive~~ strength *assessment* ~~analysis~~, for which visual observation and/or testing indicates changed physical or chemical characteristics and is suspected of no longer being of acceptable strength. The Department may select this or any other bulk waste stream it deems appropriate for additional ~~compressive~~ strength *evaluation* ~~analysis~~ by the Permittee, at its discretion. The requirements of this condition do not apply to solid debris and wastes contained in steel drums or other rigid steel containers.

REASON:

The stability analyses presented in the RMU-2 Engineering Report assumed the average waste strengths for the total waste mass. These waste strengths should not be used as allowable minimums. The condition as presented would not allow the disposal of waste that did not meet this average value. CWM's subject expert has suggested other geotechnical tests that may be used to perform waste strength assessments. Therefore, CWM proposes that the criteria for establishing the parameters for accepting Low Strength Waste be provided in the RMU-2 O&M Manual to be prepared and submitted for RMU-2 (Comment 86).

CWM COMMENT NUMBER: 84

TOPIC:

RMU-2 Waste Disposal
Interim Storage of Stabilized Waste in Containers in RMU-2

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition E.7, Page G-35/36

EXISTING CONDITION:

7. Interim Storage of Stabilized Waste in Containers in RMU-2

The Permittee may place stabilized bulk wastes in interim storage while awaiting results of Toxicity Characteristic Leaching Procedure (TCLP) tests to determine the waste's compliance with land disposal restrictions in 6 NYCRR 376. All such bulk wastes awaiting TCLP test results must be in covered roll-offs or drums which may be stored within the RMU-2 landfill or in other Container Storage Areas at the facility which are allowed by this Permit to store these container types. The placement, storage and ultimate disposition of such waste must be in accordance with the following requirements:

a. Each such interim storage container must have a flag or other marker displayed with an identifier(s) that correlates to waste tracking information which indicates the specific waste in the container and the date the container was sampled for TCLP testing.

b. If the TCLP test result on a stabilized bulk waste load in an interim storage container indicates that the waste meets requirements for land disposal, the Permittee may place the waste in a permanent disposal location within RMU-2.

c. If the TCLP test results on a stabilized bulk waste load in an interim storage container indicate that the waste does not meet requirements for land disposal, the Permittee must either re-stabilize the waste load or have it transported for proper disposal at an appropriate off-site facility in accordance with all applicable regulations. Any such failed stabilized waste load that the Permittee elects to restabilize must be stored in an interim storage container subsequent to re-stabilization, and may not be permanently disposed in the landfill until it is retested and the test results indicate the waste's compliance with the land disposal restrictions in 6 NYCRR 376.

PROPOSED MODIFICATION:

Revise as follows:

7. ~~Interim~~ Storage of Stabilized Waste in Containers ~~in RMU-2~~

The Permittee may place stabilized bulk wastes in ~~interim~~ storage while awaiting results of Toxicity Characteristic Leaching Procedure (TCLP) tests to determine the waste's compliance with land disposal restrictions in 6 NYCRR 376. All such bulk wastes awaiting TCLP test results must be in covered roll-offs or drums which ~~may~~ *must* be stored ~~within the RMU-2 landfill or~~ in ~~other~~ Container Storage Areas at the facility which are allowed by this Permit to store these container types. The placement, storage and ultimate disposition of such waste must be in accordance with the following requirements:

a. Each such interim storage container must have a ~~flag or other~~ marker displayed with an identifier(s) that correlates to waste tracking information which indicates the specific waste in the container and the date the container was sampled for TCLP testing.

b. If the TCLP test result on a stabilized bulk waste load in a~~n interim~~ storage container indicates that the waste meets requirements for land disposal, the Permittee may place the waste in a permanent disposal location within RMU-2.

c. If the TCLP test results on a stabilized bulk waste load in a~~n interim~~ storage container indicate that the waste does not meet requirements for land disposal, the Permittee must either re-stabilize the waste load or have it transported for proper disposal at an appropriate off-site facility in accordance with all applicable regulations. Any such failed stabilized waste load that the Permittee elects to restabilize must be stored in a~~n interim~~ storage container subsequent to re-stabilization, and may not be permanently disposed in the landfill until it is retested and the test results indicate the waste's compliance with the land disposal restrictions in 6 NYCRR 376.

REASON:

Permit condition revision based on current Sitewide Part 373, modified by Permit Modification No. 7 issued by the NYSDEC on June 20, 2014 and Permit Modification No. 9 issued June 27, 2014.

CWM COMMENT NUMBER: 85

TOPIC:

RMU-2 Waste Disposal
Final Waste Screening Procedures
Non-Containerized (Bulk) Wastes

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition E.8.b, Page G-36/37

EXISTING CONDITION:

b. Non-Containerized (Bulk) Wastes

The Permittee must spread out all bulk waste loads in thin layers within the landfill to facilitate a final inspection. During or subsequent to the spreading of a waste load, but prior to it being covered by other wastes or daily cover, the Permittee must have trained landfill personnel familiar with the waste disposal conditions of this Permit visually inspect the waste for conformance with all waste disposal Permit conditions. This inspection must be conducted in a manner consistent with the Personnel Training Plan in Attachment H of the Permit and the Permittee's safety policies, using field glasses (i.e., binoculars) where necessary to facilitate a safe and thorough inspection of the waste surface. Any bulk waste load, or portion thereof, which is identified by landfill personnel as not meeting the land disposal restrictions/requirements of this Permit, must be placed in an appropriate container(s) and removed from the landfill. In addition, any fire or apparent reaction identified by landfill personnel as occurring within a bulk waste load or on the waste in the landfill shall require the immediate implementation of the Facility's Contingency Plan in Attachment G of this Permit.

PROPOSED MODIFICATION:

Revise as follows:

b. Non-Containerized (Bulk) Wastes

The Permittee must spread out all bulk waste loads in thin layers within the landfill to facilitate a final inspection. During or subsequent to the spreading of a waste load, but prior to it being covered by other wastes or daily cover, the Permittee must have trained landfill personnel familiar with the waste disposal conditions of this Permit visually inspect the waste for conformance with all waste disposal Permit conditions. This inspection must be conducted in a manner

consistent with the Personnel Training Plan in Attachment H of the Permit and the Permittee's safety policies, using field glasses (i.e., binoculars) where necessary to facilitate a safe and thorough inspection of the waste surface. Any bulk waste load, or portion thereof, which is identified by landfill personnel as *obviously* not meeting the land disposal restrictions/requirements of this Permit, must be placed in an appropriate container(s) and removed from the landfill. In addition, any fire or apparent reaction identified by landfill personnel as occurring within a bulk waste load or on the waste in the landfill shall require the immediate implementation of the Facility's Contingency Plan in Attachment G of this Permit.

REASON:

Condition should be revised to be consistent with existing Exhibit F, Condition E.g.i.'b' for waste placement in RMU-1 landfill.

CWM COMMENT NUMBER: 86

TOPIC:

RMU-2 Operating Requirements
Additional RMU-2 Operational Plans
RMU-2 Operations & Maintenance (O&M) Manual

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.1.a.i, Page G-38/39

EXISTING CONDITION:

a. RMU-2 Operations & Maintenance (O&M) Manual

i. Initial Cell

Prior to commencing construction of the first RMU-2 cell, the Permittee must submit for Department approval, an RMU-2 O&M Manual which provides operational details for the first RMU-2 landfill cell. It must include the landfill operational requirements as presented in the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, and as stipulated by this Exhibit. This RMU-2 O&M Manual must be based on and formatted in conformance with, and contain all the comparable landfill operational elements as presented in the "RMU-1 Operations & Maintenance (O&M) Manual which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, including, but not limited to:

- a figure, or figures, indicating the haul routes into and out of the cell at all stages of cell fill progression, from initial waste placement up through the cell's maximum fill progression as depicted on RMU-2 Landfill Drawing No. 8 ("Cell 20 Initial Fill Progression") contained in Attachment J, Appendix D-6a of this Permit;

- A description and a figure indicating the "acid-sensitive", "acid generating" and "buffer" zones within the cell;

- An indication of the elevation corresponding to one (1) foot of leachate head on the cell's primary geomembrane liner (outside the sump) which is associated with leachate collection and removal requirements specified by **Condition F.5.a** of this Exhibit, based on the cell's design; and

– Detailed specific designs for all storm water perimeter infiltration channels, culverts and retention basins based on the leachate and storm water management elements and evaluations contained in Appendices E & F of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit.

No waste shall be placed in the initial RMU-2 cell prior to Department approval of this manual.

PROPOSED MODIFICATION:

Revise as follows:

a. RMU-2 Operations & Maintenance (O&M) Manual

i. Initial Cell

Prior to commencing construction of the first RMU-2 cell, *or other time-frame as approved by the Department*, the Permittee must submit for Department approval, an RMU-2 O&M Manual which provides operational details for the first RMU-2 landfill cell. It must include the landfill operational requirements as presented in the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, and as stipulated by this Exhibit. This RMU-2 O&M Manual must be based on and formatted in conformance with, and contain all the comparable landfill operational elements as presented in the "RMU-1 Operations & Maintenance (O&M) Manual which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, including, but not limited to:

– a figure, or figures, indicating the haul routes into and out of the cell at all stages of cell fill progression, from initial waste placement up through the cell's maximum fill progression as depicted on RMU-2 Landfill Drawing No. 8 ("Cell 20 Initial Fill Progression") contained in Attachment J, Appendix D-6a of this Permit;

– A description and a figure indicating the "acid-sensitive", "acid generating" and "buffer" zones within the cell;

– *A Low Strength Waste Management Plan in accordance with Condition E.5.e of this Exhibit;*

- An indication of the elevation corresponding to one (1) foot of leachate head on the cell's primary geomembrane liner (outside the sump) which is associated with leachate collection and removal requirements specified by **Condition F.5.a** of this Exhibit, based on the cell's design; and

- Detailed specific designs for all storm water perimeter infiltration channels, culverts and retention basins based on the leachate and storm water management elements and evaluations contained in Appendices E & F of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit.

No waste shall be placed in the initial RMU-2 cell prior to Department approval of this manual.

REASON:

The requirement to submit an Operations and Maintenance Manual prior to commencing construction of the first RMU-2 cell is too restrictive. Upon issuance of the permit modification for RMU-2, CWM will likely want to start excavations, MSE wall construction, and filling procedures to attain subgrade elevations as soon as practical. The proposed revision allows flexibility for submittal of the plan. Ultimately, the NYSDEC must approve the plan prior to any waste receipts. The revision also adds the requirement for the preparation and inclusion in the RMU-2 O&M Manual of a Low Strength Waste Management Plan. See related Comment Nos. 9 and 83.

CWM COMMENT NUMBER: 87

TOPIC:

RMU-2 Operating Requirements
Additional RMU-2 Operational Plans
RMU-2 Cell Fill Progression Plan

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.1.b.i, Page G-40

EXISTING CONDITION:

b. RMU-2 Cell Fill Progression Plan

i. Initial Cell

Prior to commencing construction of the initial RMU-2 cell, the Permittee must submit for Department approval, an RMU-2 Cell Fill Progression Plan. The Plan must contain details on the placement of waste in the initial RMU-2 cell from initial waste placement up through the cell's maximum fill progression as depicted on RMU-2 Landfill Drawing No. 8 ("Cell 20 Initial Fill Progression") contained in Attachment J, Appendix D-6a of this Permit, and must depict the design of any and all storm water management features within the cell (e.g., retention basins, etc.). This Plan must conform to the waste placement and landfill stability requirements presented in the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, and as stipulated by **Condition F.4** of this Exhibit. No waste shall be placed in the initial RMU-2 cell prior to Department approval of this Plan.

ii. Subsequent Cells

Prior to commencing construction of each subsequent RMU-2 cell, the Permittee must submit for Department approval, an addendum to the previously approved RMU-2 Cell Fill Progression Plan. Each Plan addendum must contain details on the placement of waste in the subsequent RMU-2 cell from initial waste placement in the new cell up through the maximum fill progression in the new and previously operational cells. Each addendum must indicate a fill progression and final cover installation which is consistent with the waste filling sequencing depicted on RMU-2 Landfill Drawing No. 9 ("Conceptual Waste Filling and Final Cover Sequencing") contained in Attachment J, Appendix D-6a of this Permit, and must depict the design of any and all storm water management features within the operational area of the landfill including the new cell (e.g., retention basins,

etc.). Each Plan addendum must present landfill stability analyses (both static and seismic) for the maximum fill progression up through the new cell which conforms to the waste placement and landfill stability requirements presented in the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, and as stipulated by **Condition F.4** of this Exhibit. No waste shall be placed in each subsequent RMU-2 cell prior to Department approval of each Plan addendum.

PROPOSED MODIFICATION:

Revise as follows:

b. RMU-2 Cell Fill Progression Plan

i. Initial Cell

Prior to commencing construction of the initial RMU-2 cell, *or other time-frame as approved by the Department*, the Permittee must submit for Department approval, an RMU-2 Cell Fill Progression Plan. The Plan must contain details on the placement of waste in the initial RMU-2 cell from initial waste placement up through the cell's maximum fill progression as depicted on RMU-2 Landfill Drawing No. 8 ("Cell 20 Initial Fill Progression") contained in Attachment J, Appendix D-6a of this Permit, and must depict the design of any and all storm water management features within the cell (e.g., retention basins, etc.). This Plan must conform to the waste placement and landfill stability requirements presented in the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, and as stipulated by **Condition F.4** of this Exhibit. No waste shall be placed in the initial RMU-2 cell prior to Department approval of this Plan.

ii. Subsequent Cells

Prior to commencing construction of each subsequent RMU-2 cell, the Permittee must submit for Department approval, an addendum to the previously approved RMU-2 Cell Fill Progression Plan. Each Plan addendum must contain details on the placement of waste in the subsequent RMU-2 cell from initial waste placement in the new cell up through the maximum fill progression in the new and previously operational cells. Each addendum must indicate a fill progression and final cover installation which is consistent with the waste filling sequencing depicted on RMU-2 Landfill Drawing No. 9 ("Conceptual Waste Filling and Final Cover Sequencing") contained in Attachment J, Appendix D-6a of this Permit, and must depict the design of any and all storm water management features within the operational area of the landfill including the new cell (e.g., retention basins,

etc.). Each Plan addendum must present landfill stability analyses (~~both~~ static ~~and seismic~~) for the maximum fill progression up through the new cell which conforms to the waste placement and landfill stability requirements presented in the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, and as stipulated by **Condition F.4** of this Exhibit. *The Plan addendum for the second cell of RMU-2 shall utilize data generated from the monitoring of pore water pressures from the first operational cell required by Condition D.5.c of this Exhibit.* No waste shall be placed in each subsequent RMU-2 cell prior to Department approval of each Plan addendum.

REASON:

The requirement to submit a Fill Progression Plan prior to commencing construction of the first RMU-2 cell is too restrictive. Upon issuance of the permit modification for RMU-2, CWM will likely want to start excavations, MSE wall construction, and filling procedures to attain subgrade elevations as soon as practical. The proposed revision allows flexibility for submittal of the plan. Ultimately, the NYSDEC must approve the plan prior to any waste receipts. See related Comment No. 9.

The requirement for seismic analysis of each operational step was shown in Appendices C-5, C-8, and C-9 of the RMU-2 Engineering Report (November 2013) to be a non-issue and not a requirement in accordance with the rules. The seismic analyses were presented as a demonstration that they were indeed not controlling issues. The continued assumption that these analyses are needed and the requirement to constantly rerun shake analyses to reflect the new geometries places an added unnecessary burden. The Engineering Report has shown that seismic behavior is a non-controlling factor at the site.

The condition as presented also does not appear to allow for further refinement of parameters concerning pore pressure dissipation based on the data that will be gathered from the monitoring of vibrating wire piezometers. The pore pressure under the initial operational cell will be monitored using vibrating wire piezometers. The results from the piezometers will allow the relationship between filling rates and pore pressures to be measured as opposed to predicted. The values obtained will be used to assess fill rates for future operational cells.

See related Comment No. 9.

CWM COMMENT NUMBER: 88

TOPIC:

RMU-2 Operating Requirements
Additional RMU-2 Operational Plans
RMU-2 Cell Leachate and Storm Water Management Plan

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.1.c.i, Page G-41, first sentence

EXISTING CONDITION:

c. RMU-2 Cell Leachate and Storm Water Management Plan

i. Initial Cell

Prior to commencing construction of the initial RMU-2 cell, the Permittee must submit for Department approval, an RMU-2 Cell Leachate and Storm Water Management Plan.

PROPOSED MODIFICATION:

Revise as follows:

c. RMU-2 Cell Leachate and Storm Water Management Plan

i. Initial Cell

Prior to commencing construction of the initial RMU-2 cell, *or other time-frame as approved by the Department*, the Permittee must submit for Department approval, an RMU-2 Cell Leachate and Storm Water Management Plan.

REASON:

The requirement to submit a Leachate and Storm Water Management Plan prior to commencing construction of the first RMU-2 cell is too restrictive. Upon issuance of the permit modification for RMU-2, CWM will likely want to start excavations, MSE wall construction, and filling procedures to attain subgrade elevations as soon as practical. The proposed revision allows flexibility for submittal of the plan. Ultimately, the NYSDEC must approve the plan prior to any waste receipts. See related Comment No. 9.

CWM COMMENT NUMBER: 89

TOPIC:

RMU-2 Operating Requirements
RMU-2 Waste Mass Stability

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.4, Page G-43

EXISTING CONDITION:

4. RMU-2 Waste Mass Stability

The Permittee must maintain RMU-2 waste mass stability at all times during the landfill operational period. Any and all slope stability analyses required by **Condition F.1.b.ii** of this Exhibit, must be conducted in accordance with the methods and assumptions used in Section 3.4.1.4 and Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, including, but not limited to the landfill material and subgrade properties presented in Tables 2.2 & 3.1 of the above referenced Appendix C-9. All such stability analyses must evaluate both "circular" and "sliding block" failure modes under both "static" and "seismic" conditions. The results of these stability analyses must indicate a Factor of Safety of 1.5 or greater for static conditions and a liner system displacement of no greater than ¼ of an inch for seismic conditions in accordance with the above referenced Appendix C-9.

a. Cell Interior Waste Slopes

RMU-2 cell interior waste slopes (i.e., waste slopes within a cell at all stages of fill progression) must not exceed a 3 on 1 gradient, except under specific circumstances allowed by this Permit condition. The Permittee may construct waste slopes within an RMU-2 cell with gradients between 3 on 1 and 2 on 1 as long as such slopes do not exceed the maximum vertical height from toe to crest of 20 feet, based on the stability analyses of 2 on 1 waste slopes in Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. Under no circumstances may the Permittee construct any cell interior waste slopes exceeding a 2 on 1 gradient.

PROPOSED MODIFICATION:

Revise as follows:

4. RMU-2 Waste Mass Stability

The Permittee must maintain RMU-2 waste mass stability at all times during the landfill operational period. Any and all slope stability analyses required by **Condition F.1.b.ii** of this Exhibit, must be conducted in accordance with the methods and assumptions used in Section 3.4.1.4 and Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit, including, but not limited to the landfill material and subgrade properties presented in Tables 2.2 & 3.1 of the above referenced Appendix C-9. All such stability analyses must evaluate ~~both "circular" and "sliding block" failure modes under both~~ "static" ~~and "seismic"~~ conditions. The results of these stability analyses must indicate a Factor of Safety of 1.5 or greater for static conditions ~~and a liner system displacement of no greater than ¼ of an inch for seismic conditions~~ in accordance with the above referenced Appendix C-9.

a. Cell Interior Waste Slopes

RMU-2 cell interior waste slopes (i.e., waste slopes within a cell at all stages of fill progression) must not exceed a 3 on 1 gradient, except under specific circumstances allowed by this Permit condition. The Permittee may construct waste slopes within an RMU-2 cell with gradients between 3 on 1 and 2 on 1 as long as such slopes do not exceed the maximum vertical height from toe to crest of ~~20~~ *33* feet, based on the stability analyses of 2 on 1 waste slopes in Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. Under no circumstances may the Permittee construct any cell interior waste slopes exceeding a 2 on 1 gradient.

REASON:

There is no need to do both circular and block failures; a program that allows shape morphing should and will be used. The Design Engineer will use the most appropriate type for the job at hand.

The requirement for seismic analysis of each operational step was shown in Appendices C-5, C-8, and C-9 of the RMU-2 Engineering Report to be a non-issue and not a requirement in accordance with the rules. The seismic analyses were presented as a demonstration that they were indeed not controlling issues. The continued assumption that these analyses are needed and the requirement to constantly rerun shake analyses to reflect the new geometries places an added unnecessary burden. The Engineering Report has shown that seismic behavior is a non-controlling factor at the site.

The assignment of a maximum vertical height from toe to crest of 20 feet is arbitrary. Section 3.3.5 of Appendix C-9 of the Engineering Report for RMU-2 indicates that a 2:1 slope of 33 feet high was investigated. This represents the maximum fill zone that can practically be left at a 2:1 slope while maintaining access and drainage. The results of the analyses show that if the lift heights are subject to the same time constraint of filling to reach the lift top elevation, then the factors of safety are essentially the same as those attained for the grading scheme shown in the fill progression plan.

CWM COMMENT NUMBER: 90

TOPIC:

RMU-2 Operating Requirements
Primary Leachate and Contaminated Storm Water Run-Off Management
RMU-2 Cell Primary Leachate Collection Pipe Flush & Check

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.5.d, Page G-46

EXISTING CONDITION:

d. RMU-2 Cell Primary Leachate Collection Pipe Flush & Check

For all RMU-2 cells, the Permittee must run a "hydroflush" device on a flexible hose along the entire length of each cell's primary leachate collection pipe at a minimum of twice per calendar year, with the second flush coming no sooner than five (5) months after the first. This frequency may be decreased to once every two (2) years for cells where the final cover has been in place over the entire cell for more than one year. The length of the flexible hose insertion must be measured, recorded and compared against the documented as-built length of each cell's primary leachate collection pipe to verify the pipe's integrity over its entire length. After each hydroflush, a video camera must be advanced down each pipe to provide a visual record of the pipe's condition, help determine the hydroflush's effectiveness in removing any buildup of waste residue in the pipe interior or in its perforations, and help identify any problems encountered during the hydroflush (e.g., failure of the hydroflush hose to reach the end of the pipe). The Permittee must provide on-site Department staff with 24 hours advance notice of the Permittee's performance of the pipe flush and videotaping. The Permittee must record the results including any problems encountered and the video tape record, and submit them to the Department within thirty (30) days of completing each pipe flush and videotaping. Upon review of each such submission, the Department may require the Permittee to perform additional hydroflushing or take other actions necessary to maintain each pipe's designed collection and flowcapability.

PROPOSED MODIFICATION:

Revise as follows:

d. RMU-2 Cell Primary Leachate Collection Pipe Flush & Check

For all RMU-2 cells, the Permittee must run a "hydroflush" device on a flexible hose along the entire length of each cell's primary leachate collection pipe at a minimum of

~~twice~~ *once* per calendar year~~, with the second flush coming no sooner than five (5) months after the first~~. This frequency may be decreased to once every two (2) years for cells where the final cover has been in place over the entire cell for more than one year. The length of the flexible hose insertion must be measured, recorded and compared against the documented as-built length of each cell's primary leachate collection pipe to verify the pipe's integrity over its entire length. After each hydroflush, a video camera must be advanced down each pipe to provide a visual record of the pipe's condition, help determine the hydroflush's effectiveness in removing any buildup of waste residue in the pipe interior or in its perforations, and help identify any problems encountered during the hydroflush (e.g., failure of the hydroflush hose to reach the end of the pipe). The Permittee must provide on-site Department staff with 24 hours advance notice of the Permittee's performance of the pipe flush and videotaping. The Permittee must record the results including any problems encountered and the video tape record, and submit them to the Department within thirty (30) days of completing each pipe flush and videotaping. Upon review of each such submission, the Department may require the Permittee to perform additional hydroflushing or take other actions necessary to maintain each pipe's designed collection and flowcapability.

REASON:

The design of RMU-2 Cell Primary Leachate Collection Pipe (PLCP) as compared to the PLCP for RMU-1 has been extended to daylight at the upstream end of the pipe. The PLCP will also be installed with a stainless steel cable threaded through the pipe to allow for pulling of cleaning and camera equipment throughout the entire perforated length of the pipe. The requirement for twice per year flushing and camera inspection imparts an undo burden. The condition indicates that the NYSDEC may require additional hydroflushing at any time. Therefore, the NYSDEC could increase the frequency of hydroflushing and camera inspection from once per year at any time if conditions warrant. Additionally, if pipe flushing is required twice per year, at least one of the procedures would be performed during a "wet" season. If flushing and inspection are required once per year, then the procedure could be scheduled during dry periods. Performing the flushing and inspection during dry periods would provide added assurances that the process would be successful.

CWM COMMENT NUMBER: 91

TOPIC:

RMU-2 Operating Requirements
RMU-2 Specific Waste Placement Requirements

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.7, Page G-48

EXISTING CONDITION:

7. RMU-2 Specific Waste Placement Requirements

In all RMU-2 cells, the Permittee shall place wastes in lifts in accordance with the waste fill progression requirements in **Condition F.3** of this Exhibit and the waste mass stability requirements in **Condition F.4** of this Exhibit. A waste lift must consist of one (1) drum or macroencapsulation box height for containers, or sufficient bulk waste to limit the lift thickness to six (6) feet. On a case-by-case basis, the Permittee may request and the Department may approve waste items which are larger than the above defined waste lift height as part of the waste stream review process required by **Condition E.3** of this Exhibit. At no time shall drums, macroencapsulation boxes or roll-off containers used for interim waste storage in accordance with **Condition E.7** of this Exhibit be placed in the RMU-2 landfill in such a manner as the tops of these containers exceed the final waste grades as depicted on the "RMU-2 Top of Waste Grades" Drawing No. 6 in Attachment J, Appendix D-6a of this Permit. In addition, RMU-2 waste placement must be in accordance with the requirements below.

PROPOSED MODIFICATION:

Revise as follows:

7. RMU-2 Specific Waste Placement Requirements

In all RMU-2 cells, the Permittee shall place wastes in lifts in accordance with the waste fill progression requirements in **Condition F.3** of this Exhibit and the waste mass stability requirements in **Condition F.4** of this Exhibit. A waste lift must consist of one (1) drum or macroencapsulation box height for containers, or sufficient bulk waste to limit the lift thickness to six (6) feet. On a case-by-case basis, the Permittee may request and the Department may approve waste items which are larger than the above defined waste lift height as part of the waste stream review process required by **Condition E.3** of this Exhibit. At no time shall drums~~,~~ *or* macroencapsulation boxes ~~or roll-off containers used for interim waste storage in accordance with **Condition E.7** of this Exhibit~~ be

placed in the RMU-2 landfill in such a manner as the tops of these containers exceed the final waste grades as depicted on the “RMU-2 Top of Waste Grades” Drawing No. 6 in Attachment J, Appendix D-6a of this Permit. In addition, RMU-2 waste placement must be in accordance with the requirements below.

REASON:

Permit condition revision based on current Sitewide Part 373, modified by Permit Modification No. 9 issued by the NYSDEC on June 27, 2014.

CWM COMMENT NUMBER: 92

TOPIC:

RMU-2 Operating Requirements
RMU-2 Specific Waste Placement Requirements
RMU-2 Waste Placement Time Periods

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.7.a, Page G-48/49

EXISTING CONDITION:

a. RMU-2 Waste Placement Time Periods

The Permittee may place waste in RMU-2 landfill cells only between the hours of 5:00 a.m. and 6:00 p.m., on all days except Sundays and Legal Holidays. Special written approval is required from the Department on a case-by-case basis for waste placement in RMU-2 outside of these hourly limits or on Sundays and Legal Holidays. Any request by the Permittee for Department approval of additional RMU-2 waste placement time periods must be accompanied by detailed reasons for the additional time requested and a plan for artificial lighting if the request involves waste placement during other than daylight hours. The Permittee must notify on-site Department staff by 3:00 p.m. every Friday of its intended work schedule for the following Saturday through Friday.

PROPOSED MODIFICATION:

Revise as follows:

a. RMU-2 Waste Placement Time Periods

The Permittee may place *drummed and/or stabilized bulk* waste in RMU-2 landfill cells *24 hours per day* ~~only between the hours of 5:00 a.m. and 6:00 p.m.~~, on all days except Sundays and Legal Holidays. Special written approval is required from the Department on a case-by-case basis for waste placement in RMU-2 ~~outside of these hourly limits or~~ on Sundays and Legal Holidays. *Bulk wastes not requiring stabilization must be placed in the landfill only during the hours of 5:30 a.m. to 8:00 p.m. Monday through Saturday.* Any request by the Permittee for Department approval of additional RMU-2 waste placement time periods must be accompanied by detailed reasons for the additional time requested and a plan for artificial lighting if the request involves waste placement during other than daylight hours. The Permittee must notify on-site Department staff by 3:00 p.m. every Friday of its intended work schedule for the following Saturday through Friday, *if the Permittee intends to work weekends or outside normal business hours*.

