Pollution Prevention Plan for Tar Removal
Springstead & Hogtown Creeks
Gainesville, Florida

Cabot Carbon/Koppers Superfund Site
Gainesville, Florida

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1.0 INTRODUCTION & SITE INFORMATION

This document is a supplement to the Tar Removal Work Plan for Springstead & Hogtown Creeks in Gainesville, Florida dated October 2009. This Pollution Prevention Plan provides additional information regarding site access, water control, sediment excavation, sediment dewatering, backfilling, and sediment staging. This document also includes best management practices (BMPs) and contingency planning related to surface water quality and turbidity control during sediment removal and backfilling operations. Figure 1 shows the sediment removal locations and surrounding property ownership. Attachment 1 shows photographs of equipment to be used.

The nature of the planned activity is to remove tar stained sediments from up to 10 locations along Springstead and Hogtown Creeks in Gainesville, Alachua County Florida. The general sequence of activities is provided in Table 1. The estimated duration of the project is approximately 35 work days. The plan is to conduct the sediment removal during the next dry period that follows completion of acquiring property access. The total site area is scattered over approximately 2 miles of Springstead and Hogtown Creeks. The total area to be disturbed is conservatively estimated to be less than 1 acre, with the majority of the disturbance associated with creating the access routes to the stream bank (0.5 acre). The total area to be excavated is approximately 0.12 acre.

Table 1 Summary of Work Sequence

Activity Description	Estimated Duration (Days)	Comments
1. Mobilization & Staging Area Preparation	2-4	Total
2. Creation of Access Paths	0.5	Per Location (8 Access Locations)
3. Establishment of Turbidity & Water Control Systems	0.5	Per Removal Location (10 Locations)
4. Sediment Excavation, Dewatering, Transport to Staging Area, & Partial Backfilling	1	Per Location (10 Locations)
5. Removal of Water Control System	0.5	Per Location (10 Locations)
6. Removal of Turbidity Control System	0.25	Per Location (10 Locations)
7. Site Restoration	0.5	Per Location (8 Locations)
8. Soil Loading & Transport to Disposal Facility	Ongoing Throughout Excavation	
9. Staging Area Restoration & Demobilization	2-4	Total

Activities 3-7 will be repeated at each removal location.
Activities 2, 7 & 8 will be conducted concurrently with other sediment removal activities.
Durations do not include weather delays.
Activity durations assume a single staging area can be used to prepare and load the soils for transport to the disposal facility.

2.0 SITE ACCESS

Because property ownership rights extend to the centerline of the creek, it will be necessary to secure property access from the property owners in those areas where sediment removal is planned. Access will be requested from the properties where tar removal is planned and also from select adjacent properties to allow for variances in the actual property line locations and to allow creation of safe access routes to the creek bank. With this in mind, there are some properties where access is needed that do not have tar present in the stream bed behind the property. Site specific conditions at each location present different challenges to successfully removing the tar containing sediments. The general desire and agreed upon plan is to use commercial properties as the access routes as much as possible. In instances where there are multiple removal locations close together (e.g., SA and SD), the sediment removal will be completed from a single access point, if possible (See Figure 1). Table 2 depicts the access strategy for each removal location.

Table 2 Site Access Plan Summary

Removal Location	Parcels Numbers Requiring Access	Planned Access Route	Latitude*	Longitude*
SS 5	11, 12, 13, 14, 15	13	82.32253	29.68154
SS2	N. Main Terrace Right of Way	N. Main Terrace Right of Way	82.32435	29.68420
S9	25, 22, 24	25 or 30	82.33623	29.68720
S10	20, 21, 23, 25,30	25 or 30	82.33516	29.68700
SC	1 & 26	26	82.33886	29.68594
SD	3,6,8,19,	6 or 7	82.34035	29.68508
SA	6,7,19	6 or 7	82.34076	29.68480
HB	0,3,19	19	82.34154	29.68493
H4	4,5,9,10 , 31	28 & 31	82.34220	29.68191
HA	28	28	82.34201	29.67951

* Latitude & Longitude from Alachua County EPD August 2009 Sediment Quality Study.

Planned access routes may be adjusted in response to actual property access obtained.

