CITY OF NEW BEDFORD
JONATHAN F. MITCHELL, MAYOR
ENVIRONMENTAL STEWARDSHIP DEPARTMENT

Project Description and Alternatives Evaluation for Notice of Intent
Former Cliftex Corporation Tanks Site
Assessor's Map 105 Lots 183, 208, and 209, New Bedford, MA
MADEP Release Tracking Number (RTN): 4-14112

Property Owners:

Lots 208 and 209: The City of New Bedford, 133 William St., New Bedford, MA 02740
Lot 183: Salgado's Riverside LLC, 194R Riverside Ave., New Bedford 02746.

I. Introduction

The subject Site for the current Notice of Intent (NoI) consists of three vacant lots identified on the New Bedford Assessors Map 105 as Lots 208, 209, and 183, located in the City of New Bedford, Massachusetts. The contiguous lots are located along the west bank of the Acushnet River (see attached Figures 1 through 4) and access to the site is limited by fences to the west and south although access via foot and or boat is possible to the north and west.

Lots 208 and 209 are owned by the City of New Bedford and are accessed via a locked gate at Manomet Street. Lot 208 consists of a vacant lot of approximately 9,500 square feet, and is improved by a concrete sidewalk. Lot 209 contains approximate 10,433 square feet, and houses two adjacent abandoned 75,000-gallon No. 6 fuel oil concrete underground storage tanks (USTs). The concrete tanks are located side by side and are covered by a concrete pad. Historically, the USTs were associated with the former Cliftex mill property at 194 Riverside Avenue until being transferred to the City of New Bedford in 2011. Former operations at the Cliftex mill included the production of textile products and storage.

Lot 183, owned by Salgado's Riverside Trust LLC, lies along the west bank of the Acushnet River and consists of approximately 126,760 square feet. Lot 183 is between Lots 208 and 209 and the Acushnet River. For the purpose of this document, only the south area of Lot 183, in the vicinity of Lots 208 and 209 is included as part of the Site.

The Site is part of a larger disposal site listed with the Massachusetts Department of Environmental Protection (MADEP) for the two abandoned USTs (north tank, south tank) and associated releases of fuel oil to soil and groundwater beginning in 1998. As of October 2015, the south UST has been pumped out, steam cleaned, and the access ports have been secured. Up to 20,000 gallons of thick weathered No. 6 fuel oil and solids remain in the north tank. Remedial approaches to address the contents of the north tank being evaluated by the City are presented in the Alternatives Analysis section below.

Several soil and groundwater sampling investigations in the vicinity of the USTs have been completed, and evaluations of UST closure and soil remediation alternatives have been documented in regulatory report submittals previously prepared for the disposal Site and submitted to the MADEP beginning in 1998. Historical reports indicate greater than one-half inch of non-aqueous phase liquid (NAPL), consistent with a release of weathered fuel oil was present in a monitoring well near the USTs. Further investigation

documented in regulatory submittals for the disposal site indicated that fuel oil impacts were present along the south and east sides of the USTs, at depths between 5 and 12 feet below grade. In 2011, an investigation identified NAPL at two locations between 5 and 10 feet below grade southeast of the USTs. Additionally, groundwater gauging identified NAPL in two disposal site and three down gradient locations.

II. Proposed Project

The intent of this project (NoI) is to define the limits of oil impacts associated with the Site and carry out additional source control activities prior to remedial efforts. The City intends to advance 5 test pit trenches at the perimeter of the USTs in an effort to define the site as well as view subsurface conditions. Test pits 2, 3 and 4 would extend into the riverfront area and/or 100 ft. buffer zone on Lot 183, as depicted on the attached Figure 3. Test trenches 1 and 5 would be advanced outside of the 100 ft buffer zone on Lots 209 and 183, respectively. Additionally, the City intends to collect three sediment samples and three surface water samples at the Acushnet River to determine the limits of the Site and to support an ecological risk assessment, pending US Environmental Protection Agency (EPA) approval.

Once the Site limits have been defined, an EPA-required Analysis of Brownfields Cleanup Alternatives, focused on reducing potential exposure to contaminants for on-Site receptors, eliminating the NAPL source area, and preventing the further down gradient migration of NAPL onto adjacent Lot 183 property will be developed and a Remedial Plan selected.

Three source control alternatives and four remedial alternatives are presented in the analysis below for the purposes of this NoI. The project will include the decommissioning of the USTs, which will require the mobilization and staging of excavation equipment and trucks within the buffer zone. Selected soils identified with NAPL impacts within the buffer zone are also likely to be excavated as part of the remedial activities conducted as part of this project.