REASON:

Condition should be revised to be consistent with existing Exhibit F, Condition F.5.c for waste placement in RMU-1 landfill.

CWM COMMENT NUMBER: 93

TOPIC:

RMU-2 Operating Requirements
RMU-2 Specific Waste Placement Requirements
Initial Waste Placement In Any Cell

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.7.b, Page G-49

EXISTING CONDITION:

b. Initial Waste Placement In Any Cell

Drums and any bulk wastes containing or potentially containing rigid, sharp or other debris that could damage liner system geosynthetics (except for hazardous debris contained in macroencapsulation boxes), shall not be placed in the first waste lift in any cell or within ten (10) feet of any cell side slope.

PROPOSED MODIFICATION:

Revise as follows:

b. Initial Waste Placement In Any Cell

~~Drums and a~~Any bulk wastes containing or potentially containing rigid, sharp or other debris that could damage liner system geosynthetics (except for hazardous debris contained in macroencapsulation boxes), shall not be placed in the first waste lift in any cell ~~or within ten (10) feet of any cell side slope~~.

REASON:

Consistent with RMU-1 operations, drums should be allowed to be placed in the first lift of each cell. Procedures will be prepared and submitted in the RMU-2 O&M Manual for the placement of the first and subsequent lifts including placement near the sideslope and cell separation berms.

CWM COMMENT NUMBER: 94

TOPIC:

RMU-2 Operating Requirements
RMU-2 Specific Waste Placement Requirements
Waste Placement Rate for the First 10 Lifts in Any Cell

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.7.c, Page G-49

EXISTING CONDITION:

c. Waste Placement Rate for the First 10 Lifts in Any Cell

The waste placement rate for the first 10 lifts in any RMU-2 cell shall be limited to no greater than 16,600 cubic yards per month in accordance with the 50,000 cubic yards per quarter assumption used in the landfill operational stability analyses presented in Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. The Permittee must demonstrate compliance with this limit in each Periodic Waste Mass Survey submitted in accordance with **Condition I.1** of this Exhibit.

The Permittee shall prepare a plan as prescribed by the Design Engineer for monitoring of pore pressures under each cell during waste placement in the first 10 lifts. The plan shall require utilization of the vibrating wire piezometers installed in accordance with **Condition D.5.a.iv** of this Exhibit, and indicate the type and frequency of monitoring, as well as propose an allowable rate of pore pressure increase during waste placement based on the stability analyses presented in Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. This plan must be included in the initial submission of the RMU-2 O&M Manual for the first operational cell and in each Addendum for subsequent cells, as required by **Condition F.1.a** of this Exhibit. Any exceedance the allowable rate of pore pressure increase shall require immediate suspension of waste placement in the cell and a re-evaluation of the waste placement rate in terms of landfill operational stability.

PROPOSED MODIFICATION:

Revise as follows:

c. Waste Placement Rate for the First 10 Lifts in Any Cell

The waste placement rate for the first 10 lifts in any RMU-2 cell shall be limited to no greater than ~~16,600 cubic yards per month in accordance with the~~ 50,000 cubic yards per quarter assumption used in the landfill operational stability analyses presented in Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. The Permittee must demonstrate compliance with this limit in each Periodic Waste Mass Survey submitted in accordance with **Condition I.1** of this Exhibit.

The Permittee shall prepare a plan as prescribed by the Design Engineer for monitoring of pore pressures under each cell during waste placement in the first 10 lifts. The plan shall require utilization of the vibrating wire piezometers installed in accordance with **Condition D.5.~~a.iv~~** ***c*** of this Exhibit, and indicate the type and frequency of monitoring, as well as propose an allowable rate of pore pressure increase during waste placement based on the stability analyses presented in Appendix C-9 of the "RMU-2 Engineering Report" which is incorporated by reference into this Permit by **Schedule 1 of Module I** of this Permit. This plan must be included in the initial submission of the RMU-2 O&M Manual for the first operational cell and in each Addendum for subsequent cells, as required by **Condition F.1.a** of this Exhibit. ~~Any exceedance the allowable rate of pore pressure increase shall require immediate suspension of waste placement in the cell and a re-evaluation of the waste placement rate in terms of landfill operational stability.~~

REASON:

The pore pressure under the initial operational cell will be monitored using vibrating wire piezometers. The results from the piezometers will allow the relationship between filling rates and pore pressures to be measured as opposed to predicted. The values obtained will be used to assess fill rates looking forward. However, it should be noted that the factor of safety at the lower lifts, such as waste lift 6 was found to be in excess of 2 with partial drainage. This clearly suggests significant flexibility is available below the 6th or 7th lift with regard to localized variation in the grading scheme and fill rates. In addition, the monitoring of pore pressures, which will be detailed in the O&M plan, negates the need to place restrictions on the fill rates per month, provided the monitoring is done once every two weeks and examined relative to a chart that will be made available in the O&M plan connecting waste elevation and pore pressure.

CWM COMMENT NUMBER: 95

TOPIC:

RMU-2 Operating Requirements
Requirements for Vehicles and Equipment Operating in the Landfill

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition F.8, Page G-50, first paragraph

EXISTING CONDITION:

8. Requirements for Vehicles and Equipment Operating in the Landfill

All vehicles and equipment used in the placement of wastes in the first lift of any cell must exhibit a ground pressure of 4.4 psi or less if operating directly on the cell's operational layer. Vehicles and equipment exhibiting greater than 4.4 psi of ground pressure operating above this layer will require a minimum thickness of waste or other material to protect underlying geosynthetic materials. This minimum thickness shall be determined by the Design Engineer based on the maximum ground pressure of the vehicles and equipment, and included in the initial submission of the RMU-2 O&M Manual for the first operational cell, as required by **Condition F.1.a** of this Exhibit. Also, no vehicle or equipment exhibiting greater than 4.4 psi of ground pressure shall be allowed to operate above the cell's leachate collection pipe until the full depth of the first waste lift is established over the pipe, or an equivalent depth of road material is placed above the pipe.

PROPOSED MODIFICATION:

Revise as follows:

8. Requirements for Vehicles and Equipment Operating in the Landfill

All vehicles and equipment used in the placement of wastes in the first lift of any cell must exhibit a ground pressure of 4.4 psi or less if operating directly on the cell's operational layer. Vehicles and equipment exhibiting greater than 4.4 psi of ground pressure operating above this layer will require a minimum thickness of waste or other material to protect underlying geosynthetic materials. This minimum thickness shall be determined by the Design Engineer based on the maximum ground pressure of the vehicles and equipment, and included in the initial submission of the RMU-2 O&M Manual for the first operational cell, as required by **Condition F.1.a** of this Exhibit. ~~Also, no vehicle or equipment exhibiting greater than 4.4 psi of ground pressure shall be allowed to operate above the cell's leachate collection pipe until the full depth of the first~~

~~waste lift is established over the pipe, or an equivalent depth of road material is placed above the pipe.~~

REASON:

Appendix E-2 of the Engineering Report for RMU-2 indicates that a pipe deflection analysis demonstrates that completion of the primary leachate collection system layer (i.e., 1 foot of granular drainage layer plus 1 foot of operations layer) provides adequate cover (15-inches) to protect the pipe from excessive deflection under vehicle loading by a fully-loaded waste-hauling truck.

CWM COMMENT NUMBER: 96

TOPIC:

RMU-2 Monitoring and Inspection Requirements
Cell Primary Leachate Monitoring

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition G.2, Page G-51

EXISTING CONDITION:

2. Cell Primary Leachate Monitoring

The Permittee must monitor the leachate in all RMU-2 cells in accordance with the following requirements:

a. The primary leachate level in each cell must be monitored on a continuous basis using automatic data read-out equipment.

b. The volume of primary leachate pumped from each cell must be monitored using permanently installed metering equipment and recorded on a weekly basis.

c. The Permittee must sample and analyze the primary leachate pumped from each cell on a quarterly basis for pH, specific conductance, PCBs, and Priority Pollutant volatile organics.

d. The Permittee must sample and analyze the primary leachate pumped from each cell on a semiannual basis for Priority Pollutant Metals (i.e., antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, zinc).

e. On a quarterly basis and every time a cell's leachate level indicator probe is moved, the liquid level in the cell must be manually measured and compared to the results of the automatic data read-out to calibrate the leachate level indicators (probes).

The results of the analyses required by **Conditions G.2.c & G.2.d** of this Exhibit must be submitted to the Department on a monthly basis contained within the monthly environmental monitoring report for the month in which the samples were collected. The results of the level and volume measurements required by **Conditions G.2.a & G.2.b** of this Exhibit and the results of the manual level check on the automatic data required by

Condition G.2.e of this Exhibit must be made available to Department staff upon request. The results of all level and volume measurements required by **Conditions G.2.a & G.2.b** of this Exhibit and the results of the manual level checks required by **Condition G.2.e** of this Exhibit, must be submitted to the Department on a quarterly basis, within 30 days after the end of the quarter.

Upon closure of any cell, or cells, (i.e., completion of final cover over the entire area of the cell, or cells) and Department acceptance of the closure certification as required by 6 NYCRR 373-2.7(f)(1), the monitoring for that cell, or cells, required by **Conditions G.2.c & G.2.d** of this Exhibit, must be performed semiannually. At any time after the first semiannual monitoring event during the cell(s)' post-closure period, the Permittee may request Department approval to decrease the frequency or suspend the monitoring activities required by **Conditions G.2.b & G.2.d** of this Exhibit altogether based on a data supported demonstration of consistent leachate character.

PROPOSED MODIFICATION:

Revise as follows:

2. Cell Primary Leachate Monitoring

The Permittee must monitor the leachate in all RMU-2 cells in accordance with the following requirements:

a. The primary leachate level in each cell must be monitored on a continuous basis using automatic data read-out equipment.

b. The volume of primary leachate pumped from each cell must be monitored using permanently installed metering equipment and recorded on a ~~weekly~~ *monthly* basis.

c. The Permittee must sample and analyze the primary leachate ~~pumped~~ from each cell on a quarterly basis for pH, specific conductance, PCBs, and *Site Specific Volatile Organic Compounds (27 VOCs)* ~~Priority Pollutant volatile organics~~.

d. The Permittee must sample and analyze the primary leachate ~~pumped~~ from each cell on a semiannual basis for Priority Pollutant Metals (i.e., antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, zinc).

e. On a quarterly basis and every time a cell's leachate level indicator probe is moved, the liquid level in the cell must be manually measured and compared to

the results of the automatic data read-out to calibrate the leachate level indicators (probes).

*f. Refer to **Condition L.4.a of Exhibit F** for sampling of the RMU-2 groundwater monitoring wells in conjunction with the sampling of the primary leachate.*

*The level measurements required by **Condition G.2.a** of this Exhibit must be monitored from the automatic data read-out and the results must be made available to on-site Department staff.* The results of the *volume measurements required by **Condition G.2.b** and the* analyses required by **Conditions G.2.c & G.2.d** of this Exhibit must be submitted to the Department on a monthly basis contained within the monthly environmental monitoring report for the month in which the samples were collected. ~~The results of the level and volume measurements required by **Conditions G.2.a & G.2.b** of this Exhibit and the results of the manual level check on the automatic data required by **Condition G.2.e** of this Exhibit must be made available to Department staff upon request.~~ The results of ~~all level and volume measurements required by **Conditions G.2.a & G.2.b** of this Exhibit and the results of~~ the manual level checks required by **Condition G.2.e** of this Exhibit, must be submitted to the Department on a quarterly basis, within 30 days after the end of the quarter.

Upon closure of any cell, or cells, (i.e., completion of final cover over the entire area of the cell, or cells) and Department acceptance of the closure certification as required by 6 NYCRR 373-2.7(f)(1), the monitoring for that cell, or cells, required by **Conditions G.2.c & G.2.d** of this Exhibit, must be performed semiannually. At any time after the first semiannual monitoring event during the cell(s)' post-closure period, the Permittee may request Department approval to decrease the frequency or suspend the monitoring activities required by **Conditions** ~~**G.2.b & G.2.d**~~ ***G.2.c through G.2.e*** of this Exhibit altogether based on a data supported demonstration of consistent leachate character.

REASON:

Condition G.2.b: The volume of primary leachate pumped from each cell will be monitored using permanently installed metering equipment with a flow totalizer. The volume of primary leachate will be recorded monthly and reported in the monthly environmental monitoring report.

Conditions G.2.c and G.2.d: Standard practice is to sample the leachate in the sump by manually activating the pump to collect the sample, rather than sampling downstream after the leachate has been pumped from the cell.

Condition G.2.c: Revise condition to be consistent with the Primary Leachate Monitoring for RMU-1 as required by Exhibit F, Condition G.2.b, as modified by Permit Modification No. 5 issued by the NYSDEC on May 21, 2014.

Condition G.2.f: Comment No. 99 requests that groundwater monitoring requirements for RMU-2 be moved from Exhibit G to Exhibit F. CWM has added a reference to Exhibit F to indicate that RMU-2 Detection monitoring wells are sampled when the primary leachate is sampled.

Revisions to the second paragraph of Condition G.2 were made for consistency with existing conditions for RMU-1 in Exhibit F, Condition G.2 and based on the capabilities of the leachate level monitoring system. The leachate level will be monitored on a continuous basis using automatic data read-out equipment and alarms if the leachate level exceeds one-foot above the primary liner. The automatic data read-outs and the results will be available to on-site Department staff at any time.

Revisions to the third paragraph were made for consistency with existing conditions for RMU-1 in Exhibit F, Condition G.2.

See related Comment No. 11.

CWM COMMENT NUMBER: 97

TOPIC:

RMU-2 Monitoring and Inspection Requirements
Monitoring & Inspection Requirements for RMU-2 Leachate Systems
Leachate Removal and Transfer System Inspection Requirements

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition G.3.a, Page G-52

EXISTING CONDITION:

a. Leachate Removal and Transfer System Inspection Requirements

The cell riser vaults, leachate transfer pipe manholes and pump station must be inspected in accordance with the Inspection Plan in Attachment F of this Permit. Proper operation of all electronic leak detection systems installed at vaults and piping manholes, must be verified at least quarterly by visually checking for liquids at all locations where a visual check can be performed without entering a confined space. In addition, alarms for leak detection systems will be verified annually by either manually placing the probe in water or by electrical simulation in locations where a manual check would require a confined space entry.

PROPOSED MODIFICATION:

Revise as follows:

a. Leachate Removal and Transfer System Inspection Requirements

The ~~cell riser vaults,~~ leachate transfer pipe*lines* ~~manholes~~ and *Leachate Pump Station* ~~pump station~~ must be inspected in accordance with the Inspection Plan in Attachment F of this Permit. Proper operation of all electronic leak detection systems installed at vaults and piping manholes, must be verified at least quarterly by visually checking for liquids at all locations where a visual check can be performed without entering a confined space. In addition, alarms for leak detection systems will be verified annually by either manually placing the probe in water or by electrical simulation in locations where a manual check would require a confined space entry.

REASON:

The condition was revised to be consistent with Condition G.3.a of Exhibit F for RMU-1.

CWM COMMENT NUMBER: 98

TOPIC:

RMU-2 Secondary Leachate Collection System (SLCS) Requirements
RMU-2 SLCS Monitoring

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition H.1.c & d, Page G-52/53

EXISTING CONDITION:

c. On a quarterly basis, the Permittee must sample the liquid removed from each cell's SLCS sump and analyze each sample for pH, specific conductance, PCBs and Priority Pollutant volatile organics.

d. On a yearly basis, the Permittee must sample the liquid removed from each cell's SLCS sump and analyze each sample for pH, specific conductance, PCBs, Priority Pollutant organics and Priority Pollutant metals (i.e., antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, zinc).

PROPOSED MODIFICATION:

Revise as follows:

c. On a quarterly basis, the Permittee must sample the liquid removed from each cell's SLCS sump and analyze each sample for pH, specific conductance, ~~PCBs~~ and *Site Specific VOCs (27 VOCs)* ~~Priority Pollutant volatile organics~~.

d. On a yearly basis, the Permittee must sample the liquid removed from each cell's SLCS sump and analyze each sample for pH, specific conductance, ~~PCBs,~~ *Site Specific Volatile Organic Compounds (27 VOCs), Organic* Priority Pollutants ~~organics~~ *(i.e., semi-volatile organics, PCBs and pesticides)* and Priority Pollutant metals (i.e., antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, zinc).

REASON:

Revise condition to be consistent with the Primary Leachate Monitoring for RMU-1 as required by Exhibit F, Condition G.2.b, as modified by Permit Modification No. 5 issued by the NYSDEC on May 21, 2014.

CWM COMMENT NUMBER: 99

TOPIC:

RMU-2 Groundwater Monitoring and Protection Requirements

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition L, Page G-58 to G-66, All Conditions

EXISTING CONDITION:

L. RMU-2 Groundwater Monitoring and Protection Requirements

PROPOSED MODIFICATION:

Revise as follows:

Move groundwater monitoring conditions for RMU-2 from Exhibit G to Exhibit F, Condition L.

REASON:

To prevent confusion and potential conflicting conditions, it would be logical to have all groundwater protection conditions in one Exhibit. This includes new Fac Pond 5 Monitoring and RMU-2. Condition L of Exhibit F contains conditions applicable to both active and closed units. If future permit modifications are necessary for general groundwater monitoring conditions then revisions would not be necessary at multiple locations if these conditions are moved to Exhibit F.

CWM COMMENT NUMBER: 100

TOPIC:

RMU-2 Groundwater Monitoring and Protection Requirements
Point of Compliance

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition L.1, Page G-59

EXISTING CONDITION:

1. Point of Compliance

The Points of Compliance for RMU-2 are as follows:

a. RMU-2: The Point of Compliance for this landfill is defined as the vertical surface passing through the downgradient monitoring wells R201SR, R204S, R205S, R206S, R207S, R208S, R209S, R210S, R211S, R212S, R213S, R214S, R215S, and R216S.

The Points of Compliance are shown on Figure 1 provided at the end of this Exhibit.

PROPOSED MODIFICATION:

Revise as follows:

Figure 1 is not provided at the end of Exhibit G. If the RMU-2 groundwater monitoring conditions are not moved to Exhibit F then Figure 1, showing the Points of Compliance, should be attached to Exhibit G.

REASON:

Insert figure if conditions are not moved to Exhibit F for completeness. A revised Points of Compliance (Figure 1) was inadvertently not provided in the November 2013 Permit Modification Request for RMU-2. Attachment F provides a revised Figure 1 with the Points of Compliance for RMU-2.

CWM COMMENT NUMBER: 101

TOPIC:

RMU-2 Groundwater Monitoring and Protection Requirements
Description of Wells

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition L.3, Page G-59

EXISTING CONDITION:

3. Description of Wells

a. Upgradient. Background monitoring wells BW01S, BW01D, BW03S, BW03D, BW04S, BW04D, BW05S and BW05D.

b. Downgradient. Monitoring wells R204S, R204D, R205S, R205D, R206S, R206D, R207S, R207D, R208S, R208D, R209S, R209D, R210S, R210D, R211S, R211D, R212S, R212UD, R212LD, R213S, R213D, R214S, R214D, R215S, R215D, R216S, and R216D will be used to monitor RMU-2.

PROPOSED MODIFICATION:

Revise as follows:

3. Description of Wells

a. Upgradient. Background monitoring wells BW01S, BW01D, BW03S, BW03D, BW04S, BW04D, BW05S and BW05D.

b. Downgradient. Monitoring wells *R201SR, R201DR,* R204S, R204D, R205S, R205D, R206S, R206D, R207S, R207D, R208S, R208D, R209S, R209D, R210S, R210D, R211S, R211D, R212S, R212UD, R212LD, R213S, R213D, R214S, R214D, R215S, R215D, R216S, and R216D will be used to monitor RMU-2.

REASON:

Groundwater monitoring wells R201SR and R201DR should be added to the list of downgradient monitoring wells in accordance with revisions to the Groundwater Sampling and Analysis Plan. Condition should be revised whether the groundwater conditions for RMU-2 are moved to Exhibit F or not.

CWM COMMENT NUMBER: 102

TOPIC:

RMU-2 Groundwater Monitoring and Protection Requirements
Description of Wells

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition L.6, Page G-60

EXISTING CONDITION:

6. Indicator Parameters

As set forth in 6 NYCRR 373-2.6(i)(1), the following parameters must be used as indicator parameters in the Detection Monitoring Program:

Volatile Organic Compounds

Benzene	Ethylbenzene
Bromoform	Methyl Bromide
Carbon Tetrachloride	Methyl Chloride
Chlorobenzene	Methylene Chloride
Chlorodibromomethane	1,1,2,2-Tetrachloroethane
Chloroethane	Tetrachloroethylene
2-Chloroethylvinylether	Toluene
Chloroform	trans-1,2-Dichloroethylene
Dichlorobromomethane	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethylene
1,1-Dichloroethene	Vinyl Chloride
1,2-Dichloropropane	cis-1,3-Dichloropropylene
trans-1,3-Dichloropropylene	

PROPOSED MODIFICATION:

Revise as follows:

6. Indicator Parameters

As set forth in 6 NYCRR 373-2.6(i)(1), the following parameters must be used as indicator parameters in the Detection Monitoring Program:

Volatile Organic Compounds

Benzene	Ethylbenzene

Bromoform	Methyl Bromide
Carbon Tetrachloride	Methyl Chloride
Chlorobenzene	Methylene Chloride
Chlorodibromomethane	1,1,2,2-Tetrachloroethane
Chloroethane	Tetrachloroethylene
1,2-Dichlorobenzene~~2-Chloroethylvinylether~~	Toluene
Chloroform	trans-1,2-Dichloroethylene
Dichlorobromomethane	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane	Trichloroethylene
1,1-Dichloroethene	Vinyl Chloride
1,2-Dichloropropane	cis-1,3-Dichloropropylene
trans-1,3-Dichloropropylene	

REASON:

If the RMU-2 Groundwater Monitoring conditions are not moved to Exhibit F, Condition L, Revise condition to be consistent with the Groundwater Monitoring and Protection Requirements for RMU-1 as required by Exhibit F, Condition L.6, as modified by Permit Modification No. 2 issued by the NYSDEC on December 12, 2013.

CWM COMMENT NUMBER: 103

TOPIC:

RMU-2 Groundwater Monitoring and Protection Requirements
Description of Wells

LOCATION OF CONDITION:

Exhibit G, Supplement to Module VI – Landfills [RMU-2]
Condition L.9.a, Page G-62

EXISTING CONDITION:

The Permittee must evaluate the data using the procedures set forth on Figure 2 provided at the end of this Exhibit and submit the results of the statistical comparison of the indicator parameters as part of the Routine Environmental Monitoring Report. If the analyses reveal a statistically significant increase in the concentration of an indicator parameter at any well in the Detection Monitoring Network, the Permittee must:

PROPOSED MODIFICATION:

Revise as follows:

Insert Figure 2 if conditions are not moved to Exhibit F for completeness.

REASON:

Figure 2 is not provided at the end of Exhibit G. If the RMU-2 groundwater monitoring conditions are not moved to Exhibit F then Figure 2, showing the Data Evaluation Flow Chart, should be attached to Exhibit G.

CWM COMMENT NUMBER: 104

TOPIC:

7. Process Codes and Design Capacities

LOCATION OF CONDITION:

Attachment A
Section A Part A Application
Hazardous Waste Permit Information Form
Page 3 of 6, Line 3

EXISTING CONDITION:

Line Number		A. Process Code			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure	C. Process Total Number of Units
	3	S	0	1	~~1390816~~ 2153552	G	0~~33~~46

PROPOSED MODIFICATION:

Revise as follows:

Line Number		A. Process Code			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure	C. Process Total Number of Units
	3	S	0	1	~~1390816~~ ~~2153552~~ 2161796	G	0~~33~~46

REASON:

See Comments 14, 15, and 106 for correction to the container storage quantity (S01). A revised Page 3 of 6 of the Hazardous Waste Permit Information Form is provided as Attachment G.

CWM COMMENT NUMBER: 105

TOPIC:

Containers
Container Storage Areas

LOCATION OF CONDITION:

Attachment D, Appendix D-1, Section A, Pages 1/2

EXISTING CONDITION:

LOCATION	WASTE TYPE	CONTAINER TYPE	STORAGE CAPACITY	AVAILABLE SECONDARY CONTAINMENT (gallons)	REQUIRED SECONDARY CONTAINMENT (gallons)
New Drum Management Building					
Area 1 Flammable Storage Area	Liquid/Solid	drums	504 55-gal drums	9,011	2,772
Area 2 Acid Storage Area	Liquid/Solid	drums	1008 55-gal drums	6,667	5,544
Area 3 Caustic Storage Area	Liquid/Solid	drums	1008 55-gal drums	6,915	5,544
Area 4 Poisons Storage Area	Liquid/Solid	drums	96 55-gal drums	1,245	528
Area 5 Oxidizer Storage Area	Liquid/Solid	drums	96 55-gal drums	765	528
Area 6 QA/QC Storage Area	Liquid/Solid	drums	336 55-gal drums	8,459	1,848
Area 7 Fuels Transfer Ramp	Liquid	cargo tanks	2 5,500-gal cargo tanks	23,338	10,681
Area 8 Transformer Area	Liquid/Solid	trans./drums	6 345-gal trans. or 37 55-gal drums	2,065	345
Area 9 Loading Ramp Area	Liquid/Solid	drums	1,040 55-gal drums	95,681	5,720
New Full Trailer Park Area	Liquid/Solid	cargo tanks/ rolloffs	48 rolloffs or 5 tankers	66,583	39,749
Stabilization Facility New Trailer Park Area	Liquid/Solid	cargo tanks/ rolloffs	37 rolloffs or 11 cargo tanks	56,106	38,777

PROPOSED MODIFICATION:

Revise as follows:

LOCATION	WASTE TYPE	CONTAINER TYPE	STORAGE CAPACITY	AVAILABLE SECONDARY CONTAINMENT (gallons)	REQUIRED SECONDARY CONTAINMENT (gallons)
New Drum Management Building					
Area 1 Flammable Storage Area	Liquid/Solid	drums	504 55-gal drums	9,011	2,772
Area 2 Acid Storage Area	Liquid/Solid	drums	1008 55-gal drums	6,667	5,544
Area 3 Caustic Storage Area	Liquid/Solid	drums	1008 55-gal drums	6,915	5,544
Area 4 Poisons Storage Area	Liquid/Solid	drums	96 55-gal drums	1,245	528
Area 5 Oxidizer Storage Area	Liquid/Solid	drums	96 55-gal drums	765	528
Area 6 QA/QC Storage Area	Liquid/Solid	drums	336 55-gal drums	8,459	1,848
Area 7 Fuels Transfer Ramp	Liquid	cargo tanks	2 5,500-gal cargo tanks	23,338	10,681
Area 8 Transformer Area	Liquid/Solid	trans./drums	~~6 345~~ *2,065*-gal trans or ~~37~~ *144* 55-gal drums	2,065	~~345~~ *2,065*
Area 9 Loading Ramp Area	Liquid/Solid	drums	1,040 55-gal drums	95,681	5,720
New Full Trailer Park Area	Liquid/Solid	cargo tanks/ rolloffs	48 rolloffs or 5 tankers	66,583	39,749
Stabilization Facility New Trailer Park Area	Liquid/Solid	cargo tanks/ rolloffs	37 rolloffs or ~~11~~ 5 cargo tanks	56,106	~~38,777~~ *35,227*

REASON:

Area 8, Transformer Area – Transformers come in various sizes and shapes. CWM has selected a volume of the anticipated largest transformer that could be expected to be received. Additionally, if the transformer area was strictly used for drum storage, the maximum number of solid containers would be 416 55-gallon drums and flammable liquid containers would be 144 55-gallon drums. Therefore, CWM requests that the area be permitted for 144 55-gallon drums.

CWM COMMENT NUMBER: 106

TOPIC:

Containers
New Drum Management Building
Loading/Unloading Areas

LOCATION OF CONDITION:

Attachment D, Appendix D-1, Section O, Second Paragraph, Page 37

EXISTING CONDITION:

After receipt, containers may be stored on a flatbed in the dock area incidental to the transfer of these containers to other on-site operations, such as aqueous treatment, stabilization, or the landfill. If DOT incompatible waste containers remain stored on flatbed trailers in the dock area at the end of the work shift they will be separated from each other as required by 6 NYCRR Part 373-2.9(h)(s).

PROPOSED MODIFICATION:

Revise as follows:

After receipt, containers may be stored on a flatbed in the dock area incidental to the transfer of these containers to other on-site operations, such as aqueous treatment, stabilization, or the landfill. If DOT incompatible waste containers remain stored on flatbed trailers in the dock area at the end of the work shift they will be separated from each other as required by 6 NYCRR Part 373-2.9(h)~~(s)~~.

