



Shaping the Future

December 19, 2013

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RE: Proposal for Continued Interim Source Removal Activities
Parcel #1 – PCB and Petroleum Impacted Areas
Former H.D. King Site, Ft. Pierce

Dear Mr. Mimms:

Cardno TBE is pleased to submit this technical and cost proposal for conducting Continued Interim Source Removal (ISR) activities on Parcel #1 of the former HD King Power Plant site on behalf of the Ft. Pierce Redevelopment Agency (FPRA).

BACKGROUND

Cardno TBE prepared a Preliminary Engineering/Remedial Cost Estimate for the Former HD King Site contained in a Memo dated October 12, 2012 addressed to the FPRA, TCRPC and the Ft. Pierce Utility Authority. Those preliminary costs were based on best available data obtained during supplemental/confirmatory sampling activities conducted to further delineate previously identified soil impacts consisting of primarily polychlorinated biphenyls (PCBs) and petroleum related contaminants.

The previously provided preliminary remedial cost estimate was based on the following:

- The anticipated end-use of the site.
- The previously detected PCBs exceeding TSCA concentrations could be removed under TSCA's "Self Implementing Process".
- The remaining PCB impacted soil containing less than 50 mg/kg PCBs could be disposed of locally in Florida.
- The FPRA does not want any encumbrances or deed restrictions placed on the property that may hinder redevelopment potential in the future.

Based on the anticipated remedial costs presented in the above referenced memo, FPRA requested and received additional funding from the TCRPC using their EPA BF Revolving Loan Fund (RLF) grant to conduct limited source removal activities consisting of supplemental infill sampling and subsequent soil removal in the previously identified TSCA PCB's areas and petroleum impacted area along the northern portion of the site adjacent to Moore's Creek.

Interim source removal activities were initiated using the RLF funding in early November 2013 and are expected to be completed by December 20, 2013. Reporting and FDEP Voluntary Cleanup Tax Credit (VCTC) applications for the assessment and remedial expenditures for FY 2013 will be completed and submitted to the FDEP by January 30, 2014.

To address the remainder of the soil and groundwater contamination identified on site, supplemental soil removal activities will be required followed by groundwater testing and monitoring. Several remedial strategies have been previously discussed with the most significant issue being the timing (potential phasing) of the future remedial activities in an effort to maximize the potential recovery of the available FDEP Brownfields cleanup tax credits, which limits tax credits associated with eligible site rehabilitation/cleanup activities to 50% of eligible costs, not to exceed \$500,000 per annum. Current remedial costs estimates indicate cleanup costs will slightly exceed 2 million dollars (including 20% contingency and groundwater monitoring). The FPRA and the FPUA have both expressed an interest in cleaning up the site in the most cost effective yet expeditious manner with soil removal activities to be completed during 2014, followed by groundwater testing and monitoring. This scenario will fast-track the project and provides a shorter time to reach full closure of environmental issues and ultimately a Site Rehabilitation Competition Order (SRCO). Once the SRCO has been obtained, a 25% VCTC "kicker" on the total cleanup cost (max allowable \$500,000) will be available to the FPRA/FPUA. Timeframes to reach site closure under this scenario is likely 18-24 months from initiation of remediation activities, assuming existing groundwater impacts do not require active remediation and groundwater closure can be obtained using risk-based closure criteria.

If the source removal activities were to be phased over a two-year period, the FPRA/FPUA would realize additional VCTC dollars over the previous scenario; however, economy of scale cost savings would be diminished (likely increasing costs by 15-20% due to additional mobilizations, increases in transportation and disposal costs) and site closure would be extended to at least 12-18 months from implementation of complete source removal activities.

The following scope of services details proposed interim source removal activities for the remainder of Parcel #1 assuming that **all** source removal activities for the entire site will be conducted in early 2014.

The costs presented below also assumes that the City will provide the necessary "clean fill" as discussed in our previous meeting on December 5, 2013. Furthermore, if the FPRA secures supplemental TCRPC BF Revolving Loan Fund monies, source removal costs would be reduced by the amount of the supplemental RLF (less programmatic expenses) or could be used to address the previously identified groundwater contamination.

