

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Response Action Completion Report**

Cover Page

Regulatory ID number (Solid waste registration number, VCP ID number, etc) SWR No. 31547
 check one: Initial RACR submittal for this on-site property Subsequent RACR submittal
 Report date: June 24, 2017 – Rev 1 TCEQ Region No.: 12

TCEQ Program (check one)
 Corrective Action (Mail Code 127) Superfund PRP Lead (Mail Code 143)
 Voluntary Cleanup Program (Mail Code 221) Municipal Solid Waste Permits (Mail Code 124)
 Petroleum Storage Tank Program (Mail Code 137)

On-Site Property Information

On-Site Property Name: Union Pacific Railroad Houston Wood Preserving Works Site
 Street no. 4910 Pre dir: Street name Liberty Street type: Road Post dir:
 City: Houston County: Harris County Code: 101 Zip: 77007
 Nearest street intersection or location description: Site is located south of Liberty Rd. between Kashmere St. and Lockwood St, and north of Lee St.
 Latitude: Decimal Degrees (circle one) North 29.787413
 Longitude: Decimal Degrees (circle one) West 95.321062


Off-Site Affected Property Information

Off-Site Affected Property Name: _____
 Street no. _____ Pre dir: _____ Street name: _____ Street type: _____ Post dir: _____
 City: _____ County: _____ County Code: _____ Zip: _____
 Check if there are no off-site properties affected

Contact Person Information and Acknowledgement

Person (or company) Name: Union Pacific Railroad
 Contact Person: Geoffrey Reeder Title: Manager, Site Remediation
 Mailing Address: 24125 Aldine Westfield Road
 City: Spring State: TX Zip: 77373 E-mail address GBREEDER@UP.COM
 Phone: 281-350-7197 Fax: 402-233-2351

By my signature below, I acknowledge the requirement of §350.2(a) that no person shall submit information to the executive director or to parties who are required to be provided information under this chapter which they know or reasonably should have known to be false or intentionally misleading, or fail to submit available information which is critical to the understanding of the matter at hand or to the basis of critical decisions which reasonably would have been influenced by that information. Violation of this rule may subject a person to the imposition of civil, criminal, or administrative penalties.

Signature of Person  Name, print: Geoffrey Reeder Date: 062217

Executive Summary

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Check the reports/forms submitted:

Remedy Standard A

___ Self-Implementation Notice Submittal date: _____

___ Response Action Plan - Approval date: _____

Remedy Standard B

X Response Action Plan - Approval date: _____
 Currently under review. Corrective action approved under the TCEQ Area of Contamination (AOC) Approval dated February 9, 2015 (and amended February 22, 2016).

List all media (surface soil, subsurface soil, groundwater, sediment, surface water, air) that contained or contains a PCLE zone and specify the response action taken for each media. Indicate the type of removal, decontamination, physical control, or institutional control action that was used in the response action. If a media with a PCLE zone was not addressed in the response action, provide an explanation below.

Media	COCs ¹	Removal	Decontamination	Physical Control	Institutional Control	Modified Response Objective ²		
						PMZ	WCU	TI
Surface Soil	Benzene, SVOCs, metals	X		X	X			
Subsurface Soil	SVOCs			X	X			
Groundwater	Benzene, SVOCs				X	X		

Is there a media that contains a PCLE zone that was not addressed in the response action? yes no

If yes, provide justification for not addressing the PCLE zone in the response action.

This Response Action Completion Report (RACR) only addresses the response actions for the surface and subsurface soil PCLE Zones. The response action for the groundwater PCLE zone is detailed in the Response Action Plan (RAP) dated November 21, 2014, and revised dated December 7, 2015, July 15, 2016, and June 24, 2017. Following approval of the RAP by the TCEQ and implementation of the proposed response action, a separate RACR will be submitted to the TCEQ for the groundwater PCLE zone.

Current land use of the on-site affected property: ___ Residential Commercial/industrial
 Projected future land use of the on-site property (if known): ___ Residential Commercial/industrial

Explain why you believe the response action to be complete.

As discussed in the RAP (PBW, 2015), the response action objectives (RAOs) for surface and subsurface soil PCLE Zones was to excavate impacted soils with COCs above cPCLs and consolidate the soils within the Site using the Area of Contamination approach, and control exposure through Remedy Standard B

¹ Specify either a specific COC or, if the response action is the same for all COCs in one type, specify the type of COC (for example, VOCs, SVOCs, metals).

² If a modified groundwater response objective was used, check the type(s) of modifications.

using physical barriers such that on-site commercial/industrial and off-site residential pathways will not be exposed to concentrations of COCs in excess of the critical human health PCLs (§350.33(a)(1)). In addition, COC concentrations in the surface and subsurface soils will not create a leachate that will lead to cPCL exceedances at the alternate point of exposure wells within the proposed Plume Management Zone (PMZ) (detailed in the RAP, but not addressed in this RACR). Soil responses across the Site were implemented differently depending on the area within the Site, with controls placed in the following areas:

- Former Houston Wood Preserving Works (HWPW) Operational Areas: Surface soils with cPCL exceedances from the following Areas of Concern (AOCs) and Solid Waste Management Units (SWMUs) were excavated and consolidated within the Recent Process Area (SWMU 4), Original Process Area (SWMU 5) and AST Area (SWMU 8) under the Area of Contamination policy:
 - Inactive Wastewater Lagoon (AOC 6),
 - Location of the Former Incinerator (AOC 4),
 - Surrounding the Tank Car Storage Area (SWMU 7),
 - Oil/Water Separator (SWMU 11),
 - Areas north of the Recent Process Area (SWMU 4),
 - Areas north of the Original Process Area (SWMU 5) and
 - Areas north of the AST Area (SWMU 8)

Confirmation samples collected along the walls and base of the excavations verified that surface soil PCLE Zones were removed to cPCLs assuming commercial/industrial land use. In these areas where surface soils were excavated, the base of excavation confirmation samples also confirmed that the subsurface soils do not appear to be impacted above cPCLs. The areas excavated were backfilled with clean fill.

Two Remedy Standard B physical controls were constructed within the Former HWPW operational areas: 1) a Soil Cap and 2) an Asphalt Cap (roadway improvement). The Soil Cap construction includes installation of a vapor barrier, with geotextile fabric and placement of an engineered soil cap (12 inches of clayey soil and 6 inches of top soil) to cover the consolidated soil and remaining surface soil PCLE zone on the former operational areas. The Soil Cap is vegetated and sloped to minimize infiltration to control potential leachate migration from the surface and subsurface soils to the GWBUs. The Soil Cap serves to contain and prevent exposure to COCs above cPCLs within the surface and subsurface soil PCLE Zones at the Site.

The surface soil PCLE zone along the Southern Drainage Ditch (SDD) (SWMU No. 2), including the oil/water separator (SWMU 11) east of the former AST Area (SWMU 8), was capped in place using an asphalt cover (2.5-in thick over gravel road base) as part of a roadway improvement. The Soil Cap and Asphalt Cap will be maintained under the post-response action care period as detailed in the RAP (PBW, 2015).

- City of Houston Right-of-Way (ROW): The area immediately north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5), and AST Area (SWMU No. 8) within the City of Houston right of way (ROW) between the UPRR property boundary and Liberty Road

Executive Summary

(approximately 8 feet wide and 550 feet long) was addressed through a combination of soil excavation of the top 9-inches (consolidated within the on-site soil-capped area) and construction of a physical barrier (concrete sidewalk) preventing contact with remaining surface soils and limiting infiltration. After the soils were excavated, UPRR constructed a concrete sidewalk approximately 8 feet wide and 690 feet long serving as the physical barrier covering the remaining surface soil PCLE zone within the City of Houston ROW. As part of the post-response action care detailed in the RAP (PBW, 2015), the concrete sidewalk will be inspected to ensure the physical barrier provides protection for residential receptors against exposure to the COCs above cPCLs in surface soils in this area.

- Englewood Intermodal Yard area: The surface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact with the soil PCLE Zone and infiltration. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be inspected to ensure continued on-site worker protection.
- UPRR Main Lines Ballast Area: The area between the former HWPW operational areas and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties, and rail. UPRR will use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area.

The physical controls at the Site will be maintained and appropriate maintenance, repair of the caps will be performed as needed. UPRR will implement a health and safety program to restrict any construction activity within the capped areas. In the event construction activities are necessary, a health and safety plan and soil management plan will be implemented to ensure worker protection and proper management of soils with COCs above cPCLs.

Institutional controls were also implemented at the Site. The affected property was deed restricted to commercial-industrial land use and for the use of physical controls on surface soils in accordance with §350.31(g). A restrictive covenant was implemented for the concrete sidewalk cap area within the City of Houston ROW.

Checklist for Report Completeness

Checklist for Report Completeness

Use this checklist to determine the portions of the form that must be submitted for this report. Answer all questions by checking Yes or No. If the answer is Yes include that portion of the report. If the answer is No, do not complete or submit that portion of the report. All form contents that are marked "Required" must be submitted. Form contents marked with an asterisk (*) are not included in the blank form and are to be provided by the person.

Report Contents

	Required	Cover Page	<input checked="" type="checkbox"/>
	Required	Executive Summary	<input checked="" type="checkbox"/>
	Required	Checklist for Report Completeness	<input checked="" type="checkbox"/>
	Required	Worksheet 1.0 Confirmation of Response Action Objectives	<input checked="" type="checkbox"/>
	Required	Attachment 1A* Maps and Cross Sections	<input checked="" type="checkbox"/>
	Required	Attachment 1B* Graphs	<input type="checkbox"/>
	Required	Attachment 1C* Response Action Diagrams	<input type="checkbox"/>
No <input type="checkbox"/>	<input checked="" type="checkbox"/> Yes	Worksheet 2.0 Plume Management Zone	<input type="checkbox"/>
<i>Details provided in the Response Action Plan, Revision 3 – June 24, 2017</i>		Attachment 2A* Map of Plume Management Zone	<input type="checkbox"/>
No <input type="checkbox"/>	<input checked="" type="checkbox"/> Yes	Worksheet 3.0 Technical Impracticability	<input type="checkbox"/>
<i>Details provided in the Response Action Plan, Revision 3 – June 24, 2017</i>		Attachment 3A* Map of Technical Impracticability Area	<input type="checkbox"/>
No <input type="checkbox"/>	<input checked="" type="checkbox"/> Yes	Worksheet 4.0 Institutional Controls	<input checked="" type="checkbox"/>
	Required	Worksheet 5.0 Performance Measures and Problems	<input type="checkbox"/>
No <input type="checkbox"/>	<input checked="" type="checkbox"/> Yes	Worksheet 6.0 Operation and Maintenance	<input type="checkbox"/>
No <input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	Worksheet 7.0 Post-Response Action Care	<input type="checkbox"/>
No <input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	Appendix 1* References	<input type="checkbox"/>
No <input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	Appendix 2* ESA and Compensatory Restoration	<input type="checkbox"/>
No <input type="checkbox"/>	<input checked="" type="checkbox"/> Yes	Appendix 3* Institutional Controls and Landowner Concurrence	<input checked="" type="checkbox"/>

Checklist for Report Completeness

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No <input checked="" type="checkbox"/>	Is there data or boring/monitor well information not previously submitted?	<input type="checkbox"/> Yes	Appendix 4* Data Tables, Boring Logs, and Well Completions	<input type="checkbox"/>
No <input checked="" type="checkbox"/>	Did sampling procedures differ from those described in the RAP?	<input type="checkbox"/> Yes	Appendix 5* Sampling Procedures	<input type="checkbox"/>
No <input checked="" type="checkbox"/>	Has any sampling been conducted for which the analytical results were not previously submitted?	<input type="checkbox"/> Yes	Appendix 6* Laboratory Data Packages	<input type="checkbox"/>
No <input checked="" type="checkbox"/>	Were statistics or geostatistics used in the response action?	<input type="checkbox"/> Yes	Appendix 7* Statistical Methodology	<input type="checkbox"/>
No <input type="checkbox"/>	Were any wastes generated that were not reported through STEERS?	<input type="checkbox"/> Yes	Appendix 8* Waste Disposition	<input type="checkbox"/>

Confirmation of Response Action Objectives	RACR Worksheet 1.0	Page 1 of 16
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Use this worksheet to describe the attainment of the response action objectives in each media.

Response Action Objectives

What was the selected remedy standard for this affected property? A X B

List the environmental media to which this applies

Surface and subsurface soil (*groundwater to be addressed in separate RACR following approval of the RAP*)

Repeat this section for each medium that had a different response action objective.

Provide a detailed description of the response action. Describe the removal actions, decontamination actions, treatment system(s), physical or institutional control actions, and any actions for ecological considerations (ecological services analysis and compensatory restoration plans) that were conducted in each media and indicate if there were any differences between the actions taken and the actions proposed in the SIN or RAP.

