REVISED
REMEDIAL ACTION WORK PLAN
FOR SOIL

FORMER TIMEX FACILITY
LITTLE ROCK, ARKANSAS

Prepared for:

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Title

LIST OF ACRONYMS

°F	degrees Fahrenheit
1,1,1-TCA	1,1,1-Trichloroethane
ADEQ	Arkansas Department of Environmental Quality
Airport	Little Rock National Airport
CAO	Consent Administrative Order
COPCs	contaminants of potential concern
ft	feet/foot
ft^2	square-feet/foot
ft/day	feet per day
ft/year	feet per year
FTN	FTN Associates, Ltd.
FSP	*Field SamplingPlan*
ISCO	in situ chemical oxidation
MDL	method detection limit
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
PID	photo-ionization detector
ppm	parts per million
RAA	Remedial Alternative Analysis
RADD	*Remedial Action Decision Document*
RAL	Remedial Action Level
SESC	Soil Erosion and Sediment Control
Site	Former Timex facility, 2215 Crisp Drive, Little Rock, Arkansas
Soil RAWP	Remedial Action Work Plan for Soil
TCE	trichloroethylene
Timex	Timex Group USA
VOC	volatile organic compound
yd^3	cubic yards

SECTION 1

INTRODUCTION

1. INTRODUCTION

Weston Solutions, Inc. has prepared this Remedial Action Work Plan for Soil (Soil RAWP) on behalf of the Timex Group USA (Timex) for the former Timex facility previously located at 2215 Crisp Drive in Little Rock, Arkansas. This Work Plan was prepared to satisfy the requirements of the First Amendment to Consent Administrative Order (CAO) LIS-04-206 between Timex and the Arkansas Department of Environmental Quality (ADEQ).

In August 2011, Timex completed a Remedial Alternative Analysis (RAA) that evaluated various remediation technologies to address soil and groundwater contamination associated with the Site. The RAA recommended excavation and off-site disposal of source area soils and treatment of shallow groundwater using in situ chemical oxidation (ISCO). These technologies would be combined with institutional controls and monitored natural attenuation (MNA) to mitigate potential future exposures and ultimately return the groundwater to productive use, respectively. The RAA was accepted by ADEQ and they subsequently issued a *Remedial Action Decision Document* (*RADD*) that described the approved remedy. The *RADD* was issued for public comment on 20 January 2014 and finalized on 27 February 2014 (ADEQ, 2014). Contemporaneously, Timex and ADEQ agreed upon on an Amendment to the CAO that specifies the selected remedy and lists required milestones. The CAO requires that a Remedial Action Work Plan be submitted that provides for active soil remediation consisting of excavation and off-site disposal of unsaturated soils exceeding the approved soil Remedial Action Level (RAL) of 0.78 milligrams per kilogram (mg/kg) of trichloroethylene (TCE).

This Soil RAWP describes the tasks that will be performed to excavate unsaturated soils exceeding the soil RAL, off-site disposal options, confirmation sampling, excavation backfill, and utility restoration. A schedule for implementing the work is also included.

SECTION 2

SITE DESCRIPTION AND BACKGROUND

2. SITE DESCRIPTION AND BACKGROUND

For the purposes of the remedial action, the "Site" is considered to be the former Timex facility located at 2215 Crisp Drive in Little Rock, Arkansas, as well as all contiguous property owned by the Little Rock National Airport Authority (Airport). Figure 1 shows the approximate location of the Site. The 9-acre former Timex parcel is zoned as light industrial (I-2) and is currently a fenced vacant lot partially covered by aged asphalt and grassy vegetation (Figure 2). Land uses in the vicinity of the Site include vacant land, Civil Air Patrol and Army Reserve facilities, aircraft support services, and light industrial operations. A residential neighborhood of small single-family homes is located about 700 feet (ft) north of the former Timex parcel.

The subject property is owned by the Airport and was formerly leased to Timex. Timex historically manufactured watches, clocks, and cameras at the Site between 1947 and August 2000, when operations ceased and all products were removed. The Airport demolished the vacant 225,000 square-foot (ft^2) historical split-level manufacturing building in January 2005. Prior to 1947, the Site had been used for the storage and assembly of aircraft engines and for cotton storage.

Manufacturing processes formerly conducted by Timex at the Site included cutting, stamping, grinding, sanding, and plating metal and aluminum watch bezels and case backs, as well as injection molding of plastic watch cases. Various metals including copper, chromium, nickel, and gold were used in the metal plating processes. Oils and industrial solvents were used in the various metal working processes.

Prior to discontinuation of manufacturing operations, the Airport conducted a Phase I Environmental Site Assessment. A Phase II investigation conducted jointly by Timex and the Airport discovered that past operations involving chlorinated solvents had affected groundwater quality beneath the property and recommended that further investigation be conducted to define the source and extent of the impact. As a result, Timex entered into a CAO for voluntary action with ADEQ on 28 December 2004. The CAO required that Timex submit a *Site Investigation Report* and a RAA. The *Site Investigation Report* was submitted on 23 August 2007 by FTN Associates Ltd. (FTN), and was conditionally approved by ADEQ in a letter dated 2 December 2008. Additional documents detailing subsequent investigations conducted in an effort to respond to the ADEQ conditions presented in the approval letter have since been submitted.

Following completion of the site investigation, a RAA was performed to evaluate remedial options in accordance with the second requirement of the CAO. The RAA recommended a remedial approach that consisted of a combination of active remediation, institutional controls, and MNA. The active remediation would consist of excavation and off-site disposal of source area soils and ISCO treatment of contamination within the shallow aquifer. The RAA describes the remedy that formed the basis of the *Final RADD* issued on 27 February 2014.