REASON:

Reference to 6 NYCRR Part 373-2.9(h)(s) is a typographical error. The regulation reference has been corrected.

CWM COMMENT NUMBER: 107

TOPIC:

Surface Impoundments
Introduction

LOCATION OF CONDITION:

Attachment D, Appendix D-2, Section I, Third Paragraph, Page 1

EXISTING CONDITION:

Fac Ponds 3 and 8 will be closed in accordance with the Sitewide Closure Plan as part of site preparation for the construction of the Residuals Management Unit No. 2 (RMU-2) landfill. Fac Ponds 3 and 8 lie within the footprint of RMU-2 and upon closure will be filled with structural (as required) and general soil fill to the RMU-2 excavation grades. It should be noted that Fac Pond 8 will be closed in accordance with the Compliance Schedule in Schedule 1 of Module I of the Permit. Fac Pond 3 will be closed after the construction of Fac Pond 5 because of the need to continuously provide storage of treated wastewater prior to discharge.

PROPOSED MODIFICATION:

Revise as follows:

Fac Ponds 3 and 8 will be closed in accordance with the Sitewide Closure Plan as part of site preparation for the construction of the Residuals Management Unit No. 2 (RMU-2) landfill. Fac Ponds 3 and 8 lie within the footprint of RMU-2 and upon closure will be filled with structural (as required) and general soil fill to the RMU-2 excavation grades. It should be noted that Fac Pond 8 will be closed in accordance with the Compliance Schedule in Schedule 1 of Module I of the Permit. ~~Fac Pond 3 will be closed after the construction of Fac Pond 5 because of the need to continuously provide storage of treated wastewater prior to discharge.~~ *Closure of Fac Pond 3 must be completed prior to construction of the second cell of RMU-2 (Cell 18).*

REASON:

The Transition Plan for RMU-2 submitted in the Permit Modification Request (November 2013) included a “Conceptual Schedule”. It was anticipated that Fac Pond 5 would be constructed in the first year of site development for RMU-2. However, this phasing was conceptual in nature. At this time, it is anticipated that Fac Pond 5 will be constructed during the third year of RMU-2 development to replace the capacity lost due to the closure of Fac Pond 3, which also is anticipated to commence in the third year of RMU-2 development. At this time, it is anticipated that the closure of Fac Pond 3 will be completed during the fourth year of RMU-2 development, prior to construction of the second cell of RMU-2 (Cell 18). Section 2.2 of the

Transition Plan text and “Conceptual Schedule” has been revised and included as Attachment C to these comments.

CWM COMMENT NUMBER: 108

TOPIC:

Surface Impoundments
Introduction

LOCATION OF CONDITION:

Attachment D, Appendix D-2, Section VI, Fifth Paragraph, Page 5

EXISTING CONDITION:

Development of the first phase of RMU-2 (Cell 20) will be at the location of current Fac Pond 8. During the development of the first phase of RMU-2 Fac Ponds 1 / 2 and 3 will operate as described above and Fac Pond 5 will be constructed. Fac Pond 3 will be closed in accordance with the Sitewide Closure Plan prior to the development of the second phase of RMU-2 after the final discharge from the pond.

PROPOSED MODIFICATION:

Revise as follows:

Development of the first phase of RMU-2 (Cell 20) will be at the location of current Fac Pond 8. *Fac Pond 5 will be constructed during the third year of RMU-2 development to replace the capacity lost for the closure of Fac Pond 3, which also is anticipated to commence in the third year of RMU-2 development.* During ~~the development of~~ the third year ~~first phase~~ of RMU-2 development, Fac Ponds 1 / 2 ~~and 3~~ will operate as described above and Fac Pond 5 will be constructed. Fac Pond 3 will be closed in accordance with the Sitewide Closure Plan during the third and fourth years ~~prior to the development of the second phase~~ of RMU-2 *development*, after the final discharge from the pond.

REASON:

The Transition Plan for RMU-2 submitted in the Permit Modification Request (November 2013) included a "Conceptual Schedule". It was anticipated that Fac Pond 5 would be constructed in the first year of site development for RMU-2. However, this phasing was conceptual in nature. At this time, it is anticipated that Fac Pond 5 will be constructed during the third year of RMU-2 development to replace the capacity lost due to the closure of Fac Pond 3, which also is anticipated to commence in the third year of RMU-2 development. At this time, it is anticipated that the closure of Fac Pond 3 will be completed during the fourth year of RMU-2 development, prior to construction of the second cell of RMU-2 (Cell 18). Section 2.2 of the Transition Plan text and "Conceptual Schedule" has been revised and included as Attachment C to these comments.

CWM COMMENT NUMBER: 109

TOPIC:

Tanks
Tank System Assessment Table

LOCATION OF CONDITION:

Attachment D, Appendix D-3, Section VIII, Footnote 6, Page 3

EXISTING CONDITION:

FOOTNOTES:

6. Year of Tank T-9001 instillation assessment.

PROPOSED MODIFICATION:

Revise as follows:

FOOTNOTES:

6. Year of Tank T-9001 ~~instillation~~ *installation* assessment.

REASON:

Spelling error.

CWM COMMENT NUMBER: 110

TOPIC:

Preparedness & Prevention
Inspection Forms
FAC Pond Transfer Systems (Page 1 of 1)

LOCATION OF CONDITION:

Attachment F, Section F, Inspection Forms, Page 13
Section I, Item A.3

EXISTING CONDITION:

A) Tank Leak Detection & Wastewater Transfer Equipment

1. T-9001 (DAILY for Tank Criteria)
(Note volume and conductivity of any liquid in leak detector)

2. No leak detection alarms for Fac Pond
Transfer Lines (DAILY)

3. No leak detection high level alarms **(DAILY)**.

PROPOSED MODIFICATION:

A) ~~Tank Leak Detection~~ *Fac Pond Riser House* & Wastewater Transfer ~~Equipment~~ *Line Valve House*

1. T-9001 (DAILY for Tank Criteria)
(Note volume and conductivity of any liquid in *tank* leak detector)

2. No leak detection alarms for Fac Pond
Transfer Lines (DAILY)

3. No ~~leak detection~~ high level alarms on *leachate collection and removal system/leak detection system (i.e. sump)* **(DAILY)**.

4. No leak detection alarms at Wastewater Transfer Line Valve House

REASON:

The proposed revisions would clarify the inspection criteria for tank T-9001 leak detector and the fac pond leachate collection and removal system/leak detection system (i.e. sump). Additionally, an inspection criterion was added for the leak detection for the proposed Wastewater Transfer Line Valve House to be located as Fac Ponds 1 / 2 as shown on Permit Drawing No. 13 of Attachment D, Appendix D-2 of the Draft Permit Modification.

CWM COMMENT NUMBER: 111

TOPIC:

Preparedness & Prevention
Inspection Forms
Landfill - RMU 2 (Page 2 or 4) and (Page 3 of 4)

LOCATION OF CONDITION:

Attachment F, Section F, Inspection Forms, Section III, Pages 17, 18, and 19

EXISTING CONDITION:

LANDFILL - RMU 2 (Page 2 of 4)

III. RMU 2 MSE Berm (YEARLY during/after construction) **Accept./Unacc.** **Comments**
(Inspection by Qualified Geotechnical Professional Engineer)

J) No Excessive Subgrade Pore Pressures
(Based on review of data from wells & electronic piezometers)

K) No Measurable Movement of MSE Berm
(Based topographic surveys of permanent bench marks)

LANDFILL - RMU 2 (Page 3 of 4)

PROPOSED MODIFICATION:

Revise as follows:

LANDFILL - RMU 2 (Page 2 of 4)

III. RMU 2 MSE Berm (YEARLY ~~during/~~after construction) **Accept./Unacc.** **Comments**
(Inspection by Qualified Geotechnical Professional Engineer)

J) No Excessive Subgrade Pore Pressures
(Based on review of data from wells & electronic piezometers)

K) No Measurable Movement of MSE Berm
(Based *on* topographic surveys of permanent bench marks)

Additionally, revise the forms by moving Landfill - RMU-2 (Pages 2, 3, and 4), Section III to the end of Attachment F (Inspection Forms).

REASON:

The Construction Quality Assurance (CQA) Engineer will be responsible for monitoring of the installation of the Mechanically Stabilized Earthen (MSE) Wall, including certification that the installation meets the requirements of the Permit, Technical Specifications, CQA Plan, and Permit Drawings. Additionally, based on the MSE Wall evaluation in the RMU-2

Engineering Report, the Design Engineer indicated that monitoring of subgrade porewater pressures will not be required during MSE Wall construction. CWM has agreed to prepare and submit for approval a MSE Wall Inspection and Repair Plan and a RMU-2 Subgrade Piezometer Installation Plan for monitoring of porewater pressures during waste filling operations. These plans will be included in the required Operations and Maintenance (O&M) Manual for RMU-2 or as stand alone plans.

The Section III inspection criteria will only be performed annually. Moving Section III to the end of Attachment F (Inspection Forms) will assist the daily RCRA Inspector by maintaining daily inspection forms sequentially and having forms for inspections that are performed at a different frequency at the end of the inspection forms.

CWM COMMENT NUMBER: 112

TOPIC:

Preparedness & Prevention
Inspection Forms
Stabilization (Page 2 of 2)

LOCATION OF CONDITION:

Attachment F, Section F, Inspection Forms, Page 23
Section VII, Items D, E, and F

EXISTING CONDITION:

VII. Roll-off box storage areas

D) Not more than 48 Roll-offs in existing Areas I-IV.

E) Not more than 37 Roll-offs or 11 Cargo Tanks in new SF Area (once constructed).

PROPOSED MODIFICATION:

Revise as follows:

VII. Roll-off box storage areas

D) Not more than 48 Roll-offs in existing Areas I-IV.

E) Not more than 37 Roll-offs *or 32 Roll-offs and 5 full* ~~11~~ Cargo Tanks in new SF Area (once constructed).

REASON:

The inspection criteria as written would only allow 37 roll-offs or 11 Cargo Tanks in the New Stabilization Trailer Parking Area. This would not allow the storage of the combination of both roll-offs and full cargo tanks at the same time. The proposed revision would clearly indicate what the inspection criteria should be.

CWM COMMENT NUMBER: 113

TOPIC:

Preparedness & Prevention
Inspection Forms
Trailer Parking Area

LOCATION OF CONDITION:

Attachment F, Section F, Inspection Forms, Page 25
Section I, Items C and D

EXISTING CONDITION:

I.	**Trailer Park (DAILY on operating days, except as noted)**	**Accept./Unacc.**	**Comments**
	C) Less than or equal to 58 rolloffs or ~~48 rolloffs &~~ 5 ~~full~~ trailers in existing South Trailer Area.		
	D) Less than or equal to 48 rolloffs or 5 trailers in new Full Trailer Area (once constructed).		

PROPOSED MODIFICATION:

Revise as follows:

I.	**Trailer Park (DAILY on operating days, except as noted)**	**Accept./Unacc.**	**Comments**
	C) Less than or equal to 58 rolloffs or ~~48 rolloffs &~~ *48 rolloffs &* 5 ~~full~~ *full cargo tanks* ~~trailers~~ in existing South Trailer Area.		
	D) Less than or equal to 48 rolloffs *or 38 rolloffs &* 5 ~~trailers~~ *full cargo tanks* in new Full Trailer Area (once constructed).		

REASON:

The inspection criterion C) for the existing Trailer Park was modified. The inspection criterion as modified would only allow 58 roll-offs or 5 trailers (Cargo Tanks) in the existing Trailer Parking Area. This would not allow the storage of the combination of both roll-offs and trailers/cargo tanks at the same time. The proposed revision to would clearly indicate what the inspection criterion for the existing Trailer Park should be.

The new inspection criterion D) for the new Full Trailer Park was added. The inspection criterion as shown would only allow 48 roll-offs or 5 trailers (Cargo Tanks) in the existing Trailer Parking Area. This would not allow the storage of the combination of both roll-offs and

full cargo tanks at the same time. The proposed revision to would clearly indicate what the inspection criterion for the new Full Trailer Park should be.

CWM may store at times RCRA empty cargo tanks which should not count against the number of full or partially full trailer, cargo tanks, of bulk containers containing liquid waste. Partially full cargo tanks or bulk containers will be consider full as counted against the maximum quantity of liquid wastes that may be stored in these areas.

CWM COMMENT NUMBER: 114

TOPIC:

Sitewide Closure Plan
Waste Inventory at Closure

LOCATION OF CONDITION:

Attachment I, Section 1.4.A, Page 6

EXISTING CONDITION:

A. Container storage areas:

New Drum Management Building

Transformer Area 8		6 transformers or equivalent	
	or	37 drums	2,035 gal. Solid/liquid waste

PROPOSED MODIFICATION:

Revise as follows:

New Drum Management Building

Transformer Area 8		~~6~~ *1 2,065 gallon* transformer or equivalent	
	or	~~37~~ *144* drums	~~2,035~~ *7,920* gal. Solid/liquid waste

REASON:

See the reasons in Comment Nos. 14 and 105 related to storage in the New Drum Management Building Transformer Room. See Attachment H for a revised closure cost estimate for the New Drum Management Building.

CWM COMMENT NUMBER: 115

TOPIC:

Sitewide Closure Plan
Waste Inventory at Closure
Container storage areas

LOCATION OF CONDITION:

Attachment I, Section 1.4.A, Page 7

EXISTING CONDITION:

New Full Trailer Park Area		
Trailer parking area	48 rolloffs	1,440 cu. yds. Solid waste
or	5 tankers	27,500 gal. Liquid waste
Stabilization Facility		
New Trailer Park Area	37 rolloffs	1,110 cu. yds. Solid waste
or	11 tankers	60,500 gal. Liquid waste

PROPOSED MODIFICATION:

Revise as follows:

New Full Trailer Park Area		
Trailer parking area	48 rolloffs	1,440 cu. yds. Solid waste
or	*38 rolloffs*	*1,140 cu. yds. Solid waste*
and	5 *(5,500 gallon)* ~~tankers~~ *cargo tank*	27,500 gal. Liquid waste
Stabilization Facility		
New Trailer Park Area	37 rolloffs	1,110 cu. yds. Solid waste
or	*32 rolloffs*	*960 cu. yds. Solid waste*
and	~~11~~ *5 (5,500 gallon)* ~~tankers~~ *cargo tank*	~~60,500~~ *27,500* gal. Liquid waste

REASON:

In the November 2013 Permit Modification Request, CWM requested that the New Full Trailer Park Area be permitted for a maximum of 48 rolloffs or 38 rolloffs and 5 cargo tankers. The New Stabilization Trailer Park Area should also be permitted for a maximum of 37 rolloffs or 32 rolloffs and 5 cargo tankers. The Closure Cost Estimate for these container storage area included 38 rolloffs and 5 5,500-gallon cargo tankers for the New Full Trailer Park Area and 26 rolloffs and 5 5,500-gallon cargo tankers for the New Stabilization Trailer Park Area. SEE COMMENTS NO. 1, 14, 105, and 120. See Attachment I for the CWM prepared closure cost estimate for Stabilization including revised for the addition of the New Stabilization Trailer Park Area.

CWM COMMENT NUMBER: 116

TOPIC:

Sitewide Closure Plan
Waste Inventory at Closure
Tank storage areas

LOCATION OF CONDITION:

Attachment I, Section 1.4.B, Page 9

EXISTING CONDITION:

C. Tank storage areas:
TABLE 1 - MAXIMUM TANK INVENTORY

TANK #	CAPACITY IN GALLONS	CONSTRUCTION MATERIAL	LOCATION SUB-AREA	CONTENT
T-160 LIFT STATION	3,000	CARBON STEEL	RMU 1	LEACHATE

PROPOSED MODIFICATION:

Revise as follows:

C. Tank storage areas:
TABLE 1 - MAXIMUM TANK INVENTORY

TANK #	CAPACITY IN GALLONS	CONSTRUCTION MATERIAL	LOCATION SUB-AREA	CONTENT
T-160 LIFT STATION	3,000	CARBON STEEL	RMU 1 *& RMU-2*	LEACHATE

REASON:

For tank T-160, the Location Sub-Area should also include RMU-2. RMU-2 Cell 20 leachate will route through the tank until the new RMU-2 northern leachate line to T-150 is constructed during the construction of Cells 15 and/or 16.

CWM COMMENT NUMBER: 117

TOPIC:

RMU-2 Technical Specifications
Polyethylene Geomembrane

LOCATION OF CONDITION:

Attachment J, Appendix D-7a, Section 02401, Article 3.03.F.1 and 3.a, Page 02401-13

EXISTING CONDITION:

1. Produce seams meeting following requirements in conformance with GRI GM19:

POLYETHYLENE SEAM PROPERTIES

PROPERTY	**METHOD**	**VALUE (minimum)**	
		40 MIL	**80 MIL**
Shear Strength	ASTM D4437*	80 lb/in	160 lb/in
Peel Strength			
Fusion	ASTM D4437*	60 lb/in	121 lb/in
Extrusion	ASTM D4437*	52 lb/in	104 lb/in

* Test methods as modified in Article 1.02.

2. Align geomembrane panels to have nominal overlap of 3 in. (75 mm) for extrusion welding and 5 in. (125 mm) for fusion welding. Provide sufficient overlap to allow peel tests to be performed on seam.

3. Use double-fusion welding as primary method of seaming adjacent field panels.

a. For cross seam tees, associated with fusion welding, extrusion weld to minimum distance of 4 in. (100 mm) on each side of tee.

PROPOSED MODIFICATION:

Revise as follows:

1. Produce seams meeting following requirements in conformance with GRI GM19:

POLYETHYLENE SEAM PROPERTIES

PROPERTY	METHOD	VALUE (minimum)	
		40 MIL	80 MIL
Shear Strength	ASTM ~~D4437*~~ *D6392**	80 lb/in	160 lb/in
Peel Strength			
Fusion	ASTM ~~D4437*~~ *D6392**	60 lb/in	121 lb/in
Extrusion	ASTM ~~D4437*~~ *D6392**	52 lb/in	104 lb/in

* Test methods as modified in Article 1.02.

2. Align geomembrane panels to have nominal overlap of 3 in. (75 mm) for extrusion welding and 5 in. (125 mm) for fusion welding. Provide sufficient overlap to allow peel tests to be performed on seam.

3. Use double-fusion welding as primary method of seaming adjacent field panels.

a. For cross seam tees, associated with fusion welding, extrusion weld to minimum distance of ~~4~~ *6* in. (100 mm) on each side of tee.

REASON:

The referenced test method in the table is incorrect. ASTM D4437 is the Standard Practice for Non-Destructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes. The correct method should be ASTM D6392 - Standard Test Method for Determining the Integrity of Non-reinforced Geomembrane Seams Produced Using Thermo-Fusion Methods.

Article 3.03.F.3.a has been revised to be consistent with Condition D.5.e.i of Exhibit G.

See Attachment E replacement page for Technical Specifications Page 02401-13

CWM COMMENT NUMBER: 118

TOPIC:

Sitewide Closure, Post-Closure And Corrective Measures Cost Estimates

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Section No. I
Table 1 – Summary of Site and RMU-1 Closure, Post-Closure And Corrective Measures Cost Estimates CWM Chemical Services, L.L.C., Model City, New York (January 2014 Department Approved Revised Estimate – With 2013 Inflation Adjustment)

EXISTING CONDITION:

See Draft Permit Document in Draft Documents Incorporated by Reference

Table 1 - Summary of Site & RMU-1
Closure, Post-Closure & Corrective Measures Cost Estimate
CWM Chemical Services, L.L.C., Model City, New York
(January 2014 Department Approved Revised Estimate – With 2013 Inflation Adjustment)

PROPOSED MODIFICATION:

Revise as follows:

See Attachment J for currently approved Table 1 - Summary of Site and RMU-1 Closure, Post-Closure And Corrective Measures Cost Estimates CWM Chemical Services, L.L.C., Model City, New York, dated July 30, 2014.

REASON:

On January 16, 2014, CWM Chemical Services, LLC (CWM) submitted a request to the New York State Department of Environmental Conservation (NYSDEC) to reduce the financial assurance amount based on revisions to the closure cost estimates for the Model City Facility. Revisions to the closure cost estimate were related to modifications to the Aqueous Wastewater Treatment System (AWTS) Water Treatment Building, correction of the total capacities of the Facultative Ponds, and the installation of Final Cover over portions of active waste areas of Residuals Management Unit No. 1 (RMU-1).

On May 13, 2014, the NYSDEC approved a reduction to the total financial assurance amount. CWM elected to leave the existing financial assurance instruments (totaling $100,119,708) in place until CWM was required to make the 2014 inflation adjustment to the cost estimate (60 days prior to October 2, 2014 per Condition O.3 in Module I of the Permit), at which time revised or replacement instruments would be required.

On July 30, 2014, CWM submitted revised closure, post-closure, and corrective action cost estimates which were adjusted for inflation. The July 30, 2014 submittal included an updated Table 1 which provides a summary of the currently approved Summary of Site and RMU-1 Closure, Post-Closure And Corrective Measures Cost Estimates.

CWM COMMENT NUMBER: 119

TOPIC:

Sitewide Closure, Post-Closure And Corrective Measures Cost Estimates

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Section No. I
Table 2 – Table 2

Summary of RMU-2 and Associated Units

Closure, Post-Closure & Corrective Measures Cost Estimates

Additions & Increased Totals

CWM Chemical Services, L.L.C., Model City, New York

EXISTING CONDITION:

Revise as follows:

See Draft Permit Document in Draft Documents Incorporated by Reference

Table 2
Summary of RMU-2 and Associated Units
Closure, Post-Closure & Corrective Measures Cost Estimates
Additions & Increased Totals
CWM Chemical Services, L.L.C., Model City, New York

PROPOSED MODIFICATION:

See Attachment J for replacement to Table 2.

REASON:

The NYSDEC prepared Table 2 only shows cumulative costs for adding new or modified hazardous waste units to the facility. This table does not provide an accurate summary/total of the true closure, post-closure, and corrective action cost estimates as RMU-2 is developed. For development of RMU-2 and related units, existing units will have to be closed and or modified. As an example, the first phase of RMU-2 will include the construction of Cell 20 which is at the location of existing Facultative Pond 8. For construction of Cell 20 Fac Pond 8 must be closed in accordance with the modified Closure Plan in the Draft Permit Modification for RMU-2. The closure of Fac Pond 8 must be certified by a New York State Professional Engineer and the NYSDEC must approve this closure. Upon receipt of approval of the closure of Fac Pond 8 from

the NYSDEC, CWM will request approval from the NYSDEC to reduce the financial assurance closure costs related to Fac Pond 8.

Note 4 of Table 2 does indicate that: "These amounts may also be decreased subsequent to Department approval in accordance with Condition O.5 in Module I and Condition G.3 in Exhibit A in Schedule 1 of Module I of the Part 373 Permit." However, showing only the cumulative total cost estimate in column 10 may mislead the public into thinking that these will be the actual total costs during development of RMU-2. CWM's November 2013 RMU-2 Permit Modification Request provides a summary of the cost adjustments and timing of these cost adjustments.

It appears that the NYSDEC prepared Table 2 using the cost estimates included in the Permit Modification Request for RMU-2 (November 2103) as the cost base, however, indicated that it is a 2011 cost base. The cost estimates used a 2010 cost base consistent with the currently approved Sitewide cost estimates. The adjustment for inflation in the NYSDEC provided Table 2 were only adjusted for 2011 to 2012. However, as included in the draft permit modification request the base costs should be adjusted for inflation from 2010 to 2011 and from 2011 to 2012. Additionally, to be consistent with the current inflation adjusted cost estimate, the RMU-2 costs should be adjusted based on an adjustment currently provided for the Sitewide cost estimates.

CWM COMMENT NUMBER: 120

TOPIC:

Sitewide Closure, Post-Closure And Corrective Measures Cost Estimates

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Section No. I
Table 4.01 Stabilization (revised) Closure Cost Estimate, 20-Dec-13

EXISTING CONDITION:

See Draft Permit Document in Draft Documents Incorporated by Reference
Table 4.01 Stabilization (revised) Closure Cost Estimate, 20-Dec-13

PROPOSED MODIFICATION:

Revise as follows:

See Attachment I for the CWM provided closure cost estimate for the stabilization area including the new trailer parking area.

REASON:

The Table 4.01 included in the Draft Permit Modification appears to have been prepared by the NYSDEC and does not match the Table 4.01 that was included in the Permit Modification Request for RMU-2 (November 2013). The NYSDEC estimate incorrectly assumes 16 5,500-gallon tankers could be present in the new Stabilization Trailer Parking Area at closure. As indicated in Comment No. 15, 5,500-gallon tankers are proposed for the New Stabilization Trailer Parking Area.

Current Stabilization Trailer Parking Areas I and II must be closed prior to the construction of the New Stabilization Trailer Parking Area. Current Stabilization Trailer Parking Areas III and IV are currently permitted for a total of 5 5,500-gallon tankers. Upon construction and certification of the New Stabilization Trailer Parking Area, 5,500-gallon tankers will be stored in the New Full Trailer Parking Area and Areas III and IV will be closed. The New Stabilization Trailer Parking Area will be permitted for 5 5,500-gallons tankers (or equivalent bulk containers for liquid storage).

SEE COMMENTS NO. 1, 15, 105, and 115

CWM COMMENT NUMBER: 121

TOPIC:

Sitewide Closure, Post-Closure And Corrective Measures Cost Estimates

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Section No. I
Table 5.32 AWTS Fac 5 (1 tk), August 28, 2013

EXISTING CONDITION:

Assembly 5.32.1, third line, tank: T-9002

PROPOSED MODIFICATION:

Revise as follows:

Assembly 5.32.1, third line, tank: T-~~9002~~ *9001*

REASON:

The November 2013 Permit Modification Request, Closure Cost Estimate included in Assembly 5.31 (AWTS Fac 5, (1 tk)) indicated that the tank for containment of liquids from the leak detection system for Facultative Pond 5 for closure was tank T-9002. See Attachment K for a revised Assembly 5.31. The tank proposed to be installed at Fac Pond 5 will have the designation T-9001 and will be permitted as such. See Exhibit D and Attachment D, Appendix D-3 or the Draft Permit Modification for RMU-2.

CWM COMMENT NUMBER: 122

TOPIC:

Sitewide Closure, Post-Closure And Corrective Measures Cost Estimates

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Section No. I
Tables 6.0 & 6.04, Facultative Ponds Closure Cost Estimates

EXISTING CONDITION:

The NYSDEC proposed closure cost estimates for the development of RMU-2 includes existing currently approved Assembly 6.0 (Fac Ponds), which includes existing Fac Ponds 1 / 2, 3, and 8. The NYSDEC has prepared a cost estimate for Fac Pond 5 only.

PROPOSED MODIFICATION:

Revise as follows:

Include CWM prepared Assemblies 6.01, 6.02, and 6.03 from CWM's Permit Modification Request for RMU-2 (Application) submitted in November 2013 and remove NYSDEC prepared Assembly 6.04.

6.01 Fac Ponds (3 & 1 / 2)

6.02 Fac Ponds (Fac 1&2, 3 and New 5)

6.03 Fac Ponds (Fac 1&2 and New 5)

REASON:

The construction of the first cell of RMU-2 will require the closure and certification of closure of Fac Pond 8 prior to initiation of the construction. Upon approval of the certification of closure of Fac Pond 8, CWM will request approval to remove the costs for closure of Fac Pond 8 from the cost estimates and subsequently from the Financial Assurance Instruments. At that time the closure cost estimates in Assembly 6.01 will apply. In accordance with Section 2.2 of the revised Transition Plan (Attachment C), Fac Pond 5 will be constructed prior to the development of the second cell (Cell 18) of RMU-2. Financial Assurance for new Fac Pond will be required at least 60 days prior to placement of waste in the new pond. During this time, Facultative Pond 3 will be closed. Assembly 6.02 provides a cost estimate for the time period where Fac Ponds 1 / 2 and 5 are operational and Fac Pond 3 is in the midst of the closure process. Assembly 6.03 provides the closure cost estimate, upon acceptance of the closure certification of Fac Pond 3.

CWM COMMENT NUMBER: 123

TOPIC:

Groundwater Sampling and Analysis Plan (GWSAP)

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Groundwater Sampling and Analysis Plan (GWSAP)

EXISTING CONDITION:

Appendix C-2

PROPOSED MODIFICATION:

Revise as follows:

Appendix C-2 of the existing sitewide Groundwater Sampling and Analysis Plan (GWSAP) should only include the pages that are included as Attachment M to these comments as approved by the Permit Modification issued December 12, 2013.

REASON:

Outdated tables from the Federal Register would inadvertently left in the GWSAP. These outdated references should be removed from Appendix C-2.

