



City of Fort Myers, Florida

Engineering Division
Stormwater Management
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FDEP ID: COM 288039, Lime Residual Removal and Disposal Plan

May 2, 2018

The City of Fort Myers intends to investigate and voluntarily remove all lime residual from the entire 3.77 acre block that contains the property associated with the above referenced project. This includes both the city owned properties as well as the private properties interspersed within the block.

It is estimated that the City of Fort Myers disposed of 20,000 cubic yards of lime residual on the property during the 1960's. The material has been in place approximately 50 years and testing has confirmed that there is no immediate health risks to the surrounding neighborhood or the ground water.

The removal of the lime residual is a complex process that will take a significant amount of time and coordination to complete successfully.

Site Preparation

Right of Entry (ROE) permissions will be obtained from all the adjacent property owners within the block. The fence will then be relocated to the perimeter of the ROW. The City is currently pursuing the ROE required to complete the project.

The fence will be relocated and all organic debris will be removed from the site prior to excavation. This is required due to the recycling processes used for the disposal of the lime residual. The organic debris will be disposed of according to the rules and regulations of the FDEP.

Lime Residual Removal

The lime residual on the property will be removed completely from the site by a company experienced in the removal of lime residual from lagoons and registered with the state of Florida. The private adjacent properties will be evaluated and any lime residual found on those sites will be removed. The excavation project will operate under the rules and regulations of the Florida Department of Environmental Protection and the Federal Environmental Protection Agency.

Removal Assurance

Source removal excavation monitoring and confirmatory sampling will be conducted in accordance with Chapter 62-780.525(5)(a)5, F.A.C. Initial completeness of excavation will be based on the visual presence or absence of sludge. If observations indicate that there is no visible sludge along the sidewalls or bottom of the excavation, and the sidewalls and bottom are above the water table, confirmatory soil samples will be collected from the bottom and sidewalls of the excavation to determine completeness of the sludge removal.

Two soil samples will be collected from depths of 0.5-ft. and 2-ft. below land surface, approximately every 20 linear feet of the excavation perimeter/sidewalls, following the sampling frequency identified in the Guidelines for Assessment and Source Removal of Petroleum Contaminated Soil, prepared by the FDEP, May 1998. Excavation bottom confirmation soil samples will be collected from approximately 20-foot centers.

Soil samples collected above the groundwater table will be analyzed for arsenic following EPA Method 6010. If laboratory analysis indicated arsenic concentrations above the residential direct exposure Soil Cleanup Target Level (SCTL) of 2.1 mg/kg, additional excavation will be performed, followed by the confirmatory sampling and analysis protocol described above.

Where the depths of excavation extend below the water table, the material in the excavation bottom and sidewalls in the excavator bucket will be visually inspected for the presence or absence of lime sludge. Samples from the excavator bucket will be collected and inspected at approximately 20-foot intervals along the sidewalls and from approximate 20-foot centers from the bottom of the excavations below the water table.

Excavations above the water table will be determined to be complete when concentrations of arsenic in all confirmation soil samples are below the residential exposure SCTL. Excavations below the water table will be determined to be complete when there is no visible lime sludge in samples retrieved from the excavator bucket.

In addition, the City will perform ground water monitoring of the ten monitoring wells in July and October 2018. The wells will be tested for arsenic and any constituents that have been detected above the drinking water standard in the April testing. (Results not available).

Transportation

The lime residual will be transported by truck from the property to a drying site. After the material has dried sufficiently the material will be transported to either a barge loading site or a final disposal site. All the equipment used for transportation will have all the appropriate licenses; fuel permits, and meet all DOT and OSHA safety requirements.

If the barge transportation option is selected the barge loading site will be permitted and monitored by an experienced Marine Engineering company to ensure that transfer of material to the barge is accomplished safely and without spills. A site plan application of the barge loading area will be provided to FDEP prior to the utilization of the area. The application submitted to FDEP will include the details of the barge loading site as well as all staging areas and barge movements in and out of the area.

Material Drying Processing

The sludge residual will be transported to an off-site drying location that meets the requirements of F.A.C.62-780.525(5)(a)7. The lime residual will be placed on an impervious surface and covered. This step is being added as it will reduce the excavation time required on the project site.