2.1 HYDROGEOLOGIC SETTING

The Site is relatively flat and located about 255 ft above mean sea level. Surface/storm water drainage is primarily to the west through shallow, unlined storm drains, and ditches that discharge to a larger ditch along Bond Avenue that is part of the City of Little Rock drainage system. Flow within the larger ditch continues south for approximately 1 mile and enters Fourche Creek, which discharges to the Arkansas River approximately 0.9 mile north of the Site (FTN, 2007a).

2.1.1 Geology

Regional geology is characterized by 75 to 100 ft of Quaternary alluvium overlying older, more consolidated, Tertiary deposits of the Wilcox and Midway Groups. The Quaternary alluvium is a relatively thick sequence of fluvial deposits from the Arkansas and Mississippi Rivers and their tributaries that is composed primarily of sand, silt, and clay. These deposits make up the Surficial Alluvial Aquifer System.

Based on information gathered during previous investigations (FTN, 2007b), site geology is characterized by a surficial silt and clay unit overlying two predominate sand layers separated by a confining clay unit. The units are summarized below in descending order from the ground surface.

- **Surficial Silt and Clay:** A sequence of interbedded sandy silts and clays extending from approximately 2 to 13 ft below the ground surface. Thin discontinuous silty sand lenses are also present and may be associated with paleo channels. A silty clay or clay layer 2 to 4 ft thick typically marks the base of this unit (also sometimes referred to as the "upper clay").

- **Shallow Sand**: This unit ranges in thickness from 3 to 14 ft and consists of reddish brown to brown silty sands and sandy silts.
- **Confining Clay**: The shallow sand unit is underlain by a reddish-brown to brown clay that is approximately 14 to 22 ft thick.
- **Intermediate Sand**: The intermediate sand layer, which has a thickness ranging from 3.5 to 6 ft, is located within the confining clay unit described above and consists of silt, silty sand, and poorly sorted sands. This layer is discontinuous across the Site and may represent a paleo channel deposit.
- **Deep Sand**: The deep sand unit is poorly graded fine to medium-grained, loose sand with a silty sand interval directly below the overlying clay stratum. This unit is about 35 ft thick and extends to a depth of roughly 60 or 65 ft below grade, where it rests unconformably on the more consolidated Tertiary age deposits.

2.1.2 Hydrogeology

Two distinct hydrostratigraphic zones have been identified at the Site; the shallow sand aquifer and the deep sand aquifer.

The shallow sand aquifer corresponds to the shallow sand unit described above. Hydrogeologic conditions within the shallow sand aquifer in and around the Site vary from being completely saturated and partially confined (south) to unsaturated (north). Groundwater flow within this unit is predominantly north and northeast toward the Arkansas River, although there is a minor westward component towards Bond Avenue that is likely related to a paleo stream channel. Groundwater level measurements indicate that groundwater in the vicinity of the Site is present at depths ranging from between 5 to 17 ft below grade. An average site-wide hydraulic gradient of 0.0064 was calculated for the shallow sand aquifer. Hydraulic conductivity estimates for the shallow sand, based on slug tests performed on monitoring wells, average 2 to 4 feet per day (ft/day). The calculated seepage velocity for the shallow sand aquifer was about 25 feet per year (ft/year). Based on the limited saturated thickness and hydraulic conductivity of this zone, it is not considered a viable source of groundwater for economic uses. A well search conducted by FTN did not document any current use of the shallow groundwater.

The deep sand aquifer corresponds to the deep sand layer and is confined in all areas of the Site. Groundwater flow in the deep sand aquifer is to the northeast towards the Arkansas River, which is the regional groundwater discharge point. Potentiometric surface levels within the deep sand aquifer rise to within about 14 to 18 ft of the ground surface. An average site-wide hydraulic gradient of 0.00067 was calculated for the deep sand aquifer. Hydraulic conductivity estimates for the deep sand, based on slug tests performed on monitoring wells, average 115 to 175 ft/day. The calculated seepage velocity for the deep sand aquifer was about 150 ft/year. The greater saturated thickness (35 ft) and hydraulic conductivity of this zone suggests that it could be used as a water source, although municipal water is available at the Site and all surrounding areas. A well search performed by FTN confirmed two nearby industrial supply wells (Little Rock Crate and Basket and the former Northwest Hardwoods) screened in the deep sand, but four other wells listed in online databases could not be located and are presumed to no longer be in operation.

Groundwater elevation monitoring has suggested that there is some hydraulic communication between the two groundwater zones. Vertical hydraulic gradients between the shallow and deep sand aquifer are strongly downward, with groundwater potentiometric surface elevation differences between the two units ranging from about 6 to 9 ft in the vicinity of the Site. The vertical gradient remains downward northeast (downgradient) of the Site; but the differences in potentiometric elevations between the two aquifers decreases as you move away from the Site (FTN, 2007b).

2.2 NATURE AND EXTENT OF SOIL CONTAMINATION

Investigation of environmental conditions has been ongoing at the Site for the last 10 years. Hundreds of samples of various environmental media (including soil, groundwater, surface water, sediment, and indoor air) have been collected and analyzed for potential site contaminants. The investigations have shown that some industrial solvents and their breakdown products are present in the environment as a result of manufacturing operations at the facility. Some of these compounds have migrated downgradient and extend off the former Timex property to the west, north, and east. Two suspected source areas were identified: a former plating room/effluent treatment plant area within the footprint of the former manufacturing building, and a storm drain located near the northwest corner of the former building.

The RADD identifies the chemicals of potential concern (COPCs) for soil at the Site as:

- 1,1,1-Trichloroethane (1,1,1-TCA)
- 1,1-Dichloroethane
- TCE
- 1,1-Dichloroethene
- Cis-1,2-dichloroethene

The COPCs for soil were identified largely due to the risk to degrade groundwater quality. The majority of samples containing elevated concentrations of COPCs were collected from within the capillary zone or saturated zone, indicating the observed contamination is associated with groundwater and not a soil release. Unsaturated zone impacts were identified beneath the west end of the storm drain that runs along the north side of the former building and at MW-10, which is located within the footprint of the building beneath the former plating room/effluent treatment plant.