CWM COMMENT NUMBER: 124

TOPIC:

RMU-2 Transition Plan, April 2013 (Revised November 2013)

LOCATION OF CONDITION:

Part 373 DRAFT Permit Modification
Incorporated Documents
Section 2.2 and 2.5 and RMU-2 Conceptual Construction Schedule (Initial Phases)

EXISTING CONDITION:

See Transition Plan Development of Residuals Management Unit No. 2 included in the Draft RMU-2 Part 373 Permit Modification.

PROPOSED MODIFICATION:

Revise as follows:

See Attachment C for proposed revisions to the RMU-2 Transition Plan.

REASON:

The Transition Plan for RMU-2 submitted in the Permit Modification Request (November 2013) included a "Conceptual Schedule". It was anticipated that Fac Pond 5 would be constructed in the first year of site development for RMU-2. However, this phasing was conceptual in nature. At this time it is anticipated that Fac Pond 5 will be constructed during the third year of RMU-2 development to replace the capacity lost for the closure of Fac Pond 3, which also is anticipated to commence in the third year of RMU-2 development. At this time, it is anticipated that the closure of Fac Pond 3 will be completed during the fourth year of RMU-2 development, prior to construction of the second cell of RMU-2 (Cell 18). Section 2.2 of the Transition Plan text and the "Conceptual Schedule" has been revised and included as Attachment C to these comments.

Upon further review of Permit Drawing No. 26, the leachate transfer line along the west side of RMU-2 will require installation during the construction of RMU-2 Cell 18. Permit Drawing No. 26 shows the leachate transfer line will exit Manhole No. 15 and cross the footprint of existing T-158 Load/Unload Area. Therefore, the existing T-158 Load/Unload area must be closed and removed and replace with the new ramp during Cell 18 construction. Section 2.5 of the RMU-2 Transition Plan has been revised to reflect that the existing T-158 Load/Unload Area will be closed and construction of a replacement will occur during the construction of Cell 18. See Attachment C for a revision to the Transition Plan.

The Conceptual Schedule has been modified to reflect the current phasing and timing of the phases of RMU-2 development.

ATTACHMENT A

CONTAINER STORAGE CAPACITY SUMMARY

COMMENT No. 1
CONTAINER STORAGE CAPACITY SUMMARY
SITEWIDE 373 PERMIT
WITH MODIFI CATION FOR RMU-2 DEVELOPMENT
CWM CHEMICAL SERVICES, LLC MODEL CITY FACILITY

	CSA	Area Descriptioin		# of Containers	Container Capacity	Waste Type	Total Capacity (Gallons)	Notes
Current Drum Management Building	1	Area I		688	55	(LIQUID OR SOLID)	37840	
	2	Area II		320	55	(LIQUID OR SOLID)	17600	
	3	Area III		36	55	(LIQUID OR SOLID)	1980	
	4	Area IV		36	55	(LIQUID OR SOLID)	1980	
	5	Area V		1376	55	(LIQUID OR SOLID)	75680	177 Liquid Drum Limit
	6	Area IV		956	55	SOLID	52580	
	7	West Tanker Ramp		2	5500	LIQUID	11000	
	8	Truck Load/Unload Ramp		1040	55	SOLID	57200	
PCB Warehouse	9	Area 1		1368	55	SOLID	75240	
	10	Area 3/6		1358	55	(LIQUID OR SOLID)	74690	160 Liquid Drum Limit
South Trailer Parking	11	South Trailer Parking	Cargo Tanks	0		LIQUID	0	Max 5 liquid tankers 5,500 gallon
		South Trailer Parking	30-CY Rolloffs	58	6060	SOLID	351480	
Stabilization Trailer Parking	12	Area I		6	6060	SOLID	36360	
	13	Area II		14	6060	SOLID	84840	
	14	Area III	Cargo Tanks	0		LIQUID	0	Max 4 liquid tankers 5,500 gallons
			30-CY Rolloffs	19	6060	SOLID	115140	
	15	Area IV	Cargo Tanks	0		LIQUID	0	Max 1 liquid tankers 5,500 gallons
			30-CY Rolloffs	9	6060	SOLID	54540	
Stabilization	16	Waste Ash	30-CY Rolloffs	1	6060	SOLID	6060	
	17	Special Client	30-CY Rolloffs	4	6060	SOLID	24240	
	18	Marco Area I	30-CY Rolloffs	4	6060	SOLID	24240	
	19	Marco Area II	30-CY Rolloffs	8	6060	SOLID	48480	
	20	Marco Area III	30-CY Rolloffs	6	6060	SOLID	36360	
	21	Lower Drum Shredder	30-CY Rolloffs	2	6060	SOLID	12120	
	22	Upper Drum Shredder		300	55	SOLID	16500	
	23	North Exp		15	6060	SOLID	90900	
Aqueous Treatment	24	Drum Dock		128	55	(LIQUID OR SOLID)	7040	
	25	Tanker Unload		2	6000	(LIQUID OR SOLID)	12000	
	26	Filter Press	30-CY Rolloffs	1	6060	SOLID	6060	
TO Building	27	Pan Area	Transformers	11	386		4246	
	28	Loading Ramp	Cargo Tanks	2	6000	(LIQUID OR SOLID)	12000	
General Facility	29	Truck Wash	30-CY Rolloffs	3	6060	SOLID	18180	
	30	T-130 Load/Unload	Cargo Tanks	0	5500	LIQUID	0	Max 1 liquid tankers 5,500 gallons
			30-CY Rolloffs	1	6060	SOLID	6060	
	31	T-108 Load/Unload	Cargo Tanks	0	5500	LIQUID	0	Max 1 liquid tankers 5,500 gallons
			30-CY Rolloffs	1	6060	SOLID	6060	
	32	T-109 Load/Unload	Cargo Tanks	0	5500	LIQUID	0	Max 1 liquid tankers 5,500 gallons
			30-CY Rolloffs	1	6060	SOLID	6060	
	33	T-158 Load/Unload	Cargo Tanks	0	5500	LIQUID	0	Max 1 liquid tankers 5,500 gallons
			30-CY Rolloffs	1	6060	SOLID	6060	
			SUBTOTAL	7777	Units		1,390,816	Gallons

CONTAINER STORAGE CAPACITY SUMMARY
SITEWIDE 373 PERMIT
WITH MODIFI CATION FOR RMU-2 DEVELOPMENT
CWM CHEMICAL SERVICES, LLC MODEL CITY FACILITY

	CSA	Area Descriptioin		# of Containers	Container Capacity	Waste Type	Total Capacity (Gallons)	Notes
New Drum Management Building	34	AREA 1	FLAMMABLES	504	55	(LIQUID OR SOLID)	27720	
	35	AREA 2	ACIDS	1008	55	(LIQUID OR SOLID)	55440	
	36	AREA 3	CAUSTIC	1008	55	(LIQUID OR SOLID)	55440	
	37	AREA 4	POISONS	96	55	(LIQUID OR SOLID)	5280	
	38	AREA 5	OXIDIZER	96	55	(LIQUID OR SOLID)	5280	
	39	AREA 6	QA/QC	336	55	(LIQUID OR SOLID)	18480	
	40	AREA 7	FUELS RAMP	2	5500	LIQUID	11000	
	41	AREA 8	TRANSFORMER FLUSH	0	1500	LIQUID	0	Max transformer volume 2,065 gallons
			Drums	144	55		7920	
	42	AREA 9	Truck Loading/Unloading Ramp	1040	55	LIQUID	57200	
			SUBTOTAL	4234			243,760	Gallons
General Facility (new units)	43	New Full Trailer Park	Cargo Tanks (5)	0	5500	LIQUID	0	Max 5 liquid tankers 5,500 gallons
			30-CY Rolloffs	48	6060	SOLID	290880	
	44	Stabilization Facility New Trailer Park	Cargo Tanks (11)	0	2500	LIQUID	0	Max 5 liquid tankers 5,500 gallons
			30-CY Rolloffs	37	6060	SOLID	224220	
	45	New T-109 Loading	Cargo Tanks (1)	0	5500	LIQUID	0	
			30-CY Rolloffs	1	6060	SOLID	6060	
	46	New T-158 Loading	Cargo Tanks (1)	0	5500	LIQUID	0	
			30-CY Rolloffs	1	6060	SOLID	6060	
			SUBTOTAL	87			527,220	Gallons
			GRAND TOTAL	12098	Units		2,161,796	Gallons

ATTACHMENT B

FACULTATIVE POND NO. 3 PREQUALIFICAITON SAMPLING - 2014

2014 PHYSICAL / CHEMICAL ANALYSES
FACULATIVE POND # 3

EFFLUENT PARAMETER	DISCHARGE LIMIT	FACULTATIVE POND #3 CONCENTRATION	PRACTICAL QUANTITATION LIMIT	UNITS
pH (RANGE)	(6.5 to 8.5)	7.7	0.01	SU
SPECIFIC CONDUCTANCE	Monitor	9,000	10	µmhos/cm
ALKALINITY, TOTAL (as CaCO3)	Monitor	145	2	mg/l
HARDNESS, TOTAL (as CaCO3)	Monitor	640	0.66	mg/l
TEMPERATURE	90	74.1	0.1	^{o} F
SOLIDS, TOTAL SUSPENDED	60	28.7	3.0	mg/l
SOLIDS, TOTAL DISSOLVED	13,000	5,233	50	mg/l
SOLIDS, VOLATILE DISSOLVED	Monitor	<69.3	50	mg/l
SOLIDS, SETTLEABLE	0.2	<0.1	0.1	ml/l/hr
BOD, 5-DAY	45	18.7	5	mg/l
DISSOLVED OXYGEN	2.0 (min)	9.0	0.01	mg/l
DISSOLVED OXYGEN	2.0 (min)	7.7	0.01	mg/l
CARBON, TOTAL ORGANIC	Monitor	25.3	2.5	mg/l
NITROGEN, TOTAL ORGANIC (as N)	Monitor	3.6	0.30	mg/l
AMMONIA (as N)	20	3.68	0.075	mg/l
NITRITE, TOTAL (as N)	1.5	2.20	0.2	mg/l
NITRITE, TOTAL (as N) Resample	1.5	0.55	0.05	mg/l
NITRITE + NITRATE, TOTAL (N)	10	4.1	0.5	mg/l
NITRITE + NITRATE, TOTAL (N) Resar	10	0.54	0.1	mg/l
OIL & GREASE	15	<4.0	4.0	mg/l
SURFACTANTS (MBAS)	1.0	0.347	0.05	mg/l
ALUMINUM, TOTAL	4,000	207	100	µg/l
ANTIMONY, TOTAL	90	26 J	50	µg/l
ARSENIC, TOTAL	80	48	5	µg/l
BARIUM, TOTAL	1,000	80	10	µg/l
BERYLLIUM, TOTAL	20	<5	5	µg/l
CADMIUM, TOTAL	50	<5	5	µg/l
CHLORIDE, TOTAL	Monitor	2,506,667	50,000	µg/l
CHLORINE, RESIDUAL	1,000	<345	324	µg/l
CHROMIUM, TOTAL	370	3 J	10	µg/l
COBALT, TOTAL	75	<20	20	µg/l
COPPER, TOTAL	300	13	10	µg/l
CYANIDE, TOTAL	400	4 J	5	µg/l
FLUORIDE, TOTAL	12,000	1,770	1,250	µg/l
IRON, TOTAL	3,100	430	50	µg/l
LEAD, TOTAL	100	<7.3	10	µg/l
MANGANESE, TOTAL	1,100	217	10	µg/l

2014 PHYSICAL / CHEMICAL ANALYSES
FACULATIVE POND # 3

EFFLUENT PARAMETER	DISCHARGE LIMIT	FACULTATIVE POND #3 CONCENTRATION	PRACTICAL QUANTITATION LIMIT	UNITS
MERCURY, TOTAL	2,000	<200	200	ng/l
MERCURY, TOTAL LOW LEVEL	Monitor	<0.3	0.5	ng/l
MOLYBDENUM, TOTAL	410	83.3	50	µg/l
NICKEL, TOTAL	550	43	25	µg/l
PHOSPHOROUS, TOTAL	5,000	662	10	µg/l
SELENIUM, TOTAL	40	4 J	10	µg/l
SILVER, TOTAL	60	<7	7	µg/l
STRONTIUM, TOTAL	4000	1589	0.5	µg/l
SULFATE, TOTAL	Monitor	1,166,667	100000	µg/l
SULFIDE, TOTAL	2000	<100	100	µg/l
THALLIUM, TOTAL	50	<20	20	µg/l
TIN, TOTAL (3)	10	<10	10 (MDL)	µg/l
TITANIUM, TOTAL	1000	7.2 J	10	µg/l
VANADIUM, TOTAL	42	3 J	10	µg/l
ZINC, TOTAL	500	8 J	50	µg/l
AROCLOR 1016	Nondetect	<50	50	ng/l
AROCLOR 1221	Nondetect	<50	50	ng/l
AROCLOR 1232	Nondetect	<50	50	ng/l
AROCLOR 1242	Nondetect	<50	50	ng/l
AROCLOR 1248	Nondetect	<50	50	ng/l
AROCLOR 1254	Nondetect	<50	50	ng/l
AROCLOR 1260	Nondetect	<50	50	ng/l
ACENAPHTHLYENE	20	<2	2	µg/l
BENZIDINE	200	<20	20	µg/l
BENZO[A]ANTHRACENE	40	<2	2	µg/l
BENZO[B]FLUORATHENE	20	<2	2	µg/l
BENZOTHIAZOLE	10	<10	10	µg/l
BENZO[GHI]PERYLENE	5.5	<2	2	µg/l
BIS(2-CHLOROETHOXY)METHANE	30	<5	5	µg/l
BIS(2-CHLOROETHYL)ETHER	30	<2	2	µg/l
BIS(2-CHLOROISOPROPYL)ETHER	30	<2	2	µg/l
BIS(2-ETHYL HEXYL)PHTHALATE	50	<3	3	µg/l
4-CHLORO-3-METHYLPHENOL	20	<2	2	µg/l
2-CHLOROPHENOL	20	<2	2	µg/l
4-CHLOROPHENYL PHENYL ETHER	20	<2	2	µg/l
1,4-DICHLOROBENZENE	20	<5	5	µg/l
3,3'-DICHLOROBENZIDINE	70	<5	5	µg/l
2,4-DICHLOROPHENOL	20	<5	5	µg/l

2014 PHYSICAL / CHEMICAL ANALYSES
FACULATIVE POND # 3

EFFLUENT PARAMETER	DISCHARGE LIMIT	FACULTATIVE POND #3 CONCENTRATION	PRACTICAL QUANTITATION LIMIT	UNITS
DIETHYLPHTHALATE	40	<5	5	µg/l
2,4-DIMETHYPHENOL	20	<5	5	µg/l
2,4-DINITROPHENOL	120	<20	20	µg/l
2,4-DINITROTOLUENE	30	<5	5	µg/l
HEXAMETHYLBENZENE	8	<5	5	µg/l
INDENO[1,2,3-C,D]PYRENE	5.5	<2	2	µg/l
2-METHYL-4,6-DINITROPHENOL	100	<10	10	µg/l
2-NITROPHENOL	20	<5	5	µg/l
PENTACHLOROPHENOL	20	<5	5	µg/l
PHENANTHRENE	30	<2	2	µg/l
2,4,6-TRICHLOROPHENOL	20	<5	5	µg/l
SEMI-VOLATILE ORGANICS (1)	10	<10	(10)	µg/l
PHENOLICS, TOTAL RECOVERABLE	220	<30	30	µg/l
2-CHLOROETHYLVINYL ETHER	20	<10	10	µg/l
DICHLORODIFLUOROMETHANE	10	<1	1	µg/l
METHYLENE CHLORIDE	20	0.78 J	5.0	µg/l
VOLATILE ORGANICS (2)	10	<5	(5)	µg/l

NOTES:

(1) Parenthetical reporting limit represents the highest reporting limit for USEPA Method 625 for those compounds not listed individually.

(2) Parenthetical reporting limit represents the highest reporting limit for USEPA Method 624 for those compounds not listed individually.

(3) The laboratory's PQL (i.e. Reporting Limit) for Tin is 50 µg/L which is above the compliance level of 10 µg/L. The laboratory's MDL is 10 µg/L. A result of non-detect at the MDL was used to determine compliance with the permit limit.

ATTACHMENT C

REVISED TRANSITION PLAN

TRANSITION PLAN
DEVELOPMENT OF
RESIDUALS MANAGEMENT UNIT NO. 2

CWM CHEMICAL SERVICES, LLC
MODEL CITY, NEW YORK

April 2013
(Revised November 2013)
(Revised November 2014)

Prepared By: *CWM Chemical Services, LLC.*
1550 Balmer Road
Model City New York, 14107

TABLE OF CONTENTS

1.0 INTRODUCTION

CWM Chemical Services, LLC (CWM) proposes to construct and operate a residuals management unit for the permanent disposal of hazardous and industrial non-hazardous wastes at the CWM Chemical Services, LLC (CWM), Model City Hazardous Waste Management Facility (Model City Facility).

Prior to and during development of Residuals Management Unit No. 2 (RMU-2), operations at the facility will be modified both temporarily and permanently. This includes the closure, removal/demolition, and/or replacement of Part 373 permitted units and supporting operations that do not require inclusion in the Part 373 permit.

This plan will be used as guide for transition of the facility during the development of RMU-2 and site facilities affected by the development of the landfill.

1.1 DESCRIPTION OF PROPOSED RESIDUALS MANAGEMENT UNIT 2

Proposed RMU-2 incorporates a six (6) cell double-lined fully permittable land burial facility design, in a geologically suitable location, to provide a safe approach to addressing part of the state's hazardous and industrial non-hazardous waste disposal capacity needs over the next 10 to 20 years. RMU-2 will accommodate approximately 4,030,700 cubic yards of waste and will be situated on approximately 43.5 acres of land in the location indicated on Permit Drawing No. 2 of the Part 373 Permit Modification Application. The unit will be constructed in accordance with the requirements of 6 NYCRR 373-2.14. As provided in 6 NYCRR 360-1.1(b), non-hazardous industrial wastes disposed in RMU-2 will be managed in accordance with 6 NYCRR Part 373.

The RMU-2 development area includes current RCRA permitted units, existing supporting facilities not requiring RCRA permit, former RCRA Solid Waste Management Units (SWMUs), RCRA investigation/corrective action areas, underground and above ground utilities, and third-party SWMUs/investigation areas.

1.2 EXISTING FACILITIES IN THE RMU-2 LOCATION

The proposed location for RMU-2 is within an existing developed portion of the Model City Facility currently occupied by the following structures, buildings and operational areas:

1. Drum Management Building (Part 373 Container Storage);
2. Empty Trailer Parking Area;
3. South Trailer Parking Area (Part 373 Container Storage);
4. Emergency Response Garage;

5. Heavy Equipment Maintenance Building;
6. McArthur and "M" Streets;
7. Various aboveground and belowground utilities and communications services;
8. Facultative (Fac) Pond 8 (Part 373 Surface Impoundment);
9. Fac Pond 3 (Part 373 Surface Impoundment);
10. Stabilization Facility Trailer Parking Area (Part 373 Container Storage);
11. Secure landfill- (SLF-) 10 Leachate Building Unloading Ramp (Part 373 Container Storage); and
12. SLF 1-11 Oil/Water Separator Building Unloading Ramp (Part 373 Container Storage).
13. RMU-1 Lift Station (Part 373 Tank)
14. RMU-1 Leachate Forcemain to the Oil Water Separator Building (Part 373 Tank Ancillary Equipment)

RMU-2 development will occur in phases. The initial phase of development will occur over multiple years due to the number of site facilities that will be affected. Multiple facilities will be closed, demolished, and constructed during the first phase of RMU-2 development.

Attachment A presents a conceptual construction/closure sequencing schedule for the first phases of development of RMU-2. The RMU-2 development area includes current RCRA permitted units, existing support facilities not requiring RCRA permits, former RCRA Solid Waste Management Units (SWMUs), RCRA investigation/corrective action areas, underground and above ground utilities, and third-party SWMUs/investigation areas.

As required by CWM's Sitewide 6 NYCRR Part 373 Permit, a Project Specific Soil Excavation Monitoring and Management Plan (SEMMP) is required for all excavations/soil disturbances exceeding 1,000 square meters (m^2) or 150 cubic meters (m^3). RMU-2 development will exceed these thresholds. A Project Specific SEMMP has been submitted to the NYSDEC for the development of RMU-2 (April, 2013). The SEMMP also includes the procedures to be employed during the excavation and closure of RCRA SWMUs, RCRA investigation/corrective action areas, and third-party SWMUs/investigation areas. RCRA permitted units will be closed in accordance with the Sitewide Closure Plan in CWM's Part 373 Permit.

The following sections describe the affect on existing operations during the construction of RMU-2 for the initial and subsequent phases.

2.0 RMU-2 PHASED CONSTRUCTION

2.1 GENERAL

The initial phases of construction for Cells 20 and 18 will include the closure, demolition, and/or removal of the following facilities:

1. Closure of Fac Pond 8
2. Closure & demolition of South Trailer Parking Area
3. Remove/close Empty Trailer Parking Area
4. Demolition of SLF-10 Loading/Unloading Ramp
5. Closure of Fac Pond 3

The initial phases of construction for Cells 20 and 18 will include the construction of the following facilities:

1. Fac Pond 5
2. Fac Pond 5 Transfer Line
3. New Full Trailer Parking Area and Utilization of Empty Trailer Parking Area Northwest of SLF-12
4. New SLF-10 Loading/Unloading Ramp
5. Upgrade Tank T-150 Lift Station
6. New Tank T-150 Transfer Line
7. West Leachate Forcemain Transfer Line
8. Cells 20 and 18 including Cut-off-Wall, MSE Wall, Subgrade excavation, baseliner installation
9. Wetlands Mitigation Area

Subsequent phases of development of RMU-2 will include construction of Cells 19, 17, 16, and 15 and will include the closure/demolition and the construction of the following:

1. Relocation of Site Water Lines and Site Electric
2. Construction of New Drum Management Building
3. Closure & Demolition of Existing Drum Building & Water Tank Demolition
4. Closure & Demolition of Existing Stabilization Full Trailer Parking Areas I & II
5. Construction of New Stabilization Full Trailer Parking Area
6. Closure & Demolition of Existing Stabilization Full Trailer Parking Areas III & IV

7. Demolition of RMU-1 Lift Station and Force Main
6. Relocation of Meteorological Tower
7. Demolition of existing Heavy Equipment Maintenance Building. Construction of new Heavy Equipment Maintenance Building
8. Demolition Emergency Response Garage and Relocate to the Former Transportation Building
9. Construction of new SLF 1-11 Oil/Water Separator Loading/Unloading Ramp. Closure & Demolition of existing SLF 1-11 Oil/Water Separator Loading/Unloading Ramp.
10. MacArthur/M Streets - Removal of old Underground Leachate/Water/Sewer Lines
11. Demolition of leachate transfer lines
12. Closure of Former Railroad Bed Area
13. Closure/Removal of DOD Trash Pit
14. Cells 19, 17, 16 and 15 Construction including Cut-off-Wall, MSE Wall, Subgrade excavation, baseliner installation

The following sections describe the phases of development of RMU-2 and how these phases will affect the operation of the facility.

2.2 FACULTATIVE PONDS

The proposed RMU-2 footprint includes land currently occupied by two fac ponds designated as Fac Pond 3 and Fac Pond 8. Fac Pond 8, located immediately west of RMU-1, is permitted for storage of treated wastewater from the facility's Aqueous Wastewater Treatment System (AWTS). Fac Pond 8 is currently out of service and undergoing closure. Fac Pond 3, located west of Fac Pond 8, is currently being used for storage of treated wastewater. Wastewater stored in Fac Pond 3 is discharged to the Niagara River following approval of the pre-qualification testing requirements included in CWM's State Pollutant Discharge Elimination System (SPDES) Permit. Fac Pond 3 will also be closed as a result of RMU-2 development. The closure of Fac Pond 3 will be performed in accordance with the Site-Wide Part 373 Permit requirements, and is described in greater depth below.

In order to compensate for the treated wastewater volume reduction due to the removal of Fac Ponds 3 and 8, new Fac Pond 5 will be constructed between SLF-12 and SLF-7. The construction of Fac Pond 5 will include the construction of Part 373-compliant baseliner system as indicated in the RMU-2 Engineering Report.

Standard operations following construction would include the periodic transfer of treated wastewater from Fac Ponds 1/2 to new Fac Pond 5, which would be installed to replace Fac Pond 3 as the final qualification pond prior to discharge to the Niagara River.

It is anticipated that Fac Pond 5 will be constructed in the third year of site development for RMU-2 . Fac Pond 3 will be used utilized during the construction of Fac Pond 5 and will be closed prior to construction of Cell 18 of RMU-2. Included in the construction of Fac Pond 5 is the installation of two double contained underground transfer pipes for the transfer of the treated wastewater between the Fac Ponds 1/2 and Fac Pond 5 and/or to discharge to the Niagara River upon pre-qualification. The existing influent and effluent piping at Fac Ponds 1/2 and Fac Pond 3 will be modified, as necessary, to accommodate the fac pond reconstruction.

Upon construction of Fac Pond 5, Fac Pond 3 will be closed in accordance with the procedures in the Site-Wide Closure Plan with the exception that the pond area will not be backfilled to grade. The Site-Wide Closure Plan will be modified to allow for only backfilling the Fac Pond 3 to offset hydrostatic uplift.

The closure of Fac Pond 3, as described in the Model City Facility's Site-Wide Closure Plan, consists of discharging treated effluent from the fac pond following approval of the pre-qualification testing requirements included in CWM's SPDES Permit. Following discharge of treated effluent, residual water may be transferred to Fac Ponds 1/2 or Fac Pond 5, and the soils at the base of Fac Pond 3 will then be sampled in accordance the Site-Wide Closure Plan.

It will then be determined if removal of the soils and sediments from the bottom of Fac Pond 3 is needed based on the results of the initial sampling described above. If concentrations of hazardous constituents do not exceed Industrial Soil Cleanup Objectives provided in 6 NYCRR Part 375-6.8(b), the soils and sediments from the pond areas will be excavated to achieve design grades for RMU-2. In the event concentrations of hazardous constituents exceed Industrial Soil Cleanup Objectives provided in 6 NYCRR Part 375-6.8(b) in the surface samples, but not in the samples collected at the 6-inch depth, a minimum of 6 inches of soil/sediment will be removed from the base of the pond and properly disposed. The remaining soils will be excavated to achieve design grades for RMU-2.

If concentrations of hazardous constituents exceed the criteria indicated 6 NYCRR Part 375-6.8(b) in the subsurface samples, but not in the surface samples, the upper twelve inches of material will be removed from the bottom of the facultative pond and disposed of properly. In the event that materials are removed, post-removal sampling will be conducted to confirm that the indicated criteria above have been achieved. The sampling and analysis program described in the Site-Wide Closure Plan will be repeated (including sampling locations and analytical parameters) except that only the one inch surface samples will be collected. The results of the post-removal sampling will be used to demonstrate clean closure.

Excavation and disturbance of soils associated with construction of Fac Pond 5 and closure of Fac Pond 3 will be performed in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

2.3 SOUTH TRAILER PARKING AREA

The existing South Trailer Parking Area, located south of the existing Empty Trailer Parking Area, is used for the storage of liquid and solid, RCRA regulated, TSCA regulated and non-hazardous containers. These containers consist of the following:

- Box trailers holding hazardous and non-hazardous, New York State Department of Transportation- (NYSDOT-) approved containers;
- Bulk tanker trailers, vacuum trailers or other bulk containers holding liquids;
- Covered roll-off trailers, covered dump trailers or other bulk containers holding solid materials; and
- Flatbed or lowboy trailers holding transformers or containers of contaminated solid materials.

A portion of the existing South Trailer Parking Area is located within the footprint of RMU-2 and the West Leachate Forcemain. As such, the existing South Trailer Parking Area will be removed and a new area will be constructed along the western edge of RMU-2. The new Full Trailer Parking Area would include a reinforced concrete base with concrete curbing on three sides. Prior to construction of the new Full Trailer Parking Area, the existing South Trailer Parking Area will be closed in accordance the closure requirements included in the Site-Wide Part 373 Permit. In general, closure activities to be implemented for the existing South Trailer Parking Area will include the following:

- An initial inventory of all wastes within the South Trailer Parking Area will be performed to verify accuracy with current records, to confirm the integrity of all waste containers for removal and to identify, by visual observation, any potentially contamination areas.
- All trailers will be transported to the Stabilization Full Trailer Parking Area.
- Following removal of all waste containers, the existing South Trailer Parking Area will be decontaminated by sweeping or vacuuming the floors, followed by washing the floors. Any wastewater generated by the washing will be treated on site at the AWT facility.
- Once the cleaning process has concluded, the structure will be demolished. The containment demolition debris will be landfilled on site or shipped to an appropriate waste management facility.
- Once the concrete is removed, the soil will be inspected for signs of contamination. Any soil showing contamination will be sampled in in accordance with the Sitewide Closure Plan. Depending on the characterization results, the soils will either be removed and disposed of in a RCRA and/or TSCA permitted landfill on-site or off-site or disposed of in a solid waste permitted landfill off-site.