The need for excavation at the S9 and S10 locations is under discussion with regulatory stake holders. The concentrations of chemicals of concern are relatively low in the samples collected at these locations. Additionally, there are significant access challenges associated with narrow space between the apartment buildings, the limited access points on the adjacent property and the steep banks and narrow access routes from the cross stream residential properties.

Weston & Alachua County EPD will return to the S9 and S10 locations and conduct additional probing (using the same methods employed during the Alachua County EPD 2009 Study) to provide a more refined estimate of the sediment quantities. If the quantities are significantly less than originally estimated, then some targeted removal using manual or less intrusive mechanical methods could be carried out at the S9 and S10 locations. This probing will be conducted when seasonal rainfall subsides and stream flow conditions diminish.

3.0 WATER CONTROL

The recommended water control approach is to use stackable water filled “Jersey” style HDPE constructed highway barriers and/or an Aqua Barrier (water filled elongated HDPE tube with internal baffles) to construct upstream and downstream coffer dams (See Page 3 of Attachment 1). Figure 2 shows the layout of the water control set up. Impermeable plastic sheeting and sand bags will be used to seal the edges and seams of each type of modular dam. The coffer dams can be filled with water from the creek. An electric submersible pump and associated piping will be used to pump the water from behind the coffer dam (Page 4 of Attachment 1). A second dam will be installed using similar materials downstream of the excavation zone to isolate the work zone and control downstream turbidity. Water will be pumped from the creek bed to reduce the amount of water in the excavation.

The construction of coffer dams using HDPE barriers and aqua barriers are proven devices and methods employed on environmental projects where stream flow management in creeks is required. The size of the streambed area to be water controlled will be established based on an area that can be excavated in 1 day. Additionally, weather forecasts and weather conditions will be monitored daily to further calculate the control area size and avoid conducting the sediment removal during storms.

4.0 SEDIMENT EXCAVATION

The basic excavation tool recommended is a CAT 301 excavator or equivalent (See Page 2 of Attachment 1). This equipment has been chosen for it's relatively narrow width (3 ft 3 inches) and low ground pressure to allow minimum disturbance and impact and to be as less intrusive as reasonably possible. It can be lifted into the stream bed, if needed. Sediments will be placed either in a front end loader or into 1 ton capacity Super Sacks (see Page 6 of Attachment 1). A Lull Telehandler or equivalent will be used for both lifting and as a front end loader (See Page 7 of Attachment 1). A CAT 308 track mounted excavator or equivalent will be used to empty the Super Sacks into a dewatering box (specially designed roll-off container) and to load dewatered stockpile soils for off-site disposal. It can also be used clear paths to access the stream bank.

Super Sacks will be used as the sediment transport device in areas where access to the creek bank is limited and the dewatering box(es) cannot be direct loaded (See Page 6 of Attachment 1). The Super Sacks will be fitted with plastic liners and equipped with draw string discharge for ease of emptying. A track mounted articulating dump truck will be used to transport the Super Sacks (See Page 7 of Attachment 1). This vehicle rotates on it's chassis, requiring limited turnaround space (reducing the amount of clearing needed) and can climb steep grades.

Interlocking plastic mats (See Page 5 of Attachment 1) may be used to move up and down the stream banks at the access points and within the stream bed. Additionally, sectional bridges may be used to traverse the stream in areas where access is difficult and grading to improve bank access conditions would be too invasive in order to facilitate moving up and down the stream banks.

5.0 SEDIMENT DEWATERING

Water tight steel roll-off containers specifically designed for dewater applications (i.e., dewatering boxes) will be used to dewater the excavated sediments. Sediment will be placed in these special purpose roll-off containers equipped with screened bottoms that allow water to gravity drain form the sediments. Air moving trucks or air operated diaphragm pump(s) may be used to accelerate the dewatering (See page 8 of Attachment 2). The contact water will be collected in tanks for characterization and disposal. The roll-off containers will be transported to the staging areas for stockpiling and further drying.