2.3 SELECTED REMEDIAL ALTERNATIVE FOR SOIL

As mentioned above, Timex completed a comprehensive RAA that screened 24 different remedial technologies, of which 10 were determined to be potentially applicable to the Site. The ten applicable technologies were used to develop four remedial action alternatives, which were then evaluated against nine performance criteria. Based on this evaluation, ADEQ selected the approved remedy for the Site that is described in the *Final RADD*.

The approved remedy includes the application of institutional controls that will limit site use to industrial activities and prevent the use of shallow and deep groundwater on-site and off-site within the area affected by the groundwater contamination.

Active soil remediation consisting of excavation and off-site disposal of unsaturated soils exceeding the RAL of 0.78 mg/kg of TCE will be performed to mitigate potential vapor intrusion risk to future industrial workers.

SECTION 3

SOIL REMEDIAL ACTION

3. SOIL REMEDIAL ACTION

The soil remedial action will consist of excavation of all unsaturated soils exceeding the RAL of 0.78 mg/kg of TCE, off-site disposal of excavated soil, sidewall and bottom confirmation soil sampling to verify compliance, restoration of impacted utilities, backfill with clean soil, surface restoration, and reporting.

Based on soil samples collected during the Site Investigation, soils exceeding the RAL are limited to a narrow zone adjacent to the existing storm drain located north of the former Timex building and a small area related to a former plating room/effluent treatment plant area within the former building footprint (near existing monitoring well MW-10S). Based on the distribution of soil contamination in those two areas, the source appears to have been historical releases into a catch basin connected to the storm drain and a floor drain associated with the former plating room/effluent treatment plant.

The estimated extent of impacted soils requiring removal is shown on Figure 3. It is estimated that up to 2,800 cubic yards (yd^3) of soil may exceed the RAL and require removal and off-site disposal from the two areas. The impacted soils extend from just below the ground surface to a depth of between 8 and 10 ft, coincident with the shallow groundwater saturated zone in that area.

3.1 SITE ACCESS

The two excavation areas are both wholly-located on property owned by the Airport. Timex has a signed Access Agreement in place with the Airport that includes performance of this soil remediation work.

3.2 PERMITS

The soil remediation will require an excavation permit from the City of Little Rock. That permit will likely include a Soil Erosion and Sediment Control (SESC) Plan. A copy of the SESC Plan will be provided to ADEQ’s Hazardous Waste and Water Divisions prior to the start of excavation activities.

The SESC will describe the methods to be used to control erosion of soil from the work areas during remediation. Temporary SESC measures will be implemented for the duration of the work and will include hay bales and silt fence to intercept sediment flow from disturbed areas and soil stockpiles. The silt fence will be composed of geotextile fabric pulled tightly across supporting posts. The bottom of the silt fence will be keyed at least 3 inches into the underlying soil to prevent underflow. Hay bales will be installed around catch basin inlets to prevent sediment discharge. Stockpiled soils will be placed on and covered by polyethylene sheeting to prevent erosion and sediment generation. Hay bales will be placed around stockpiles to prevent sediment migration as a backup to the polyethylene cover.

3.3 SITE CONTROL

The former Timex property is fully contained by a 6-ft security fence. However, the western extent of the soil excavation will extend beyond the current fence, across an alley, and into a parking area both of which are owned by the Airport. Temporary construction fencing will be used to extend the existing permanent fence across the alley west of the former Timex property and around the work area to restrict off-hours access.

It is anticipated that the alley that extends southward from Crisp Drive along the western boundary of the former Timex property will be closed to public traffic for the duration of the project. Because this is a dead-end alley that is controlled by the Airport and receives almost no daily traffic, this temporary closure will not adversely impact any local businesses or residents.

3.4 SITE PREPARATON

Prior to beginning excavation of contaminated soils, the planned excavation areas will be marked in the field and Arkansas One Call will be contacted to mark subsurface utilities. The Airport, Central Arkansas Water, and City of Little Rock will also be directly contacted and asked to mark out any subsurface utilities that they are aware of that might not be covered by Arkansas One Call.

The SESC measures will be installed in accordance with the approved SESC Plan and the site control features (alley closure and temporary security fencing) will be erected. An equipment decontamination pad will be constructed as described in Subsection 3.10.

3.5 MONITORING WELL ABANDONMENT AND REPLACEMENT

Seven existing monitoring wells are located in close proximity to the proposed soil remediation area. These seven wells are shown on Figure 2 and include:

MW-4	MW-10S	MW-18S
MW-14	MW-10D	MW-18D
MW-15		

To avoid damage to these wells during the excavation work, they will be properly abandoned prior to beginning the excavation. The abandonment will be performed by a state-licensed driller in accordance with ADEQ Hazardous Waste Division Interim Policy No. HW-002, PRCR 96-04. Upon completion of the soil remediation, and restoration of the area, the wells will be reinstalled in approximately the same locations and using the same construction specifications (depth, screen interval, etc.). The replacement monitoring wells will be installed and developed using the methods described in the ADEQ-approved *Field Sampling Plan* for this Site (FTN, 2004). After installation, the replacement wells will be developed and then surveyed for location and measuring point elevation. It is anticipated that soil cuttings from the monitoring well installation will be included with the remediation soils for off-site disposal. If not, then the soil cuttings will be containerized in 55-gallon drums, characterized, and disposed separately. Development water will be containerized in 55-gallon drums, sampled for waste characterization, and disposed off-site at an appropriate facility.