PROPOSED SCOPE OF WORK

This Proposal/Scope of Work is broken down into three sections: source removal activities, reporting and groundwater sampling and monitoring.

Task I Source Removal Elements

A) Source Removal: Cardno TBE will provide environmental project oversight and confirmatory soil sampling to determine the extent of PCB/hydrocarbon contaminated soil as part of the interim source removal activities. Post-excavation confirmatory sampling will be conducted in accordance with the EPA/FDEP-approved Revised ISRP. Sample collection and laboratory analytical testing will be implemented pursuant to FDEP SOPs and the EPA criteria.

It is anticipated that the source removal activities will be sequenced such that approximately 1/3 of the site will be excavated at any one time so that effective ingress and egress to the excavation and staging areas are properly maintained. Confirmatory side-wall and bottom samples will be collected continuously as the excavation proceeds, therefore reducing laboratory turn-a-round times (waiting for clean results) so that backfilling or over-excavation can proceed, as necessary.

Cardno TBE will screen potentially contaminated soils discovered during excavation activities with an Organic Vapor Analyzer (OVA) equipped with a Flame Ionization detector (FID), as well conduct visual and olfactory observations to evaluate the potential presence of volatile contaminants. Soil will be direct loaded into dump/mini-wheeler trucks for transport to an approved/permitted landfill. The depth and thickness of impacted soil varies across the site and excavation activities will be targeting these areas by depth interval to minimize the potential for over excavation of non-impacted soils. Groundwater is encountered at approximately four (4) to five (5) ft below land surface across much of the site and excavation activities are not planned to proceed below the water table. Excavation work will proceed in an incremental manner across the site in approximately 50 to 100 ft grids to maintain accessibility during backfilling.

Upon completion of excavation activities, confirmatory laboratory analytical sampling will be conducted according to the ISR plan to verify removal of impacts to the appropriate regulatory criteria. Cardno TBE proposes post-excavation confirmatory soil samples be collected from the sidewalls of the excavation at 25 ft intervals along the perimeter of the excavation. Samples will be collected at the mid-point of the sidewall at each sample location. In areas where the excavations do not encounter the water table, base samples will be collected from the center point of every 40 ft by 40 ft area excavated. Post-excavation confirmatory samples will be analyzed for PCB/petroleum hydrocarbons (historical impacts) only. Please note that final sampling protocols may be revised based on FDEP negotiations/requirements and associated costs will be adjusted accordingly.

Clean backfill will be provided by the City and will be transported to the site from the City's borrow/staging area by the trucking company providing transportation of the contaminated soil to the approved landfill. It is anticipated that the "clean fill" will be picked up as a back-haul from the landfill run to minimize dead-head costs (i.e. driving empty trucks) back from the landfill. Fill material will be placed in 12-inch lifts and mechanically compacted using onsite excavation

equipment and vibratory/roller compactors to approximately 98% modified proctor. Compaction testing and oversight will be conducted by Cardno staff and a certified geotechnical technician.

- B) Reporting:** An ISR report will be prepared documenting the removal activities and results of post-excavation confirmatory sampling and will be submitted to EPA/FDEP for review and approval. Supplemental removal activities will be conducted as funding is available and will be conducted in accordance with the aforementioned approved plans.

Task II Groundwater Assessment and Natural Attenuation Monitoring

- A) Well Installation and Sampling:** It is anticipated that the source removal activities will be completed by mid-2014 concluding prior to the anticipated rainy-season. Previous work orders have authorized funds to conduct the initial installation and sampling of select groundwater monitoring wells to be installed in previously excavated areas or where previous groundwater impacts were identified in the 2009 Site Assessment Report (SAR). Wells will be sampled for the parameters identified in TCRPC Task Order BC2-12

- B) Reporting:** Groundwater analytical results will be summarized and presented to FDEP for review. If groundwater sampling results indicate that groundwater contaminants, if present, are below Chapter 62-777, FAC Groundwater Cleanup Criteria, Cardno TBE will request a No Further Action determination from the FDEP concerning groundwater quality on parcel #1. If groundwater impacts persist above groundwater cleanup target levels (GCTLs), additional assessment and/or long term monitoring may be required. Fees for the initial groundwater reporting are also covered by the previously reference Task Order. Supplemental assessment/well installations are considered outside the scope of Task Order BC2-12.