- Soils underlying the South Trailer Parking Area will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

During the closure of the existing South Trailer Parking area and construction of a new containment area the total site capacity for the storage of roll-offs and trailers will be temporarily reduced until the replacement parking area is constructed. The total site capacity will be temporarily reduced by 58 roll-offs or 29 tankers from the existing South Trailer Parking Area. During the closure of the South Trailer Parking area and the construction of the New Full Trailer Parking Area, the Stabilization Full Trailer Parking Area will have sufficient capacity to store the containers from the South Trailer Parking area. The following table provides a summary containment capacities of the South Trailer Parking area and the New Full Trailer Parking Area.

LOCATION	WASTE TYPE	CONTAINER TYPE	STORAGE CAPACITY	AVAILABLE SECONDARY CONTAINMENT (gallons)	REQUIRED SECONDARY CONTAINMENT (gallons)
Existing South Trailer Parking Area	Liquid/Solid	tankers/roll-offs	58 roll-offs or 29 tankers	82,481	68,521
New Full Trailer Parking Area	Liquid/Solid	tankers/roll-offs	48 roll-offs or 24 tankers	66,583	47,449

Note: A maximum of 55,000 gallons of incinerable liquids in tankers will be stored in the New Full Trailer Parking Area and the Stabilization Trailer Parking Area.

2.4 EMPTY TRAILER PARKING AREA

The Empty Trailer Parking Area is used to stage trailers following the off-loading of wastes. The existing Empty Trailer Parking area, currently located southeast of the Leachate Tank Farm (LTF), will be removed. Empty trailers will continue to be stored in an existing area northwest of SLF-12.

2.5 LOADING/UNLOADING RAMPS FOR THE SLF-10 LEACHATE BUILDING AND SLF 1-11 OIL/WATER SEPARATOR BUILDING.

Existing loading/unloading ramps are provided at the SLF-10 Leachate Collection Building west of SLF-10 and the SLF 1-11 Oil/Water Separator Building east of the LTF to provide facilities for vehicle loading/unloading of the tanks within these buildings. Although these buildings and their unloading ramps are not located within the footprint of RMU-2, access to the ramps will be impacted by the RMU-2 project. New ramps will be installed south of the SLF-10 Leachate Collection Building and east of the SLF 1-11 Oil/Water Separator Building and will generally be the same dimensions as the existing ramps. Therefore, the secondary containment capacities will only change slightly. Following construction of the new ramps, the existing ramps will be closed in accordance the closure requirements included in the Site-Wide Part 373 Permit. In general, closure activities to be implemented for the existing ramps will include the following:

- Following construction of the new ramps, the existing ramps will be decontaminated by sweeping or vacuuming the floors, followed by washing the floors. Any wastewater generated by the washing will be treated on site at the AWT facility.
- Once the cleaning process has concluded, the ramp structures will be demolished. The containment demolition debris will be landfilled on site or shipped to an appropriate waste management facility.
- Once the concrete is removed, the soil will be inspected for signs of contamination. Any soil showing contamination will be sampled in in accordance with the Sitewide Closure Plan. Depending on the characterization results, the soils will either be removed and disposed of in a RCRA and/or TSCA permitted landfill on-site or off-site or disposed of in a solid waste permitted landfill off-site.
- Soils underlying the ramps will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

It is anticipated that the ramp at the SLF-10 Lift Station will be replaced for the construction of Cell 20 of RMU-2 and the ramp at the SLF 1-11 Oil/Water Separator Building will be replaced for the construction of Cell 18.

2.6 UPGRADE T-150 LIFT STATION AND NEW TRANSFER LINE

Leachate collected from both RMU-1 and RMU-2 will be pumped to the existing SLF-12 lift station (tank T-150), which will be upgraded to accommodate the anticipated flow rates. To manage this peak flow rate, the existing SLF-12 lift station pump will be replaced with two Godwin GSP300HV or equivalent submersible pumps.

Leachate pumped from the SLF-12 lift station will discharge to the three existing storage tanks located in the LTF for temporary storage prior to treatment at the aqueous wastewater treatment system (AWTS) facility. Two new double-walled HDPE leachate underground transfer lines will be installed from the SLF-12 Lift Station to the LTF during construction of Cell 18. Based on the results of the LTF storage capacity analysis presented in Appendix F of the Engineering Report (February 2013), the temporary storage and treatment capacities of the LTF and AWTS, respectively, are sufficient to manage the anticipated leachate volumes collected from RMU-2.

2.7 REPLACEMENT OF DRUM MANAGEMENT BUILDING

The existing Drum Management Building, located west of RMU-1, is located within the footprint of RMU-2. The new DMB will be constructed prior to closure of the existing DMB and is to be located east of RMU-1. Drum management capacities and procedures in the current Part 373 Permit will be utilized until the New DMB is constructed and certified. Storage capacities and operations will not be affected during construction of the new DMB. The new Drum Management Building will include facilities for storage of drums and other containers, offices, a laboratory and mechanical room. Provisions will also be included for fuels bulking (as is

currently performed in the existing Drum Management Building) and transformer decommissioning (to be relocated from the existing T.O. Building). The new DMB will be operated according to the operating procedures for the existing DMB. Following construction of the new Drum Management Building, the existing Drum Management Building will be closed in accordance with the closure requirements included in the Site-Wide Part 373 Permit. In general, closure activities to be implemented for the existing Drum Management Building will include the following:

- An initial inventory of all wastes within the building will be performed to verify accuracy with current records, to confirm the integrity of all waste containers for removal and to identify, by visual observation, any potentially contamination areas.
- All wastes will then be removed from the building and either relocated to the new Drum Management Building, disposed on site or transported off site to an approved hazardous waste management facility.
- Following removal of all waste containers, the Drum Management Building will be decontaminated by sweeping or vacuuming the floors, followed by washing the floors. Any wastewater generated by the washing will be treated on site at the aqueous wastewater treatment (AWT) facility. Once the cleaning process has concluded, the area will be inspected to verify no staining, PCB wipe testing will be performed to confirm PCB decontamination, the the building will be demolished. The building demolition debris will be landfilled on site or shipped to an appropriate waste management facility.
- Once the concrete is removed, the soil will be inspected for signs of contamination. Any soil showing contamination will be sampled in in accordance with the Sitewide Closure Plan. Depending on the characterization results, the soils will either be removed and disposed of in a RCRA and/or TSCA permitted landfill on-site or off-site or disposed of in a solid waste permitted landfill off-site.
- The soils underlying the Drum Management Building will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan. Following completion of the closure activities, CWM will submit to the NYSDEC a certification that the Drum Management Building has been closed in accordance with the specifications in the Site-Wide Part 373 Permit within 60 days of final closure. Because existing operations will continue at the new Drum Management Building, it is anticipated that most mobile and stationary equipment utilized in the existing Drum Management Building will be transferred to the new building for continued use. Any equipment not planned for reuse will be cleaned, tested for alternate use or managed in accordance with the Site-Wide Part 373 Permit requirements.

The capacity of the existing Drum Management Building is provided in the following table. These capacities will be maintained during the construction of the new Drum Management Building. The capacity of the new Drum Management Building upon completion is also provided below and is included in proposed modifications to Appendix D-1, Attachment D of the

Sitewide Part 373 Permit include in the Permit Modification Application for RMU-2 (February 2013).

Current Permitted Capacity of Drum Management Building

LOCATION	WASTE TYPE	CONTAINER TYPE	STORAGE CAPACITY	AVAILABLE SECONDARY CONTAINMENT (gallons)	REQUIRED SECONDARY CONTAINMENT (gallons)
Area I	Liquid/Solid	drums	688 55-gal drums	4,675	3,784
Area II	Liquid/Solid	drums	320 55-gal drums	1,989	1,760
Area III	Liquid/Solid	drums	36 55-gal drums	251	198
Area IV	Liquid/Solid	drums	36 55-gal drums	251	198
Area V (Floor Trench System)	Liquid	drums	117 55-gal drums	648	644
	Solid	drums	1,376 55-gal drums	NA	NA
Drum Building West Ramp	Liquid	tankers	2-5,500-gal tankers	22,118	10,104
Truck Loading/Unloading Area & Ramp	Solid	drums	1,040 55-gal drums	NA	NA
Area VI, Sections 1, 2 & 3	Solid	drums	956 55-gal drums	NA	NA

Proposed Capacity for New Drum Management Building

LOCATION	WASTE TYPE	CONTAINER TYPE	STORAGE CAPACITY	AVAILABLE SECONDARY CONTAINMENT (gallons)	REQUIRED SECONDARY CONTAINMENT (gallons)
Area 1	Liquid/Solid	drums	504 55-gal drums	9,011	2,772
Area 2	Liquid/Solid	drums	1008 55-gal drums	6,667	5,544
Area 3	Liquid/Solid	drums	1008 55-gal drums	6,914.6	5,544
Area 4	Liquid/Solid	drums	96 55-gal drums	1,244.7	528
Area 5	Liquid/Solid	drums	96 55-gal drums	765.2	528
Area 6	Liquid/Solid	drums	336 55-gal drums	3,768	1,848
Area 7 Fuels Transfer Ramp	Liquid	tankers	2-5,500-gal tankers	21,392	10,681
Area 8 Transformer Flush	Liquid	Drums/ transformers	2,065 gallons	2,065.2	2,065
Area 9 Truck Loading/Unloading Area & Ramp	Liquid/Solid	drums	1,040 55-gal drums	95,681	5,720

2.8 STABILIZATION TRAILER PARKING AREA

The existing Stabilization Trailer Parking Area consists of three separate concrete secondary containment areas, which are located west of the Stabilization Building. The south and west areas (also known as Areas III and IV) are currently permitted for bulk container storage similar to the Full Trailer Parking Area. The north area (also known as Areas I and II) is currently used for storage of non-hazardous materials. The south and west areas are located within the footprint of RMU-2. Prior to RMU-2 construction, the existing north area will be closed in accordance with the Site-Wide Part 373 Permit and removed and a new longer concrete secondary containment will be installed in that location, designed similar to the existing areas.

Following construction of the new Stabilization Trailer Parking Area, the existing west and south Stabilization Trailer Parking Areas will be closed in accordance with the closure requirements included in the Site-Wide Part 373 Permit. In general, closure activities to be implemented for the Stabilization Trailer Parking Areas will include the following:

- An initial inventory of all wastes within the west and south Stabilization Trailer Parking Areas will be performed to verify accuracy with current records, to confirm the integrity of all waste containers for removal and to identify, by visual observation, any potentially contamination areas.
- All trailers will be transported to the new Stabilization Trailer Parking Area or alternative area.
- Following removal of all waste containers, the existing west and south Stabilization Trailer Parking Areas will be decontaminated by sweeping or vacuuming the floors, followed by washing the floors. Any wastewater generated by the washing will be treated on site at the AWT facility.
- Once the cleaning process has concluded, the structures will be demolished. The containment demolition debris will be landfilled on site or shipped to an appropriate waste management facility.
- Once the concrete is removed, the soil will be inspected for signs of contamination. Any soil showing contamination will be sampled in in accordance with the Sitewide Closure Plan. Depending on the characterization results, the soils will either be removed and disposed of in a RCRA and/or TSCA permitted landfill on-site or off-site or disposed of in a solid waste permitted landfill off-site.
- Soils underlying the west and east Stabilization Trailer Parking Areas will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

During the closure of the north Stabilization Trailer Parking area and construction of a new containment area the total site capacity for the storage of roll-offs will be temporarily reduced until the replacement parking area is constructed. The total site capacity will be temporarily reduced by 20 roll-offs from the north Stabilization Trailer Parking area. The south and west Stabilization Trailer Parking Areas (Areas III and IV) will continue to be utilized until the new

Stabilization Full Trailer Parking Area is complete. Following completion of the New Stabilization Full Trailer Parking Area, Trailer Parking Areas III and IV will be closed in accordance with the Site-Wide Closure Plan and demolished. The following table provides a summary of the existing Stabilization Trailer Parking area containment capacity and containment capacity upon demolition of the existing containment areas and construction of the New Stabilization Trailer Parking Area.

LOCATION	WASTE TYPE	CONTAINER TYPE	STORAGE CAPACITY	AVAILABLE SECONDARY CONTAINMENT (gallons)	REQUIRED SECONDARY CONTAINMENT (gallons)
Stabilization Facility					
Existing Trailer Parking (north) Area I	Solid	Roll-offs	6 roll-offs	NA	NA
Existing Trailer Parking (north)Area II	Solid	Roll-offs	14 roll-offs	NA	NA
Existing Trailer Parking (west) Area III	Liquid/Solid	Roll-offs	19 roll-offs	39,273	27,887
Existing Trailer Parking (south) Area IV	Liquid/Solid	Roll-offs	9 roll-offs	19,636	13,668
New Stabilization Full Trailer Parking Area	Liquid/Solid	tankers/roll-offs	37 roll-offs or 26 rolloffs and 11 tankers (2,500 gal)	56,106	41,977

Note: A maximum of 55,000 gallons of incinerable liquids in tankers will be stored in the New Full Trailer Parking Area and the Stabilization Trailer Parking Area.

2.9 RMU-1 LIFT STATION AND FORCEMAINS

Construction of RMU-2 will require the closure and demolition of the RMU-1 lift station, including tank T-160, and removal of an underground pipeline currently used to transfer leachate from the RMU-1 lift station to the leachate tank farm. The RMU-1 lift station and tank T-160 will be closed in accordance with the Site-Wide Closure Plan in CWM's Site-Wide Permit.

Once the closure process for the lift station and tank T-160 is complete, the tank and building will be demolished. The demolition debris will be landfilled on site or shipped to an appropriate waste management facility. Once the concrete is removed, the soil will be inspected for signs of contamination. Any soil showing contamination will be sampled in in accordance with the Sitewide Closure Plan. Depending on the characterization results, the soils will either be removed and disposed of in a RCRA and/or TSCA permitted landfill on-site or off-site or disposed of in a solid waste permitted landfill off-site.

The existing RMU-1 underground leachate forcemains in the RMU-2 footprint will be removed by excavation following the RMU-2 Project Specific Soil Excavation Monitoring and Management Plan.

The RMU-1 lift station is located at a low point along the RMU-1 leachate forcemains. A new leachate transfer manhole will, therefore, be installed at this low point and to the east of the RMU-1 lift station. The purpose of the new manhole is to provide a means for leak detection at the forcemain low point. This will allow the majority of the RMU-1 forcemains to remain in service without modification. Two new, identical underground forcemains will be installed from an existing manhole at the northwest corner of RMU-1 to a junction manhole north of RMU-2 Cells 15 and 16. At this junction manhole, flow from the RMU-1 leachate forcemains will combine with flow from RMU-2 Cells 15 and 16 and then continue flowing to the west to the SLF 12 lift station. The proposed layout for the RMU-2 leachate forcemains, as well as modifications to the RMU-1 leachate forcemains are shown on Permit Drawing No. 26.

2.10 HEAVY EQUIPMENT MAINTENANCE BUILDING

The existing Heavy Equipment Maintenance Building, located approximately 250 feet west of RMU-1, would be relocated to the area north of Fac Ponds 1/2. The existing structure, foundation and all existing utilities would be removed to facilitate construction of RMU-2. The new Heavy Equipment Maintenance Building would include a truck bay and office area, and space for maintenance repair equipment. Operations associated with the existing Heavy Equipment Maintenance Building would be maintained at the new location. Soils underlying the building will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

2.11 EMERGENCY RESPONSE GARAGE

The existing Emergency Response Garage, located west of RMU-1, would be relocated to an existing building west of RMU-2 (i.e. Truck Wash Building). The existing structure, foundation and all existing utilities would be removed to facilitate construction of RMU-2. Operations associated with the existing Emergency Response Garage would be moved and maintained at the new location. Soils underlying the garage will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

2.12 MCARTHUR AND “M” STREETS

To facilitate construction of RMU-2, approximately 2,000 linear feet of site roadway (portions of McArthur Street and “M” Streets) would be removed. Although portions of the roads may remain in service for use by waste trucks going to RMU-1 during the initial phase of development and by construction vehicles, the road surface material, road base and all above and belowground utilities along the portions of the roads impacted by RMU-2 would be removed. Removal and excavations in this area will be performed in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

2.13 EXISTING UTILITIES AND COMMUNICATIONS SERVICES

In November 2002, Blasland, Bouck & Lee, Inc. (BBL) performed a utilities investigation to identify all existing above and belowground utilities impacted by the construction of RMU-2.

There are several underground water supply pipelines and electrical service lines within the proposed RMU-2 footprint. All existing utilities would be removed during either relocation of existing facilities or prior to construction of RMU-2. Excavation would be carefully conducted so that the presence of any previously unidentified utilities can be addressed. Since no underground utilities would be left beneath the RMU-2 landfill, landfill stability would not be affected and the potential for contamination migration along pipelines would not exist. Underground utilities will be excavated as part of RMU-2 construction, in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan. Replacements for the current active utilities will be installed prior to removal of the existing utilities; therefore, site operations will not be affected.

2.14 METEOROLOGICAL TOWER

The existing MET tower, located north of SLF-1 through SLF-6, would be relocated during construction of subsequent phases of RMU-2 so that its operation would not be affected by the height of RMU-2. The new location would be determined by CWM, based on approval from the NYSDEC and the DOH.

2.15 RAILROAD BED AREA

In April 1994, a routine surface-water sampling event near the intersection of "M" Street and MacArthur Street at the Model City Facility identified the presence of elevated concentrations of VOCs. A surface-water sampling investigation was performed by CWM both upstream and downstream of the intersection to identify the source and extent of the contamination. The investigation determined that the probable source of the contamination was an abandoned railroad bed located west of the intersection. A supplemental investigation of the abandoned railroad bed was performed in 1997. The supplemental investigation determined that low level VOC contamination (less than 100 ppm) is confined to the Glacial Till layer immediately below the abandoned railroad bed, approximately 25 feet north and south of the railroad bed, extending east to the edge of MacArthur Street and west to the location of former Tank Farm E. Excavations in this area within the RMU-2 footprint will follow the RMU-2 Project Specific Soil Excavation Monitoring and Management.

2.16 CLOSURE/REMOVAL OF DOD TRASH PIT

A burn pit/trash pit was discovered by CWM during an excavation to install leachate lines for the leachate hydraulics controls upgrade (LHCU). Three drums, old batteries, and other debris were found in the pit. CWM excavated through the burn pit but did not remove all of the material. The pit is located near the Fire Water Storage Tank.

The Department of Energy (DOE) investigated the Trash Pit by geophysical investigation, test trenches, direct-push borings, soil, and groundwater sampling. Impacts include lithium, boron, and VOCs. DOE indicated in a Remedial Investigation Report/Management Plan that the preferred remedy is removal with confirmatory soil sampling. Excavations in this area within the RMU-2 footprint will follow the RMU-2 Project Specific Soil Excavation Monitoring and Management Plan.

2.17 SITE CLEARING ACTIVITIES

Prior to construction of RMU-2 and the aforementioned relocated facilities, the limits of work will be surveyed and staked. Erosion control measures will be established prior to any soil disturbance. The areas within the limits of work will then be cleared and grubbed to remove and dispose all objectionable material, such as trees, stumps, stones, brush, shrubs, roots, rubbish and other debris. Trees and other large woody debris will be chipped. Trees and stumps too large to be chipped will be properly disposed. Any existing groundwater monitoring wells or piezometers in the proposed areas for construction will either be marked for protection or abandoned in accordance with applicable regulations.

2.18 EXCAVATION AND LANDFILL SUBBASE

After site preparation has been completed, excavation for RMU-2 would proceed to the subbase grade. The average depth of excavation is approximately 12 feet. On-site visual inspection would confirm the suitability of the subbase and any need for over-excavation of unsuitable material. Compacted clay (that may be taken from approved on-site stockpiles or off-site sources) would be placed in over-excavated areas. A rigid Construction Quality Assurance (CQA) Plan, meeting the requirements of the USEPA and NYSDEC, would be implemented during preparation of the subbase and all aspects of landfill construction.

Hydrostatic uplift calculations in the RMU-2 Engineering Report were based on current available data. Prior to construction, water levels would be confirmed to verify hydrostatic uplift assumptions by the design engineer or qualified geotechnical engineer. Piezometers would be monitored prior to sump excavation to determine if the water level is the same or lower than the design water table. If the same or lower, construction would proceed to design grades, otherwise further evaluation would be conducted before proceeding with construction.

Excavated material would be segregated and stockpiled on site at the Model City Facility for future appropriate uses, including construction of the exterior berms, the compacted clay secondary liner system and the final cover. Additional clay for use in the liner system (described below) would be obtained from existing on-site stockpiles or off-site sources. The exact sources of this clay are not currently known, but would be obtained on a contract basis from appropriately permitted or exempt sources.

During excavation activities to achieve RMU-2 design subgrade elevations, the possibility of encountering contaminated soils within the Glacial Till layer exists. This contamination may be chemical (i.e., volatile organic compounds [VOCs]) or radiological. All excavated contaminated soils would be segregated from soils that would potentially be used in construction of RMU-2. Excavated contaminated soils would be disposed in accordance with all applicable requirements. All excavation and soil disturbance performed as part of construction for RMU-2, relocated facilities or other associated activities, shall be completed in accordance with the requirements of the RMU-2 Soil Excavation Monitoring and Management Plan.

3.0 SURFACEWATER AND LEACHATE MANAGMENT

3.1 SURFACEWATER MANAGEMENT

A Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the development of RMU-2 and related facilities. Surface-water management measures during construction of individual cells (i.e., before placement of wastes into the cells) would involve sediment control barriers consisting of rock check dams, silt fences and/or hay bales. The number and location of these would be determined by the progress of construction operations. All silt fences and hay bales would be removed following re-vegetation of areas that have been disturbed as a result of construction operations. During construction, surface water would be directed to the Model City Facility's existing surface-water collection system. The existing surface-water collection system is monitored for hazardous constituents according to the Model City Facility's *SurfaceWater Sampling and Analysis Plan*. During operation of RMU-2, precipitation entering the cells would be collected in the leachate collection system and treated as leachate.

Water from the final cover system would be treated as surface water. All surfacewater runoff from the final cover system would be directed to the existing stormwater management system and retention basins. The proposed grading for RMU-2 would cause a portion of the perimeter ditch along the western edge of RMU-1 to be unable to gravity drain along the surface to any stormwater basin. Consequently, a storm sewer system would be installed between RMU-1 and RMU-2 to convey runoff that enters this segment of the perimeter ditch to the existing V01 basin. The storm sewer system would consist of a single drop inlet (consisting of pre-cast concrete catch basin structure and a frame and inlet grate) and a series of pre-cast concrete manholes interconnected by smooth-bore corrugated HDPE piping. The storm sewer system would convey flow along the existing RMU-1 perimeter berm and would daylight at the northwest corner of RMU-1. The storm sewer system has been designed to convey the 25-year, 24-hour storm event estimated peak discharge under newly graded conditions.

Ground surfaces surrounding all other areas that will be disturbed as part of the RMU-2 project (e.g., relocated facilities and Fac ponds) will be regraded as necessary to promote drainage to the existing stormwater management system and appropriate stormwater basins. Provisions for increasing the capacity of the stormwater retention areas will be completed as needed based on the 25-year, 24-hour storm event.

3.2 LEACHATE MANAGEMENT

During the transition of landfill operations from RMU-1 to RMU-2 the amount of leachate generated and subsequently treated at the AWT facility will decrease. As of the end of 2012, approximately 10.5 acres of RMU-1 are still open and actively receiving waste. The volume of leachate generated from RMU-1 during 2012 (10.5 acres active area) was approximately 10.3 million gallons, while the average amount of leachate generated by RMU-1 the previous five years (21.8 acres active area) was approximately 15.6 million gallons. Preliminary plans are that

approximately 4.5 acres of final cover will be constructed in 2013 with the remaining 5.5 acres constructed in subsequent years depending on waste receipts. Therefore, leachate and contact water generated from the open areas of RMU-1 will be significantly reduced during development of RMU-2.

RMU-2 will be developed in phases over a number of years as landfill airspace is needed. Cell 20 (approximately 6.1) will be constructed during the first phase of landfill development, followed by construction of Cells 18, 19, 17, 16 and 15. Leachate from Cell 20 will be conveyed by double contained forcemain to the primary leachate vault for RMU-1 Cell 2 and tie into the forcemain for RMU-1 Cells 2, 4, 6, 9/10, 11/13, and 12/14. The existing RMU-1 lift station and forcemains have adequate capacity to manage leachate generated from Cell 20. The RMU-1 lift station and forcemain to the leachate tank farm will remain in use until construction of Cell 17. A Leachate Level Compliance Plan (LLCP) for RMU-2 Cell 20 will be prepared, submitted, and approved prior to acceptance of waste in Cell 20. The LLCP for Cell 20 will show that the existing RMU-1 leachate management system and the facility's Aqueous Wastewater Treatment System are adequate to manage leachate from the addition of Cell 20.

New forcemains (West Leachate Forcemain Transfer Line) to manage leachate from Cells 17, 18, and 19 of RMU-2 will be constructed during construction of Cell 18. The new RMU-2 forcemains will convey leachate to the SLF-12 lift station which will be upgraded during construction of Cell 18. The existing above ground leachate forcemains from the SLF-12 lift station to the leachate tank farm will be replaced with new underground forcemains during the Cell 18 construction season.

For construction of Cell 17, the RMU-1 lift station will be closed and demolished and new leachate forcemains (North Leachate Forcemain Transfer Line) will be constructed along the north perimeter berm of RMU-2 to replace the existing forcemains from the RMU-1 lift to the leachate tank farm. The new forcemains will convey leachate to the upgraded SLF-12 lift station.

LLCPs for RMU-2 will be prepared, submitted, and approved for each phase of landfill development prior to acceptance of waste in each new phase.

ATTACHMENT 1

RMU-2 CONCEPTUAL CONSTRUCTION SCHEDULE
(Revised November 2014)

CWM Chemical Services, LLC.
Model City Facility
Niagara County, New York

RMU-2 Conceptual Construction Schedule (Initial Phases)

Task ID#	Construction/Closure Description	Year 1												Year 2												Year 3												Year 4												Year 5											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Complete FP8 Remediation Berm/Close																																																														
2	RMU-1/2 Control Upgrades																																																														
3	Construction of Cell 20 (6.1 A)				Cell 20 Construction												Cell 20 Construct																																																
4	Construction of Fac Pond 5																											Construct FP 5																																				
5	Construct Fac Pond 5 Transfer Line																												Transfer Line																																		
6	Remove/Close Fac Pond 3																																																														
7	Construct New SLF-10 Loading Ramp																																																														
8	Demo Existing SLF-10 Loading Ramp																																																														
9	Construct Cell 18 (5.8 A)																																																														
10	Construct West Forcemain Transfer Line																																																														
11	Demo/Close Existing Full Trailer Parking																																																														
12	Construct New Full Trailer Parking Area																																																														
13	Construct New T-158 Loading Ramp																																																														
14	Demo Existing T-158 Loading Ramp																																																														
15	Upgrade Tank T-150 Lift Station																																																														
16	New Tank T-150 Transfer Line to LTF																																																														
17	Construct Cell 19 (5.8 A)																																																													Construct Cell 19 Beyond Year 5											
18	Build New Drum Building																																																											Drum Building Construction Beyond Year 5											
19	Relocate utilities																																																											Utilities Beyond Year 5											
20	Wetlands Mitigation								Wetlands																																																									

Treated Wastewater Management

- Filling of Fac Ponds 1/2 from Aqueous Wastewater Treatment System (AWTS) is continuous throughout construction of Fac Pond 5 and Closure of Fac Pond 3
- Fill Fac Pond 3 from Fac Ponds 1/2
- Discharge from Fac Pond 3 to SPDES Outfall 001
- Fill Fac Pond 5 from Fac Ponds 1/2
- Discharge Fac Pond 5 to SPDES Outfall 001

Notes: The above schedule is a conceptual schedule based on the anticipated sequencing of construction and closure of permitted units and may change based on the timing of the modification to the Sitewide Part 373 Permit and need for permitted units.