3.6 SOIL EXCAVATION

Excavation of impacted soils will be performed using a track-mounted excavator or similar equipment. In areas where asphalt pavement exists at the surface, the pavement will be removed and stockpiled separately for off-site disposal or recycling. Soils will be removed using the excavator bucket and field-screened for contamination using a portable Photo-Ionization Detector (PID). Two different PIDs will be used during the soil removal. The PID used for the soil removal in the 1,1,1-TCA source area (near MW-10S) will be equipped with a 11.7-eV lamp to enable detection of the chlorinated ethanes in that area. The PID used for the larger TCE source area (along the storm drain) will be equipped with a 10.6-eV lamp capable of detecting the chlorinated ethenes driving that excavation.

Because the field screening is used only as a guide and all project decisions (the need for additional excavation and waste disposal options) will be based on laboratory analytical results, only occasional screening of the excavated soil is needed. The frequency of screening during the excavation work will be based on visual and olfactory observations by the Construction Oversight Manager and equipment operator, and on the conceptual site model. The current conceptual site model for the TCE source area is that the solvents were likely released into the catch basins and moved along the storm drains, eventually leaking out into the soil (and ultimately the groundwater) through joints in the pipes and/or the bottom of the catch basins. This would mean that the soil located above the storm drain may not be significantly impacted by site contamination and could possibly be clean. Conversely, the soil just above, around, and especially below the storm drain and catch basins is likely to be highly contaminated. For the 1,1,1-TCA source area, the release was believed to have been from a floor drain so the soil contamination there is expected to begin close to the surface.

Field screening will be performed on a more frequent basis initially as the site personnel develop an understanding for the distribution and migration pathways of the contamination (confirm or revise the conceptual site model). For example, soil from 5 of the first 10 buckets of soil may be screened to assess whether there may be unanticipated shallow contamination. If the initial readings confirm that the results are at or close to background, then the frequency would be substantially reduced to something like 1 in 10 buckets until the excavation is advanced several feet, at which point the process would be repeated. Any visual or olfactory indications of contamination would result in an immediate increase in screening frequency, as would discovery of any buried utilities or structures. A higher frequency of screening would be used when significant contamination is encountered to help with segregation of soils.

The PID screening will be performed in two different ways depending upon which of the two objectives is desired. When screening to segregate soil for disposal/reuse, the screening will consist of slowly moving the intake tube of the PID over the surface of the soil. Small holes may be made in the soil by hand and the PID intake tube inserted into the hole to reduce dilution from ambient air. When performing PID screening to assess whether further excavation is required or whether confirmation soil samples should be collected, a small sample of soil will be obtained from the bucket, placed in a self-sealing plastic bag, and allowed to warm to ambient temperature. If the ambient temperature is less than 50 degrees Fahrenheit (°F), the bag will be place in a vehicle and allowed to warm to at least 70°F. Once the soil has been warmed, the bag will be opened slightly to allow the intake tube of the PID to be slipped inside and the headspace in the bag will be tested and the result recorded.

Excavated soils will either be placed directly into a dump truck and transported to a soil staging area, or temporarily stockpiled adjacent to the excavation and periodically loaded into a dump truck with a loader for transportation to the soil staging area, depending on Contractor preference. Soil will be segregated based on the field screening results as described more fully in Subsection 3.8. Soil stockpiles will be located in either the parking lot located at the north end of the former Timex property or on the Airport parcel located west of the former Timex property based on contractor and/or Airport preference or other site constraints. The excavation will be advanced until the PID readings suggest that contaminated soils exceeding the RAL have been removed, or when the groundwater is encountered. Based on water levels measured in monitoring wells located in this area, shallow groundwater is expected at between 8 and 10 ft below the existing grade. Because excavation of soils below the water table is not required, dewatering will not be needed. Side slopes on the excavation will be maintained at a safe level as determined by a Competent Person as defined by the Occupational Safety and Health Administration Regulations for Construction (29 Code of Federal Regulation 1926).

It is anticipated that the most highly-contaminated soil will be located within the bedding of the existing storm water system and that removal of a section of the storm drain and several catch basins will be required. Before a catch basin is removed, it will be examined to determine if any standing water is present. If standing water is observed, it will be pumped into holding containers (55-gallon drums or similar) before the basin is removed. The stored water will be tested for volatile organic compounds (VOCs) and properly disposed off-site, if required based on the sample results. Stored water having no VOCs [i.e., no VOCs are detected at concentrations above the method detection limit (MDL)] will be discharged to the ground surface on the former Timex lease property at a rate that will not erode the soil surface or cause large (greater than 10 ft diameter) ponded areas. The MDL for the VOC analysis used to determine whether the water from the catch basin is suitable for on-site discharge or requires off-site disposal will be consistent with the ADEQ-approved 2004 *Field Sampling Plan* (*FSP*). Timex will properly dispose of all water containing detectable concentrations of VOCs at an authorized off-site disposal facility. The drain line leading into the catch basin to be removed will be plugged to prevent water from flowing into the excavation. Because the storm water system impacted by the remediation activities only drains the former Timex parking area, limited runoff is expected and can be pumped around the excavation during rain events if needed to prevent flooding. Once the remediation work is completed, the storm drain will be restored as required by the Airport and/or the City.

The excavation will remain open until the results of confirmation soil samples are received from the laboratory (see Subsection 3.7), indicating that further excavation is not required. In order to prevent storm water from entering the excavation, a 2-ft tall by 2-ft wide soil diversion berm will be constructed on the upslope sides of the excavation area to minimize storm water run-on into the excavation. Imported clean soil will be used to construct the berms. Upon receipt of laboratory results from confirmation soil samples documenting that the soil excavation is complete, this imported clean soil will be used for backfill.

3.7 CONFIRMATION SOIL SAMPLING

Upon completion of the excavation, confirmation soil samples will be collected from the sidewalls and bottom of the excavation. The confirmatory soil samples will be analyzed for VOCs to ensure that all soils exceeding the RAL of 0.78 mg/kg TCE have been removed. Confirmatory soil samples will be collected for every 50 linear feet of sidewall (approximately every 500 ft^2). Bottom samples will be collected at a frequency of 1 per 500 ft^2 whether or not the excavation extends down to the groundwater. All samples will be analyzed at a state-certified analytical laboratory using U.S. Environmental Protection Agency Method 8260B.