When the material has been dried sufficiently it will be transported to the disposal site. If required an admixture will be added to the residual to complete the drying process.

Leachate will be collected from the drying area and tested for arsenic. Due to the nature of the lime material and its use in water purification it is not anticipated that the leachate will contain arsenic. If the leachate test indicates that arsenic concentrations are below drinking water standards the collected water will be discharged to an adjacent area and allowed to percolate into the ground. If the leachate tests positive for arsenic it will be filtered through an iron oxide media filter to remove the arsenic prior to disposal. Iron oxide media filters do not require a backwash and the used iron oxide media is not a hazardous material and may be disposed of through standard disposal methods.

The material drying area will need to be permitted, prepared and constructed prior to operation of the site. A site plan of the proposed operation will be submitted to FDEP prior to the utilization of the site.

Disposal

OPTION 1 The City of Fort Myers currently intends for the lime residual to be transported to a qualified manufacturer to be reused in the production of concrete, ceramics and hydrated lime pellets for use by public consumers. However, the City will continue to investigate other FDEP approved disposal methods until the contract negotiations have been completed and contracts are scheduled for Council Approval. An alternative disposal method may be required if contractual problems arise during the negotiations.

OPTION 2 The dried lime residual will be transported to one of two FDEP certified and approved disposal sites for final disposition.

Time Line

Please see the attached Gantt chart for the timeline to complete the project. Due to the complexities and weather reliance of the project, the attached timeline is the most viable estimate of the critical path required for project completion.

Based on the estimated timeline to complete the voluntary lime residual removal, the project will extend beyond the rainy season. This can be advantageous as the excavation portion of the project begins after the rainy season. There are several potential issues that may result from expediting the excavation of site during the rainy season:

1. The lime residual will become extremely soft if the surface becomes saturated during the rainy season resulting in the failure of equipment on the site being able to perform work.
2. Operations in the rainy season could also lead to potential tracking issues with the transportation of the lime residual from the site to the drying location.

The City requests that the proposed timeline and description be accepted by FDEP for the removal of lime residual. The City will maintain communications with FDEP through-out the process until the lime residual has been removed and the site has been inspected and approved by FDEP.