6.0 TURBIDITY CONTROL & MONITORING

The sediment removal activities have the potential to create turbid conditions downstream of the tar removal work areas. The key phases of work where turbid conditions can occur include establishment of the water control system, sediment excavation and backfilling with nearby stream sediments, as well as removal of the water control system. The planned approach to controlling turbidity and the associated monitoring are described below

The downstream coffer dam is expected to greatly reduce the potential for release of turbid waters from the work area. Water filtering materials will be installed downstream of the work area, prior to installing the water control system at each location. These may include hay bales and wattles, depending on the water depth. The water filtering devices will be fastened to the stream bottom with wooden stakes. Additional rows of water filtering devices will be added as needed to maintain the downstream turbidity within 29 units over background. The water filtering devices will be replaced as needed if sediment begins to clog the devices. The downstream turbidity control devices will be inspected daily for integrity and effectiveness.

Turbidity will be controlled from the pump around discharge pipe with either a turbidity bag/geotube or a series of perforated pipes. The turbidity bag will be used in lower flow conditions and the perforated pipe arrangement, if needed, will be used for higher discharge volumes. The contingency plan for controlling turbidity associated with the pump discharge is to use a longer turbidity bag or additional sections of perforated pipe.

To enhance dewatering efforts from below the streambed elevation and from within the gravel subgrade, as well as to reduce the potential for pump blockage, the pump will be placed inside a container such as 55-gallon drum to isolate the pump from the surrounding sediment, allowing for more effective and consistent operation of the pump.

The turbidity monitoring plan has been developed to comply with Florida Administrative Code Chapter 62-302(Surface Water Quality Standards). Turbidity monitoring will be performed during tar removal activities including the establishment of water control, excavation/ backfilling, and removal of the water control structures. A turbidity meter will be used to measure in stream turbidity 50-ft upstream of and 200 feet downstream of the work area. The turbidity meter will be calibrated daily in accordance with the manufacturer's specifications. Meter calibration will be documented in the field log book. The resulting upstream measurements will be considered background turbidity for the individual location. Turbidity measurements will be taken 4 times daily, while in-stream activities are occurring and recorded in the site field logbook or on a field data collection forms. If turbidity measurements exceed 29 Nephelometric Turbidity Units (NTU), then contingency measures described in Section 10 will be implemented to reduce the downstream turbidity measurements to 29 NTU above background.

7.0 BACKFILLING

Discussions with representatives of The City of Gainesville and Alachua County EPD personnel have indicated that local governments are spending substantial sums of money to routinely remove sediments from the creek that accumulates near downstream weirs. With this in mind, replacing the removed sediment with clean backfill is not desirable. Excess sediments in nearby un-impacted sand bars will be used to partially fill the excavated areas to reduce the potential for bank erosion and minimize potential hazards associated with leaving a hole in the stream bed. This material will be placed using the equipment described in Section 4. Backfilling with nearby sediments will be conducted prior to the removal of the water control structures.

8.0 SOIL STAGING AREA

To prevent contact between the ground surface and the excavated sediments, durable impermeable plastic sheeting will be placed on the ground beneath the soil staging area. Hay bales will be placed approximately 5-10-feet from the edge of the plastics sheeting and the plastic sheeting will be lapped over the hay bales to facilitate containment of any run-off associated with soil pile. The soil staging area will be sloped to a designated corner of the sheeting. A lined sump will be placed in this area of the sheeting. Water collected in the sump will be pumped into a tank for off-site disposal. Figure 2 contains detail of the soil staging area lay-out.

9.0 RESTORATION

Due to the relatively steep slopes and thick tree canopy that slows vegetative growth, bank erosion is a concern. Equipment will operate off of interlocking mats in some instances to make safer more stable platforms and to limit land disturbance caused by more intrusive bank access methods (See Page 5 of Attachment 1). These mats have been used successfully in soft/wet soil conditions to provide a stable platform for movement of equipment and materials. If the S9 and S10 locations are machine excavated, then a sectional bridge may be needed to access the creek (See Page 5 of Attachment 1).

The stream access points will be restored to like conditions and erosion reducing mating will be placed on the stream banks as needed. The preference is to use biodegradable erosion control matting (e.g., loose weave burlap material) to the extent possible. Trees that are removed will be replaced in accordance with local tree ordinances.