Exact soil sample locations will be determined in the field based upon the size and shape of the excavation and will be biased towards areas with higher PID screening results so that they reflect worst-case locations. Soil samples will be collected directly from the excavation sidewalls providing that it is safe for the sampler to do so. If it is deemed unsafe to collect samples due to sidewall instability, the samples may be collected from the excavator bucket. In that case, the sampler will direct the excavator operator where the soil sample is desired and assist him/her in maneuvering the bucket to the correct location with hand and verbal instructions. Once in position, the operator will move the bucket such that a small amount of soil is dislodged from the sidewall or bottom onto the teeth and very front of the bucket. The bucket will be removed from the excavation and lowered to where the sampler can easily access the soil. The sampler will collect the soil from the teeth of the bucket and place it into the appropriate laboratory-supplied bottles.

If it is determined that soils with TCE concentrations above the RAL remain, additional soil will be excavated from that area of the failed sample and a second sample will be collected. This process will continue until all remaining soils are below the RAL.

3.8 SOIL HANDLING AND OFF-SITE DISPOSAL

As mentioned above, soil removed from the excavation will be field-screened for VOCs, and transported to a staging area. More-highly contaminated soils [those that are visibly contaminated or have PID screening results above 200 parts per million (ppm)] will be kept in separate stockpiles. Lesser-contaminated soils (those with PID results above background but less than 200 ppm) will be segregated from presumed clean soils (PID readings at or below background). All soil stockpiles will be equipped with run-on and run-off controls in accordance with the SESC Plan approved by the City. The erosion and sediment control measures will include hay bales and/or silt fencing around the stockpiles. All stockpiles will be kept covered with polyethylene sheeting weighted down with sandbags or equivalent unless they are being actively worked.

All stockpiled soil will be sampled for VOCs to determine whether it requires off-site disposal (i.e., contains VOCs above the laboratory reporting limit) or may be reused. Soils with VOCs above the reporting limit will be sampled for waste characterization analyses to determine the most suitable off-site disposal facility. The waste characterization sampling will comply with the frequency and analytical parameters required by the receiving disposal facility. Representative waste characterization samples will be collected from each discrete stockpile of soil. Sampling will follow procedures in American Society for Testing and Material D6009, Standard Guide for Sampling Waste Piles. The collection of all stockpile soil samples will be documented in the field log book. It is estimated that 2,800 yd^3 of soil will be stockpiled. Representative soil samples will be collected for laboratory analysis at the frequency required by the licensed disposal facility, which is expected to be approximately 1 per 100 yd^3 of excavated material. The volume of each individual soil pile will be estimated and divided by five. If the result is not a whole number, it will be rounded up to the next whole number. Sampling points will be evenly distributed throughout the entire surface area of the stockpile, and samples will be collected from between 6 and 12 inches below the surface of the pile. Samples collected for VOC analysis will be collected as grab samples, and samples collected for any other parameter required by the disposal facility will be composite samples. A disposable spoon will be used for sample collection. The VOC samples will be collected by first screening the soil at each composite sampling point using a PID equipped with either a 10.6-eV or 11.7-eV lamp (depending on the source area the soil came from) by placing soil in a self-sealing bag, allowing it to warm to ambient temperature, and then testing the air in the bag with the PID. The soil sample for laboratory analysis will then be collected directly into a laboratory-provided sample container from the sampling point that had the highest level of contamination as determined by field screening and submitted to the laboratory for analysis. Composite samples for non-VOC analysis will be homogenized in disposable aluminum pans, and the homogenized sample will then be transferred into the appropriate container for laboratory analysis. Waste characterization samples will be analyzed by the state-certified analytical laboratory. Once the soil has been characterized and accepted for disposal, the material will be loaded onto trucks, covered, and transported under a Bill of Lading or Uniform Hazardous Waste Manifest as required, to the selected disposal facility.

3.9 BACKFILL AND RESTORATION

Upon determination that soil removal is complete (i.e., all soils exceeding the RAL of 0.78 mg/kg TCE have been removed based on the confirmation sample results), the excavation will be backfilled with a combination of reused clean soil from on-site and imported clean fill, and the storm drain system will be restored. Soils that were originally removed and characterized as clean based on the sampling protocol discussed in Subsection 3.8 (discrete VOC samples collected at a frequency of 1 per 100 cy selected based on the highest field screening result) will be used as backfill material. Additional material used for backfill will be obtained from a clean, off-site source, this will include the imported clean soil used for soil erosion control measures (i.e., run-on berms). Backfilled material will be compacted using the excavator bucket in approximately 18-inch lifts back to the pre-existing grade. Final surface restoration will be negotiated with the Airport.

3.10 DECONTAMINATION PROCEDURES

Soil excavation and transportation equipment (dump trucks, etc.) will be decontaminated once handling of contaminated soil is completed and before handling of clean backfill material. Decontamination will consist of physically removing residual contaminated soil from the equipment using steam cleaning/pressure washing methods. A temporary decontamination pad will be constructed using dimensional lumber and polyethylene sheeting (see Figure 3 for the approximate location). Decontamination fluids will be collected and containerized for characterization and off-site disposal if required.

Decontamination fluids will be collected and containerized for characterization and off-site disposal. Stored water having no VOCs (i.e., no VOCs are detected at concentrations above the MDL) will be discharged to the ground surface on the former Timex lease property at a rate that will not erode the soil surface or cause large (greater than 10 ft diameter) ponded areas. The MDL for the VOC analysis used to determine whether the decontamination fluids are suitable for on-site discharge or require off-site disposal will be consistent with the ADEQ-approved 2004 *FSP*. Timex will properly dispose of all other decontamination water (with any detection above the laboratory detection limit) at an authorized off-site disposal facility.