The Response Action Objectives (RAO) for the surface and subsurface soil PCLE Zones is to control exposure through physical barriers such that commercial/industrial workers will not be exposed to concentrations of COCs in excess of the critical human health PCLs (§350.33(a)(1)). Prior to implementing the response action, the surface soil PCLE zone extended across the Recent Process Area (SWMU 4), Original Process Area (SWMU 5), Water Treatment and Boiler System (SWMU 6), Aboveground Storage Tank Area (SWMU 8), Oil/Water Separators (SWMU 11), Location of the Former Incinerator (AOC 4), down the Southern Drainage Ditch (SDD) (SWMU 2), and across the Former Inactive Wastewater Lagoon (Area of Concern (AOC) 6). The surface soil PCLE Zone also extended north of the Site onto the City of Houston right of way (ROW) and south across the UPRR main lines and into the Englewood Intermodal Yard (as detailed in the Response Action Plan (RAP), PBW, 2015).

Three key approaches were implemented to protect commercial/industrial workers from exposure to COCs in surface and subsurface soils:

- Former HWPW Operation Areas: Using the Area of Contamination approach (as defined by the Affected Property (Attachment 1A-1)), surface soils with critical Protective Concentration Level (cPCL) exceedances (assuming commercial/industrial land use) near the Former Incinerator (AOC 4), in the Inactive Wastewater Lagoon (AOC 6), areas north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5), and AST Area (SWMU No. 8) were excavated and consolidated in the area of SWMUs 4, 5, and 8 under the Soil Cap. The Soil Cap area was then covered with a vapor barrier with geotextile fabric and an engineered soil cap (12 inches of clayey soil and 6 inches of top soil) to prevent human exposure to the impacted soils above c PCLs. The surface soil PCLE zone along the Southern Drainage Ditch (SDD) (SWMU No. 2), including the oil/water separator (SWMU 11) east of the former AST Area (SWMU 8), was capped in place using asphalt cover (2.5-in thick over gravel road base) as part of a roadway improvement.
- Englewood Intermodal Yard area: The surface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact and infiltration. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be inspected to ensure continued on-site worker protection.
- UPRR Main Lines Ballast Area: The area between the former wood treating works area and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties,

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and rail. UPRR will use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area. Since this area is owned and controlled by UPRR, UPRR will implement a health and safety program to restrict any construction activity in the area of the railroad lines. In the event construction activities are necessary, a health and safety plan will be implemented to ensure worker protection from COCs in the surface soils.

To address potential exposure to surface soil PCLE Zone off-Site, the following will be implemented to protect residents (i.e. occasional trespasser) from exposure to COCs in surface and subsurface soils:

- City of Houston Right of Way (ROW): The area immediately north of the AST Area (SWMU No. 8) within the City of Houston right of way (ROW) between the UPRR property boundary and Liberty Road (approximately 7 to 8 feet wide and approximately 690 feet long) was addressed through a combination of limited soil excavation (placed within the capped area) and construction of a concrete sidewalk to restrict exposure to the surface soil PCLE zone. The soil excavation in this area was limited due to the presence of a high pressure natural gas pipeline within the ROW.

The Affected Property (including the entire Site (HWPW and Englewood Intermodal Yard)) (Attachment 1A-1) was also deed restricted for commercial-industrial land use, for the use of physical controls on surface and subsurface soil, and restrictions on soil excavation within the capped areas in accordance with §350.31(g).

Through the response actions implemented at the Site, the following SWMUs and AOCs were remediated either through surface soil excavation or capping through physical control:

SWMU	Description	AOC	Description
2	Southern Drainage Ditch	1	Diesel Storage Tank
4	Recent Process Area	4	Location of Former Incinerator
5	Original Process Area	6	Inactive Wastewater Lagoon
6	Water Treatment and Boiler System	7	Location of Former UST No. 44-023-21
7	Tank Car Storage Area		
8	Aboveground Storage Tank Area		
9	Location of Former UST No. 44-023-05		
10	Location of Former Sap Water Treatment Tank		
11	Oil/Water Separators		

Details of the response actions implemented at the Site are provided below.

Former HWPW Operation Areas

The response action for the surface soil PCLE zone at the Site was implemented through a combination of excavation and removal with consolidation and capping with a physical control (i.e., Soil Cap) under the Area of Contamination approach. The removal action was designed to remove surface soils containing chemicals of concern (COCs) at concentrations exceeding cPCLs. As detailed in the Affected Property Assessment Report (APAR), Updated Addendum dated March 2011 (PBW, 2011), on-site soil cPCLs were established for the Site by using the lowest of commercial/industrial PCLs for the following

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pathways: ^{Tot}Soil_{Comb}; ^{Air}Soil_{Inh-v} (Tier 1); and ^{GW}Soil_{Ing} (Tier 1 or 2). Comparing the maximum surface and subsurface soil analytical data to the critical commercial/industrial PCLs for on-site and residential PCLs for off-site, concentrations of the following COCs exceeded their respective critical PCLs (figures showing the Affected Property and PCLE Zone for each COC):

Surface Soils

- 1,2-Diphenylhydrazine (Attachment 1A-1-1)
- 2,4-Dinitrotoluene (Attachment 1A-1-2)
- 2-Methylnaphthalene (Attachment 1A-1-3)
- Benzene (Attachment 1A-1-4)
- Benzo(a)anthracene (Attachment 1A-1-5)
- Benzo(a)pyrene (Attachment 1A-1-6)
- Dibenzofuran (Attachment 1A-1-7)
- Fluoranthene (Attachment 1A-1-8)
- Naphthalene (Attachment 1A-1-9)
- Pentachlorophenol (Attachment 1A-1-10)
- Phenanthrene (Attachment 1A-1-11)
- Arsenic (Attachment 1A-1-12)
- Lead (Attachment 1A-1-13)

Of the COCs identified for surface soils, benzo(a)anthracene (^{Tot}Soil_{Comb}), benzo(a)pyrene (^{Tot}Soil_{Comb}), naphthalene (^{Tot}Soil_{Comb}), and pentachlorophenol (^{GW}Soil_{Ing} (Tier 2)) are the most prevalent across at the Site and typically define the surface soil PCLE zones. However, with the revised PCLs issued by the TCEQ on March 31, 2017, the ^{Tot}Soil_{Comb} PCLs for benzo(a)anthracene and benzo(a)pyrene were significantly increased, thereby reducing the PCLE Zone that required a response action.

Prior to implementing the response action for the surface soil PCLE zone at the Site, additional soil samples were collected in April 2015 (soil borings SB-156 through SB-211) and January-February 2016 (soil borings around the perimeter of the areas to be excavated detailed below) to confirm the surface soil PCLE zones to be addressed through the response action (Appendix 4, Table 1). Based on the soil analytical data, the following surface soil PCLE zones or areas were excavated (Attachment 1A-1) as part of the Area of Contamination:

- Area A - areas north of the Recent Process Area (SWMU 4), Original Process Area (SWMU 5), and AST Area (SWMU No. 8);
- Area B – Surface soil hotspot located west of Area A;
- Area C – area with elevated COC concentrations near the Location of the Former Incinerator (AOC 4)
- Area D, E, & F – areas in the Former Inactive Wastewater Lagoon (AOC 6); and
- Area G – within the drainage ditch downgradient of the Southern Drainage Ditch (SWMU 2).

Details of the response actions conducted under the Area of Contamination are provided below. A photo log of the construction activities is provided in Appendix 1-B.

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Site Preparation

Prior to response action activities, silt fencing was installed around the areas to-be disturbed including the areas of excavation (Areas A-G) and the Soil Cap area. The Soil Cap area was then mowed to remove the tall grass and vegetation in order to expose all structures, foundations and other debris that needed removal. The existing monitoring wells within the Soil Cap area were either plugged and abandoned by a licensed well driller or barricaded for protection if they were to remain. Several concrete structures (containment walls, foundations, footings, etc.) within the areas of excavation or Soil Cap were pulverized into smaller pieces and placed in the center of the Soil Cap area. Trees and underbrush covering Areas D, E and F on the western end of the property were shredded (mulched) down to ground level. The tree root balls were excavated with the contaminated soils and disposed of within the Soil Cap. In order to access Areas D, E and F due to wet and muddy conditions, wooden mats were purchased and placed on the haul route to eliminate mud/soil from being tracked out of the contaminated areas on the wheels and tracks of haul trucks and equipment. Plastic sheeting was also placed beneath the wooden mats in order to provide a barrier between the soil and wooden mat.

Excavation, stockpiling, and placement of impacted soils within the Soil Cap Area

The surface soils within the public right-of-way of Liberty Road (from the back of curb to the HWPW property line) were excavated to a depth of approximately 9 inches for the sidewalk and 12 inches for the side slope area in preparation for the concrete sidewalk and side-slope. The excavated soils were transported to the Site, stockpiled on the eastern portion of the Soil Cap area, and kept covered with 6-mil plastic sheeting until final placement during cap construction.

The surface soils from Areas B, C, D, E and F were excavated to the vertical extent of the PCLE zone, five feet below grade. For most of Area A, the surface soils within the top 5 feet below grade were excavated. While excavating the surface soils from Area A on the eastern portion, several cast iron water lines were encountered at a depth of approximately 3.5 feet below grade. Excavation activities in this area ceased at the top of the underground water lines. Soil samples were collected at that depth, which resulted in concentrations being below the applicable cPCLs. No additional excavation was necessary in that area of Area A. Area G consisted of a drainage ditch where the side-slopes and bottom were excavated to approximately 3 feet below grade due to excavation activities encroaching into the supporting soil for the rail main line and underlying fiber optic utilities. Soil samples were collected at that depth, which resulted in concentrations being below the applicable cPCLs. Soils from the areas of excavation were excavated, loaded into haul trucks and transported to the Soil Cap area for placement using precautionary measures in order to eliminate any loss of soil. Excavated soils that were stockpiled within the Soil Cap area were kept covered using 6-mil plastic sheeting until they could be placed (levelled and compacted) during cap construction.

Based on spot elevations and post-excavation surveys, the following volumes of soil were excavated from the individual corrective action areas:

Excavation Area	Estimated Volume (cubic yards (cyds))
City of Houston ROW	144
Area A	4,061
Area B	713
Area C	463
Area D	852
Area E	537
Area F	1,347
Area G	280

Approximately 8,400 cubic yards (in-place) of soil were placed within the Area of Contamination near SWMUs 4, 5 and 8 and covered with an engineered Soil Cap, detailed later in this section.

In addition to the eight excavation areas, surface soils were also excavated near soil boring SB-107 located south the AOC 6 to remove a small hot spot of impacted soils above cPCLs in the drainage ditch. Approximately 6 cubic yards of soil were removed from this area and placed within the Soil Cap area.

The response action also included addressing two oil/water separators (SWMU 11) (buried tank car and concrete sump) that were to be cleaned out and filled in or removed. The concrete oil/water separator near the access road was cleaned out, visually inspected for residual waste, and backfilled with clean fill material. The top portion was then capped with concrete and the asphalt surfacing of the roadway improvement (asphalt cap). The original plan for the buried railcar oil/water separator was to be cleaned out, removed from the ground and disposed of properly. Due to the proximity of the buried tank car to two CenterPoint gas lines (6-in and 8-in lines) within the Liberty Road right-of-way, the original plan was changed to close the railcar in place by removing all soil from the tank car, and then backfilling and covering. The railcar separator was cleaned out using the mini-excavator and long-reach shovels, residual soils in the tank car were sampled (Appendix 4 – Table 1), then it was backfilled with flowable fill (cement stabilized sand) (bottom 2/3rd of the tank), clean sand (top 1/3rd), and covered with clean backfill to match surrounding grade.

During the excavation of Area A, a storm water drain pipe was encountered about 4 to 5 feet below grade running parallel with the north boundary of the excavation area and sloping from west to east. Approximately 350 feet of corrugated drain pipe (24-in diameter) was removed during the excavation activities to remove the surface soil in that area. Once the drain pipe sloped to below 5 feet below grade, the remainder of the drain pipe was left in place. Following excavation activities, the drain pipe was reinstalled using new, 24-in diameter corrugated pipe and sand backfill around the pipe. In addition, a storm drain inlet was discovered within the Soil Cap area. The drain was filled with a concrete plug and covered with plastic sheeting to prevent any migration of soils into the storm drain.

During excavation activities in Areas A, B, and C, numerous railroad ties were encountered. The railroad ties were transported to the soil cap area where the soil remnants on the ties were removed. The railroad ties were then loaded into roll-off bins and transported to a licensed landfill facility for disposal (see Waste Management section for details).

Verification Sampling

Verification sampling was performed at each of the excavation areas following excavation of soils to ensure that the affected soils containing COCs at concentrations in excess of the applicable cPCLs were removed. Both sidewall and bottom of excavation samples were collected from each excavated area and analyzed for the list of site-specific semi-volatile organic compounds (SVOCs) by EPA Method 8270. Site-specific volatile organic compounds (VOCs) such as benzene were not analyzed in the confirmation samples since none of the site-specific VOCs exceeded cPCLs in the areas that were excavated. The soil response action verification samples analytical results are summarized in Appendix 4, Table 2. Laboratory data packages and data usability summaries are provided in Appendix 6. The locations of verification samples and the COC concentrations in the verification samples are shown on Attachment 1A-2 through Attachment 1A-26.