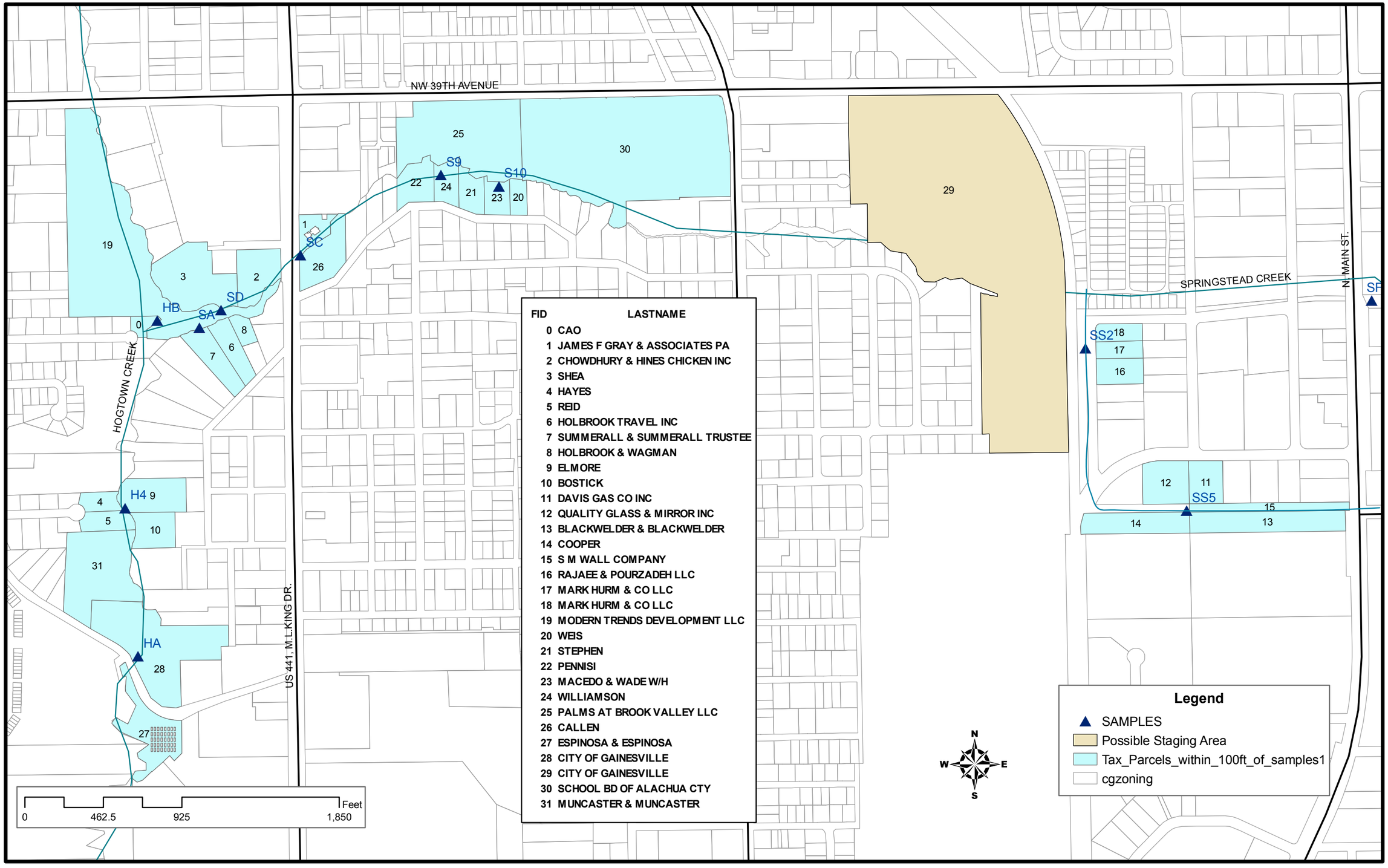
Upon completion of the work, all equipment & materials will be removed from the staging area. Areas of exposed soils will either planted with grass or covered with gravel, mulch etc. depending on the needs of the individual property owner.

10.0 BEST MANAGEMENT PRACTICES & CONTINGENCY PLANNING

Best Management Practices (BMPs) will be employed during the tar removal action to control downstream turbidity. Primary BMPs will include installation of hay bales or wattles in the stream bed immediately downstream of each work area. These devices will be installed prior to the installation of the coffer dams and will remain in place until the coffer dams are removed and stream flows return to pre-remedial action conditions. The hay bales/wattles will be affixed to the stream bottom and banks with wooden stakes.