3.11 REPORTING

The soil remediation activities will be documented in a Soil Remediation Report. The report will include a description of the soil excavation activities, including dates and photographs. A surveyed site plan will be included that shows the lateral limits and depths of the excavation and locations of confirmation samples. A summary table with the confirmation sample results will also be included. Soil disposal records including copies of Bills of Lading and disposal certificates from the receiving facility will be provided as an attachment. All laboratory reports, abandonment reports for the removed monitoring wells, and well construction/installation logs for the replacement monitoring wells will be provided.

SECTION 4

SCHEDULE

4. SCHEDULE

The remediation described in this Soil RAWP must be coordinated with groundwater monitoring and ISCO treatability testing that is also being performed at the Site. As a result, the soil remediation will be conducted after the baseline groundwater monitoring has been implemented, the soil samples for the ISCO treatability test have been collected, and the pilot injection tests are completed. This sequence represents the most efficient method of implementing all the phases of work because while the baseline monitoring and ISCO pilot tests are being conducted, Timex will be able to procure the contractor for the excavation work and obtain all of the required permits. Then while the soil excavation is being performed, the results of the ISCO treatability tests will be evaluated and the full-scale ISCO design can be developed. Ideally, we will be ready to begin the groundwater remediation shortly after the soil remediation is completed.

The soil remediation will be initiated once the baseline groundwater monitoring and ISCO pilot testing is completed. The anticipated duration for each task once the remediation has been initiated is provided below:

- Monitoring Well Abandonment — 1 week
- Site Preparation — 2 weeks
- Excavation — 4 weeks
- Off-Site Soil Disposal — 4 weeks
- Backfill and Storm Drain Replacement — 4 weeks
- Site Restoration — 2 weeks
- Monitoring Well Installation — 1 week
- Report Preparation — 4 weeks

A graphic schedule is included as Figure 4. In total, the soil remediation will be completed within 9 months of ADEQ approval of this Soil RAWP.

SECTION 5

REFERENCES

5. REFERENCES

ADEQ (Arkansas Department of Environmental Quality). 2014. *Response to Comments and Final Decision on the Remedial Action Decision Document (RADD), Former Timex Property, AFIN 60-00120, Little Rock, Pulaski County, Arkansas.* February.

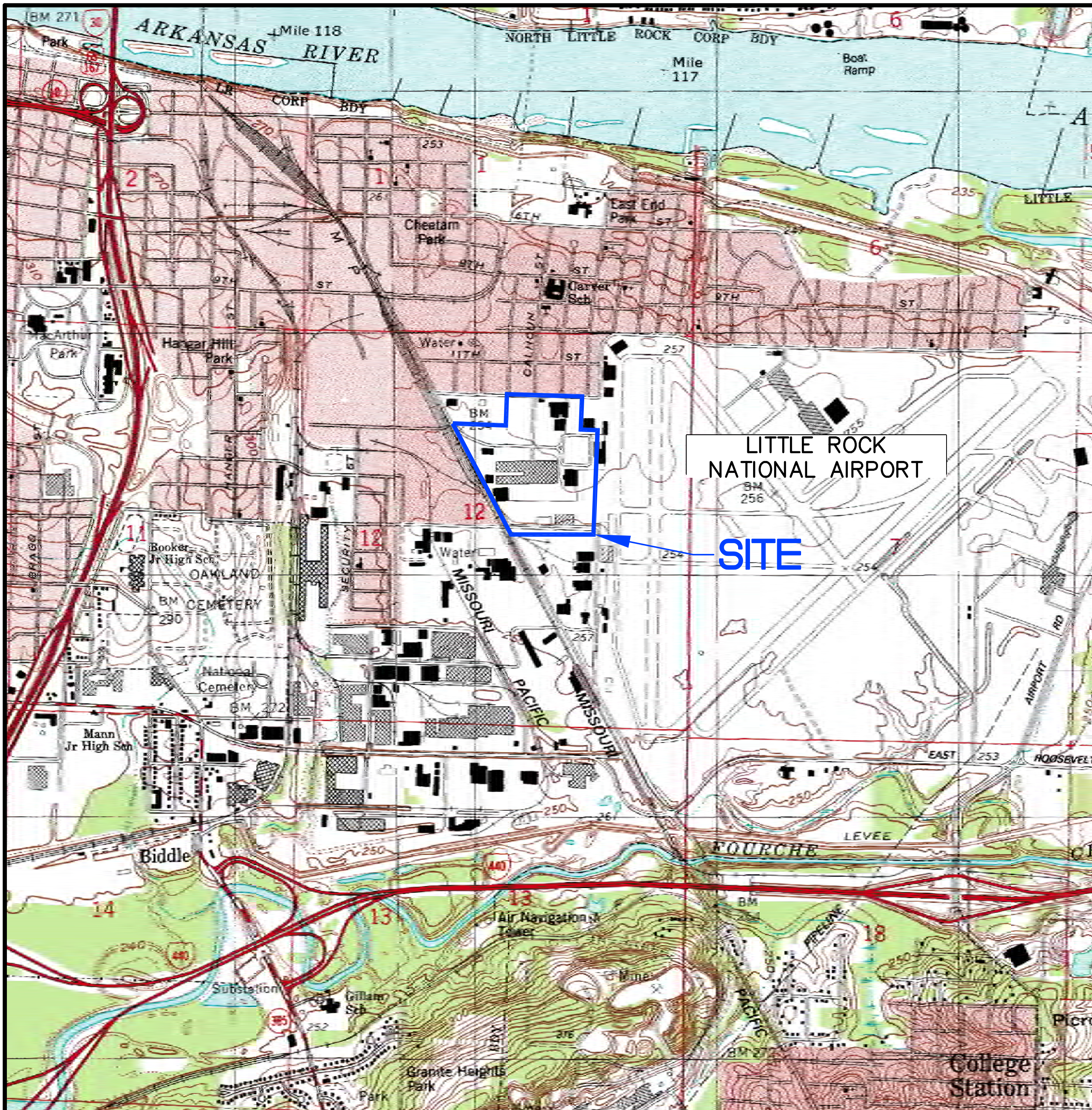
FTN (FTN Associates, Ltd). 2004. *Field Sampling Plan, Former Timex Facility, Little Rock Arkansas*. June.