Confirmation samples from the walls of the excavations were collected using the excavator bucket where the depth of excavation was five feet or more. For the excavations where the depth was less than five feet, an excavator bucket was used if the field technician was not able to gain access to the excavation safely. The excavator operator would make sure the bucket was clean (no soils clinging to it), then would scrape the face of the excavation wall from bottom to top, collecting soil within the bucket. In order to confirm that the samples were not affected by the bucket, all soils used in the composite samples were from portions that were not in contact directly with the bucket. Based on the wall length of each excavation, multiple samples were collected in order to keep the interval distance between samples less than 50-feet (Attachment 1A-2 through Attachment 1A-26.). In two locations (southwest corners of both Areas A and B), the initial verification sample concentrations indicated that additional soil removal was required to meet response action objectives. Additional surface soil was excavated in these areas, and verification sampling was repeated to confirm that impacted soils with COC concentrations greater than cPCLs had been removed.

Bottom or floor samples from the base of the excavations were also sampled to evaluate any potential subsurface soil PCLE zones under the areas excavated. Most of the bottom samples were collected at 5 feet below grade, with exceptions in Areas A and G as previously discussed.

COC concentrations in the confirmation samples were below response action criteria in all of the verification samples collected from the original soil excavation areas, except for the southern portion of the west sidewall of Area A (Attachment 1A-2) and the western portion of the south sidewall of Area B (Attachment 1A-3). In both of these areas, additional surface soils were excavated and verification samples were collected. The additional excavation removed the surface soil PCLE Zone as confirmed with the additional confirmation soil samples collected along the excavation walls.

Clean, Fill Material for Excavations

Fill material that was free of trash, rubbish or other deleterious substances from an off-site location was used to backfill all excavated areas. Prior to bringing the material on-site, analytical testing was performed to ensure that the fill material was free from contamination. One representative soil sample was collected for every 5,000 cubic yards, or fraction thereof, of fill material from the source location. The source location's geographical coordinates (latitude/longitude) were also recorded for verification

purposes. A copy of the analytical report for the clean backfill samples is provided in Appendix 6. Subcontracted haul trucks were used to transport the material from the source location to the Site. The backfill operations were coordinated in order to have the haul trucks dump the clean fill material directly within the excavated areas or adjacent to them. A bulldozer was used to evenly spread the clean backfill material within each excavation in maximum loose lifts of 8-inches. Compaction efforts for each lift consisted of several passes of tracking/compacting by the approximately 50,000-lb bulldozer until the areas of excavation approximately matched pre-construction topographic elevations. Several inches of top soil was then placed over the backfilled areas in order to enhance the re-establishment of grass and vegetation on the disturbed areas. The backfilled areas were also sloped to allow adequate storm water draining and limit ponding in these areas.

Soil Cap Construction

The engineered Soil Cap consisted of the following construction design as detailed in the RAP (December 2015) and provided in Attachment 1C:

- Placed a 6-mil thick plastic vapor barrier over the impacted soils,
- Covered the vapor barrier with geotextile fabric to protect the barrier during construction,
- Placed a minimum of a 12-inch layer of protective (clayey) soil,
- Placed a 6-inch layer of topsoil on top of the protective layer, and
- Reseeded the topsoil with a mixture of grasses and pollinator plants.

The purpose of the Soil Cap is to provide on-site worker protection from impacted soil with COC concentrations exceeding cPCLs using a physical barrier covering the consolidated soils and materials from the excavated areas and the remaining surface soil PCLE Zones within the former HWPW SWMUs 4, 5, and 8. The first phase in the construction of the Soil Cap consisted of placing the excavated soils from the City of Houston ROW along Liberty Road and Areas A through G within the limits of the cap area. Once the soils were consolidated within the cap area, a bulldozer was used to level and compact the excavated soils, starting from the west side of the cap area and progressing eastward. The bulldozer operator utilized GPS technology to match the engineered design of the cap. After the excavated soils were graded, a 6-mil thick plastic vapor barrier was installed to cover the contaminated soils. Immediately after the installation of the vapor barrier, a geotextile fabric was placed directly on top of the plastic barrier and then both layers were held in place using sandbags and/or mounds of the protective clay material. Edges of the vapor barrier and geotextile fabric were overlapped by a minimum of 24-inches to ensure a suitable seal.

The protective clay soil and topsoil materials were both from off-site sources and required the same analytical testing and source documentation as the backfill material previously discussed. Both soil materials were free of deleterious material, materials toxic to plant growth, rocks and other debris. A subcontracted trucking company was used to transport both the protective clay soil and topsoil from each source to the project Site. The protective clay soil layer was placed in one 12-inch lift by the bulldozer to match the design elevations using GPS technology mounted on the equipment. The topsoil layer was also placed in one 6-inch lift on top of the protective soil layer by the tracked bulldozer. No direct compaction effort was required for either soil layer besides the compaction of the tracked bulldozer. The designed volume of the engineered Soil Cap was approximately 10,000 cubic yards, but the overall volume of contaminated soils removed during excavation was approximately 8,400 cubic yards. In order to match

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the design grades of the plans on the eastern portion of the Soil Cap, the protective clay layer thickness was increased to reach the designed final grade.

Once the Soil Cap construction was completed, a topographic survey was conducted for the capped area. The post-construction topographic survey of the Soil Cap is provided in Attachment 1C-1 (As-Builts).

The south boundary of the Soil Cap was bounded by the existing concrete barriers, which were used in some areas as a retaining wall for the capping soils. Approximately 6-inch wide spaces were left between each concrete barrier and concrete blocks, filter fabric and hot mix asphalt were placed within the spaces to hold back any soils, but allow for runoff from the Soil Cap to be released.

No contaminated soils were placed within a six foot radius of each existing monitoring well that remained within the Soil Cap area. Each well was surrounded with clean backfill or protective clay and then covered with the 6-inch layer of topsoil.

Asphalt Roadway Improvements

To address the former SWMU 2 Southern Drainage Ditch, the asphalt cap was constructed over existing road base material that was already present in the area to serve as an asphalt roadway or access road for railroad personnel to signal boxes located near the UPRR rail siding track south of the SWMU 2 area. The asphalt cap construction consisted of grading, and filling as necessary, the existing gravel surface and placement of a minimum 2-inch thick, 16-foot wide hot mix asphalt surface on the access road along the south side of the former HWPW area and on the north side of the UPRR Main Line Railroad Ballast area. The grading of the access road was performed by the bulldozer in order to meet the required 2% cross slope from the north side to the south side to allow storm water to drain away from the Soil Cap area. The north side of the asphalt cap is bound by the concrete barriers that make up the south boundary of the Soil Cap. In addition to the asphalt cover, railroad ballast rock was placed along the entire length of the access road to tie the asphalt surface to the edge of railroad ballast along the UPRR rail siding track, just north of the west-bound main line rail. The asphalt roadway construction also included the installation of a concrete low water crossing near the southwest end of the asphalt cap (Attachment 1C).

Concrete Sidewalk and Side-Slope Construction – City of Houston ROW

The concrete sidewalk and concrete side-slope construction took place within the City of Houston Liberty Road right-of-way from the back of curb to the UPRR property line. The width of the area varied from 7 to 8 feet wide and the total length measured approximately 691-feet. The construction of the five foot wide concrete sidewalk consisted of excavating approximately 9-inches of soil, which was stockpiled on the eastern end of the Soil Cap area until placement. Approximately 3-inches of clean sand material sourced off-site was placed at the bottom of the excavated area and then the wooden forms and reinforcing steel were placed and concrete poured. The concrete sidewalk is approximately 6 inches thick. The concrete side-slope installed between the sidewalk and the UPRR property boundary was excavated to 12-inches in depth along the UPRR property line (beneath the chain-link fence). The excavated soil was also stockpiled and kept covered on the eastern end of the Soil Cap area until final placement during cap construction. The forms and reinforcing steel were then installed and the concrete was poured for the side-slope.

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Security Fencing

The existing six-foot tall chain-linked security fence along Liberty Road remained in-place during the entirety of the construction project for security purposes, but a section of the fence was replaced due to damages that were not project related. Approximately 1,540-feet of new six foot tall chain-linked security fencing was installed along the west property boundary in order to restrict unauthorized access to the UPRR property. The route of the new fence along the west side of the property was heavily wooded and required clearing an approximate ten foot wide strip along the perimeter of UPRR’s property.

Site Restoration

Site restoration at the site after construction and land disturbing activities were completed consisted of seeding the Soil Cap and disturbed areas using broadcast seeding and no-till drilling methods. The Soil Cap area was seeded with a mixture of grasses (Bermuda and Millett) and pollinator plants (Cosmos and Milkweed). The areas of excavation that were backfilled were seeded with only the grass mix. All disturbed areas were then hydromulched using a mixture of water, liquid fertilizer, seed, inoculant, tackifier and cellulose fiber. Shortly after the areas were seeded in late April, the Houston area received heavy rainfall in May 2016, which allowed significant growth of the vegetation in the capped and excavated areas (see photos in Appendix 1C-2).

Describe how the response action achieved the property-specific response objectives for the PCLE zone in each media in the context of the response objectives set forth in §350.32 or §350.33, as applicable. Explain how the response action was appropriate based on the hydrogeologic and COC characteristics. Describe any unprotective conditions that continued or resulted from the remedial actions and the actions taken to mitigate unprotective conditions.

Response objectives were achieved at each surface soil PCLE Zone by physical removal of affected soil or through consolidation and capping of the impacted soils using a physical barrier within the Soil Cap Area under the Area of Contamination approach. For the seven excavation areas (Areas A through G), which were backfilled with clean import fill, surface soils PCLE zones were effectively remediated under a Remedy Standard A response objective as demonstrated through verification sampling, with the only control necessary for those areas being an institutional control limiting future land use to commercial/industrial. Except for the City of Houston ROW sidewalk area, none of the other excavated areas require a physical control.

For the Soil Cap Area, Asphalt Roadway Cap, and City of Houston ROW Sidewalk areas, the response actions achieve Remedy Standard B response objectives through physical controls to prevent exposure to concentrations of COCs in the environmental media in excess of commercial/industrial critical human health PCLs. The Soil, Asphalt, and Concrete Sidewalk caps will contain the COCs by eliminating pathways such as; dermal contact/ingestion of soils, inhalation hazards (dust), and restricting leaching of COCs to storm water or groundwater. In addition, for the Soil Cap area, a vapor barrier was installed to restrict potential migration of vapors (specifically, naphthalene concentrations in surface/subsurface soils that indicated a potential for migration to outdoor air). The Soil Cap was

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vegetated to restrict erosion of the soil cap and resulting possible exposure to the impacted soils. The Asphalt and Concrete Sidewalk Caps were constructed to prevent erosion and exposure to impacted soils under the cap material. In addition, institutional controls will be in place to prohibit disturbance of the caps. The combination of these measures, along with long-term maintenance of the Soil, Asphalt, and Concrete Sidewalk caps, as well as the existing Railroad Ballast Cap and Englewood Intermodal Yard Concrete Cap, will reliably contain the soil COCs over time and prevent human health exposure to the COCs above critical human health PCLs.

If different from the information provided in the RAP, explain how the COCs were handled, treated, disposed, or transferred to another media and document that the response action did not result in any additional exposure conditions due to response action activities.

The response actions for the surface soil PCLE Zones detailed in the RAP were implemented at the Site, except for the removal of the oil/water separators (SWMU 11). As previously discussed, the soil within and around the sides of the buried tank car separator was excavated and placed within the Soil Cap Area. The buried tank car was then backfilled with a flowable fill, clean sand, and clayey backfill within and around the tank car. Soil within the at-grade concrete oil/water separator located east of SWMU 8 was also excavated and the concrete structure was backfilled with clean fill and covered with the Asphalt Cap.

During consolidation activities, Site workers operated under a site-specific health and safety plan (HASp) and impacted soils will be consolidated within the surface soil Affected Property. Storm water protection (i.e., Storm Water Pollution Prevention Plan (SWPPP), silt fencing) activities were conducted during remediation activities to ensure the activities did not result in additional exposure conditions. During excavation and stockpiling activities within the Soil Cap area, impacted soils were covered with plastic to limit exposure to storm water during rainfall events. Dust suppression activities (with subsequent air monitoring and sampling activities after February 10, 2016) were implemented to control the potential migration of dust from the Site. Initial air monitoring during construction activities was conducted using visual observations and a photoionization detector (PID) to evaluate occupational exposures to potential vapors encountered during the excavation activities. After discussions with the TCEQ, an Air Monitoring Sampling and Analysis Plan (SAP) dated February 9, 2016 (provided in Appendix 5) was developed to establish real-time air monitoring downwind of dust-producing operations both at the excavation site and at the perimeter of the rail yard. The purpose of this monitoring was to identify those operations, if any, with the potential to generate dust above the site-specific action levels (as outlined in the Air SAP) and implement near immediate corrective action to minimize dust generation and offsite dust migration. To supplement real-time air monitoring efforts, analytical air samples were collected for PM₁₀ and polycyclic aromatic hydrocarbons (PAHs) at locations downwind of remediation operations. In contrast to real-time methodology, analytical air samples are capable of making chemical-specific measurements (for PAHs) and are able to achieve sufficiently low limits of analytical sensitivity. Daily air samples were collected and analyzed for from February 10 through March 8, 2016. As discussed in the CTEH Air Monitoring and Sampling Report (Appendix 5), throughout the monitoring there were no action level exceedances of the TCEQ Air Monitoring Comparison Values (AMCVs) for the Site-specific PAHs (PAHs) that were tested

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during the daily air analytical monitoring (Appendix 5). Once the handling of impacted soil was completed, the Air SAP was revised on March 8, 2016 to eliminate the air analytical sampling and to continue real-time monitoring for particulate matter (PM₁₀). The TCEQ approved the revised Air SAP and Dust Control Plan on March 9, 2016. Throughout the real-time PM₁₀ monitoring that began on February 10, 2016 and ended on April 28, 2016, there were no exceedances of the stop work action levels detailed in the Air SAP, indicating that the dust suppression activities during the remediation activities did not result in any additional exposure conditions.