ATTACHMENT D

LEACHATE ANALYTICAL SUMMARY COMPARISON

Analyte Name	Range		Range		Units
	NORTHEAST MSW LANDFILLS		CWM MODEL CITY		
	Low	High	Low	High	
1,1,1-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ug/l
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5	ND<5	ug/l
1,1,2-Trichloroethane	ND<5	ND<5	ND<5	ND<5	ug/l
1,1-Dichloroethane	ND<5	ND<5	ND<5	ND<5	ug/l
1,1-Dichloroethene	ND<5	ND<5	ND<5	ND<5	ug/l
1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ug/l
1,2-Dichloroethane	ND<5	ND<5	ND<5	2600	ug/l
1,2-Dichloropropane	ND<5	ND<5	ND<5	ND<5	ug/l
2-Butanone (MEK)	ND<5	5000	ND<5	ND<5	ug/l
Acetone	ND<20	7800	ND<5	21000	ug/l
Benzene	2.1	67.8	ND<5	ND<5	ug/l
Bromodichloromethane	ND<5	ND<5	ND<5	ND<5	ug/l
Bromoform	ND<5	ND<5	ND<5	ND<5	ug/l
BROMOMETHANE	ND<5	ND<5	ND<5	ND<5	ug/l
Carbon Tetrachloride	ND<5	ND<5	ND<5	ND<5	ug/l
Chlorobenzene	ND<5	79	ND<5	ND<5	ug/l
Chloroethane	ND<5	23.6	ND<5	ND<5	ug/l
Chloroform	ND<5	ND<5	ND<5	ND<5	ug/l
CHLOROMETHANE	ND<5	ND<5	ND<5	ND<5	ug/l
CIS-1,2-DICHLOROETHENE	ND<1.1	5	ND<5	ND<5	ug/l
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5	ND<5	ug/l
Dibromochloromethane	ND<5	ND<5	ND<5	ND<5	ug/l
Ethylbenzene	ND<5	93.2	ND	15	ug/l
Methylene Chloride	ND<5	24	ND<5	ND<5	ug/l
Tetrachloroethene	ND <5	ND <5	ND<5	ND<5	ug/l
Toluene	ND <5	57	ND	2400	ug/l
trans-1,2-Dichloroethene	ND <5	ND <5	ND<5	ND<5	ug/l
trans-1,3-Dichloropropene	ND <5	ND <5	ND<5	ND<5	ug/l
Trichloroethene	ND <5	ND <5	ND<5	ND<5	ug/l
Vinyl Chloride	ND <2	ND <2	ND	43	ug/l
Xylenes (total)	ND<5	370	ND<5	ND<5	ug/l
Arsenic	ND<0.02	3	ND<0.005	0.0873	mg/l
Barium	0.16	6.9	0.0755	1.64	mg/l
Antimony	ND<0.02	ND<0.02	ND<0.008	ND	mg/l
Beryllium	ND<0.001	ND<0.001	ND<0.003	ND	mg/l
Cadmium	ND<0.0005	0.014	ND<0.003	0.966	mg/l
Chromium	ND<0.01	0.39	ND<0.004	0.0936	mg/l
Cobalt	0.0031	0.039	ND<0.003	0.0657	mg/l
Copper	0.0031	0.3	ND<0.004	0.13	mg/l
Iron	1.2	136	0.102	2.27	mg/l
Lead	ND<0.003	0.17	ND<0.006	ND	mg/l
Manganese	0.082	7.3	0.029	1.87	mg/l
Mercury	ND<0.2	ND<0.2	ND	ND	ug/l
Nickel	ND<0.01	0.27	0.0504	1.98	mg/l
pH (Lab)	6.04	8.25	6.83	8.12	SU
Selenium	ND<0.02	ND<0.02	ND<0.007	0.0801	mg/l
Silver	ND<0.005	ND<0.005	ND<0.004	ND	mg/l
Specific Conductance (Field)	1270	44008	11200	74100	UMHOS/CM
Thallium	ND <0.02	ND <0.02	ND<0.006	0.0889	mg/l
Vanadium	ND<0.005	6.6	ND<0.004	0.43	mg/l
Zinc	ND<0.0021	1.7	0.145	14.3	mg/l

PCB-1016 (AROCLOR 1016)			ND<1.0	ND<1.0	ug/l
PCB-1221 (AROCLOR 1221)			ND<1.0	ND<1.0	ug/l
PCB-1232 (AROCLOR 1232)			ND<1.0	ND<1.0	ug/l
PCB-1242 (AROCLOR 1242)			ND<1.0	447	ug/l
PCB-1248 (AROCLOR 1248)			ND<1.0	ND<1.0	ug/l
PCB-1254 (AROCLOR 1254)			ND<1.0	ND<1.0	ug/l
PCB-1260 (AROCLOR 1260)			ND<1.0	ND<1.0	ug/l
PCB-1262 (AROCLOR 1262)			ND<1.0	ND<1.0	ug/l
PCB-1268 (AROCLOR 1268)			ND<1.0	ND<1.0	ug/l

ATTACHMENT E

REVISED SPECIFICATION PAGE 02401 revised Oct 2014

F. Seaming Methods: Approved processes for field seaming are extrusion fillet welding and fusion welding. Proposed alternate processes shall be documented and submitted to OWNER and ENGINEER for approval. Alternate procedures shall be used only after being approved in writing by the OWNER and the ENGINEER.

1. Produce seams meeting following requirements in conformance with GRI GM19:

POLYETHYLENE SEAM PROPERTIES

PROPERTY	METHOD	VALUE (minimum)	
		40 MIL	80 MIL
Shear Strength	ASTM D6392*	80 lb/in	160 lb/in
Peel Strength			
Fusion	ASTM D6392*	60 lb/in	121 lb/in
Extrusion	ASTM D6392*	52 lb/in	104 lb/in

* Test methods as modified in Article 1.02.

2. Align geomembrane panels to have nominal overlap of 3 in. (75 mm) for extrusion welding and 5 in. (125 mm) for fusion welding. Provide sufficient overlap to allow peel tests to be performed on seam.

3. Use double-fusion welding as primary method of seaming adjacent field panels.

   a. For cross seam tees, associated with fusion welding, extrusion weld to minimum distance of 6 in. (100 mm) on each side of tee.

   b. When subgrade conditions dictate, use movable protective layer (e.g. extra piece of geomembrane) directly below each overlap of geomembrane that is to be seamed to prevent buildup of moisture between sheets and prevent debris from collecting around pressure rollers.

4. Use conventional fillet extrusion welding as secondary method for seaming between adjacent panels and as primary method of welding for detail and repair work. Fillet extrusion welding shall also be used as the primary method of welding in corners of the perimeter berm, and the perimeter/intercell berm.

   a. Purge heat-degraded extrudate from barrel of extruder prior to beginning seam and whenever extruder has been inactive.

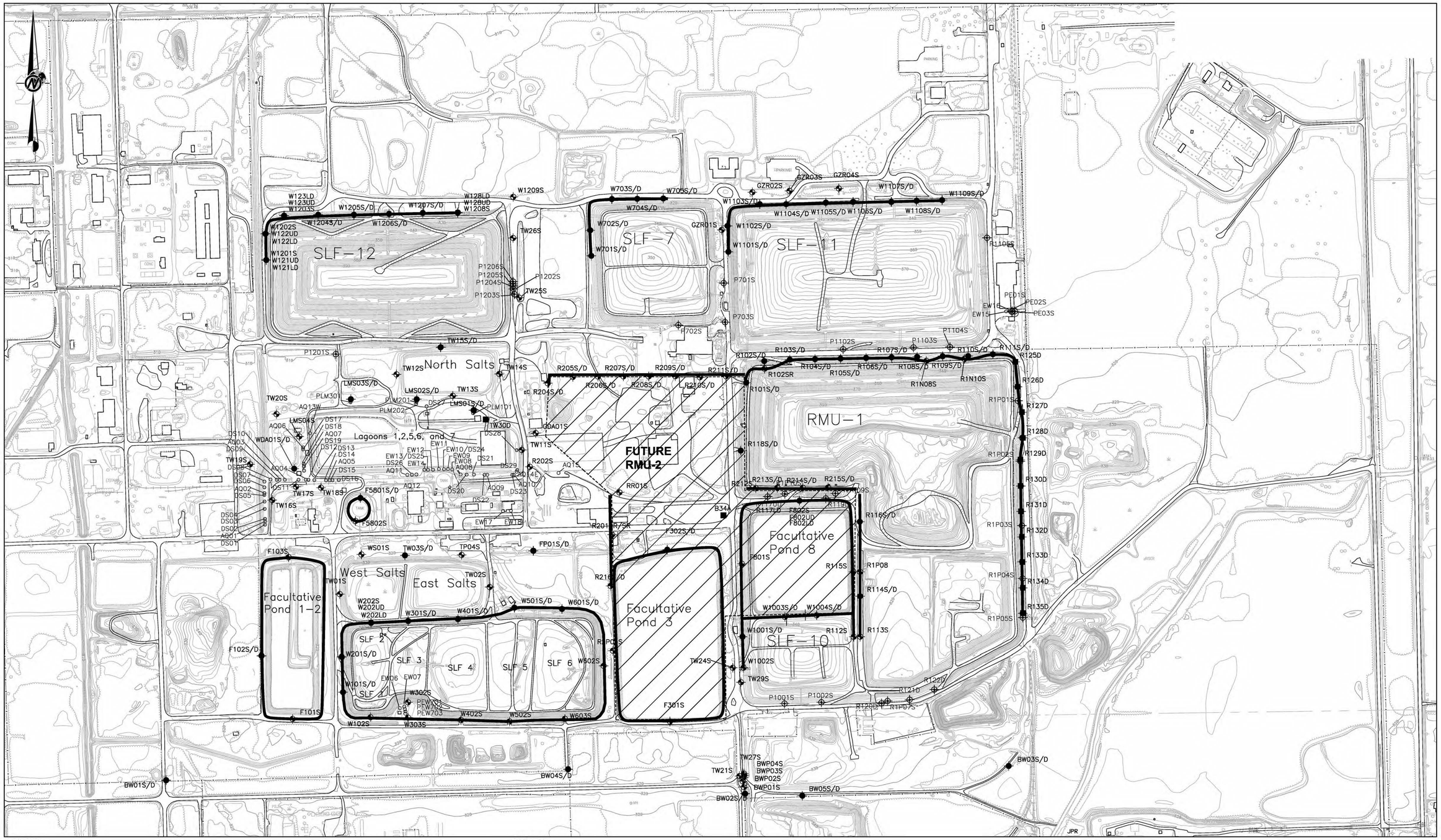
   b. Use clean and dry welding rods or extrudate pellets.

   c. Complete grinding process without damaging geomembrane within l hr of seaming operation.

   d. Minimize exposed grinding marks adjacent to extrusion weld. Do not allow exposed grinding marks to extend more than ¼ in. outside finished seam area.

ATTACHMENT F

FACILITY WELL MAP w/ POINTS OF COMPLIANCE
FIGURE 1



LEGEND

- UPPER TILLS UNIT (SHALLOW) MONITORING WELL
- UPPER TILL UNIT (SHALLOW) AND GLACIOLACUSTRINE SILT/SAND UNIT (DEEP) MONITORING WELL PAIR OR TRIPLET
- GLACIOLACUSTRINE SILT/SAND UNIT (DEEP) MONITORING WELL OR DEEP PAIR
- PIEZOMETER
- GROUND WATER EXTRACTION AQUEOUS SUMP, DNAPL SUMP OR EXTRACTION WELL
- POINT OF COMPLIANCE

NOTES

1.) WELL AND PIEZOMETER LOCATIONS ARE APPROXIMATE.

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

200 0 200 400
SCALE FEET

REV.	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	4/19/12	AJN	Removed wells R123D, R124D and R1P08S; added well pairs W1003S/D and W1004S/D; changed wells R117D/LD, R118D, R120D, and R122D to piezometers; changed F580ZS to F580ZD; added proposed GWES wells AQ-15, EW-17 and EW-18; added R202S.	AJN	AL	DCW
1	10/29/03	JPR	Added new wells east of RMU-1 and compliance boundaries.	JPR	JPR	BCS

PROJECT

CWM CHEMICAL SERVICES, L.L.C.
MODEL CITY, NEW YORK

TITLE

FACILITY WELLS

Golder Associates
Buffalo, NY

PROJECT No.		023-9312	FILE No.		0239312B172
DESIGN	JPR	02/04/02	SCALE	AS SHOWN	REV. 1
CADD	AM	02/12/02	FIGURE 1		
CHECK	JPR	03/06/02			
REVIEW	DCW	03/06/02			

ATTACHMENT G

REVISED PERMIT ATTACHMENT A
PAGE 3 OF 6

EPA ID Number | N | Y | D | 0 | 4 | 9 | 8 | 3 | 6 | 6 | 7 | 9 | OMB#: 2050-0024; Expires 12/31/2014

7. Process Codes and Design Capacities (Continued)

EXAMPLE FOR COMPLETING Item 7 (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	B. PROCESS DESIGN CAPACITY (2) Unit of Measure	C. Process Total Number of Units	For Official Use Only
X	1	S	0	2	533.788	G	001	
	1	D	8	0	2233 4731	A	0012	
	2	S	0	2	986951 988051	G	0278	
	3	S	0	1	1390816 2153552	G	03346	
	4	S	0	4	117649500 142349500	G	0045	
	5	T	0	1	259180	U	032	
	6	T	0	4	150	D	002	
	7							
	8							
	9							
1	0							
1	1							
1	2							
1	3							

Note: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the line sequentially, taking into account any lines that will be used for "other" process (i.e., D99, S99, T04, and X99) in Item 8.

8. Other Processes (Follow instructions from Item 7 for D99, S99, T04, and X99 process codes)

Line Number (Enter #s in sequence with Item 7)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	(2) Unit of Measure	C. Process Total Number of Units	For Official Use Only
X	2	T	0	4	100.00	U	001	
0	6	T	0	4	150	D	2	

Modified: November 2013

ATTACHMENT H

NEW DRUM MANAGEMENT BUILDING CLOSURE COST ESTIMATE
REVISED November 19, 2014

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.0 Inventory Verification						production rate = two persons req'd @ average of two drums/minute/crew with a 10-min break/hour	
Laborer	42.3	hours	$39.00	$1,650	$1,650	4,232 drums @ 100 drums/hr = 42.3 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				**$1,650**	**$1,650**		
Subt: Assemblies 2.01.1)				**$1,650**	**$1,650**	*survey and inventory of maximum capacity of Drum Management Building*	
2.01.2 Load Solids Drms for O/S L'Fill						production rate = 80 drums/hour/person; Facility experience	
Laborer	76.8	hours	$39.00	$2,995	$2,995	3068 drums @ 80 drums/hr = 38.4 hours @ 2 units/crew = 76.8 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	38.4	hours	$22.21	$853	$853	3068 drums @ 80 drums/hr = 38.4 hours @ 1 units/crew = 38.4 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	38.4	hours	$6.26	$240	$240	3068 drums @ 80 drums/hr = 38.4 hours @ 1 units/crew = 38.4 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drums for Onsite L'Fill				**$4,088**	**$4,088**		
2.01.3 Trans Solids Drms to O/S L'Fill						assumes on-site disposal	
Road Tractor (4 x 2, 30-ton)	19.2	hours	$32.45	$0	$623	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	19.2	hours	$45.00	$0	$864	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	19.2	hours	$6.26	$0	$120	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Drms to Onsite L'Fill				**$0**	**$1,607**		
2.01.4 Unload Sol Drums at O/S L'Fill						assumes on-site disposal	
Laborer	19.2	hours	$39.00	$0	$749	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	19.2	hours	$22.21	$0	$426	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	19.2	hours	$6.26	$0	$120	3068 drums @ 80 drums/load = 38.4 loads @ 0.5 hr/load = 19.2 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Drms at Onsite L'Fill				**$0**	**$1,295**		
2.01.5 Offsite Disp - Solids Drums						assumes off-site land disposal; 80 drms/load; Fac est assumes on-site disposal	
Offsite Transportation	14784	miles	$3.50	$51,744	$0	3068 drums @ 80 drums/ld = 38.4 loads @ 385 miles/trip = 14,784 miles	Rate: transporters quote/site experience
Offsite Disposal - Landfill	3068	drums	$100.00	$306,800	$0	3068 drums	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite Disp - Solids Drums				**$358,544**	**$0**		
(Subt: Assemblies 2.01.2 thru 2.01.5)				**$362,632**	**$6,991**	*loading, off-site transporting, and off-site disposal of drummed solids*	
2.01.6 Load Drums for O/S Aque Trt						production rate = 80 drums/hour; facility experience	
Laborer	10.2	hours	$39.00	$398	$398	410 drums @ 80 drums/hr = 5.1 hours @ 2 units/crew = 10.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.1	hours	$22.21	$113	$113	410 drums @ 80 drums/hr = 5.1 hours @ 1 units/crew = 5.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.1	hours	$6.26	$32	$32	410 drums @ 80 drums/hr = 5.1 hours @ 1 units/crew = 5.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drms for Onsite Aq/Tr				**$543**	**$543**		
2.01.7 Transp to O/S Aqueous Treat						production rate = 0.5 hours for onsite travel	
Road Tractor (4 x 2, 30-ton)	2.6	hours	$32.45	$84	$84	410 drums @ 80 drum/load = 5.1 loads @ = 0.5 hours/trip = 2.6 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	2.6	hours	$45.00	$117	$117	410 drums @ 80 drum/load = 5.1 loads @ = 0.5 hours/trip = 2.6 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	2.6	hours	$6.26	$16	$16	410 drums @ 80 drum/load = 5.1 loads @ = 0.5 hours/trip = 2.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Aque Treat				**$218**	**$218**		

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
2.01.8 Unload/Empty Drms:O/S AqTrt						production rate = 80 drm/hr; facility experience					
Laborer	10.2	hours	$39.00	$398	$398	410 drums @	80 drums/hr =	5.1 hours @	2 units/crew =	10.2 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	5.1	hours	$22.21	$113	$113	410 drums @	80 drums/hr =	5.1 hours @	1 units/crew =	5.1 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	5.1	hours	$6.26	$32	$32	410 drums @	80 drums/hr =	5.1 hours @	1 units/crew =	5.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unl/Emp Drms: O/S Aqu Trt				**$543**	**$543**						
2.01.9 Onsite Aqueous Treatment											
Onsite Aqueous Treatment	22550	gal	$0.1526	$3,441	$3,441	410 drums @	55 gal/drum =	22,550 gallons			On-site treatment costs: other (gate receipts) wastewater source
Subt - Onsite Aqueous Treatment				**$3,441**	**$3,441**						
(Subt: Assemblies 2.01.6 thru 2.01.9)				**$4,745**	**$4,745**	*loading, onsite transporting, unloading, and onsite disposal of drummed liquids*					
2.01.10 Load Org Liq Drms for Bulking						production rate = 80 drums/hour; facility experience					
Laborer	15.8	hours	$39.00	$616	$616	634 drums @	80 drums/hr =	7.9 hours @	2 units/crew =	15.8 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	7.9	hours	$22.21	$175	$175	634 drums @	80 drums/hr =	7.9 hours @	1 units/crew =	7.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton) not req'd	0	hours	$6.26	$0	$0	0 drums @	80 drums/hr =	0.0 hours @	1 units/crew =	0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Org Liq Drms - Bulking				**$792**	**$792**						
2.01.11 Onsite Transportation						onsite bulking performed at Drum Management Building by forklift; no transportation costs incurred					
N/A	0	hours	$0.00	$0	$0	0 drums @	80 drum/load =	0.0 loads @	0.5 hours/trip =	0.0 hours	drums moved solely by forklift at Drum Mgmt Bldg
Subt - Onsite Transportation				**$0**	**$0**						
2.01.12 Unload Org Liq Drms/Bulking						production rate = 80 drums/hour; facility experience					
Laborer	15.8	hours	$39.00	$616	$616	634 drums @	80 drums/hr =	7.9 hours @	2 units/crew =	15.8 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	7.9	hours	$22.21	$175	$175	634 drums @	80 drums/hr =	7.9 hours @	1 units/crew =	7.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton) not req'd	0	hours	$6.26	$0	$0	0 drums @	80 drums/hr =	0.0 hours @	1 units/crew =	0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Org Liq Drms/Bulking				**$792**	**$792**						
2.01.13 Bulk Org Liquids into Tankers						prod'n rate = 5 min/drum; employs a 2-person crew + equipment					
Laborer	105.6	hours	$39.00	$4,118	$4,118	634 drums @	12 drums/hr =	52.8 hours @	2 units/crew =	105.6 hours	two laborers; rate 2011 3rd party quote
Pumping Equipment	52.8	hours	$71.47	$3,774	$3,774	634 drums @	12 drums/hr =	52.8 hours @	1 units/crew =	52.8 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer - 5,500 Gallons	52.8	hours	$6.31	$333	$333	634 drums @	12 drums/hr =	52.8 hours @	1 units/crew =	52.8 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Bulk Org Liq into Tankers				**$8,225**	**$8,225**						
(Subt: Assemblies 2.01.10 thru 2.01.13)				**$9,809**	**$9,809**	*loading, onsite transporting, and bulking drummed organic liquids*					

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
2.01.14 Transp Org Liquids Offsite						capacity per 5,500-gal tanker = one hundred (100) 55-gal drums					
Transport in 5,500-gal Tankers	9786	miles	$3.50	$34,251	$34,251	634 drums @	100 drm/tankr =	6.4 loads @	1529 miles/trip =	9,786 miles	Rate: transporters quote/site experience
Subt - Transp Org Liquids Offsite				**$34,251**	**$34,251**						
2.01.15 Transp Ramp Liquids Offsite						two standing 5,500-gal tankers parked at West ramp = 11,000 gallons					
Transport two 5,500 Gal Tankers	3058	miles	$3.50	$10,703	$10,703	11000 gals @	5500 gal/tankr =	2.0 loads @	1529 miles/trip =	3058.0 miles	Rate: transporters quote/site experience
Subt - Transp Org Liquids Offsite				**$10,703**	**$10,703**						
2.01.16 Offsite Org Liquids Disposal						offsite incineration of non-PCB liquids					
Disposal Cost - Liquids (558 drums)	34870	gallons	$3.15	$109,841	$109,841	634 drums @	55 gal/drum =	34870 gallons			HWC/ETC 2004 & Current third party rate
Disposal Cost - Liquids (2 Tankers)	11000	gallons	$3.15	$34,650	$34,650	2.0 tankr @	5500 gal/tankr =	11000 gallons			HWC/ETC 2004 & Current third party rate
Subt - Offsite Org Liq Disposal				**$144,491**	**$144,491**						
(Subt: Assemblies 2.01.14 thru 2.01.16)				**$189,445**	**$189,445**	*offsite T&D of liquids*					
2.01.17 Incinerables From Transf. Rm.											
Empty Transformers						prod'n rate = 1,650 gals/hr; RSM/UP p. 9-171 (33-19-0101); 6 transformers @ 344.2 gals each					2,065 gal. from Transformer Flush Area
Laborer	0	hours	$39.00	$0	$0	2,065 gals @	1650 gals/hr =	1.3 hours @	2 units/crew	2.6 hours	two laborers; rate 2011 3rd party quote
Pumping Equipment	0	hours	$71.47	$0	$0	2,065 gals @	1650 gals/hr =	1.3 hours @	1 units/crew	1.3 hours	RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer - 5,000 Gals	0	hours	$6.31	$0	$0	2,065 gals @	1650 gals/hr =	1.3 hours @	1 units/crew	1.3 hours	T&D rate below includes tanker
Subt - Empty Transformers				**$0**	**$0**						
2.01.18 Transp Transformer Liqs Offsite						capacity per tanker = 5 000 gallons capacity per tanker = 5,000 gallons					
Transport in 5,000 Gal Tanker	0	miles	$3.50	$0	$0	2,065 gals @	5000 gal/tankr =	0.4 loads (↑1.0)@	1529 miles/load	1529.0 miles	Rate: transporters quote/site experience
Subt - Transp't Transformer Liquids				**$0**	**$0**						
2.01.19 Dispose of Transformer Liquids						liquid PCB wastes					
Disposal Cost - PCB Liquids	0	gallons	$4.68	$0	$0	2,065 gallons					HWC/ETC 2004 & Current third party rate
Subt - Transformer O/S Liq Dispos'l				**$0**	**$0**						
(Subt: Assemblies 3.2 thru 3.4)				**$0**	**$0**	*empty transformers and T&D PCB liquids* - no transformers all drums in area					
2.01.20 Load Empty Drums						production rate = 160 drums/hour (double the rate of full drums)					
Laborer	13.1	hours	$39.00	$511	$511	1044 drums @	160 drums/hr =	6.5 hours @	2 units/crew =	13.1 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	6.5	hours	$22.21	$144	$144	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	6.5	hours	$6.26	$41	$41	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Empty Drums				**$696**	**$696**	Loaded for on-site shredding & offsite disposal or for onsite disposal					
2.01.21 Transp Drums to Onsite Shrd						production rate = 0.5 hours for onsite travel					
Road Tractor (4 x 2, 30-ton)	6.5	hours	$32.45	$211	$0	1044 drums @	80 drum/load =	13.1 loads @	0.5 hours/trip =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	6.5	hours	$45.00	$293	$0	1044 drums @	80 drum/load =	13.1 loads @	0.5 hours/trip =	6.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	6.5	hours	$6.26	$41	$0	1044 drums @	80 drum/load =	13.1 loads @	0.5 hours/trip =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp to Onsite Shredder				**$544**	**$0**						

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
2.01.22 Unload Empty Drums						production rate = 160 drums/hour (double the rate of full drums)					
Laborer	13.1	hours	$39.00	$511	$0	1044 drums @	160 drums/hr =	6.5 hours @	2 units/crew =	13.1 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	6.5	hours	$22.21	$144	$0	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	6.5	hours	$6.26	$41	$0	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Empty Drums				**$696**	**$0**						
2.01.23 Onsite Drum Shredding						prod'n = 80 drums/hour; debris shredded into rolloff					
Laborer	26.2	hours	$39.00	$1,022	$0	1044 drums @	80 drums/hr =	13.1 hours @	2 units/crew =	26.2 hours	one shredder oper + one helper; rate 2011 3rd party quote
Shredder	13.1	hours	$329.70	$4,319	$0	1044 drums @	80 drums/hr =	13.1 hours @	1 units/crew =	13.1 hours	2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	13.1	hours	$19.02	$249	$0	1044 drums @	80 drums/hr =	13.1 hours @	1 units/crew =	13.1 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Onsite Drum Shredding				**$5,590**	**$0**						
2.01.24 Transp Drms: onsite L'fill						Transport whole drums to onsite landfill for disposal: production rate = 0.5 hours for onsite travel					
Road Tractor (4 x 2, 30-ton)	6.5	hours	$32.45	$0	$211	1044 drums @	80 drums/load =	13.1 loads @	0.5 hours/trip =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	6.5	hours	$45.00	$0	$293	1044 drums @	80 drums/load =	13.1 loads @	0.5 hours/trip =	6.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	6.5	hours	$6.26	$0	$41	1044 drums @	80 drums/load =	13.1 loads @	0.5 hours/trip =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Transp Mat'l to Landfill				**$0**	**$544**	Drums crushed in landfill					
2.01.25 Unload Empty Drum						prod'n rate = 160 drums/hour (assume double the rate of full drums @ site experience)					
Laborer	6.5	hours	$39.00	$0	$254	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	one loader oper + one helper; rate 2011 3rd party quote
Loader (medium)	6.5	hours	$14.39	$0	$94	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Flatbed Trailer (40-ton)	6.5	hours	$6.26	$0	$41	1044 drums @	160 drums/hr =	6.5 hours @	1 units/crew =	6.5 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Epty Drum at Landfill				**$0**	**$388**	Drums crushed in landfill					
2.01.26 Offsite Disp/Shrd'd Drums						assumes off-site land disposal of shredded drums; 20 tons/load					
Offsite Transportation	5.0	miles	$3.25	$16	$0	10.44 tons @	20 tons/load =	0.5 (↑1) loads @	5 miles/trip =	5.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Non-Haz Landfill	10.44	tons	$35.00	$365	$0	1044 drums @	20 lbs/drum =	10.44 tons @	1 tons/CY =	10.44 tons	Modern Disposal/Site Experience
Subt - Offsite Shrd'd Drums Disp'l				**$382**	**$0**						
(Subt: Assemblies 2.01.20 thru 2.01.26)				**$7,908**	**$1,628**	*onsite drum shredding and off-site non-haz disposal*					

2.01.27 Load Spec Treat for O/S T&D						production rate = 40 drums/hour; site experience					
Laborer	6	hours	$39.00	$234	$234	120 drums @	40 drums/hr =	3.0 hours @	2 pers/crew =	6.0 hours	one forklift oper + one helper; rate 2011 3rd party quote
Forklift	3	hours	$22.21	$67	$67	120 drums @	40 drums/hr =	3.0 hours @	1 units/crew =	3.0 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Dump Trailer (22 ton)	3	hours	$5.20	$16	$16	120 drums @	40 drums/hr =	3.0 hours @	1 units/crew =	3.0 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Spec Trt for O/S T&D				**$316**	**$316**						
2.01.28 Transport Spec Trt Offsite						Estimate based on a per drum basis for special treatment waste: max 120 drums					
Truck Transport @ 88 drums/load	0	miles	$0.00	$0	$0						
Transport per drum	120	drum	$50.00	$6,000	$6,000	Facility estimate based on per drum rate					rate = site experience
Subt - Transport Spec Trt Offsite				**$6,000**	**$6,000**						