FTN. 2007a. *Additional Investigation Summary Memorandum, Former Timex Facility, Little Rock Arkansas*. 6 March.

FTN. 2007b. *Site Investigation Report, Former Timex Facility, Little Rock Arkansas*. 23 August.

Weston Solutions, Inc. 2011. *Remedial Alternatives Analysis, Former Timex Facility, Little Rock, Arkansas*. August.

FIGURES



SOURCE:
USGS SWEET HOME QUADRANGLE AND LITTLE ROCK QUADRANGLE, ARKANSAS, 7.5 MINUTE SERIES TYPOGRAPHIC, 1986.

GRAPHIC SCALE

2000 1000 0 1000 2000

APPROXIMATE SCALE IN FEET

SITE LOCATION MAP

CONCORD NEW HAMPSHIRE

FORMER TIMEX FACILITY
LITTLE ROCK NATIONAL AIRPORT
LITTLE ROCK, ARKANSAS

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
TAC	SEPT 2014			13568.004.001
CHECKED	DATE	SCALE	REVISION	FIGURE NO.
		AS SHOWN		1

LEGEND

MW-09	MONITORING WELL
	PROPERTY FORMERLY LEASED BY TIMEX
	SITE BOUNDARY

GRAPHIC SCALE

300 150 0 150 300

APPROXIMATE SCALE IN FEET

SOURCE:
PLAN DERIVED FROM PLAN ENTITLED "FORMER TIMEX FACILITY, LITTLE ROCK NATIONAL AIRPORT, LITTLE ROCK, ARKANSAS, BASE MAP", BY FTN ASSOC. LTD., SCALE: 1"=100', DATED: 08/25/2008. PLAN UPDATED BASED ON AERIAL IMAGERY FROM GOOGLE EARTH, DATED 2/20/2012.

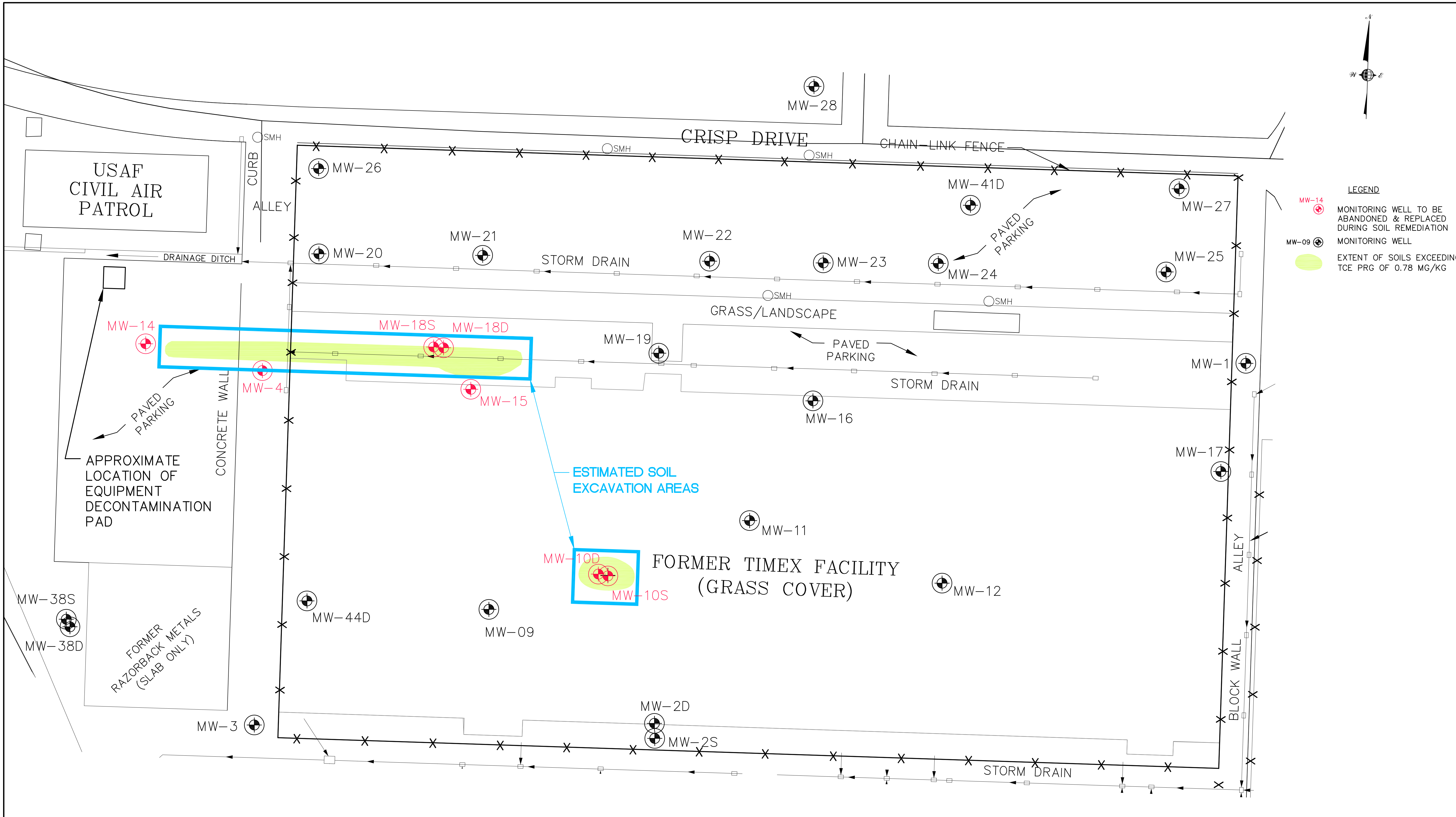
WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