During the excavation of Area A, a storm event occurred where storm water accumulated within the excavation. Approximately 9,000 gallons of storm water was removed from the excavation and was containerized in a frac tank located on site. The storm water was characterized, and determined not to contain any of the listed hazardous waste constituents related to the Site above human health levels (i.e., storm water was evaluated through the “contain-in” determination as detailed in a letter dated March 23, 2016 that was confirmed by the TCEQ Waste Permits Division in a letter dated April 1, 2016 (Appendix 8)). The containerized storm water was characterized, profiled, and properly disposed of at Republic Services McCarty Road Landfill.

Explain how the response action achieved the objectives within the reasonable time frame.

The response action achieved the response action objectives of protection of human exposure to impacted surface soils above the critical human health PCL. The construction phase of the project began in early January 2016 and was completed in early May 2016. The required deed recordation for the various capped areas was also completed, thereby finalizing the on-site soil response actions for the Site. UPRR is awaiting the restrictive covenant for the City of Houston Right of Way area capped with the concrete sidewalk.

For the Englewood Intermodal Yard and rail ballast area, surface soils were left in place. A physical barrier (concrete and/or railroad ballast/ties/rail) is already in place to prevent exposure to surface soil in that area.

For the entire Affected Property, deed restriction of the Site to commercial-industrial use will also be implemented to prevent future exposure risk. The deed notice will be filed with the Harris County Clerk upon approval of the RAP. In accordance with the TCEQ regulatory guidance document *Institutional Controls Under TRRP* (RG-366/TRRP-16), proof of filing would be submitted to the TCEQ within 120 days of approval of the RAP.

Were physical controls used as part of the response action? Yes No
If yes, describe the type and purpose of the physical control and discuss how the physical control has proved effective.

The following physical controls were constructed or already in-place and will be effective in protecting human health and the environment at the Site:

- Former HWPW area: To protect on-site commercial/industrial receptors from the surface and subsurface soil PCLE Zone, the Soil Cap was constructed using a vapor barrier (6-mil plastic) with geotextile fabric, and an engineered soil cap (12-in clayey soil, 6-in topsoil) to cover the consolidated soil and surface and subsurface soil PCLE Zones (Attachment 1C). Approximately 19,000 cyds of clayey soil and top soil were used for the construction of the Soil Cap. The Soil Cap was then vegetated (with a pollinator /grass mix to attract pollinators in the area) and sloped to minimize infiltration over the surface/subsurface soil PCLE Zone. The vegetated cap will be maintained under the post-response action care to ensure no exposure to the soils with COC concentrations greater than cPCLs. Signs will be posted with language stating restrictions on construction activity within the capped area.

For the SDD (SWMU 2) along the southern boundary of the HWPW, UPRR constructed the Asphalt Cap to serve two purposes: 1) as a roadway for railroad operations (i.e. signals, locomotive crew change out); and 2) to protect on-site commercial/industrial receptors from surface soils with COC concentrations above cPCLs. The Asphalt Cap construction consisted of grading the existing road material, compacting and stabilizing the existing road material, and applying a hot mix asphalt with at least 2-inches minimum cover approximately 16 feet wide over the length of the roadway. The Asphalt Cap, which will restrict infiltration, was constructed to drain storm water away from the Soil and Asphalt Cap areas. The Asphalt Cap will be maintained under the post-response action care to ensure no exposure to the soils within the soil PCLE Zone covered by the cap. Signs will be posted with language stating restrictions on construction activity within the capped area.

- City of Houston ROW: The Concrete Sidewalk Cap serves as a physical barrier within the off-site area immediately north of the AST Area (SWMU No. 8) within the City of Houston ROW between the UPRR property boundary and Liberty Road (approximately 7 to 8 feet in width). The concrete sidewalk (~690 feet long and approximately 6-inches thick) restricts exposure to the remaining surface soil PCLE zone within this area. The concrete sidewalk will be routinely inspected as part of the post-response action care to ensure no exposure to the underlying soils with COC concentrations above cPCLs in this area. An institutional control will be placed on the City of Houston ROW to maintain the physical control on surface soils (Appendix 5), and signs will be posted with language stating restrictions on construction activity within the capped area.
- Englewood Intermodal Yard area: The surface and subsurface soil PCLE zone in the Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact with impacted soils for on-site workers. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be routinely inspected to ensure on-site worker protection. Attachment 1A-1 shows the Soil Affected Property and its location beneath the concrete parking lot on the Site. In addition, storm drains within the proposed response action area will be inspected and sediment in the drains if present will be sampled to evaluate if COCs from surface soils have migrated into the storm water drainage system.

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- UPRR Main Lines Ballast Area: The area between the former HWPW area and the Englewood Intermodal Yard (approximately 100 feet width) is covered with railroad ballast, ties, and rail. UPRR will use the existing railroad ballast as an engineering control for preventing on-site worker exposure to impacted surface soils in this area. The railroad ballast area will be maintained as part of normal railroad operations. The track is owned and controlled by UPRR.

For each of these areas, signs will be posted with language stating restrictions on construction activity within the capped areas. In the event construction activities are necessary within a capped area, a health and safety plan will be implemented to ensure worker protection from COCs in the underlying surface soils and a soil management plan will be developed if soils are excavated as part of the construction activities.

Soil Response Action Objectives

When using removal and/or decontamination with controls or controls only, demonstrate that the physical control or combination of measures reliably contained COCs within and/or derived from the surface soil and subsurface soil PCLE zone materials over time.

Physical controls (various caps) in conjunction with an institutional control (deed notice/restrictive covenant) will permanently contain the COCs in the surface and subsurface soils. The Soil Cap, Asphalt Cap, Concrete Sidewalk Cap, and Englewood Intermodal Yard Concrete Cap will contain the COCs by eliminating pathways such as; dermal contact/ingestion of soils, inhalation hazards (dust), and leaching of COCs to storm water or groundwater. The UPRR Main Line Railroad Ballast Cap Area will also contain the COCs by eliminating pathways such as; dermal contact/ingestion of soils, and inhalation hazards (dust). Storm water will likely infiltrate the soils underlying the ballast material and could leach COCs into the shallow groundwater. However, with the proposed Plume Management Zone (PMZ) detailed in the RAP, the infiltration will not lead to either growth of or migration of the groundwater PCLE Zone in the shallow groundwater bearing unit (GWBU) A-TZ.

The caps will prevent erosion of the impacted soils from the Site to nearby drainage(s). The institutional control will be in place to prohibit disturbance of the caps. The combination of these measures, along with long-term maintenance of the caps detailed in the post-closure care will reliably contain the COCs over time.

Explain how the removal or decontamination action reduced the concentration of COCs to the critical surface soil and subsurface soil PCL throughout the soil PCLE zone and prevented COC concentrations above the critical soil PCLs from migrating beyond the original boundary of the soil PCLE zone.

For the excavation areas (Areas A through G), which were backfilled with clean imported fill, surface soils with COC concentrations above cPCLs were effectively reducing the COC concentrations below cPCLs in these areas under a Remedy Standard A response objective as demonstrated through verification sampling, with the only control necessary for those areas being an institutional control limiting current and future land use to commercial/industrial. During the construction activities, storm water protection activities were conducted to ensure the activities did not result in COCs in soils

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migrating beyond the existing soil PCLE Zones. During excavation of surface soils and stockpiling activities (prior to final grading and covering) within the Soil Cap area, impacted soils were also covered with plastic to limit exposure to storm water during rainfall events. Storm water that accumulated in the excavation was containerized, characterized, and properly disposed of in accordance with stated and federal rules and regulations. Dust suppression activities were also implemented within the construction area to control the potential migration of dust from the Site, as confirmed through air monitoring activities (Appendix 5).

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Groundwater Response Action Objectives

Name of groundwater-bearing unit to which this information applies *Will be addressed in separate RACR*

Repeat this section for each groundwater-bearing unit for which a different response action was conducted.

Groundwater classification	1	2	3	
	___	___	___	

Was a modified groundwater response action used for any part of the groundwater PCLE zone (§350.33(f)(2), (3), or (4))? Yes No

If yes, complete the appropriate portions of this report.

Explain how the removal or decontamination actions reduced the concentration of COCs to the critical groundwater PCL throughout the groundwater PCLE zone and prevented COC concentrations above the critical groundwater PCL from migrating beyond the original boundary of the groundwater PCLE zone. If COC concentrations above the critical groundwater PCL ever migrated beyond the original boundary of the groundwater PCLE zone, explain the actions taken to address the increase in the PCLE zone.

Explain how the response action prevented COCs from migrating to air at concentrations above the PCLs for air if the groundwater-to-air PCLs (^{Air}GW_{Inh-V}) were exceeded.

Explain how the response action prevented COCs from migrating to surface water at concentrations above the PCLs for groundwater discharges to surface water if surface water was a factor.

Explain how the response action prevented human and ecological receptor exposure to the groundwater PCLE zone.

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Waste Management

Describe the volume and final disposition or reuse location of waste or environmental media that was removed from the affected property during the response action, if not previously reported under STEERS. Provide copies of all manifests, other documentation of disposition, and landowner consent for reuse of soil in Appendix 8.

The wastes generated at the Site as a result of the project included non-hazardous wastes such as weathered timber cross ties, storm water, and concrete and construction debris. The volumes of the non-hazardous wastes removed consisted of the following:

- Approximately 9,000 gallons of petroleum-affected storm water (Manifest #2971873 and #2971874). Storm water was evaluated through the “contained-in” determination as detailed in a letter prepared by PBW dated March 23, 2016 that was confirmed by the TCEQ Waste Permits Division in a letter dated April 1, 2016 (Appendix 8);
- Approximately 180 cubic yards of weathered timber cross ties (Manifest #2971859 - #2971861 and #2971867 - #2971872); and
- Approximately 20 cubic yards of concrete and construction debris (Manifest #2876428 - #2876429).

These non-hazardous wastes from the Site were transported to the nearby Republic Services’ McCarty Road Landfill by Stericycle Specialty Waste Solutions, Inc. Copies of the waste manifests and documentation are provided in Appendix 8. Other non-hazardous wastes generated during the project construction consisted of general household trash which included paper, cardboard and miscellaneous other wastes.

The hazardous wastes generated during the project included recovered creosote and water, petroleum contaminated solids, F034 soil cuttings, steel pipe with creosote residue, empty poly tote, soiled personal protective equipment (PPE), and PVC pipe. The volumes of the hazardous wastes removed consisted of the following:

- Two drums (55-gallons each) of PPE and PVC Pipe pieces (Manifest #009007780);
- Seven drums (55-gallons each) of creosote liquid waste (F034) (Manifests #009007781, #009550758 and #009004982);
- One empty poly tote that was used to temporary store creosote sludge (Manifest #009550758);
- Approximately 10 cubic yards of solid waste (F034) (Manifest #009549457);
- One drum (55-gallons) of soil and creosote (Manifest #009549679); and
- Approximately 3 cubic yards of steel pipe with creosote residue (Manifest #003182983).

All of the wastes except for the steel pipe were transported from the site to Clean Harbors’ Deer Park Incineration Facility in La Porte using Clean Harbors’ equipment and personnel. The steel pipe was transported to Chemical Waste Management’s Lake Charles Landfill by Chemical Waste Management Transportation. Copies of the waste manifests and documentation are provided in Appendix 8. The hazardous wastes will be entered into the TCEQ STEERS system under SWR No. 31457.