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
2.01.29 Offsite Spec Trt Disposal						disposal price of $500/drum	
Disposal Cost (Misc Drums)	120	drum	$500.00	$60,000	$60,000	120 drums	site estimate of $500/drum for unknown wastes
Subt - Offsite Spec Trt Disposal				**$60,000**	**$60,000**		
(Subt: Assemblies 2.01.27 thru 2.01.29)				**$66,316**	**$66,316**	*offsite T&D of drums requiring special treatment*	
2.01.30 Decon Drm Mgmt Bldg (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience	47,557 = Areas 1-9 + fuels pump area & Bladder tank area
Laborer	452.9	hours	$39.00	$17,663	$17,663	47,557 SF @ 105 SF/hr = 452.9 hours @ 1 pers/crew = 452.9 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	$4.04	$0	$0	Vacuum-Pressure Wash Combo Used	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	$3.41	$0	$0	not required	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	452.9	hours	$22.94	$10,390	$10,390	47,557 SF @ 105 SF/hr = 452.9 hours @ 1 units/crew = 452.9 hours	2001 Rate * Implicit Deflator
Subt - Decon Drm Mgt Bldg (Wash)				**$28,053**	**$28,053**		
2.01.31 Decon Drum Mgt Bldg (Rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit; facility experience	
Laborer	905.8	hours	$39.00	$35,326	$35,326	47,557 SF @ 105 SF/hr = 452.9 hours @ 2 pers/crew = 905.8 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer		hours	$4.04	$0	$0	Vacuum-Pressure Wash Combo Used	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper		hours	$3.41	$0	$0	not required	RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	452.9	hours	$22.94	$10,390	$10,390	47,557 SF @ 105 SF/hr = 452.9 hours @ 1 units/crew = 452.9 hours	2001 Rate * Implicit Deflator
Subt - Decon Drm Mgt Bldg (Rinse)				**$45,716**	**$45,716**		
2.01.32 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; DEC treatment unit price = $0.1042/gallon	
Technician	8.0	hours	$38.00	$304	$304	8 samp @ 0.5 hr/samp = 4 hours @ 2 pers/crew = 8 hours	rate 2011 3rd party quote
VOC Analysis (EPA 624)	8.0	samp	$105.00	$840	$840	8 samples	analytical price: average of three quotes
On-site Water Disposal	4,755.80	gal	$0.0313	$149	$149	47,557 SF @ 0.05 gal/sf/wa = 2,377.9 gal 0.05 gal/sf/rinse = 2,377.9 gals	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				**$1,293**	**$1,293**		
2.01.33 PCB Wipe & Destruct Samp						production rate = 0.5 hours/sample for two techs based upon facility exp	
Technician	79	hours	$38.00	$3,002	$3,002	79 samp @ 0.5 hr/samp = 39.5 hours @ 2 pers/crew = 79 hours	technician rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	0	samp	$446.67	$0	$0	concrete core samples and TCLP not required - permit	analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	79	samp	$83.33	$6,583	$6,583	47,557 SF @ 625 SF/samp + 1 dup/20 samp. = 79 samples	analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				**$9,585**	**$9,585**		
(Subt: Assemblies 2.01.30 thru 2.01.33)				**$84,646**	**$84,646**	*building decontamination and sampling*	

Total Labor Hours 1841.3

2.01 New Drum Management Building

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
2.01.34 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for total non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs					
PPE Usage - Mod Level C	57.6	days	$9.00	$518	$518	1,841.3 hours @	8 hr/day =	230.2 days @	25% "Mod C" days =	57.6 days	25% of non-supv hrs in Mod Level C (price: $9/day)
PPE Usage - Level C	172.6	days	$25.00	$4,315	$4,315	1,841.3 hours @	8 hr/day =	230.2 days @	75% "C" days =	172.6 days	75% of non-supv hrs in Level C (price: $25/day)
Safety Engineer	46	hours	$75.00	$3,450	$3,450	1,841.3 hours @	2.5% hr/hr =	46 hours			Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				**$8,283**	**$8,283**						
2.01.35 Supervision						4 weeks for closure of Drum Management Building					
Foreman	160	hours	$65.00	$10,400	$10,400	4 weeks @	40 hrs/wk =	160.0 hours			Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	$75.00	$0	$0	Included in Gen'l Contractor G&A/Home Office indirect costs					Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				**$10,400**	**$10,400**						
2.01.36 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks					
Engineer	27	hours	$130.00	$3,510	$3,510	1,841.3 hours @	0.015 hr/hr =	27.6 hours			Engineer rate: 2011 3rd party quote
Clerical	27	hours	$45.00	$1,215	$1,215	1,841.3 hours @	0.015 hr/hr =	27.6 hours			Clerical rate: 2011 3rd party quote
Subtotal - Certification				**$4,725**	**$4,725**						
(Subt: Assemblies 2.01.34 thru 2.01.36)				**$23,408**	**$23,408**	*supervision, health & safety, and certification*					

2.01 New Drum Mgmt Bldg	Direct Cost	Total	Basic	$750,559	$388,637

Highlight indicates value has been revised.

2.01 New Drum Management Building **Total Cost Summary**			
Cost Category	**Proposed Percent of Direct Cost**	**Proposed 2011 Cost OffSite Disposal**	**Cost Range**
Direct Costs/Basic Disposal		$750,559	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	$52,539	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	$30,022	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	$45,034	note: DEC uses 6%
Engineering During Construction	2.00%	$15,011	note: DEC uses 2%
General Contractor Profit	6.00%	$45,034	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	$187,640	
Subtotal - Drum Storage Bldg		$938,198	
Plus Contingency	10.00%	$93,820	CWM and DEC 10%
Total - New Drum Management Bldg		**$1,032,018**	

Cost References:
"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
"RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
"RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

ATTACHMENT I

STABILIZATION CLOSURE COST ESTIMATE
REVISED November 19, 2014

4.01 New Stabilization 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References

	Inventory
RCRA Solids – Shredder/Landfill	300 drums/75 cu. yds.
RCRA Solids - Stab/Landfill	48 rolloffs/1152 tons
RCRA Solids - Macro/Landfill	18 rolloffs/288 tons
PCB Liquids - Incineration	11 tankers/27,500 gals

4.01.1 Inventory Verification						prod'n rates: 2 drums/min/crew (100 drums/hour); and 8 tanker or rolloff/hour/crew; two persons required;					
Laborer	6	hours	$39.00	$234	$234	300 drums @	100 drums/hr =	3.0 hours @	2 units/crew =	6.0 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Laborer	18	hours	$39.00	$702	$702	72 rolloffs @	8 rolloffs/hr =	9 hours @	2 units/crew =	18 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Laborer	2.5	hours	$39.00	$98	$98	5 tankers @	4 tankers/hr =	1.25 hours @	2 units/crew =	2.5 hours	HASP req's two; loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				**$1,034**	**$1,034**						
(Subt: Assemblies 4.01.1)				**$1,034**	**$1,034**	*survey and inventory of capacity of Stabilization area*					
4.01.2 Transp All Rolloffs: Onsite Stab for Offsite disp						production rate = 0.5 hours/rolloff for on-site travel (all rolloffs previouslyexisting at site)					
Road Tractor (4 x 2, 30-ton)	27.0	hours	$32.45	$876	$0	54 rolloffs @	1 rolloff/load =	54 loads @	0.5 hours/trip =	27 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	27.0	hours	$45.00	$1,215	$0	54 rolloffs @	1 rolloff/load =	54 loads @	0.5 hours/trip =	27 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	$19.02	$0	$0	0 rolloffs @	1 rolloff/load =	0.0 loads @	0.5 hours/trip =	0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subtotal -Transport Rolloffs Onsite				**$2,091**	**$0**						
4.01.3 Transp All Rolloffs: Onsite Stab for Onsite disp						production rate = 0.5 hours/rolloff for on-site travel (all rolloffs previouslyexisting at site)					
Road Tractor (4 x 2, 30-ton)	27.0	hours	$32.45	$0	$876	54 rolloffs @	1 rolloff/load =	54 loads @	0.5 hours/trip =	27 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	27.0	hours	$45.00	$0	$1,215	54 rolloffs @	1 rolloff/load =	54 loads @	0.5 hours/trip =	27 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	$19.02	$0	$0	0 rolloffs @	1 rolloff/load =	0.0 loads @	0.5 hours/trip =	0.0 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subtotal -Transport Rolloffs Onsite				**$0**	**$2,091**						
4.01.4 Stabilization (non-Macro mat'l) for Offsite disp						prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons					
PROCESS TONS (incl kiln dust)	993.6	*TONS*	*n/a*			54 rolloffs @	30 CY each @	16 tons/rolloff +	15% kiln dust =	993.6 tons	30 CY/rolloff = 16 ton material/rolloff
Cement Kiln Dust - Mat'l&Delv Cost	129.6	tons	$48.00	$6,221	$0	54 rolloffs @	30 CY each @	16 tons/rolloff +	15% kiln dust =	993.6 tons	CWM actual 2011 costs
Stabilization Cost	864.0	tons	$25.00	$21,600	$0	Facility combined rate for material & delivery					CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	18.0	samp	$348.33	$6,270	$0	54 rolloffs @	3 ro's/samp =	18 samples			average of 3 third party labs; one sample per 3 rolloffs
Subt - Stabilization				**$34,091**	**$0**	Facility include in stabilization rate; inc. labor & equipment					
4.01.5 Stabilization (non-Macro mat'l) for Onsite disp						prod'n rate = 100 tons/hour = 800 tons/day (non-Macro Room material); 30 CY roll = 16 tons					
PROCESS TONS (incl kiln dust)	993.6	*TONS*	*n/a*			54 rolloffs @	30 CY each @	16 tons/rolloff +	15% kiln dust =	993.6 tons	30 CY/rolloff = 16 ton material/rolloff
Cement Kiln Dust - Mat'l&Delv Cost	129.6	tons	$48.00	$0	$6,221	54 rolloffs @	30 CY each @	16 tons/rolloff +	15% kiln dust =	993.6 tons	CWM actual 2011 costs
Stabilization Cost	864.0	tons	$25.00	$0	$21,600	Facility combined rate for material & delivery					CWM actual 2011 costs inc. labor & equipment
TCLP Testing - RCRA (EPA 1311)	18.0	samp	$348.33	$0	$6,270	54 rolloffs @	3 ro's/samp =	18 samples			average of 3 third party labs; one sample per 3 rolloffs
Subt - Stabilization				**$0**	**$34,091**	Facility include in stabilization rate; inc. labor & equipment					

4.01 New Stabilization 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
4.01.6 Load non-Macro Rolloffs						facility include in stabilization cost					
Laborer	0	hours	$39.00	$0	$0	Not required					loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0	hours	$19.18	$0	$0						RSM/HC p. 467 (line item 01 54 33 20 0460)
Equipment Operator (Medium)	0	hours	$45.00	$0	$0						loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	$19.02	$0	$0						dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Load non-Macro Rolloffs				**$0**	**$0**						
4.01.7 Transp Rolloffs to Onsite L'fill						production rate = 0.25 hours for onsite travel					
Road Tractor (4 x 2, 30-ton)	13.5	hours	$32.45	$0	$438	54 rolloffs @	1 rolloff/load =	54 loads @	0.25 hours/trip =	13.5 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	13.5	hours	$45.00	$0	$608	54 rolloffs @	1 rolloff/load =	54 loads @	0.25 hours/trip =	13.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Transp RO's to Onsite Landfill				**$0**	**$1,046**	Assembly estimate assumes on-site disposal					
4.01.8 Unload non-Macro Rolloffs						production rate = 0.25 hours for unload in landfill					
Laborer	13.5	hours	$39.00	$0	$527	54 rolloffs @	1 rolloff/load =	54 loads @	0.25 hours/trip =	13.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	13.5	hours	$19.18	$0	$259	54 rolloffs @	1 rolloff/load =	54 loads @	0.25 hours/trip =	13.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Equipment Operator (Medium)	13.5	hours	$45.00	$0	$608	54 rolloffs @	1 rolloff/load =	54 loads @	0.25 hours/trip =	13.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	$19.02	$0	$0						dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Unload RO's at Onsite L'Fill				**$0**	**$1,393**	Assembly estimate assumes on-site disposal					
4.01.9 Offsite Landfill Disp/Solids						assumes off-site land disposal; 54 roll-offs					
Offsite Transportation - Solids	23908.5	miles	$3.25	$77,703	$0	993.6 tons @	16 tons/load =	62.1 loads @	385 miles/trip =	23,908.5 miles	Rate: transporters quote/site experience
Offsite Disp - Haz Rolloff Solids	993.6	tons	$133.00	$132,149	$0	54 rolloffs @	30 CY each @	16 tons/rolloff +	15% kiln dust =	993.6 tons	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Off-site Landfill/non-Macro				**$209,851**	**$0**						
4.01.10 Stab n/Encap n (Macro mat'l)						production rate = 40 tons/hour = 320 tons/day (Macro material): for onsite disposal					
PROCESS TONS (incl kiln dust)	419.2	TONS				18 rolloffs @	30 CY each @	0.675 ton/CY +	15% absorbent =	419.2 tons	1 CY = 1,350# (0.675 ton) @ 50# per CF for "loose" mat'l
Laborer	41.9	hours	$39.00	$1,634	$0	419.2 tons @	40 tons/hr @	10.5 hours @	4 units/crew =	41.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	21	hours	$50.00	$1,050	$0	419.2 tons @	40 tons/hr @	10.5 hours @	2 units/crew =	21.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	10.5	hours	$19.18	$201	$0	419.2 tons @	40 tons/hr @	10.5 hours @	1 units/crew =	10.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader (Medium)	10.5	hours	$14.39	$151	$0	419.2 tons @	40 tons/hr @	10.5 hours @	1 units/crew =	10.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Absorbent Additive	81	CY	$38.70	$3,135	$0	18 rolloffs @	30 CY each @	15% additive =	81 CY		2004 DEC Rate * Implicit Deflator
Encapsulation Container	18.0	units	$1,000.00	$18,000	$0	18.0 units					CWM actual 2011 costs
Rolloff (30-CY) (not used)	0.0	units	$19.02	$0	$0	0.0 units					dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stab'n/Encap'n - Macro Mat'l				**$24,171**	**$0**						
4.01.11 Transp Macro Encap'n Onsite						production rate = 0.5 hours for onsite travel					
Road Tractor (4 x 2, 30-ton)	9.0	hours	$32.45	$0	$292	18 rolloffs @	1 rolloff/load =	18.0 loads @	0.5 hours/trip =	9.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	9.0	hours	$45.00	$0	$405	18 rolloffs @	1 rolloff/load =	18.0 loads @	0.5 hours/trip =	9.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0	hours	$19.02	$0	$0						RSM/HC p. 472 (line item 01 54 33 40 6600)
Subtotal - Transp Macro Encap'n				**$0**	**$697**	Assembly estimate assumes on-site disposal					

4.01 New Stabilization 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
4.01.12 Offsite Macro Encap'n						assumes off-site land disposal; 18 macro-encap. conts. on-site disposal	
Offsite Transp'n - Encap Containers	6930.0	miles	$3.25	$22,523	$0	18.0 contain @ 1 cont/load = 18.0 loads @ 385 miles/trip = 6930.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Encap Containers	510.0	CY	$337.50	$172,125	$0	18.0 contain @ 30 CY/cont = 510.0 CY	DEC 2004 Estimate accounting for inflation
Subt - Offsite Landfill Disp/Solids				**$194,648**	**$0**		
(Subt: Assemblies 4.01.2 thru 4.01.12)				**$464,852**	**$39,317**	*onsite stabilization and offsite or onsite disposal of all Macro Room material*	
4.01.13 Shred Drums with Contents						Shredding of drums not necessary. Drums transported direct to onsite landfill or offsite landfill	
Laborer	0	hours	$39.00	$0	$0		loaded labor rate: loaded labor rate 2011 3rd party quote
Drum Shredder	0	hours	$329.70	$0	$0		2004 DEC Rate * Implicit Deflator
Rolloff (30-CY)	0	hours	$19.02	$0	$0		RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load Drums for Offsite L'fill				**$0**	**$0**		
4.01.14 Load Full Solids Drums						production rate = 80 drums/hour/person; Facility experience	
Laborer	3.8	hours	$39.00	$0	$148	300 drums @ 80 drums/hr = 3.8 loads @ 2 units/crew = 3.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.9	hours	$22.21	$0	$42	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.9	hours	$6.26	$0	$12	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Load PCB Sol Drms to L'Fill				**$0**	**$202**		
4.01.15 Transp Full Drms: onsite L'fill						Assumes onsite land disposal; 0.5 hr per load to onsite landfill	
Road Tractor (4 x 2, 30-ton)	1.9	hours	$32.45	$0	$62	300 drums @ 80 drums/load = 3.8 loads @ 0.5 hr/load = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	1.9	hours	$45.00	$0	$86	300 drums @ 80 drums/load = 3.8 loads @ 0.5 hr/load = 1.9 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Flatbed Trailer (40-ton)	1.9	hours	$6.26	$0	$12	300 drums @ 80 drums/load = 3.8 loads @ 0.5 hr/load = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill				**$0**	**$159**		
4.01.16 Unload Full Drms: onsite L'fill						assumes on-site disposal: production rate = 80 drums/hour/person; Facility experience	
Laborer	3.8	hours	$39.00	$0	$148	300 drums @ 80 drums/hr = 3.8 loads @ 2 units/crew = 3.8 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Forklift	1.9	hours	$22.21	$0	$42	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 470 (line item 01 54 33 40 2020)
Flatbed Trailer (40-ton)	1.9	hours	$6.26	$0	$12	300 drums @ 80 drums/hr = 3.8 loads @ 1 units/crew = 1.9 hours	RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Unload Full Drums				**$0**	**$202**		
4.01.17 Offsite Disp Full Drums						assumes off-site land disposal; volume based on 4 drums/CY (+ drum contents)	
Offsite Transp'n - Drum Mat'l	1463.0	miles	$3.50	$5,121	$0	300 drums @ 80 drums/ld = 3.8 loads @ 385 miles/trip = 1463.0 miles	Rate: transporters quote/site experience
Offsite Disposal - Drum Mat'l	300	drums	$100.00	$30,000	$0	300 drums	HWC/ETC 2004 & CWM 2011 cost comparison industry pricing based on current market conditions
Subt - Offsite L/F Disp: Full Drums				**$35,121**	**$0**	disposal of 300 drums with contents from drum shred area	
(Subt: Assemblies 4.01.13 thru 4.01.17)				**$35,121**	**$564**		
4.01.18 Offsite T&D - Tankers						five 5,500-gal existing tankers loaded and parked at stabilization parking area	
Offsite Transp'n - 5.5K-gal Tankers	7645.0	miles	$3.50	$26,758	$26,758	5 tankers @ 1529 miles/load = 7645 miles	Rate: transporters quote/site experience
Off-site Disp - Incin Bulk PCB Liqs	27500.0	gallons	$4.68	$128,700	$128,700	5 tankers @ 5500 gals/tankr = 27500.0 gals	HWC/ETC 2004 & Current third party rate
Subt - Offsite T&D - Tankers				**$155,458**	**$155,458**	offsite transportation and disposal of 5 five-thousand gallon tankers from stabilization area	
(Subt: Assemblies 4.01.18)				**$155,458**	**$155,458**		

4.01 New Stabilization 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
4.01.19 Decon Equipment						prod'n rate = 52.5 SF/hr (1/2 of RSM/UP p. 9-167, 33-17-0813, as wash & rinse are combined)					
Reagent Silo/Hopper	19.0	hours	$121.50	$2,309	$2,309	2 units @	500 SF each =	1000.0 SF @	52.5 SF/hour =	19.0 hours	2004 DEC Rate * Implicit Deflator
Control Room	19.0	hours	$121.50	$2,309	$2,309	1 units @	1000 SF each =	1000.0 SF @	52.5 SF/hour =	19.0 hours	assume 20' x 10' x 10' (L x W x H)
Air Compressor/Ancillary Equip't	1.9	hours	$121.50	$231	$231	1 units @	100 SF each =	100.0 SF @	52.5 SF/hour =	1.9 hours	assume 100 SF
Hydraulic Skid/Ancillary Equip't	14.3	hours	$121.50	$1,737	$1,737	1 units @	750 SF each =	750.0 SF @	52.5 SF/hour =	14.3 hours	assume 750 SF
Drum Shredder	0.0	hours	$121.50	$0	$0	Drum Shredder cleaned and removed 2009					
Knuckle Boom	9.5	hours	$121.50	$1,154	$1,154	1 units @	500 SF each =	500.0 SF @	52.5 SF/hour =	9.5 hours	assume 500 SF
Backhoe	1.9	hours	$121.50	$231	$231	1 units @	100 SF each =	100.0 SF @	52.5 SF/hour =	1.9 hours	assume 100 SF
Subt - Decon Equip't (wash & rinse)				**$7,970**	**$7,970**	7 units		3450.0 SF total			
4.01.20 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs; facility treatment unit price = $0.0273/gallon					
Technician	7.7	hours	$38.00	$293	$293	7.7 samp @	0.5 hr/samp =	3.8 hours @	2 units/crew =	7.7 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	7.7	samp	$105.00	$809	$809	7.0 units @	1.1 samp/unit =	7.7 samples			analytical price: average of three quotes
Onsite Water Disposal	3150.0	gal	$0.0313	$99	$99	3450.0 SF @	0.5 gal/sf/wa =	2100.0 gallons +	0.25 gal/sf/rinse =	1050.0 gallons	facility o/s mild waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				**$1,200**	**$1,200**						
4.01.21 PCB Wipe Samples						production rate = 0.5 hours/sample for two techs; rate same as facility's					
Technician	7.7	hours	$38.00	$293	$293	7.7 samp @	0.5 hr/samp =	3.8 hours @	2 units/crew =	7.7 hours	technician rate: rate 2011 3rd party quote
PCB Analysis/Wipe Test (SW 8081/8082)	7.7	samp	$83.33	$642	$642	7.0 units @	1.1 samp/unit =	7.7 samples			analytical price: average of three quotes
Subt - Wipe Samples				**$934**	**$934**						
4.01.22 Dismant/Load Equipment						prod'n rate = 150 SF/hr (based upon removing one 20K-gal tank in 8 hrs: 1,225 SF div. by 8 = 153 sf)					
Laborer	46.0	hours	$39.00	$1,794	$1,794	3450 SF @	150 SF/hour	23.0 hours	2 units/crew =	46.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment (300 amp towable)	23.0	hours	$4.90	$113	$113	3450 SF @	150 SF/hour	23.0 hours	1 units/crew =	23.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Yard Crane (25-ton)	23.0	hours	$86.31	$1,985	$1,985	3450 SF @	150 SF/hour	23.0 hours	1 units/crew =	23.0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Equipment Operator (Crane)	23.0	hours	$50.00	$1,150	$1,150	3450 SF @	150 SF/hour	23.0 hours	1 units/crew =	23.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Subt - Dismantle Equipment				**$5,042**	**$5,042**						
(Subt: Assemblies 4.01.19 thru 4.01.22)				**$15,146**	**$15,146**	*decontaminating and dismantling Equipment*					

4.01 New Stabilization 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
4.01.23 Demo/Load/Trans Ducts/Bagh						prod'n rates: 125 LF/hr (ductwork) = 7 days; four days/unit (baghouses) = 32 days; total = 39 days					
Dismantle/Cut/Load Ductwork	7040.0	LF	$2.14	$15,066	$15,066	7040 LF @	3 SF/LF =	21120.0 SF @	0.021 CF/SF =	16.4 CY	2004 DEC Rate * Implicit Deflator
Dismantle/Cut/Load Baghouses	8.0	each	$7,340.17	$58,721	$58,721	8 units @	2500 SF/unit =	20000.0 SF @	0.021 CF/SF =	15.6 CY	2001 Rate * Implicit Deflator
Subt - Dismantle Ducts/Baghouses				**$73,787**	**$73,787**						
4.01.24 Unload/Stabilize/Encapsulate						production rate = 15 tons/hour = 120 tons/day; includes shredding and filling containers					
PROCESS TONS (incl kiln dust)	37.2	*TONS*					32.0 CY @	1.0125 ton/CY +	15% kiln dust =	37.2 tons	1 CY = 2,025# (1.0125 ton) @ 75# per CF
Laborer	5.0	hours	$39.00	$195	$195	37.2 tons @	15 tons/hr @	2.5 hours @	2 units/crew =	5.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	7.4	hours	$45.00	$333	$333	37.2 tons @	15 tons/hr @	2.5 hours @	3 units/crew =	7.4 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	2.5	hours	$19.18	$48	$48	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	2.5	hours	$14.39	$36	$36	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	2.5	hours	$329.70	$824	$824	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2.5 hours	2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	2.5	hours	$136.29	$341	$341	37.2 tons @	15 tons/hr @	2.5 hours @	1 units/crew =	2 5 hours	2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	$0.00	$0	$0		32.0 CY @	1.0125 ton/CY @	15% kiln dust =	4.9 tons	
Cement Kiln Dust - Delivery Cost	0.0	loads	$0.00	$0	$0	4.9 tons @	20 ton/load =	0.2 loads			
Cement Kiln Dust - Mat'l&Delv Cost	4.9	tons	$48.00	$235	$235						CWM actual 2011 costs
Encapsulation Containers	2.0	units	$1,000.00	$2,000	$2,000	37.2 tons @	18.6 ton/unit =	2.0 containers			CWM actual 2011 costs
Rolloffs (30-CY)	5.0	hours	$19.02	$95	$95	37.2 tons @	18.6 tons/unit =	2.0 rolloffs @	2.5 hours/rolloff =	5.0 hours	dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				**$4,107**	**$4,107**						
4.01.25 Transp Encap Units onsite L'F						production rate = 0.5 hours for onsite travel					
Road Tractor (4 x 2, 30-ton)	1.0	hours	$32.45	$0	$32	2 rolloffs @	1 rolloff/load =	2.0 loads @	0.5 hours/trip =	1.0 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	1.0	hours	$45.00	$0	$45	2 rolloffs @	1 rolloff/load =	2.0 loads @	0.5 hours/trip =	1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Rolloff (30-CY) (existing equip't)	0.0	hours	$19.02	$0	$0						RSM/HC p. 472 (line item 01 54 33 40 6600)
Subt - Shrd Drms to Onsite Landfill				**$0**	**$77**	Transport to onsite landfill for disposal					
4.01.26 Offsite Disp/Bghouse-Duct						assumes off-site disposal; 2 macro-encap cont.; stabilized/encap. Baghouse debris					
Offsite Transp - Baghouse/Duct	770.0	miles	$3.25	$2,503	$0	37.2 tons @	18.6 tons/load =	2.0 loads @	385 miles/trip =	770.0 miles	Rate: transporters quote/site experience
Offsite Disp'l - Baghouse/Duct Deb	36.8	CY	$337.50	$12,420	$0	37.2 tons @	1.013 tons/CY =	36.8 CY @	27 CF/CY =	993.0 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite B'house/Duct Disp'l				**$14,923**	**$0**						
(Subt: Assemblies 4.01.23 thru 4.01.26)				**$92,817**	**$77,972**	*demolition, stabilization, encapsulation, and off-site disposal of ductwork and baghouses*					

4.01.27 Decon Stab'n Areas (wash)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience					
Laborer	580.3	hours	$39.00	$22,632	$22,632	60934 SF @	105 SF/hr =	580.3 hours @	1 units/crew =	580.3 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	396.4	hours	$4.04	$1,601	$1,601	41619 SF @	105 SF/hr =	396.4 hours @	1 units/crew =	396.4 hours	RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0.0	hours	$0.83	$0	$0						RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	184	hours	$22.94	$4,221	$4,221	19315 SF @	105 SF/hr =	184 hours @	1 units/crew =	184 hours	equip't price: average of three quotes
Subt - Decon Stab'n Areas (wash)				**$28,453**	**$28,453**	Pressure wash containment areas, walls, pits, & vacuum-pressure wash floors					
4.01.28 Decon Stab'n Areas (rinse)						production rate = 105 SF/hr for 1-person crew w/ one unit each; facility experience					
Laborer	184	hours	$39.00	$7,176	$7,176	19315 SF @	105 SF/hr =	184 hours @	1 units/crew =	184 hours	two laborers-1 unit each; rate 2011 3rd party quote
Pressure Washer	0.0	hours	$4.04	$0	$0						RSM/HC p. 471 (line item 01 54 33 40 5450)
Vacuum Sweeper	0.0	hours	$0.83	$0	$0						RSM/HC p. 473 (line item 01 54 33 40 7800)
Vacuum-Pressure Wash Combo	184	hours	$22.94	$4,221	$4,221	19315 SF @	105 SF/hr =	184 hours @	1 units/crew =	184 hours	equip't price: average of three quotes
Subt - Decon Stab'n Areas (rinse)				**$11,397**	**$11,397**	Rinse floor areas only					

4.01 New Stabilization 5 Tankers

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price - Offsite Disposal	2011 CWM Extended Price - Onsite Disposal	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
4.01.29 Decon Water Samp/Dispose						production rate = 0.5 hours/sample for two techs;					
Technician	13.2	hours	$38.00	$502	$502	13.2 samp @	0.5 hr/samp =	6.6 hours @	2 units/crew	13.2 hours	technician rate: rate 2011 3rd party quote
VOC Analysis (EPA 624)	13.2	samp	$105.00	$1,386	$1,386	12.0 areas @	1.1 samp/area =	13.2 samples			analytical price: average of three quotes
On-site Water Disposal (wash only)	20809.5	gal	$0.0313	$651	$651	41619 SF @	0.5 gal/sf/wa =	20809.5 gallons			site waters waste treat price ; vol @ 0.5 gal/sf (equip lit)
On-site Water Disposal (wash-rinse)	965.8	gal	$0.0313	$30	$30	19315 SF @	0.05 gal/sf/wa =	965.8 gallons +	0.05 gal/sf/rinse=	965.8 gallons	site waters waste treat price ; vol @ 0.05 gal/sf (equip lit)
Subt - Decon Water Samp/Dispose				**$2,569**	**$2,569**						
4.01.30 PCB Wipe & Destruct Samp						production rate 0.5 hours/sample for two techs; rate same as facility's					
Technician	75.4	hours	$38.00	$2,865	$2,865	74.4 samp @	0.5 hr/samp =	37.7 hours @	2 units/crew =	75.4 hours	technician rate: rate 2011 3rd party quote
TCLP (Metals/VOCs/Semi-VOCs)	2.0	samp	$446.67	$893	$893	2.0 areas @	1 samp/area =	2.0 samples	Uncoated concrete areas		analytical price: average of three quotes
PCB Analysis (SW 8081/8082)	75.4	samp	$83.33	$6,283	$6,283	47129.0 SF @	625 SF/samp =	75.4 samples			analytical price: average of three quotes
Subt - PCB Wipe/Destruct Samp				**$10,042**	**$10,042**						
(Subt: Assemblies 4.01.27 thru 4.01.30)				**$52,461**	**$52,461**	*decontamination & sampling of floors, sumps, and pits*					

Total Non-Super hours 1153.3

4.01.31 PPE Usage & H&S Planning						Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs					
PPE Usage - Mod Level C	36.1	days	$9.00	$325	$325	1153.3 hours @	8 hr/day =	144.2 days @	25% "Mod C" days =	36.1 days	25% of non-supv hrs in Mod Level C (price: $9/day)
PPE Usage - Level C	108.1	days	$25.00	$2,703	$2,703	1153.3 hours @	8 hr/day =	144.2 days @	75% "C" days =	108.1 days	75% of non-supv hrs in Level C (price: $25/day)
Health & Safety Officer	28.8	hours	$75.00	$2,160	$2,160	1153.3 hours @	2.5% hr/hr =	28.8 hours			Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				**$5,187**	**$5,187**						
4.01.32 Supervision						4 weeks for closure of Stabilization					
Foreman	160	hours	$65.00	$10,400	$10,400	4 weeks @	40 hrs/wk =	160.0 hours			Outside foreman rate: 2011 3rd party quote
Site Project Manager	0	hours	$75.00	$0	$0	Included in Gen'l Contractor G&A/Home Office indirect costs					Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				**$10,400**	**$10,400**						
4.01.33 Certification						Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory labor hours for all tasks					
Engineer	17.3	hours	$130.00	$2,249	$2,249	1153.3 hours @	0.015 hr/hr =	17.3 hours			Engineer rate: 2011 3rd party quote
Clerical	17.3	hours	$45.00	$779	$779	1153.3 hours @	0.015 hr/hr =	17.3 hours			Clerical rate: 2011 3rd party quote
Subtotal - Certification				**$3,028**	**$3,028**						
(Subt: Assemblies 4.01.31 thru 4.01.33)				**$18,615**	**$18,615**	*supervision, health & safety, and certification*					

4.01 New Stabilization 11 Tankers	**Direct Cost**	**Total**	**Basic**	**$835,502**	**$360,566**

Highlight indicates value has been revised.