FORMER TIMEX FACILITY
LITTLE ROCK NATIONAL AIRPORT
LITTLE ROCK, ARKANSAS

SITE PLAN

DRAWN	DATE	DES. ENG.	DATE	W.O. NO.
TAC	SEPT 2014			13568.004.001
CHECKED	DATE	SCALE AS SHOWN	REVISION	FIGURE NO. 2



SOURCE
PLAN DERIVED FROM PLAN ENTITLED "FORMER TIMEX FACILITY, LITTLE ROCK NATIONAL AIRPORT, LITTLE ROCK, ARKANSAS, BASE MAP", BY FTN ASSOC. LTD., SCALE: 1"=100', DATED: 08/25/2008.

FORMER TIMEX FACILITY
LITTLE ROCK NATIONAL AIRPORT
LITTLE ROCK, ARKANSAS

WESTON SOLUTIONS

CONCORD NEW HAMPSHIRE

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION

CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED		ISSUED FOR	DATE

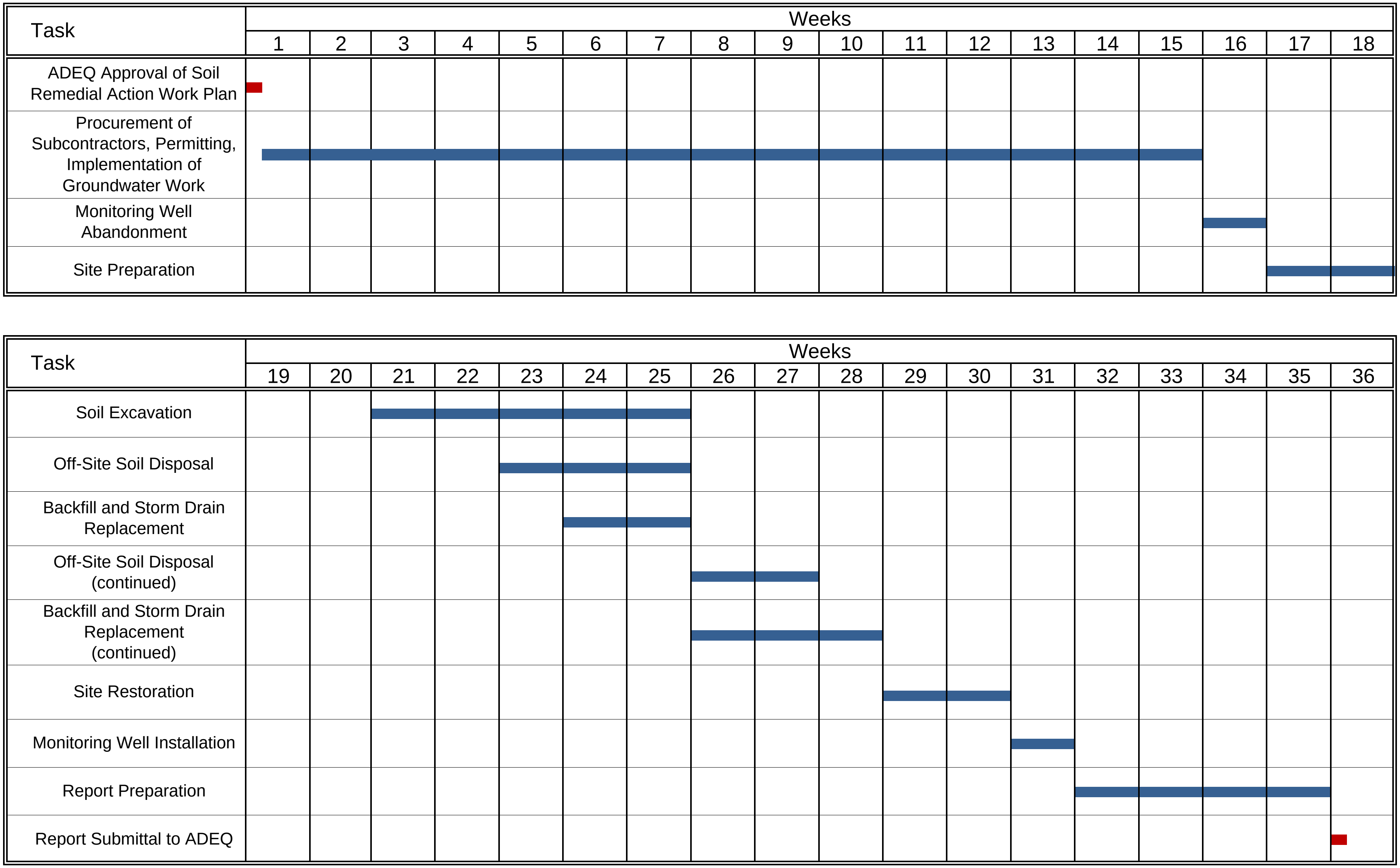
ESTIMATED SOIL EXCAVATION AREA

DRAWN	DATE	FIGURE NO.	REV. NO.
TAC	JUNE 2014	3	
SCALE: AS SHOWN	W.O. NO.: 13568.004.001	SHT. OF	

M:\Design\DWG\TIMEX ARKANSAS\2014\FIG 3.dwg, Layout1, 11/11/2014 7:51:45 AM, chaset, 1:2

Figure 4

Soil Remediation Implementation Schedule
Former Timex Facility, Little Rock, Arkansas



9/10/2014