ATTACHMENT 1A

MAPS AND CROSS SECTIONS

Attachment 1A-1 – Affected Property Map

Attachment 1A-1-1 Surface Soil Concentration Map - 1,2-Diphenylhydrazine

Attachment 1A-1-2 Surface Soil Concentration Map - 2,4-Dinitrotoluene

Attachment 1A-1-3 Surface Soil Concentration Map - 2-Methylnaphthalene

Attachment 1A-1-4 Surface Soil Concentration Map - Benzene

Attachment 1A-1-5 Surface Soil Concentration Map - Benzo(a)anthracene

Attachment 1A-1-6 Surface Soil Concentration Map - Benzo(a)pyrene

Attachment 1A-1-7 Surface Soil Concentration Map - Dibenzofuran

Attachment 1A-1-8 Surface Soil Concentration Map - Fluoranthene

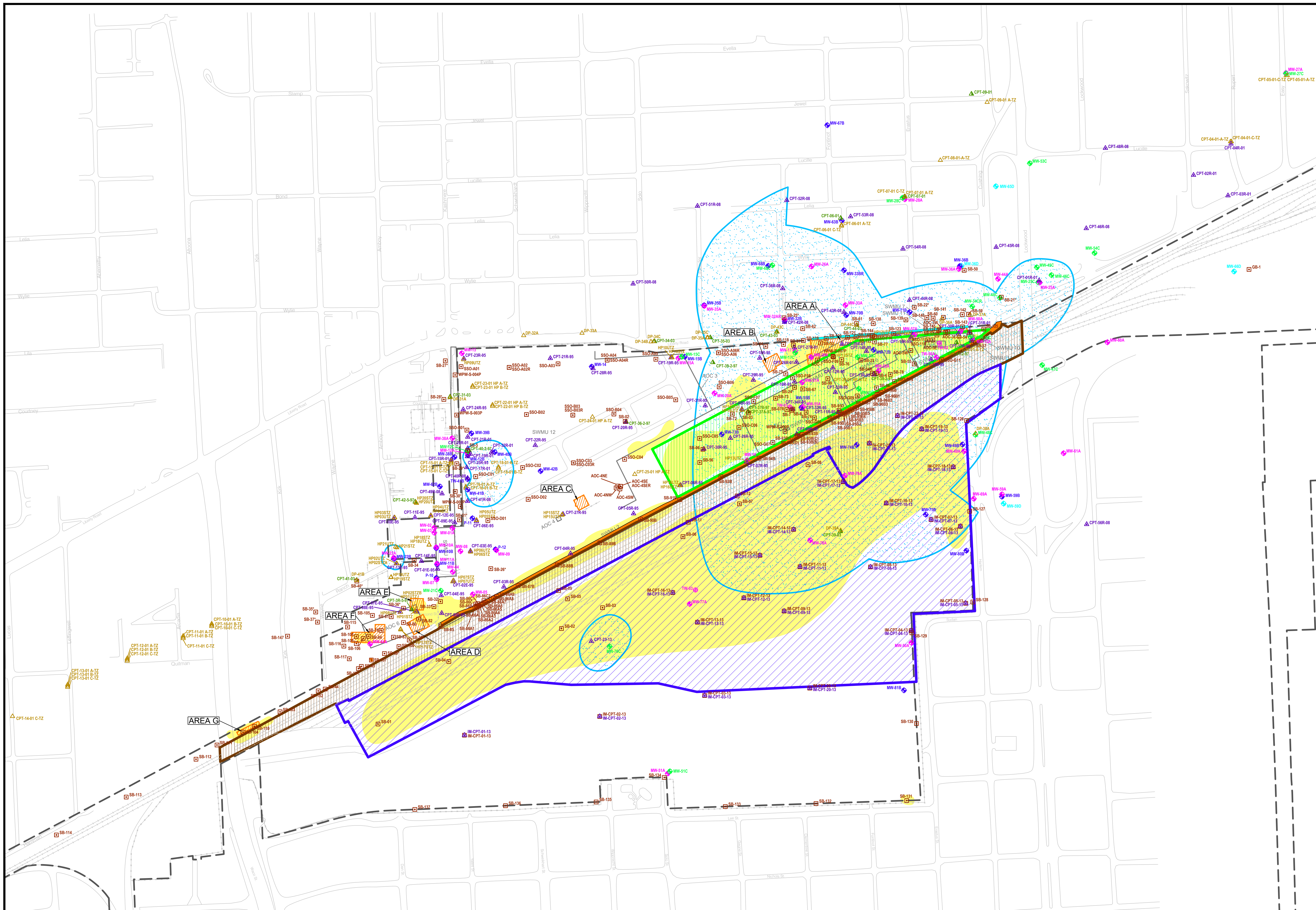
Attachment 1A-1-9 Surface Soil Concentration Map - Naphthalene

Attachment 1A-1-10 Surface Soil Concentration Map - Pentachlorophenol

Attachment 1A-1-11 Surface Soil Concentration Map - Phenanthrene

Attachment 1A-1-12 Surface Soil Concentration Map - Arsenic

Attachment 1A-1-13 Surface Soil Concentration Map - Lead



EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- ◆ A-TZ Monitoring Well Location
- ◆ B-CZ/B-TZ Monitoring Well Location
- ◆ C-TZ Monitoring Well Location
- ◆ D-TZ Monitoring Well Location
- ◆ A-TZ Temporary Monitoring Well Location
- ▲ CPT with Rost Location
- ▲ CPT Location
- ▲ Hydropunch Sample Location
- Soil Boring Location
- Soil Affected Property
- Groundwater Affected Property
- ▨ Surface Soils Excavated within AOC and Consolidated in Soil Cap Area
- ▨ Railroad Ballast Cap Area
- ▨ Asphalt Cap Area
- ▨ Soil Cap
- ▨ Concrete Sidewalk Cap
- ▨ Concrete Cap Area

Note:
* Soil analytical data rejected by validator.

No.	Description
SWMU 1	Closed Surface Impoundment
SWMU 2	Northern and Southern Drainage Ditches
SWMU 4	Recent Process Area
SWMU 5	Original Process Area
SWMU 6	Water Treatment and Boiler System
SWMU 7	Tank Car Storage Area
SWMU 8	Aboveground Storage Tank Area
SWMU 9	Location of Former UST No. 44-023-05
SWMU 10	Location of Former Sap Water Treatment Tank
SWMU 11	Oil/Water Separators
SWMU 12	Railroad Tie Storage Area
AOC 1	Diesel Storage Tank
AOC 3	Contaminated Portion of City Water Line
AOC 4	Location of Former Incinerator
AOC 5	City Storm Sewer
AOC 6	Inactive Wastewater Lagoon
AOC 7	Location of Former UST No. 44-023-21

Note:
Locations of SWMU-9 and AOCs 1, 3, 5 and 7 area approximate.



Texas Geosciences Firm No. 50248



Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1 AFFECTED PROPERTY MAP		
PROJECT: 1358	BY: AJD	REVISIONS
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

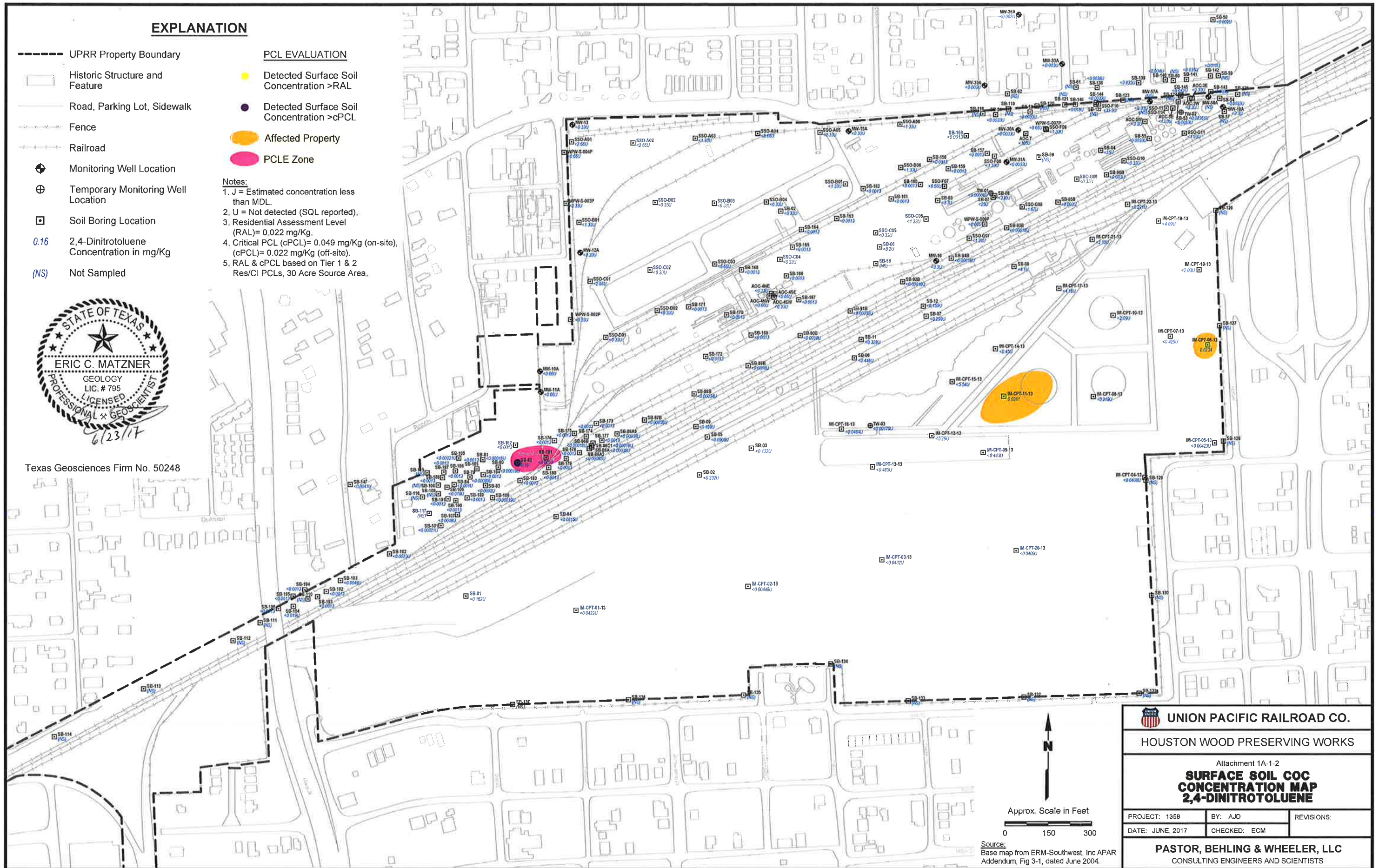
- UPRR Property Boundary
- ▭ Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- Soil Boring Location
- 0.16 2,4-Dinitrotoluene Concentration in mg/Kg
- (NS) Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration >RAL
 - Detected Surface Soil Concentration >cPCL
 - Affected Property
 - PCLE Zone
- Notes:
1. J = Estimated concentration less than MDL.
 2. U = Not detected (SQL reported).
 3. Residential Assessment Level (RAL)= 0.022 mg/Kg.
 4. Critical PCL (cPCL)= 0.049 mg/Kg (on-site), (cPCL)= 0.022 mg/Kg (off-site).
 5. RAL & cPCL based on Tier 1 & 2 Res/Cl PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Approx. Scale in Feet
0 150 300

Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-2		
SURFACE SOIL COC CONCENTRATION MAP 2,4-DINITROTOLUENE		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

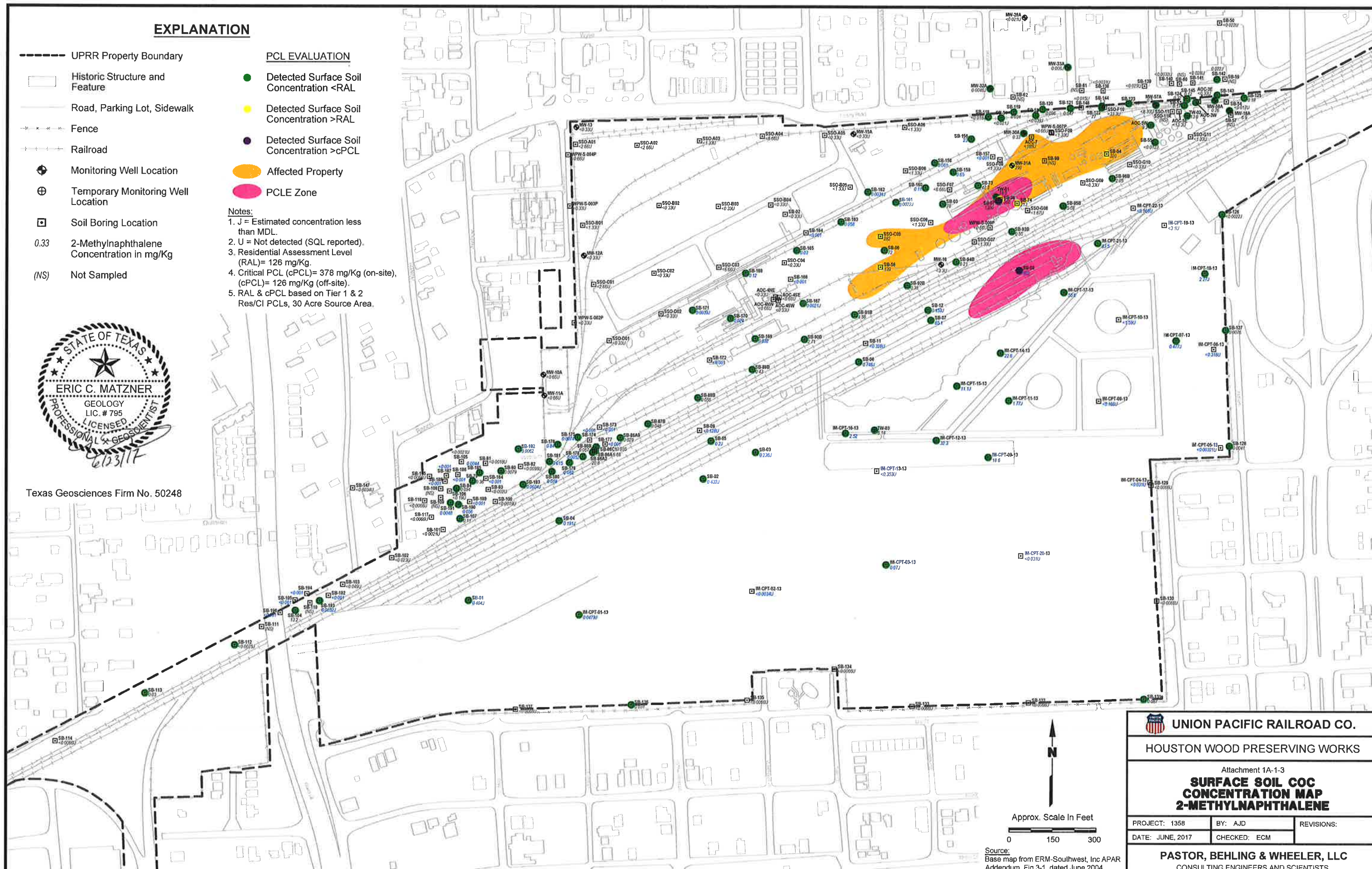
- UPRR Property Boundary
- ▭ Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- - - - Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- Soil Boring Location
- 0.33 2-Methylnaphthalene Concentration in mg/Kg
- (NS) Not Sampled