- C) Natural Attenuation Monitoring:** If groundwater impacts are determined to be present onsite at concentrations exceeding GCTLs; supplemental assessment and/or Natural Attenuation Monitoring may be necessary to address groundwater concerns to FDEP's satisfaction. A specific Scope and Fee cannot be provided for these services at this time since the extent and magnitude of any impacts is currently unknown. However; as previously discussed, a preliminary budget of \$200,000 was presented to address groundwater impacts, excluding active remediation.

SCHEDULE OF COMPENSATION

Task I: Source Removal Elements

A) Remainder of Parcel #1

ISR Plan	\$7,400
Cardno TBE Labor & Expenses (estimated based on \$6.35/ton).....	\$114,300
Mobilization/Demobilization	\$15,000
Excavation, transportation and disposal (18,000 tons @ \$68.50/ton)	\$1,233,000
Confirmatory sampling (estimated 450 samples @ \$210 ea.).....	\$94,500
Backfill and compaction (18,000 cy @ \$10.20/cy)	\$183,600*

Geotechnical Compaction Testing and Oversight (45 days @ \$1,200/day)	\$54,000
Excavation and Handling of Clean Overburden (2,050 cy @ \$25/cy)	\$51,250
Sampling of Clean Overburden – 1 sample/500 cy stockpile @ \$210 ea.)	\$840
Erosion Control – (Installation of 1,250 feet of silt fence @ \$1.50/ft)	\$1,875
Permits	\$150
Task IA Subtotal	\$1,755,915

B) Reporting and Project Management

Cardno TBE Labor & Expenses	\$43,500
Task IA and IB Estimated Subtotal:	\$1,799,415
Contingency 20%	\$359,403
Estimated RLF Amount (after programmatic expenses)	(243,723)**
Estimated Task I Subtotal	\$1,915,095

Task II: Groundwater Assessment and Natural Attenuation Monitoring

- A) Monitor Well Installation and Sampling..... Covered by TCRPC Task Order BC2-12
- B) Groundwater Data Summary Report Covered by TCRPC Task Order BC2-12
- C) Natural Attenuation Monitoring (previously provided budgetary number).....\$200,000

ESTIMATED PROJECT TOTAL **\$2,115,095**

Notes: *Clean fill to be provided by City of Ft. Pierce.

**Supplemental RLF funding covered under separate proposal to be submitted by 12/20/13

Cost estimate assumes all remaining PCBs on-site are Non-TSCA. If levels greater than 50 mg/kg are encountered in confirmatory samples, additional fees will apply.

PROPOSED PROJECT SCHEDULE

Within 30 days following receipt of written approval of the NTP, Cardno TBE will prepare and submit the ISR Plan to FDEP for approval. Concurrently, Cardno TBE will conduct stakeholder meetings and begin site preparations/mobilization. Upon approval of the ISR Plan, Cardno will mobilize to the site implement source removal activities. A tentative project schedule is further outlined below and will be adjusted based on notice-to-proceed (NTP):

- Notice to Proceed – January 2014
- Preparation of ISRP – January/February 2014
- Mobilization and Source Removal Activities – February – June 2014
- Monitor Well Installation, Sampling and Reporting – July – September 2014
- Preparation and Submittal of Interim Source Removal Report - October 2014
- FDEP Approval of ISR Report – December 2014
- VCTC Preparation – October 2014
- Post Active Remedial Groundwater Monitoring – September 2014 – September 2015
- SRCO Closure on Groundwater – October 2015

Cardno TBE project fees and expenses will be billed on a lump sum basis, except for the geotechnical oversight services which will be billed on a time and materials or unit rate basis. Excavation, transportation and disposal costs will be invoiced based on actual unit rates. If this proposal meets with your approval, your signature below will authorize Cardno TBE to begin scheduling of field activities and subcontracted services. Work performed for this project will be in compliance with the current Agreement for Consulting Services contract with the FPRA.

After review of the scope of services, please call me or Greg Schultz at 727.531.3505, if you have any questions.

Sincerely,



Rick Hagberg, PG
Director
For Cardno TBE

Approved by:

Signed by: _____
Title: _____
Date: _____