The cleanup will be overseen by a State of Massachusetts Licensed Site Professional (LSP) under the guidelines of the Massachusetts Contingency Plan (MCP): 310 CMR 40. It is expected that remedial cleanup will be performed under a Release Abatement Measure (RAM) Plan. In addition, required regulatory documents prepared for this Site will be submitted to the MADEP electronically and tracked under RTN 4-14112.

III. Evaluation of Impact Characterization, Source Control, and Cleanup Alternatives

Site Impact Characterization Alternatives

Three alternatives were considered to characterize the extent of impacts:

- **Oil Impact Characterization Alternative #1: No Action;** This alternative would leave the extent of oil impacts in the resource area and 100 ft buffer zone largely uncharacterized.
- **Oil Impact Characterization Alternative #2: Impact Characterization Solely Using Drilling Methods;** This alternative would require a substantial number of borings, potentially up to fifteen, to characterize the lateral extent of soil impact in the riverfront resource area and buffer zone.
- **Oil Impact Characterization Alternative #3: Impact Characterization Using Excavated Test Trenches with subsequent Drilling;** This alternative would utilize a backhoe or small excavator to advance three test trenches within the riverfront area and/or buffer zone to identify potential areas of impacted soil and preferential pathways through which oil may have migrated through the buffer zone and riverfront area. Subsequent limited drilling activities would include the advancement of borings

and monitoring wells to evaluate the effectiveness of any implemented remedial activities or to provide monitoring sentry points for any potential long-term monitoring activities.

Potential Impacts to Resource Areas from Oil Impact Characterization Alternatives

Characterization Alternative #1: No Action – Would have no impact on surface conditions of riverfront resource areas or the 100 ft Buffer Zone. The extent of existing subsurface impacts due to the potential migration of oil through the Buffer Zone and Riverfront area and into the river would be unknown, but would remain a potential detriment to the resource area.

Characterization Alternative #2: Impact Characterization Solely Using Drilling Methods – Would potentially have moderate effects on surface conditions in the riverside area and 100 ft buffer zone, but would provide information necessary to address potential existing detrimental impacts to the resource area. The rubber track or truck-mounted drill rig would likely be refused multiple times by rocky fill materials and debris, which would lead to extensive repositioning of the rig. Vegetation would be disturbed across a large portion of the project area and soils would be exposed. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the sedimentation of the river during storm events.

Characterization Alternative #3: Impact Characterization Using Excavated Test Trenches with Subsequent Targeted Drilling – Test trenching with a backhoe would temporarily disturb soils and vegetation along a roughly 300 square foot transect within the riverfront resource area, and along roughly 600 square foot transects in the buffer zone, but would provide information necessary to address potential existing detrimental impacts to the resource area. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the sedimentation of the river during storm events. The trenches would be immediately backfilled to eliminate safety hazard as well as minimize sedimentation of the river. Trenching eliminates the "hit or miss" of drilling and the trenches would allow for a continuous observation of subsurface conditions. Trenches would be immediately backfilled with excavated soils.

The subsurface has already been disturbed as it consists of demolition debris and suspect piping. A backhoe can address large boulders or concrete debris where drilling may be met with refusal which will extend the field time required to adequately define the subsurface conditions. Subsequent targeted drilling to characterize groundwater conditions would minimally impact soil and vegetation within the riverfront resource area and buffer zone, as the minimal number of borings would be limited to an area defined by the results of the test trenching activities.

Practicability of Characterization Alternatives

Characterization Alternative #1: No Action – This alternative would leave the potential impacts to riverfront and resource areas uncharacterized and would prevent compliance with the MCP, since oil associated with the tanks has previously been shown to have been released to soils on the adjacent Lot 183. This alternative is inconsistent with the goals of this project and does not protect the integrity of the nearby resource areas. This option is therefore not considered to be practicable.

Characterization Alternative #2: Impact Characterization Solely Using Drilling Methods – This alternative is practicable in that it would characterize soil impact within the riverfront resource area and 100 ft buffer zone. It presents an inefficient approach to characterizing the Site as drilling through an area filled with demolition debris is largely "hit or miss" and may not allow for the complete identification of preferential

migration pathways to nearby resource areas/receptors. It would also entail a relatively higher cost and level of labor than the advancement of test trenches followed by additional drilling activities.

Characterization Alternative #3: Impact Characterization Using Excavated Test Trenches with Subsequent Targeted Drilling – The advancement of test trenches and conducting targeted drilling would be the most effective and practicable alternative for the characterization of potential impacts associated with the tanks on Lot 209. It would be the most effective alternative for identifying preferential migration pathways and accurately identifying the limits and extents of impacted soil between the tanks and the river. Backhoes are agile and, should a pathway or other subsurface element be discovered, can "chase" environmental conditions of concern.