PCL EVALUATION

- Detected Surface Soil Concentration <RAL
 - Detected Surface Soil Concentration >RAL
 - Detected Surface Soil Concentration >cPCL
 - Affected Property
 - PCLE Zone
- Notes:
1. J = Estimated concentration less than MDL.
 2. U = Not detected (SQL reported).
 3. Residential Assessment Level (RAL)= 126 mg/Kg.
 4. Critical PCL (cPCL)= 378 mg/Kg (on-site), (cPCL)= 126 mg/Kg (off-site).
 5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Approx. Scale In Feet
0 150 300

Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-3 SURFACE SOIL COC CONCENTRATION MAP 2-METHYLNAPHTHALENE		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- - - Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- Soil Boring Location
- 0.012 Benzene Concentration in mg/Kg
- (NS) Not Sampled

PCL EVALUATION

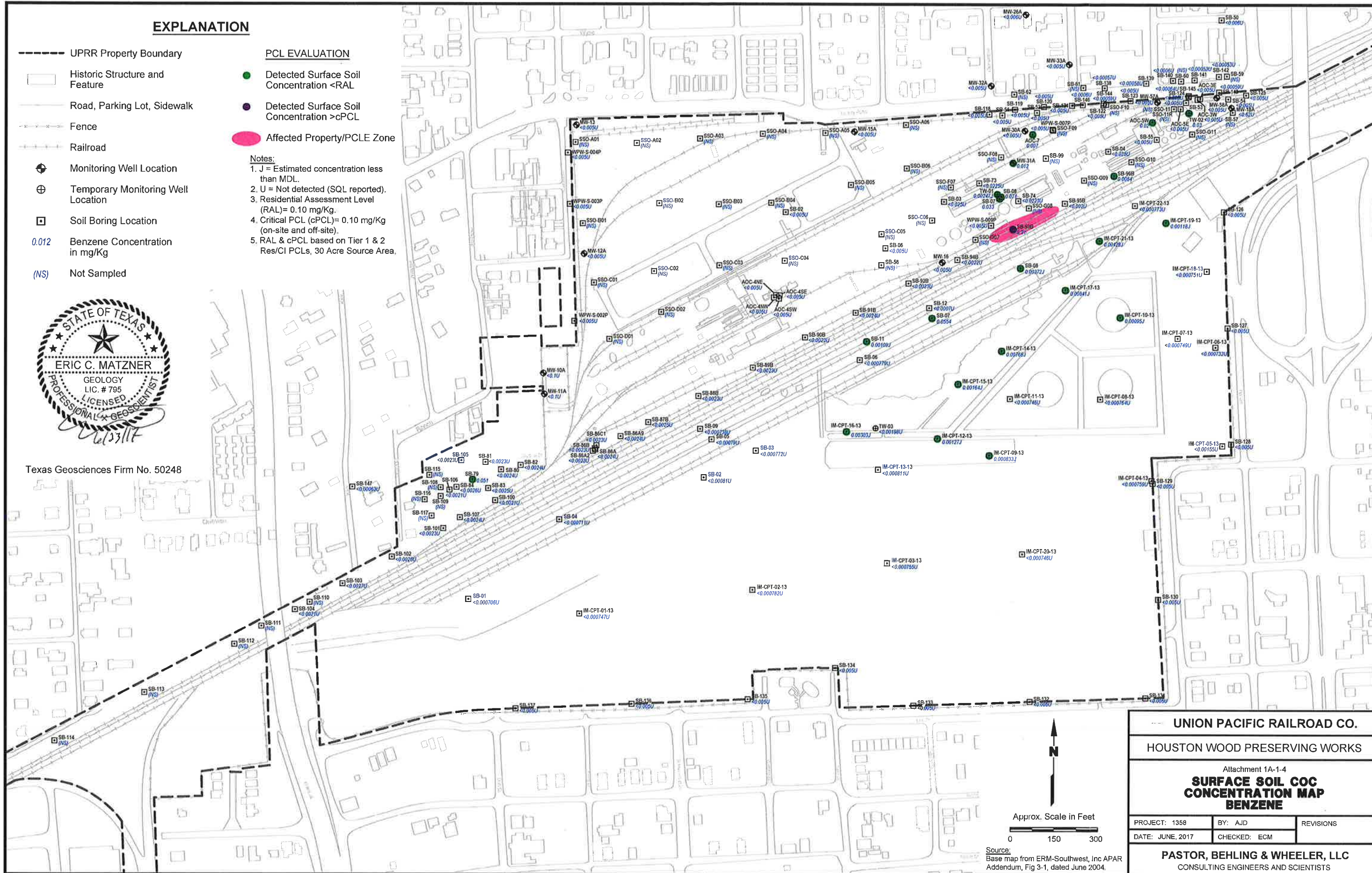
- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property/PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL) = 0.10 mg/Kg.
4. Critical PCL (cPCL) = 0.10 mg/Kg (on-site and off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Approx. Scale in Feet



Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-4		
SURFACE SOIL COC CONCENTRATION MAP BENZENE		
PROJECT: 1358	BY: AJD	REVISIONS
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- Soil Boring Location
- 2.94 Benzo(a)anthracene Concentration in mg/Kg
- (NS) Not Sampled

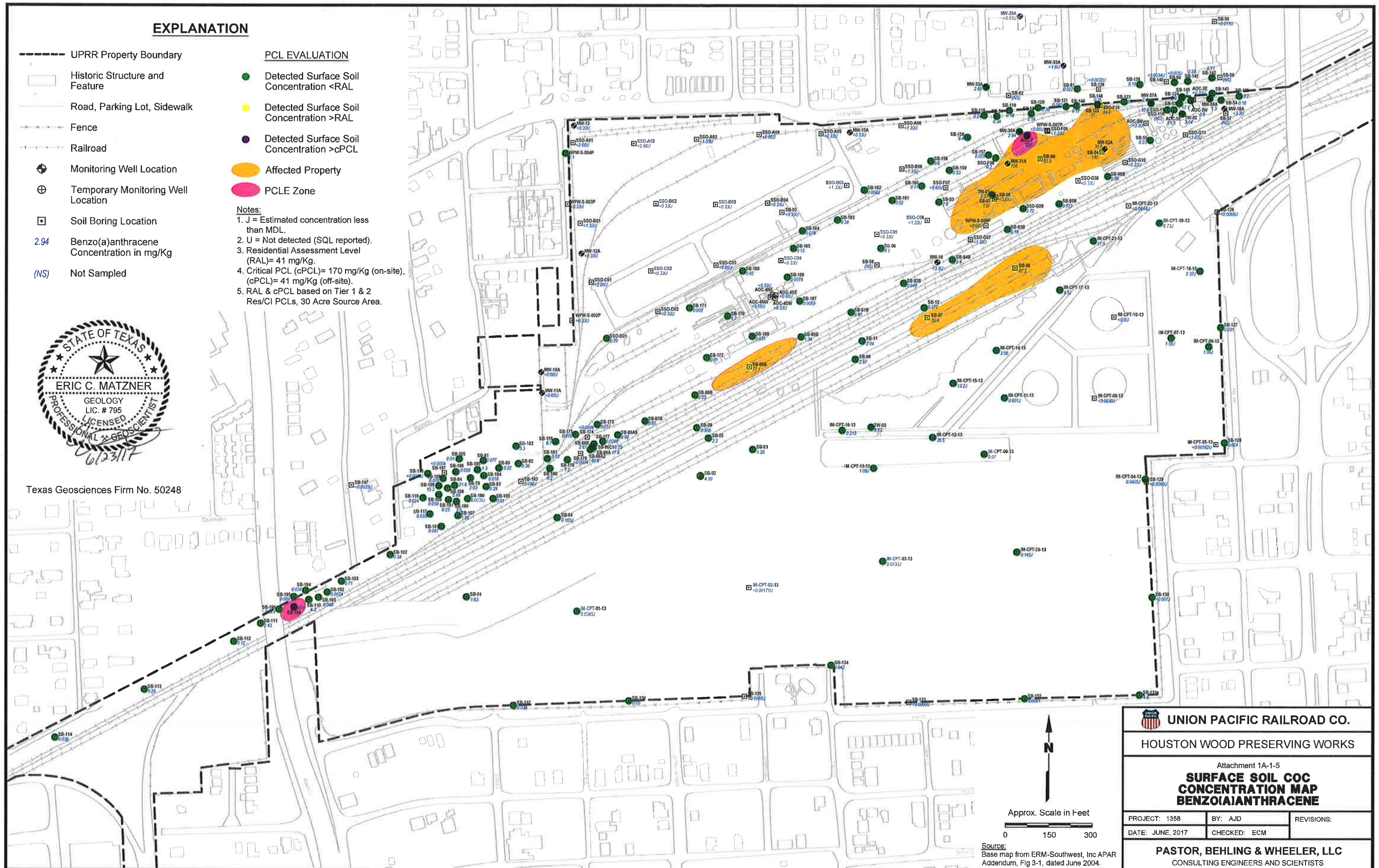
PCL EVALUATION

- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

- Notes:
1. J = Estimated concentration less than MDL.
 2. U = Not detected (SQL reported).
 3. Residential Assessment Level (RAL) = 41 mg/Kg.
 4. Critical PCL (cPCL) = 170 mg/Kg (on-site), (cPCL) = 41 mg/Kg (off-site).
 5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-5		
SURFACE SOIL COC CONCENTRATION MAP		
BENZO(A)ANTHRACENE		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC		
CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