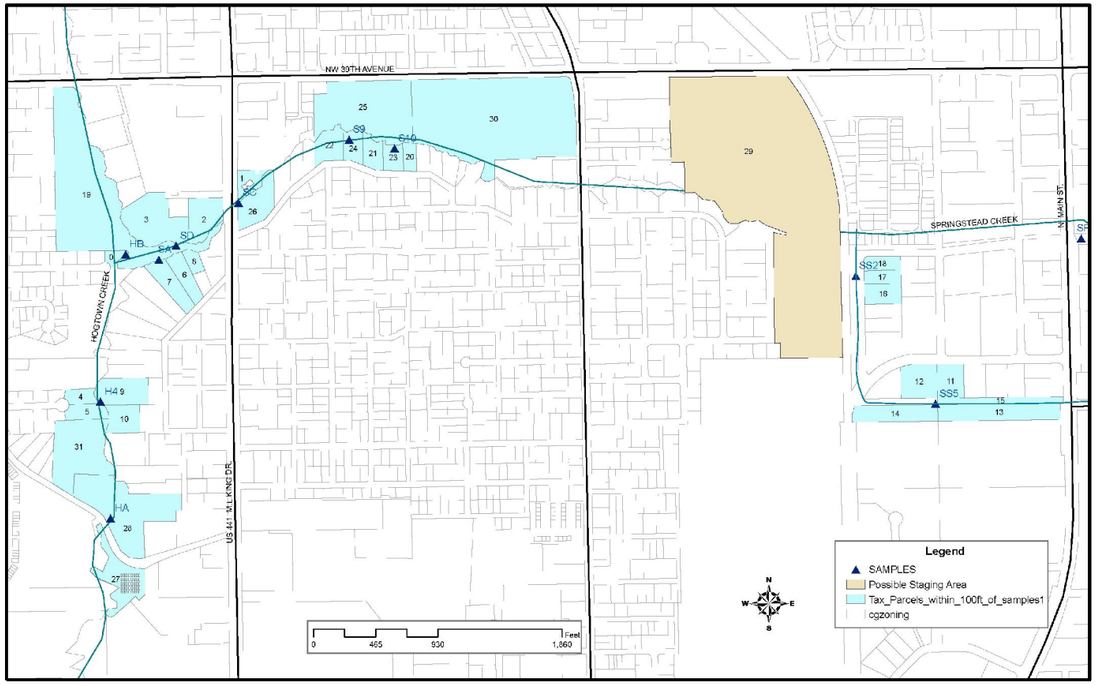
The contingency plan for turbidity control will be to install additional rows of hay bales/wattles downstream of the excavation sites until the downstream turbidity is controlled within 29 NTU of background. The contingency plan for controlling turbidity associated with the pump discharge is to add additional length to the turbidity bag or additional sections of perforated pipe. The contingency plan for controlling turbidity during storm events will be to cease operations and protect or close the excavation prior to the storm event. Additional contingency measures will include monitoring weather forecasts and weather radar on a daily basis to help avoid open excavation areas during heavy rain events. The contingency plan for preventing pump operation problems is to remove any accumulated sediment from the isolating drum or replace the drum if needed. A back-up pump will be kept on-site in the event of pump failure. As an added contingency measure the water level on the upstream coffer dam will be managed not to exceed approximately ½ the height of the coffer dam.