Given the minimal magnitude and temporary duration of impacts to the riverfront area and high potential for success, Alternative #3 is the preferred alternative for Impact Characterization activities.

Source Control Alternatives

Three alternatives were considered for controlling the remaining weathered oil in the northern tank.

- **Alternative #1: No Action:** This alternative would leave the USTs in place, including the remaining weathered oil and solids present in the northern tank.
- **Alternative #2: Oil Removal from Intact UST followed by Decommissioning of USTs**; this alternative would remove the remaining thick oil and solids from the north tank using Vactor trucks and confined space entry workers, followed by the removal or decommissioning of the concrete tank superstructures using heavy equipment.
- **Source Control Alternative #3: Oil Removal from UST during the Decommissioning of USTs** – This alternative would involve the removal of the concrete tank roof using a large excavator, the removal of debris and weathed from the north tank following stabilization through the addition of soil, and the subsequent removal or decommissioning of the concrete tank superstructure.

Potential Impacts to Resource Areas from Source Control Alternatives

Source Control Alternative #1: No Action – This alternative would not impact surface conditions in the riverfront resource area or buffer zone, but would not control the oil in the northern tank. The remaining oil could potentially migrate through the buffer zone into the riverfront resource areas through preferential pathways in the subsurface and potentially adversely impact conditions in the riverfront or river.

Source Control Alternative #2: Oil Removal from Intact UST followed by Decommissioning of USTs– This alternative would lead to limited impacts to vegetation and soil within the buffer zone as Vactor trucks are loaded with the remaining oil and debris from the north tank. The use of an excavator on vegetated portions of the buffer zone would result in moderate impacts and soil disturbance as the concrete tanks structure is broken. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the sedimentation of the river during storm events.

Source Control Alternative #3: Oil Removal from UST during the Decommissioning of USTs –This alternative would engender moderate impacts to the vegetated portions of the buffer zone adjacent to the tanks. The top of the concrete pad would be removed and fill would be placed into the north tank to solidify the remaining oil. The solidified material would be removed by an excavator and live loaded into trailer trucks for disposal. The excavator and trucks would disturb soils in this area. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the

sedimentation of the river during storm events. Piles of scrap concrete and soil would be placed outside of the buffer zone wherever possible. Soil stockpiles would be covered with tarps if not removed at the end of a working day.

Practicability of Characterization Alternatives

Source Control Alternative #1: No Action – This alternative is likely not practicable given that oil has previously been shown to have been released from the tanks. The selection of this alternative would not allow for the Site's compliance with the Massachusetts Contingency Plan (310 CMR 40), and the UST Regulation (310 CMR 80). The continued presence of the tanks on site over the long term would present serious safety concerns as they deteriorate over time.

Source Control Alternative #2: Oil Removal from Intact UST followed by Decommissioning of USTs– This alternative is practicable as it would remove both the NAPL source from the Site and prepare the northern tank to be decommissioned. It would, however, likely not prove to be cost effective given the high cost of mobilizing confined space entry crews for the removal of the oil in Vactor trucks and solidification and off-site disposal costs for the material.

Source Control Alternative #3: Oil Removal from UST during the Decommissioning of USTs – This alternative would likely be the most practicable and cost effective. It would allow the NAPL to be solidified in place using fill soils. The concrete tanks would be decommissioned and the tank graves would be filled shortly after. The work would be conducted safely from the surface using trucks and excavators, and would not require confined space entry into the tanks.

Source Control Alternative #3 is the most preferable option for removing the oil source given that it is likely to be the most cost effective option that would lead to an outcome consistent with the goals of the project and would have a greater footprint of disturbance within the buffer zone than the other feasible alternative.

Remediation Alternatives

- **Remedial Alternative #1: No Action / Institutional Controls -** This alternative would leave all NAPL and impacted soils in place. Under this approach, a risk characterization would be conducted and an Activity and Use Limitation (AUL) would likely be implemented to restrict future exposure scenarios.
- **Remedial Alternative #2: Limited Excavation with Institutional Controls -**This alternative would involve the excavation and removal of all the impacted soils where mobile LNAPL or soil impacts greater than MCP Upper Concentration Levels (UCLs) have been identified. A risk characterization would be conducted and an AUL would likely be implemented to restrict future exposure scenarios.
- **Remedial Alternative #3: Excavation with no Institutional Controls -** NAPL and impacted soils identified during characterization activities would be removed.
- **Remedial Alternative #4: Steam Enhanced Product Recovery (SEPR**) - A temporary remediation system would be installed to inject steam into the subsurface, which may allow NAPL present in site soils to be recovered. The recovered NAPL would be vacuumed into trucks for disposal.