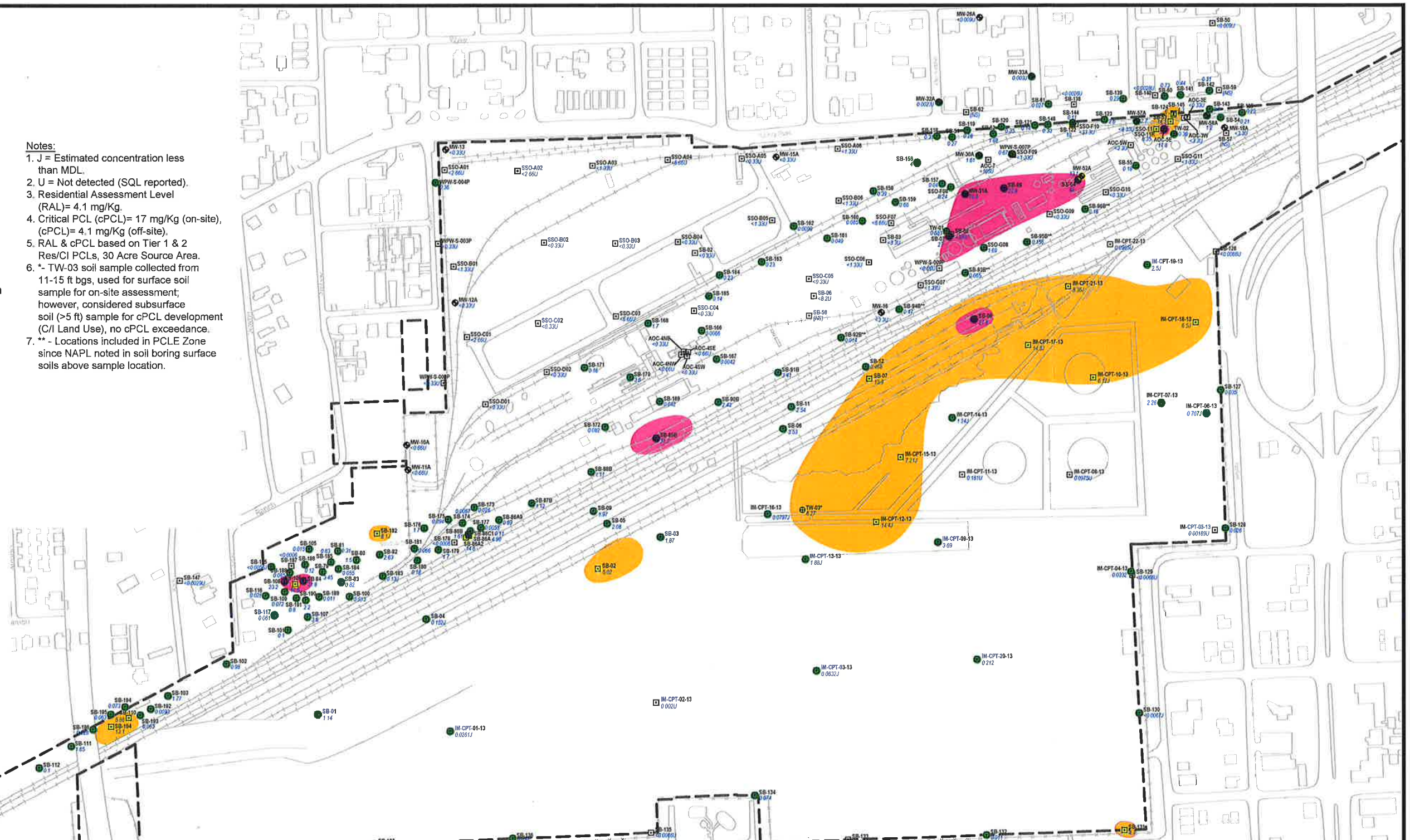
- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- Soil Boring Location
- 1.61 Benzo(a)pyrene Concentration in mg/Kg
- (NS) Not Sampled
- PCL EVALUATION
- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 4.1 mg/Kg.
4. Critical PCL (cPCL)= 17 mg/Kg (on-site), (cPCL)= 4.1 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.
6. *- TW-03 soil sample collected from 11-15 ft bgs, used for surface soil sample for on-site assessment; however, considered subsurface soil (>5 ft) sample for cPCL development (C/I Land Use), no cPCL exceedance.
7. ** - Locations included in PCLE Zone since NAPL noted in soil boring surface soils above sample location.



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UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-6		
SURFACE SOIL COC CONCENTRATION MAP BENZO(A)PYRENE		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

N
↑

Approx. Scale in Feet

0 150 300

Source:
Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- - - Fence
- ⊕ Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- Soil Boring Location
- 0.81 Dibenzofuran Concentration in mg/Kg
- (NS) Not Sampled

PCL EVALUATION

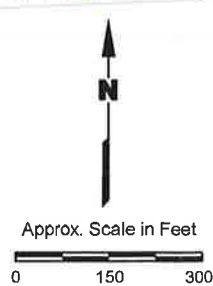
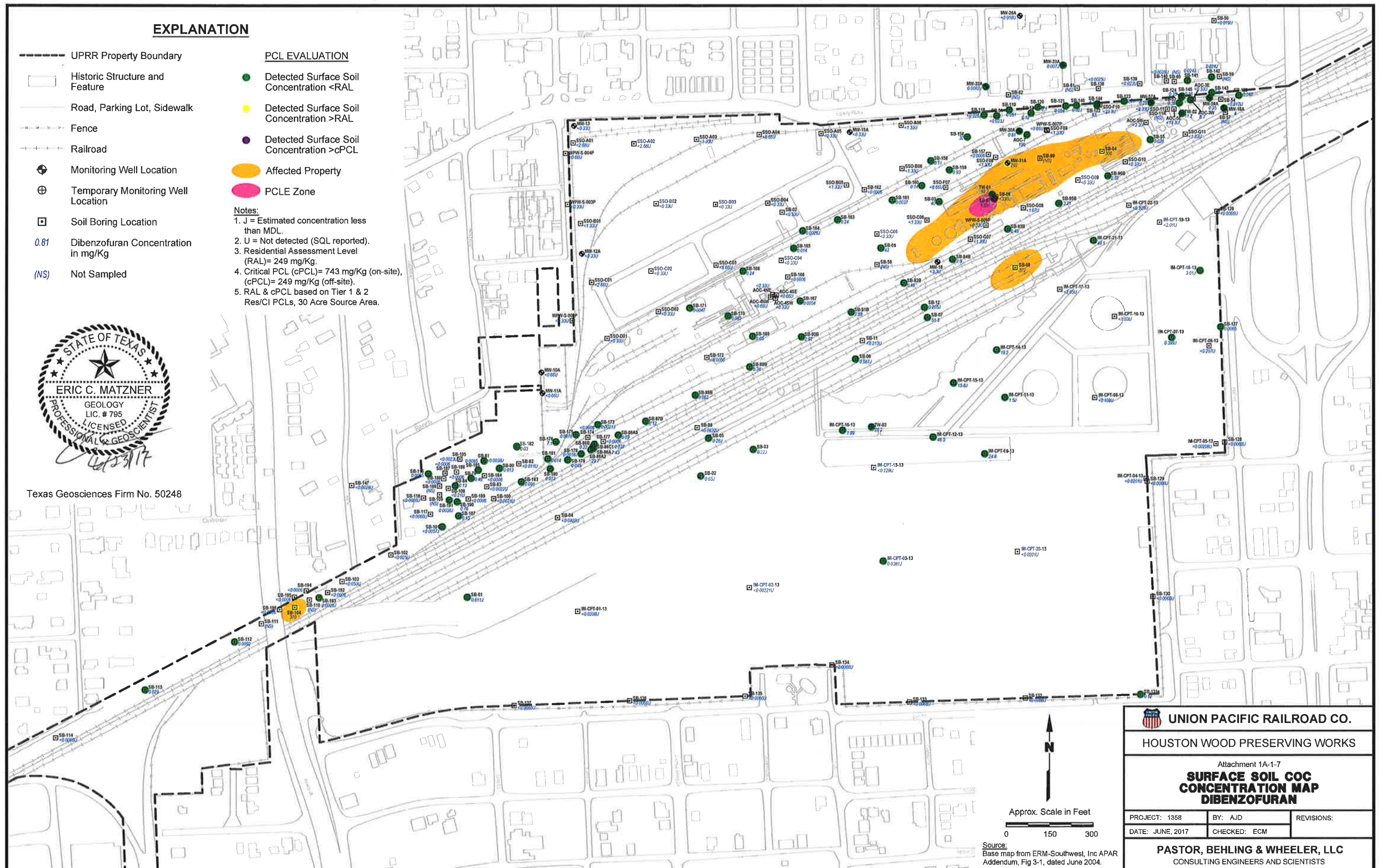
- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 249 mg/Kg.
4. Critical PCL (cPCL)= 743 mg/Kg (on-site), (cPCL)= 249 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Source:
Base map from ERM-Southwest, Inc APAR
Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-7 SURFACE SOIL COC CONCENTRATION MAP DIBENZOFURAN		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

- UPRR Property Boundary
- ▭ Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- ▣ Soil Boring Location
- 2.8 Fluoranthene Concentration in mg/Kg
- (NS) Not Sampled

PCL EVALUATION

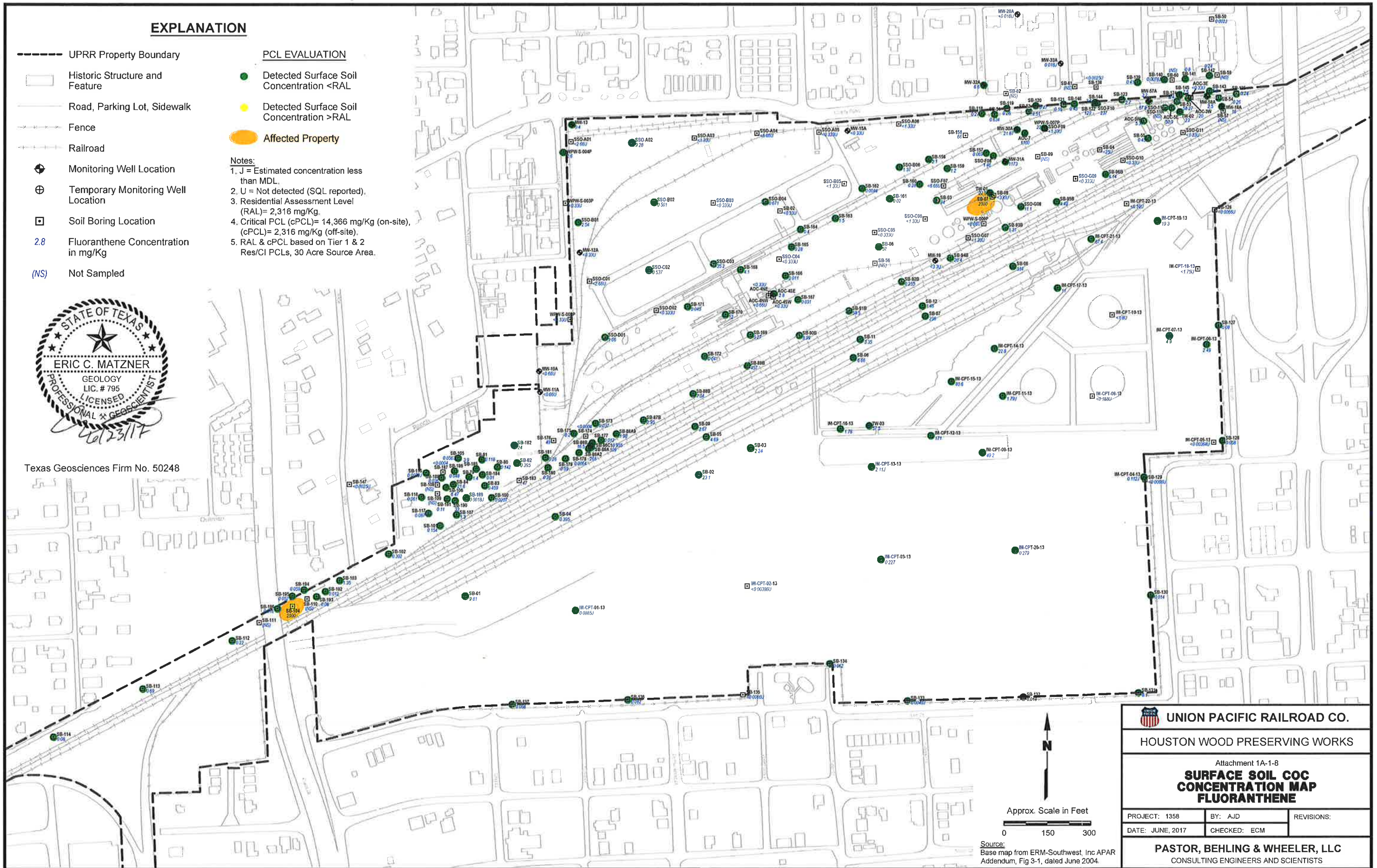
- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Affected Property

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 2,316 mg/Kg.
4. Critical PCL (cPCL)= 14,366 mg/Kg (on-site), (cPCL)= 2,316 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-8 SURFACE SOIL COC CONCENTRATION MAP FLUORANTHENE		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

- UPRR Property Boundary
- ▭ Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- ⊕ Monitoring Well Location
- ⊕ Temporary Monitoring Well Location
- ▣ Soil Boring Location
- 0.039 Naphthalene Concentration in mg/Kg
- (NS) Not Sampled