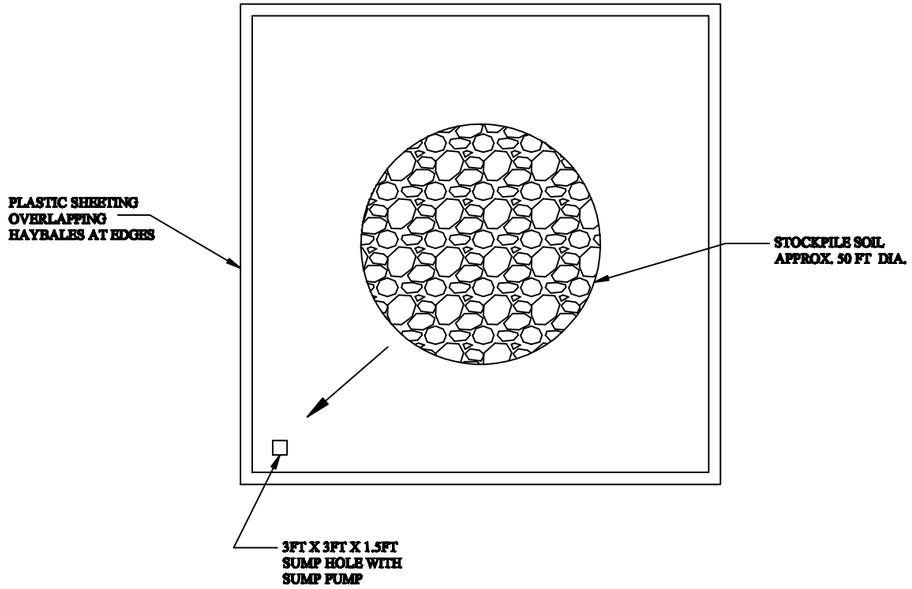
Parcels Within 100-ft of Tar-Containing Samples



FID	LASTNAME
0	CAO
1	JAMES F GRAY & ASSOCIATES PA
2	CHOWDHURY & HINES CHICKEN INC
3	SHEA
4	HAYES
5	REID
6	HOLBROOK TRAVEL INC
7	SUMMERALL & SUMMERALL TRUSTEE
8	HOLBROOK & WAGMAN
9	ELMORE
10	BOSTICK
11	DAVIS GAS CO INC
12	QUALITY GLASS & MIRROR INC
13	BLACKWELDER & BLACKWELDER
14	COOPER
15	S M WALL COMPANY
16	RAJAEE & POURZADEH LLC
17	MARK HURM & CO LLC
18	MARK HURM & CO LLC
19	MODERN TRENDS DEVELOPMENT LLC
20	WEIS
21	STEPHEN
22	PENNISI
23	MACEDO & WADE W/H
24	WILLIAMSON
25	PALMS AT BROOK VALLEY LLC
26	CALLEN
27	ESPINOSA & ESPINOSA
28	CITY OF GAINESVILLE
29	CITY OF GAINESVILLE
30	SCHOOL BD OF ALACHUA CTY
31	MUNCASTER & MUNCASTER

FIGURE 1





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APPR.	DATE	REVISION

PROJECT:
TAR REMOVAL
SPRINGSTEAD AND HOGTOWN CREEKS
GAINESVILLE, FLORIDA

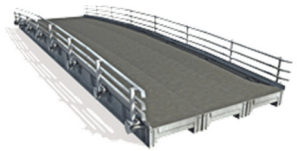
TITLE:
FIGURE 2 – WATER CONTROL AND STAGING AREA LAYOUT

SHEET: 1 OF 1

DRAWN:	DATE:	W.O. NO.:
P. BANNIS	7.22.10	05791.004.004.0012
CHKD BY:	DATE:	CAD NAME:
M. TAYLOR	7.22.10	CABOT DETAIL.DWG

ATTACHMENT 1
EQUIPMENT SELECTION

Process Flow for Soil Remediation



Evaluate Type of Access & Travel Distance

Pump Around & Coffer Dam
- Aqua Barrier
- Plastic Barrier
- Elec. Submersible Pump

Restricted/Limited
- Art. Dump Truck
- Tote Sacks
- Bridge Ramp
- Mats

Adjacent to Roadway
- Min-Excavator
- Telescoping Bucket
- Discharge to De-water Box

Transport to De-Watering Box Staging Area

Dewatering

Collected Water Management & T&D

Placement of De-watered Soils in Primary Staging Area

Stockpiling for T&D

Load Out & T&D of Tar Soils

Equipment Selection and Application

Cat 308:

- Use to Dump Totes into De-watering Box
- Use to excavate directly into Lull Bucket

(e.g. SS5)

- Use to Load out Stockpile Soils
- Used to Clear and Grub large Trees
- Longer Reach (dig-13ft; Ground Reach-20ft)
- Greater Lifting Capacity (4,000lbs-8,000lbs)
- Ground Pressure (0.41 kg/cm²)

Cat 301:

- Limited Lifting Capacity (1,700lbs Vs 8,000lbs)
- Lower Ground Pressure (~.08 kg/cm²)
- Smaller Width than Cat 308 (3'3" Vs 7'7")
- Use in creek where width is narrow.
- Use to excavate Creek Soils
- Can be Lifted into Creek Bed w/Lull

Water Filled Stackable-Coffer Dam

- Can be stacked.
- Can be manually placed
- Can be cabled together
- May be used to isolate a small area

Auqa Barrier-Coffer Dam

- Used to block larger area
- Will conform to bottom
- Requires less liner and sand bags
- Can be carried to a remote area.
- Pre-sized and not adjustable for small widths.