4.01 New Stabilization 11 Tankers			
Total Cost Summary			
Cost Category	**Proposed Percent of Direct Cost**	**Proposed 2011 Cost OffSite Disposal**	**Cost Range**
Direct Costs/Basic Disposal		$835,502	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	$58,485	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	$33,420	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	$50,130	note: DEC uses 6%
Engineering During Construction	2.00%	$16,710	note: DEC uses 2%
General Contractor Profit	6.00%	$50,130	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	$208,876	
Subtotal - Stabilization Activity		$1,044,378	
Plus Contingency	10.00%	$104,438	CWM and DEC 10%
Total - New Stabilization		**$1,148,816**	

Cost References:

"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
"RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
"RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)

ATTACHMENT J

TABLE 1 – SUMMARY OF SITE AND RMU-1 CLOSURE AND POST CLOSURE COST ESTIMATES
July 30, 2014

TABLE 2 – SUMMARY OF PROPOSED FINANCIAL ASSURANCE RESIDUALS MANAGEMENT UNIT NO. 2 DEVELOPMENT
November 19, 2014

Table 1
Summary of Proposed Financial Assurance
CWM Chemical Services, LLC
Model City Facility
Model City, New York

Closure Cost Estimate Summary

No.	Facility Activity Area	Proposed Total Cost: Base = 2010 Offsite Waste Disposal (1)
1.0	PCB Warehouse	$1,001,985
2.0	Drum Management Building	$962,097
3.0	Fuels & PCB Management Area	$220,984
4.0	Stabilization Area	$1,227,316
5.0	AWTS & CSAs	$1,266,540
6.0	FAC Ponds (revised)	$10,268,621
7.0	CSA 29 (Truck Wash Building)	$18,509
8.0	CSA 11 (South Trailer Parking)	$553,363
9.0	Surface Impoundments (Closed)	$0
10.0	Laboratories	$98,793
11.0	Roadways	$37,195
12.0	Site Monitoring (during closure)	$259,187
13.0	3rd Party Leach. Trt't (during closure)	$988,460
14.0	Residuals Management Unit - 1 (revised)	$3,367,731
	Totals	$20,270,760

Post-Closure Cost Estimate Summary

No.	Facility Activity Area	Proposed Post-Closure One Year Cost: Base = 2010	Post Closure Period	Proposed 30-Year Post Closure Costs (1)
PCC-1	SLF 1 - 6 (Post Cl)	$611,261	30	$18,337,820
PCC-2	SLF 7 (Post Cl)	$243,792	30	$7,313,752
PCC-3	SLF 10 (Post Cl)	$231,706	30	$6,951,166
PCC-4	SLF 11 (Post Cl)	$323,147	30	$9,694,415
PCC-5	SLF 12 (Post Cl)	$248,737	30	$7,462,111
PCC-6	Resid Mgmt Unit 1 (Post Cl)	$300,564	30	$9,016,922
PCC-7	Lagoons/Salts Areas (Post Cl)	$36,015	30	$1,080,444
PCC-8	Process Tank Area (Post Cl)	$40,469	30	$1,214,055
CM-1	Corrective Measures (Post Cl)	$426,828	30	$12,804,855
	Totals	$2,462,518	n/a	$73,875,541

Closure	$20,270,760
Post-Closure & Corrective Measures	$73,875,541
Subtotal	$94,146,301
Previous Adjustment for Inflation 2010-2011	$1,977,072
Subtotal	$96,123,373
Plus General Contingency	$1,435,230
Total Financial Assurance	$97,558,604
Previous Adjustment for Inflation 2011-2012	$1,658,496
	$99,217,100
Current Adjustment for Inflation 2012-2013	$1,488,257
Adjusted Total Cost Estimate	$100,705,357

	Implicit Price Deflators for Gross Domestic Product (2)	
2011	113.361	Inflation Factor
2010	110.992	1.021
2012	105.002	Inflation Factor
2011	103.199	1.017
2013	106.586	Inflation Factor
2012	105.002	1.015

Notes: (1) Individual unit costs approved by the New York State Department of Environmental Conservation by letter dated May 13, 2014.
(2) The US Department of Commerce - Bureau of Economic Analysis updated the National Income and Product Accounts Table 1.1.9. Implicit Price Deflators for Gross Domestic Product on May 31, 2012 for the year 2011, August 5, 2013 for the year 2012, and June 25, 2014 for the year 2013. An implicit deflator and adjustments for inflation has been applied to the cost estimate as shown.
http://www.bea.gov/iTable/index_nipa.cfm

Table 2
Summary of Proposed Financial Assurance
Residuals Management Unit No. 2 Development
CWM Chemical Services, LLC
Model City Facility
Model City, New York

Closure Cost Estimate Summary

No.	Facility Activity Area	Proposed Total Cost: Base = 2010 Offsite Waste Disposal	Deflated Basic Option Total Cost: 2012	Deflated Basic Option Total Cost: 2013	Notes
2.01	New Drum Management Building	$1,032,018	$1,070,674	$1,086,846	Replaces 2.0 when existing DMB closed
4.01	Stabilization Area (Revised)	$1,148,816	$1,191,846	$1,209,849	Replaces 4.0 when trailer parking closed and new trailer parking built
5.32	AWTS (Fac Pond 5 w/1 tk)	$3,752	$3,892	$3,951	New
6.01	Fac Ponds (3& 1-2)	$9,236,773	$9,582,749	$9,727,492	Replaces 6.0 Upon FP 8 completely closed
6.02	Fac Ponds (3 & 1-2 & New Fac 5)	$9,515,813	$9,872,241	$10,021,356	Replaces 6.01 Upon Construction of FP 5
6.03	Fac Ponds (1-2 & New Fac 5)	$2,514,451	$2,608,633	$2,648,035	Replaces 6.02 when Fac Pond 3 closed
8.01	CSA New Full Trail Parking (5 tankers)	$507,926	$526,952	$534,911	Replaces 8.0 when South Trailer Parking Closed & New Parking Constructed
15.01	Residuals Management Unit - 2 (1 cell)	$4,810,069	$4,990,237	$5,065,612	Financial Assurance Upon Construction of Cell 20
15.02	Residuals Management Unit - 2 (2 cells)	$10,330,917	$10,717,876	$10,879,764	Replaces 15.01 Upon Construction of Cell 18
15.03	Residuals Management Unit - 2 (3 cells)	$11,505,630	$11,936,590	$12,116,886	Replaces 15.02 Upon Construction of Cell 19
15.04	Residuals Management Unit - 2 (4 cells)	$12,439,038	$12,904,959	$13,099,882	Replaces 15.03 Upon Construction of Cell 17
15.05	Residuals Management Unit - 2 (5 cells)	$15,203,934	$15,773,418	$16,011,668	Replaces 15.04 Upon Construction of Cell 16
15.06	Residuals Management Unit - 2 (6 cells)	$15,928,417	$16,525,039	$16,774,641	Replaces 15.05 Upon Construction of Cell 15

Post-Closure Cost Estimate Summary

		30-Year Post Closure Costs				
No.	Facility Activity Area	Proposed Post-Closure One Year Cost: Base = 2010	Est'd One Year Cost: Base 2012	Est'd One Year Cost: Base 2013	Post Closure Period	Proposed 30-Year Post Closure Costs
PCC-9.01	Resid Mgmt Unit 2 (Post Cl - 1 Cell)	$30,781	$31,933	$32,416	30	$972,473
PCC-9.02	Resid Mgmt Unit 2 (Post Cl - 2 Cells)	$49,836	$51,703	$52,484	30	$1,574,511
PCC-9.03	Resid Mgmt Unit 2 (Post Cl - 3 Cells)	$67,913	$70,457	$71,521	30	$2,145,624
PCC-9.04	Resid Mgmt Unit 2 (Post Cl - 4 Cells)	$78,636	$81,581	$82,814	30	$2,484,406
PCC-9.05	Resid Mgmt Unit 2 (Post Cl - 5 Cells)	$95,396	$98,969	$100,464	30	$3,013,911
PCC-9.06	Resid Mgmt Unit 2 (Post Cl - 6 Cells)	$127,652	$132,433	$134,433	30	$4,033,004

Notes: The proposed amount for Post-Closure Care shall be the greater of the 30 year Post-Closure Cost Estimate and the Perpetural Care Cost Estimate.

The US Department of Commerce - Bureau of Economic Analysis updated the National Income and Product Accounts Table 1.1.9. Implicit Price Deflators for Gross Domestic Product on November 1, 2013 for the year 2010-2012. An implicit deflator and an adjustment for inflation has been applied to the cost estimate.
http://www.bea.gov/

Implicit Price Deflators for Gross Domestic Product		2012	2013
2012 Rate =105.002 (2012 GDP) ÷ 101.211 (2010 GDP) =		**1.03746**	**1.01510**
2013	106.588		
2012	105.002		
2011	103.199		
2010	101.211		

ATTACHMENT K

CLOSURE COST ESTIMATE ASSEMBLY 5.32
REVISED November 19, 2014

5.32 AWTS Fac 5 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
5.32.1 Inventory Verification					prod'n rates: 50 drums/hr; 15 min/tanker or rolloff; 30 min/tank; two persons required					
Laborer	1.0	hours	$39.00	$39	1 tanks @	0.5 hour/tank =	0.5 hours @	2 units/crew =	1.0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Subtotal - Inventory Verification				**$39**						
(Subt: Assemb 5.32.1)				**$39**	tank: T-9001					
5.32.2 Empty Tank T-9002					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)					
Laborer	0.0	hours	$39.00	$0	Labor included in third party operation of AWTS					loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	$0.00	$0	Existing equipment part of tank system					RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.6	hours	$6.31	$4	1000 gals @	1650 gals/hr =	0.6 hours @	1 units/crew =	0.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tank				**$4**						
5.32.3 Onsite Tanker Transport					production rate = 0.5 hours/trip for onsite transport					
Tractor	0.1	hours	$32.45	$3	1000 gals @	5500 gals/load =	0.2 loads @	0.5 hrs/trip =	0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 7410)
Driver	0.0	hours	$45.00	$0	Labor included in third party operation of AWTS					loaded labor rate: loaded labor rate 2011 3rd party quote
Tank Trailer (5,500 gals)	0.1	hours	$6.31	$1	1000 gals @	5500 gals/load =	0.2 loads @	0.5 hrs/trip =	0.1 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Onsite Tanker Transport				**$4**						
5.32.4 Empty Tanker					production rate = 1,650 gals/hour; RSM/UP p. 9-171 (line item 33-19-0101)					
Laborer	0.0	hours	$39.00	$0	Labor included in third party operation of AWTS					loaded labor rate: loaded labor rate 2011 3rd party quote
Pumping Equipment	0.0	hours	$0.00	$0	Existing equipment part of tank system					RSM/UP p. 9-171 (line item 33-19-0108)
Tank Trailer (5,500 gals)	0.6	hours	$6.31	$4	1000 gals @	1650 gals/hr =	0.6 hours @	1 units/crew =	0.6 hours	RSM/HC p. 472 (line item 01 54 33 40 6900)
Subt - Empty Tanker				**$4**						
(Subt: Assemb 5.32.2 - 5.32.4)				**$11**						

5.32.5 Onsite Aqueous Treatment					liquid wastes transferred to AWTS by tankers					
Onsite Aqueous Treatment - Tanks	1000.0	gals	$0.1526	$153	1000 gals					AWTS cost for groundwater
Subt - Onsite Aqueous Treatment				**$153**						
(Subt: Assemb 5.32.5)				**$153**	*onsite treatment of tanks' waste liquids*					

5.32.6 Steel SCA Demolition					prod'n rate = 200 SF/hr (rsm/up 16-01-0142/0216/0308, pp. 3-2/3-3,3-5); 1 CF debris per 36 sf sc area					
No. of Tanks/Capacity/Area/Weight	0.0	*tnks @*			*0 gallons:*	*90 SF SCA:*	*3 CF @*	*490 Lb/CF =*	*1225 Lbs*	*Steel Tanks only; estimate 490#/CF*
Laborer	0.0	hours	$39.00	$0	0 SF @	200 SF/hour	0.5 hours @	3 units/crew =	0 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.0	hours	$45.00	$0	0 SF @	200 SF/hour	0.5 hours @	2 units/crew =	0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	0.0	hours	$84.09	$0	0 SF @	200 SF/hour	0.5 hours @	1 units/crew =	0 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	0.0	hours	$34.40	$0	0 SF @	200 SF/hour	0.5 hours @	1 units/crew =	0 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	0.0	hours	$2.47	$0	0 SF @	200 SF/hour	0.5 hours @	1 units/crew =	0 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	0.0	hours	$30.03	$0	0 SF @	200 SF/hour	0.5 hours @	1 units/crew =	0 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	0.0	hours	$86.31	$0	0 SF @	200 SF/hour	0.5 hours @	1 units/crew =	0 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	$5.41	$0	0 SF @	200 SF/hour	0.5 hours @	1 units/crew =	0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - Steel SCA Demolition				**$0**	T-9002 is a double walled HDPE tank. No steel demolition will be required.					

5.32 AWTS Fac 5 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate					In-house Pricing References
5.32.7 HDPE Tank Demolition					production rate = 200 SF/hour (same as steel tank demolition rate); 1 CF debris per 36 SF tank area					168 SF Tank & 178 SF Secondary Containment
No. of Tanks/Capacity/Area/Weight	1.0	*tnks @*			1000 *gallons:*	346 *SF Tanks:*	9.6 *CF @*	*245 Lb/CF =*	2354 *Lbs*	HDPE *Tanks & HDPLE Secondary Containment*
Laborer	5.2	hours	$39.00	$203	346 SF @	200 SF/hour	1.7 hours @	3 units/crew =	5.2 hours	HASP req's two: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	3.5	hours	$45.00	$158	346 SF @	200 SF/hour	1.7 hours @	2 units/crew =	3.5 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Excavator	1.7	hours	$84.09	$143	346 SF @	200 SF/hour	1.7 hours @	1 units/crew =	1.7 hours	RSM/HC p. 467 (line item 01 54 33 20 0320)
Metal Shears Attachment	1.7	hours	$34.40	$58	346 SF @	200 SF/hour	1.7 hours @	1 units/crew =	1.7 hours	2004 DEC Rate * Implicit Deflator
Claw Attachment	1.7	hours	$2.47	$4	346 SF @	200 SF/hour	1.7 hours @	1 units/crew =	1.7 hours	RSM/HC p. 477 (line item 01 54 33 20 0345)
Loader	1.7	hours	$30.03	$51	346 SF @	200 SF/hour	1.7 hours @	1 units/crew =	1.7 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Yard Crane	1.7	hours	$86.31	$147	346 SF @	200 SF/hour	1.7 hours @	1 units/crew =	1.7 hours	RSM/HC p. 474 (line item 01 54 33 60 2700)
Welding Equipment	0.0	hours	$5.41	$0	346 SF @	200 SF/hour	1.7 hours @	0 units/crew =	0.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - HDPE Tank Demolition				**$764**	*tank areas based upon actual tank dimensions, or upon OSWER 9476.00-6, Vol 3, p. 5-5*					
5.32.8 Tank Piping Demolition					avg prod'n rate = 20 LF/hr, rsm/up p. 3-10 (16-01-0621/0622) for 2"/4" metal pipe @ 4#/LF					
Estimated Piping Length	100.0	*LF*			*1 tanks @*	*100 LF/tank =*	*100 LF @*	*4 Lb/LF =*	*400 Lbs*	*combined Steel and HDPE Tanks' Piping*
Laborers	10.0	hours	$39.00	$390	100 LF @	20 LF/hour	5.0 hours @	2 units/crew =	10.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	5.0	hours	$5.41	$27	100 LF @	20 LF/hour	5.0 hours @	1 units/crew =	5.0 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Piping Demolition				**$417**	*piping assumed to average 100 LF/tank*					
5.32.9 Tank Pump Demolition					prod'n rate = 1 pump/hr (see RSM/UP p. 3-11, 16-01-0634 and 16-01-0636) assume 0.5 pumps/tank					
Laborers	1.0	hours	$39.00	$39	0.5 pumps @	1 pump/hr	0.5 hours @	2 units/crew =	1.0 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Welding Equipment	0.5	hours	$5.41	$3	0.5 pumps @	1 pump/hr	0.5 hours @	1 units/crew =	0.5 hours	RSM/HC p. 473 (line item 01 54 33 40 7800)
Subt - All Tanks' Pump Demolition				**$42**	*pump weight = 250# each; one pump per tank is estimated*					
5.32.10 Load Tank Demo Debris					production rate = 15 CY/hour; RSM/BC p. 42 (line item 02225-730-3080)					
Laborer	0.06	hours	$39.00	$2	1.0 CY @	15 CY/hr =	0.06 hours @	1 units/crew	0.06 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.06	hours	$45.00	$3	1.0 CY @	15 CY/hr =	0.06 hours @	1 units/crew =	0.06 hours	loaded labor rate: loaded labor rate 2011 3rd party quote
Loader	0.06	hours	$30.03	$2	1.0 CY @	15 CY/hr =	0.06 hours @	1 units/crew =	0.06 hours	RSM/HC p. 469 (line item 01 54 33 20 4730)
Dump Trailer (20 CY)	0.06	hours	$5.20	$0	1.0 CY @	15 CY/hr =	0.06 hours @	1 units/crew	0.06 hours	RSM/HC p. 469 (line item 01 54 33 20 5400)
Subt - Load Tank Demo Debris				**$7**	*1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps*					
5.32.11 Unl'd Stabilize/Encapsulate					prod rate = 15 tons/hour = 120 tons/day; includes unloading, shredding, and filling containers					
PROCESS TONS (incl kiln dust)	1.3	*TONS*			1.0 CY debr + 15% kiln dust = 1.15 CY total total tonnage = 1.9 tons					total tons derived from foregoing assemblies + kiln dust
Laborer	0.2	hours	$39.00	$8	1.9 tons @ 15 tons/hr @ 0.1 hours @ 2 units/crew = 0.2 hours					loaded labor rate: loaded labor rate 2011 3rd party quote
Equipment Operator (Medium)	0.3	hours	$45.00	$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 3 units/crew = 0.3 hours					loaded labor rate: loaded labor rate 2011 3rd party quote
Backhoe (1 CY)	0.1	hours	$19.18	$2	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours					RSM/HC p. 467 (line item 01 54 33 20 0460)
Loader, Wheel (1 CY)	0.1	hours	$14.39	$1	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours					RSM/HC p. 468 (line item 01 54 33 20 4610)
Shredder	0.1	hours	$329.70	$33	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours					2004 DEC Rate * Implicit Deflator
Mixing Pit/Screening/Silo	0.1	hours	$136.29	$14	1.3 tons @ 15 tons/hr @ 0.1 hours @ 1 units/crew = 0.1 hours					2004 DEC Rate * Implicit Deflator
Cement Kiln Dust - Mat'l Cost	0.0	tons	$0.00	$0	0.3 tons					
Cement Kiln Dust - Delivery Cost	0.0	loads	$0.00	$0	0.3 tons @ 20 ton/load = 0.0 loads					
Cement Kiln Dust - Mat'l&Delv Cost	0.3	tons	$48.00	$14						CWM actual 2011 costs
Encapsulation Containers (30-CY)	0.03	units	$1,000.00	$30	1.15 CYs @ 30 CY/unit = 0.03 containers					CWM actual 2011 costs
Rolloffs (30-CY)	0.03	hours	$19.02	$1	1.15 CYs @ 30 CY/unit = 0.04 rolloffs @ 0.1 hours/rolloff = 0.03 hours					dumpster RSM/BC p. 42 (02225-730-0800)
Subt - Stabilize/Encapsulate				**$116**	*1 CY tank demo debris = to 972 SF @ 1/3rd" thick; and/or 432 LF of 3" diam pipe; and/or 2 pumps*					

5.32 AWTS Fac 5 1 tk

Basic Closure Activities: Direct Costs	Estimated Quantity	Unit of Measure	Unit Price	2011 CWM Extended Price	Basis of Production and Quantities for In-house Estimate	In-house Pricing References
5.32.12 Offsite T&D - Tank Demo					offsite disposal is determined to be the only disposal option	
Offsite Transportation - Debris	38.5	miles	$3.25	$125	1.15 CY @ 30 CY/load = 0.03 loads @ 385 miles/trip = 38.5 miles	Rate: transporters quote/site experience
Offsite Disposal - Tank Debris	1.15	CY	$337.50	$388	1.15 CY @ 27 CF/CY = 31.1 CF	DEC 2004 Estimate accounting for inflation
Subt - Offsite T&D - Tank Demo				**$513**		
(Subt: Assemb 5.32.6 - 5.32.12)				**$1,859**	*tank/piping/pump demolition, and offsite transportation & disposal*	
5.32.13 Decon SCA (wash)					not applicable - secondary containmnent demolished with primary tank	
Subt - Decon SCA (wash)				**$0**		
5.32.14 Decon SCA (rinse)						
Subt - Decon SCA (rinse)				**$0**		
5.32.15 Decon Water Samp/Disp						
Subt - Decon Water Samp/Dispose				**$0**		
5.32.16 PCB Wipe Samples						
Subt - PCB Wipe/Destruct Samp				**$0**		
(Subt: Assemb 5.32.13 - 5.32.16)				**$0**	*decontamination & sampling of SCA*	

Total Non-Super Labor Hours 21.3

5.32.17 PPE Usage/H&S Planning					Level C @ 75%; Mod Level C @ 25% for tot non-supv hrs for all tasks; HASP @ 2.5% of non-supv hrs	
PPE Usage - Level D	0.0	days	$0.00	$0	21.3 hours @ 8 hr/day = 2.7 days @ 0% "D" days = 0.0 days	Standard Work Clothes - Site Experience
	0.7	days	$9.00	$6	21.3 hours @ 8 hr/day = 2.7 days @ 25% "Mod C" days = 0.7 days	25% of non-supv hrs in Mod Level C (price: $9/day)
PPE Usage - Level C	2.0	days	$25.00	$50	21.3 hours @ 8 hr/day = 2.7 days @ 75% "C" days = 2.0 days	75% of non-supv hrs in Level C (price: $25/day)
Safety Engineer	0.5	hours	$75.00	$38	21.3 hours @ 2.5% hr/hr = 0.5 hours	Safety Eng Rate: rate 2011 3rd party quote
Subt - PPE Usage/H&S Planning				**$94**		
5.32.18 Supervision					0.2 weeks supervisory time for closure of 1 tank	
Foreman	8.0	hours	$65.00	$520	0.2 weeks @ 40 hrs/wk = 8.0 hours	Outside foreman rate: 2011 3rd party quote
Site Project manager	0.0	hours	$75.00	$0	Included in Gen'l Contractor G&A/Home Office indirect costs	Site Manager Rate: 2011 3rd party quote
Subtotal - Supervision				**$520**		
5.32.19 Certification					Engineer @ 1.5% and Clerical @ 1.5% of total non-supervisory hours for all tasks	
Engineer	0.3	hours	$130.00	$39	21.3 hours @ 0.015 hr/hr = 0.3 hours	Engineer rate: 2011 3rd party quote
Clerical	0.3	hours	$45.00	$14	21.3 hours @ 0.015 hr/hr = 0.3 hours	Clerical rate: 2011 3rd party quote
Subtotal -Certification				**$53**		
(Subt: Assemb 5.32.17 - 5.32.19)				**$666**		

5.32 AWTS Fac 5 1 tk	**Direct Cost**	**Total**	**Basic**	**$2,728**

5.32 AWTS (FacPond 5) 1 tk **Total Cost Summary**			
Cost Category	**Proposed Percent of Direct Cost**	**Proposed 2011 Cost**	**Cost Range**
Direct Costs/Basic Disposal		$2,728	
Plus Indirect Costs/Profit:			
Site Activity Management Costs	7.00%	$191	note: DEC uses 7%
Gen'l Contractor G&A/Home Office	4.00%	$109	note: DEC uses 4%
Pre-Construction Design Costs	6.00%	$164	note: DEC uses 6%
Engineering During Construction	2.00%	$55	note: DEC uses 2%
General Contractor Profit	6.00%	$164	Note DEC adds 6%
Indirect Costs/Basic Disposal	25.00%	$682	
Subt: AWTS (i/s A sou Full Trailer) 1 t		$3,411	
Plus Contingency	10.00%	$341	CWM and DEC 10%
Tot: AWTS (Fac Pond 5) 1 tk		**$3,752**	

Cost References:
"RSM/HC" refers to the RSMeans "Heavy Construction Cost Data", 2009 Edition (rates adjusted for inflation)
"RSM/UP" refers to the RSMeans "Environmental Remediation Cost Data - Unit Price", 2004 Edition (rates adjusted for inflation)
"RSM/BC" refers to the RSMeans "Building Construction Cost Data", 2003 Edition (rates adjusted for inflation)