Thank you,

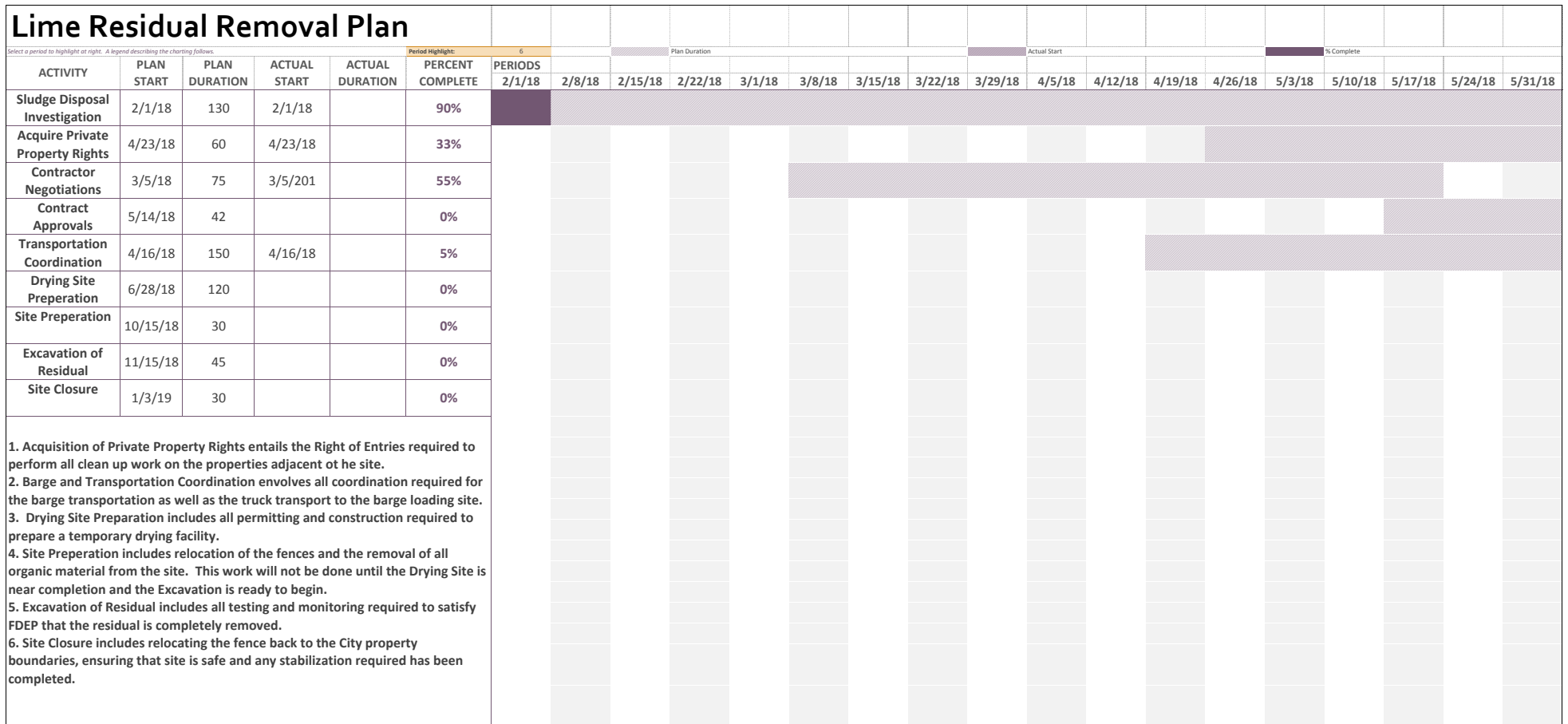


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City of Fort Myers
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CC: Saeed Kazemi, P.E. City Manager
Richard Moulton, Public Works Director



City of Fort Myers, Florida
 FDEP ID: COM 288039
 GANTT CHART





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 GANTT CHART

Lime Residual Removal Plan																								
Select a period to highlight at right. A legend describing the charting follows.						Actual (beyond plan)							% Complete (beyond plan)											
ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE	6/7/18	6/14/18	6/21/18	6/28/18	7/5/18	7/12/18	7/19/18	7/26/18	8/2/18	8/9/18	8/16/18	8/23/18	8/30/18	9/6/18	9/13/18	9/20/18	9/27/18	10/4/18	
Sludge Disposal Investigation	2/1/18	130	2/1/18		90%																			
Acquire Private Property Rights	4/23/18	60	4/23/18		33%																			
Contractor Negotiations	3/5/18	75	3/5/201		55%																			
Contract Approvals	5/14/18	42			0%																			
Transportation Coordination	4/16/18	150	4/16/18		5%																			
Drying Site Preperation	6/28/18	120			0%																			
Site Preperation	10/15/18	30			0%																			
Excavation of Residual	11/15/18	45			0%																			
Site Closure	1/3/19	30			0%																			
<p>1. Acquisition of Private Property Rights entails the Right of Entries required to perform all clean up work on the properties adjacent ot he site.</p> <p>2. Barge and Transportation Coordination envolves all coordination required for the barge transportation as well as the truck transport to the barge loading site.</p> <p>3. Drying Site Preperation includes all permitting and construction required to prepare a temporary drying facility.</p> <p>4. Site Preperation includes relocation of the fences and the removal of all organic material from the site. This work will not be done until the Drying Site is near completion and the Excavation is ready to begin.</p> <p>5. Excavation of Residual includes all testing and monitoring required to satisfy FDEP that the residual is completely removed.</p> <p>6. Site Closure includes relocating the fence back to the City property boundaries, ensuring that site is safe and any stabilization required has been completed.</p>																								



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					PERCENT COMPLETE	10/11/18	10/18/18	10/25/18	11/1/18	11/8/18	11/15/18	11/22/18	11/29/18	12/6/18	12/13/18	12/20/18	12/27/18	1/3/19	1/10/19	1/17/19	1/24/19	1/31/19	2/7/19	
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