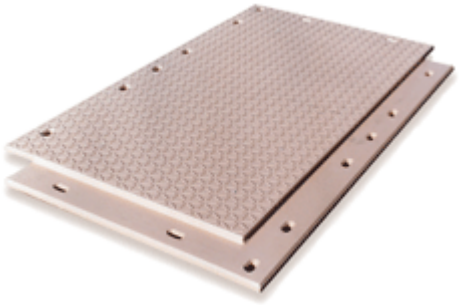
GSP30HV 6-Inch Submersible Pump w/Generator

- Able to handle a varying flow rate
- Can be manually placed (Weighs ~350lbs)
- Capable of 1,500gpm flow rates at 5ft TDH

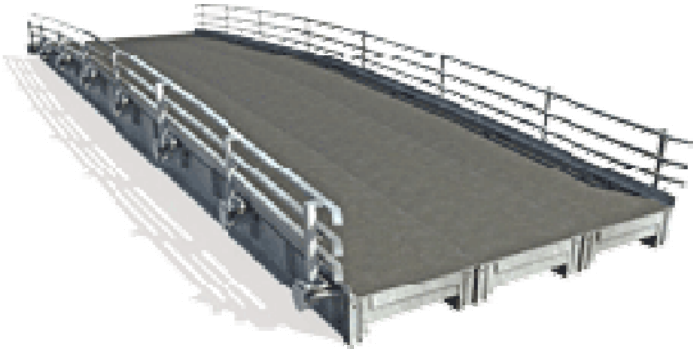
8”x6” Dri Prime

- Can be placed by Mini-Excavator
- Can handle high flow rates (>2,300gpm)
- Must be place w/mini-excavator

Mabey Bridge & Mats



- HDPE Construction
- Interlocking Key holds mats together on slopes
- Easily placed and relocated by Mini-excavator



- Bridge is sectional and can be assembled w/minimal use of min-excavator
- Can be placed on steep slopes in lieu of road construcion.
- Can be used to span Creek as needed.

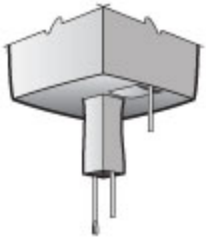
Standard Discharge Spout
(Duffel Cover Over Spout)

Flat Bottom

Full Open Dump

Cone Bottom

Sling Bottom



R.O.D.
Remote Open Discharge

<u>Super Sacks</u>

- Options include free standing opening
- Bottom Dump
- Lifitng Straps w/Stevadore Grab handles
- Liners
- Reusable
- Holds up to 1-ton

Soil Loading and Transport w/Track Art. Dump Truck & Versahandler

- Unit is track and can climb steep Grades
- Unit roates on chasis and does not require turnaround space
- Can Carry two Tote Sacks at a time
- Can be lined as double liner for tote leak contingency

- Telesocping boom can access creek bed from above.
- All Wheel Turning System allows for tight space configuration
- Can be used as a crane to place small mini-excavator directly into Creek bed.
- Can be used to direct load soils into bucket for direct discharge into de-watering box.

Dewatering and Water Handling

- Gravity Dewatering or Vaccum Asssist
- Sealed gate and Top Loaded
- Can be moved by Rail Truck or Mini-Excavator.
- Can add geo-textile for better solids filtration.

6,500 gl Baker Tank for Water Storage

- Can be used to transport water to tank storage area,
- Can be used to accelerate de-watering from de-watering box using vaccum assist.
- Can be used to collect sheen from creek, if needed.
- Can be used to vaccum soils from small areas w/access.

Stockpile Management and Loadout

Stockpile Management and Dumping when Cat 308 is in use.

Truck Loadout w/Cat 308

Use of Tandem or Tri-axles for Transport ot Landfill