Potential Impacts to Resource Areas from Remedial Alternatives

Remedial Alternative #1: No Action / Institutional Controls– This alternative would not involve any impacts to surficial portions of the resource areas, but would not address potential existing detrimental

impacts to the resource area. Free mobile NAPL potentially present in the subsurface may adversely impact wetland resources in the river.

Remedial Alternative #2: Limited Excavation with Institutional Controls – The limited excavation of mobile NAPL "hot spots" would disturb vegetation and soils in the buffer zone in relatively small areas. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the sedimentation of the river during storm events. Excavated buffer zone areas will be backfilled with imported clean soil.

Remedial Alternative #3: Excavation with No institutional Control –This alternative would extensively disturb soils within the buffer zone and riverfront area. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the sedimentation of the river during storm events. The excavated buffer zone area would be reconstructed and vegetated to match surrounding areas.

Remedial Alternative #4: Steam Enhanced Product Recovery (SEPR) – The mobilization of remedial equipment and drill rigs required to implement SEPR would disturb vegetation and expose soils in the buffer zone and riverfront area. Erosion controls, including the placement of silt fencing and hay wattles would be implemented along the wetland boundary to prevent the sedimentation of the river during storm events.

Practicability of Remedial Alternatives

Remedial Alternative #1: No Action / Institutional Controls – The provisions of the MCP require that the potential impacts associated with the weathered fuel oil be addressed. This alternative would only be feasible if risks to surrounding receptors are found to be not significant and all ongoing sources are controlled.

Remedial Alternative #2: Limited Excavation with Institutional Controls – Limited excavation of oil impact "hotspots" is likely the most practicable alternative. Advancing small excavations will reduce the source area(s) while limiting impacts to wetland resources and associated costs. Institutional controls would be emplaced to limit exposure to remaining contamination and would allow for the site to be reused without extensive resource area/buffer zone disturbance.

Remedial Alternative #3: Excavation and Off-Site Disposal of all identified Oil and Impacted Soil – The removal of all soils containing oil impacts would be feasible, though it may require extensive areas of excavation, groundwater management and costly rehabilitation of damaged resource areas/buffer zones.

Remedial Alternative #4: Steam Enhanced Product Recovery (SEPR) –This alterative requires mobilization and installation of temporary facilities for steam generation and product recovery. This alternative also requires close monitoring of field conditions throughout and following implementation to ensure that the NAPL recovery system is effectively controlling the off-Site migration. Field conditions may also require installation of hydraulic controls (i.e., groundwater depression, sheet piling). The high cost of implementation and confirmation of effectiveness of SEPR, and the ongoing disposal of recovered oil, which exceed the project budget, render this alternative impracticable.

If the potential risks associated with oil impacts remaining on-Site are shown to be significant, **Remedial Alternative # 2 is the preferred option** for limiting potential risks associated with exposures to oil and managing impacted soil on the Site. If institutional controls alone are demonstrated to be adequate to reduce potential risks to impacts remaining at the site, Alternative # 1 would be the preferred remedial approach.

IV. Stormwater Management

The Stormwater Management Standards listed in 310 CMR 10.05(6)(k-q) are applicable to projects that involve the creation of areas with impervious surfaces. This project will eventually lead to the replacement of impervious services on the surfaces of the underground tanks with permeable fill soil surfaces. Most of the standards do not directly address conditions that will be associated with this project. A brief summary of the standards and their applicability to the project is presented below:

1.) **No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.** This project will not involve the installation of stormwater conveyances.

2.) **Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.** No stormwater management systems will be designed as part of this project.

3.) Loss of annual recharge to ground water shall be eliminated or minimized. This project will incrementally increase recharge to groundwater as impervious surfaces above the tanks are replaced with fill soil.

4.) **Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).** No stormwater management systems will be designed as part of this project.

5.) For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. Source control and pollution prevention measures will be implemented to the maximum practicable extent

6.) Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices. This project will not involve any new stormwater discharges. Erosion control best management practices (BMP) will be implemented.

7.) A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable. No redevelopment is planned during this project.

8.) **A plan to control construction related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation and pollution prevention plan) shall be developed and implemented.** Construction stormwater control BMPs will be implemented and maintained throughout the project duration, including the placement of silt fence and hay wattles prior to soil disturbance. Any soil stockpiles present on site will be covered overnight or during rain events.

9.) **A long-term operation and maintenance plan shall be developed and implemented to ensure that the stormwater management system functions as designed.** A long term operation and maintenance plans will not be required as no new stormwater conveyances will be installed.

10.) **All illicit discharges to the stormwater management system are prohibited.** The proposed project will not create discharges to stormwater management systems.

Figures

Copies of Deeds

Abutters List and Notification Letter

Wetland Delineation Methodology