PCL EVALUATION

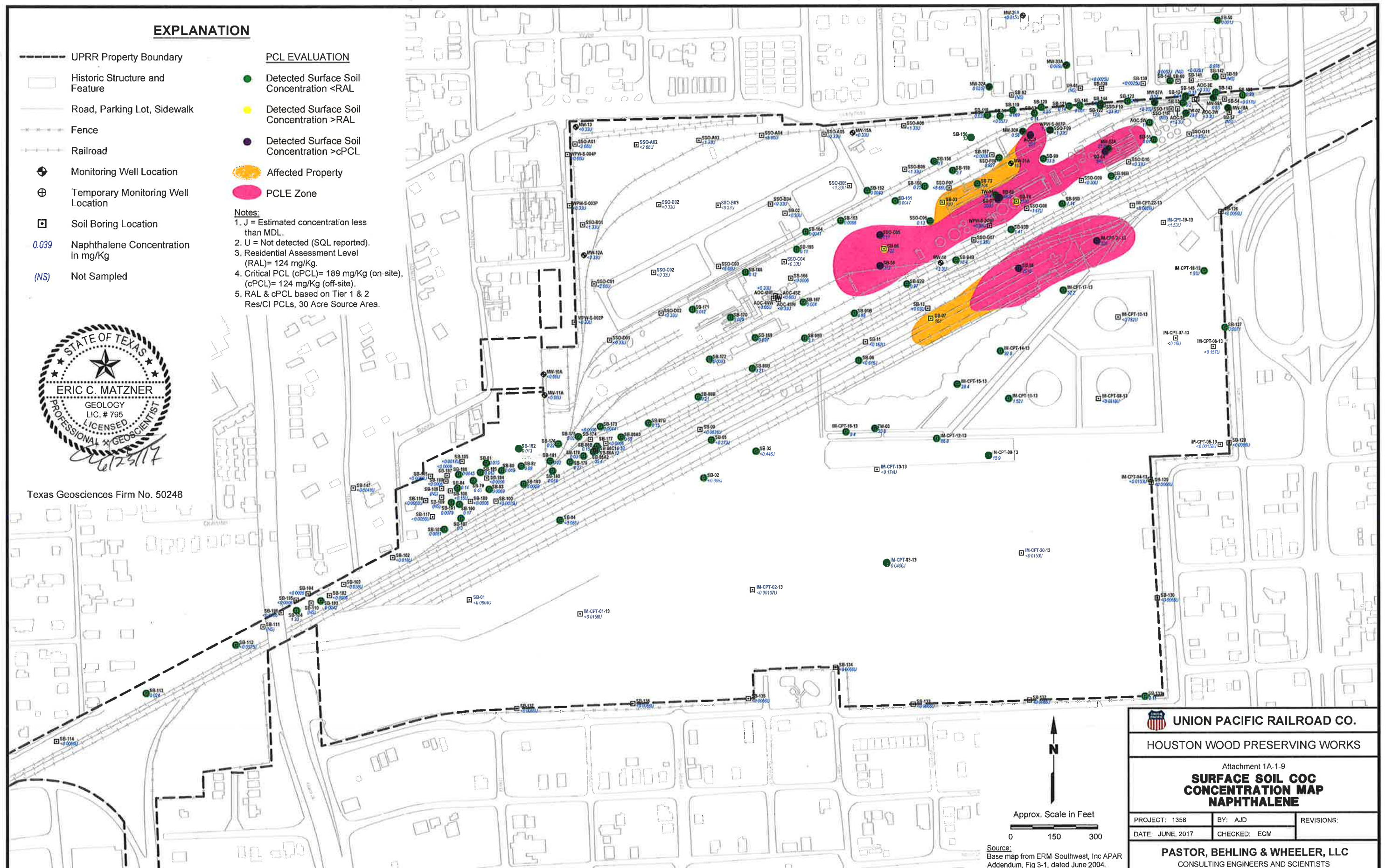
- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property
- PCLE Zone

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 124 mg/Kg.
4. Critical PCL (cPCL)= 189 mg/Kg (on-site), (cPCL)= 124 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Approx. Scale in Feet
0 150 300

Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-9 SURFACE SOIL COC CONCENTRATION MAP NAPHTHALENE		
PROJECT: 1358	BY: A/JD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

EXPLANATION

--- UPRR Property Boundary

▭ Historic Structure and Feature

— Road, Parking Lot, Sidewalk

- - - - Fence

— Railroad

⊕ Monitoring Well Location

⊕ Temporary Monitoring Well Location

□ Soil Boring Location

0.16 Phenanthrene Concentration in mg/Kg

(NS) Not Sampled

PCL EVALUATION

● Detected Surface Soil Concentration <RAL

● Detected Surface Soil Concentration >RAL

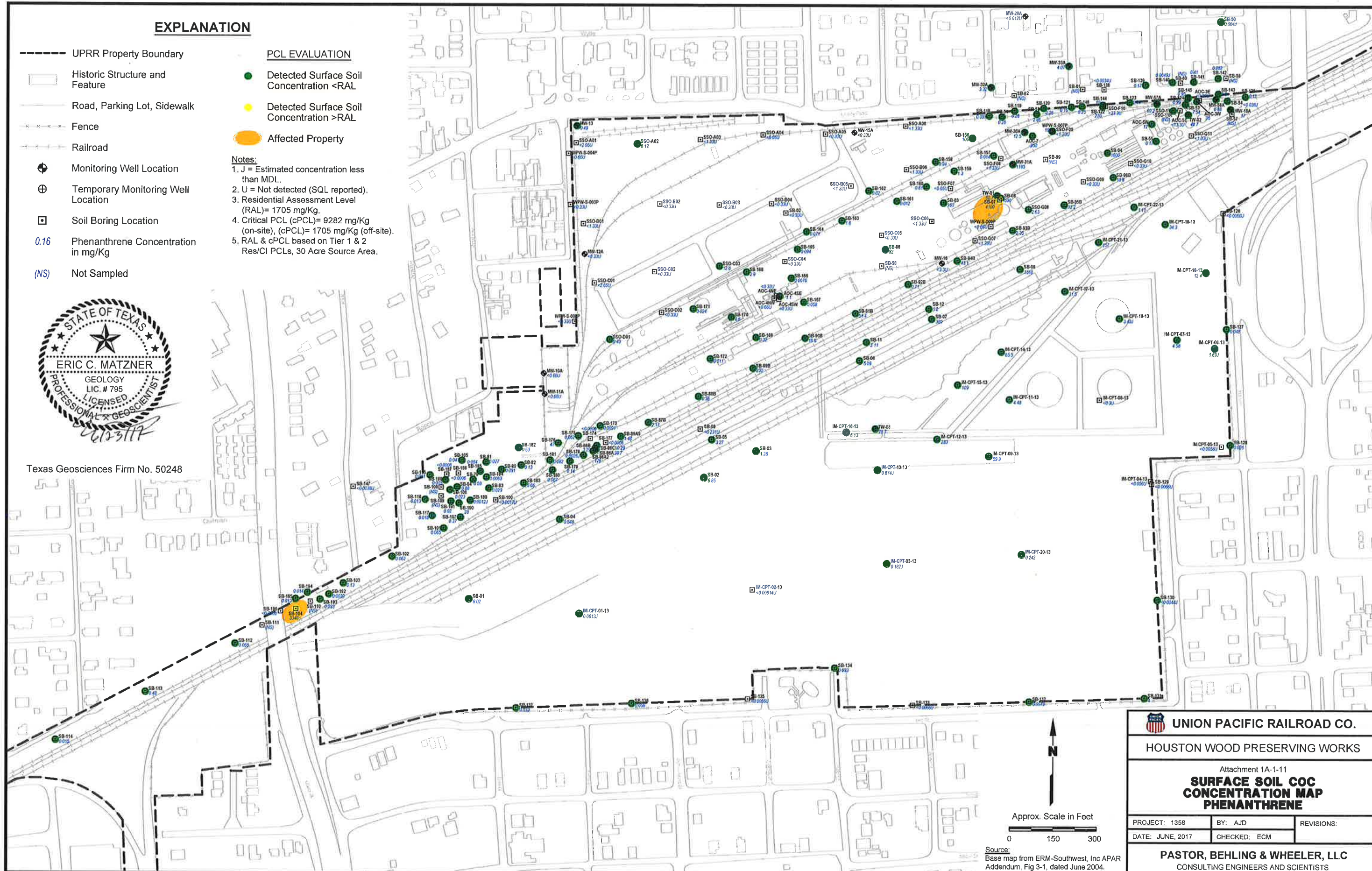
● Affected Property

Notes:

1. J = Estimated concentration less than MDL.
2. U = Not detected (SQL reported).
3. Residential Assessment Level (RAL)= 1705 mg/Kg.
4. Critical PCL (cPCL)= 9282 mg/Kg (on-site), (cPCL)= 1705 mg/Kg (off-site).
5. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.




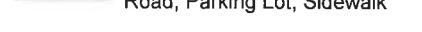

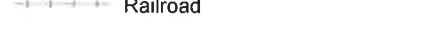
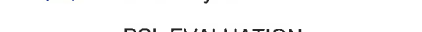
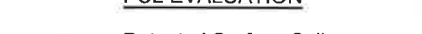
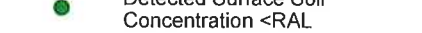


Texas Geosciences Firm No. 50248



UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-11		
SURFACE SOIL COC CONCENTRATION MAP PHENANTHRENE		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC		
CONSULTING ENGINEERS AND SCIENTISTS		

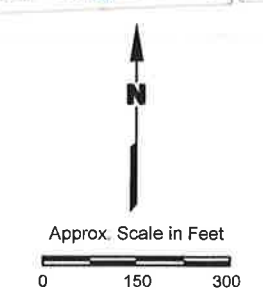
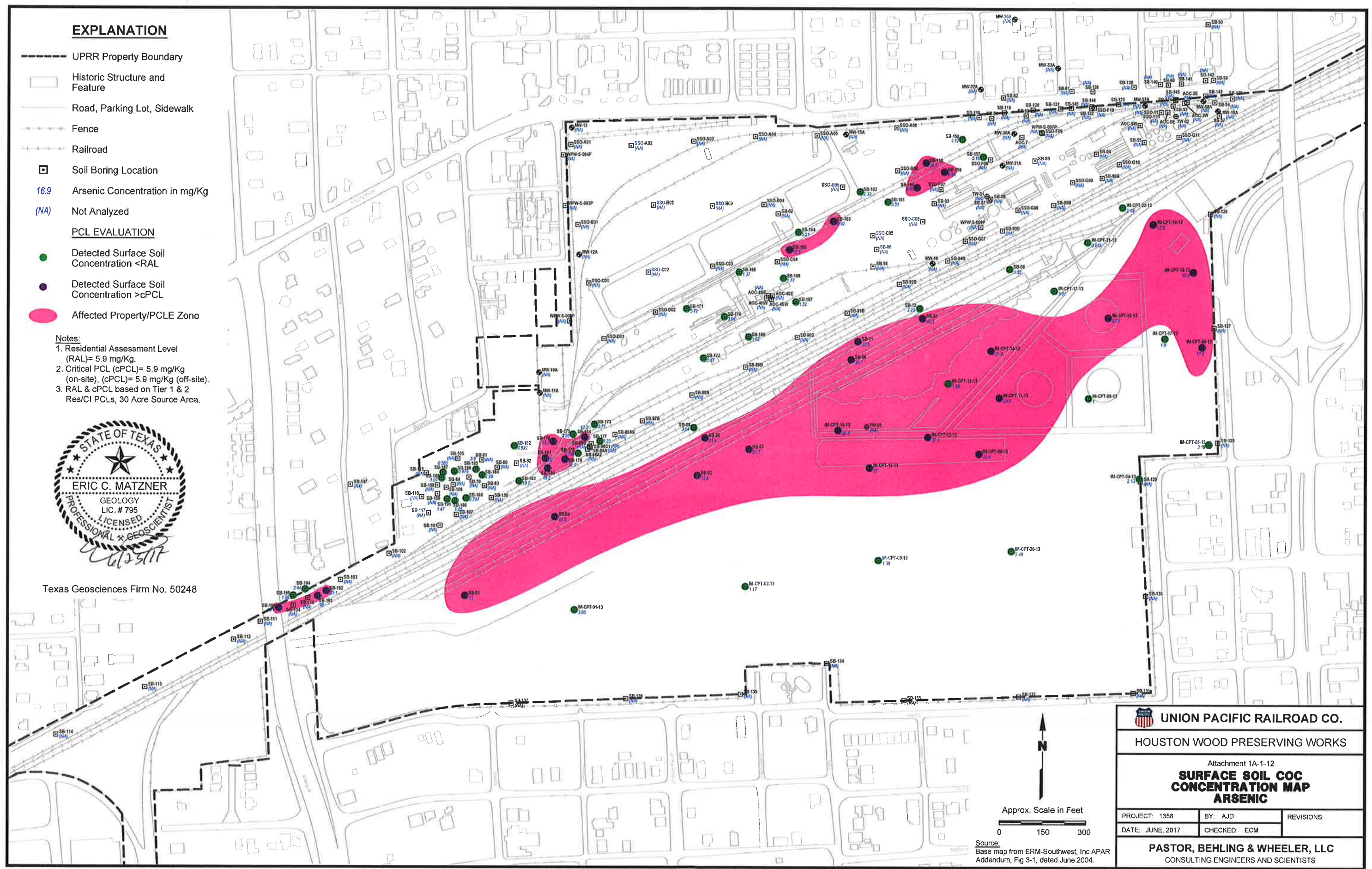
EXPLANATION

-  UPRR Property Boundary
-  Historic Structure and Feature
-  Road, Parking Lot, Sidewalk
-  Fence
-  Railroad
-  Soil Boring Location
- 16.9 Arsenic Concentration in mg/Kg
- (NA) Not Analyzed
- PCL EVALUATION**
-  Detected Surface Soil Concentration <RAL
-  Detected Surface Soil Concentration >cPCL
-  Affected Property/PCLE Zone


- Notes:**
1. Residential Assessment Level (RAL)= 5.9 mg/Kg.
 2. Critical PCL (cPCL)= 5.9 mg/Kg (on-site), (cPCL)= 5.9 mg/Kg (off-site).
 3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

 UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-12		
SURFACE SOIL COC CONCENTRATION MAP ARSENIC		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

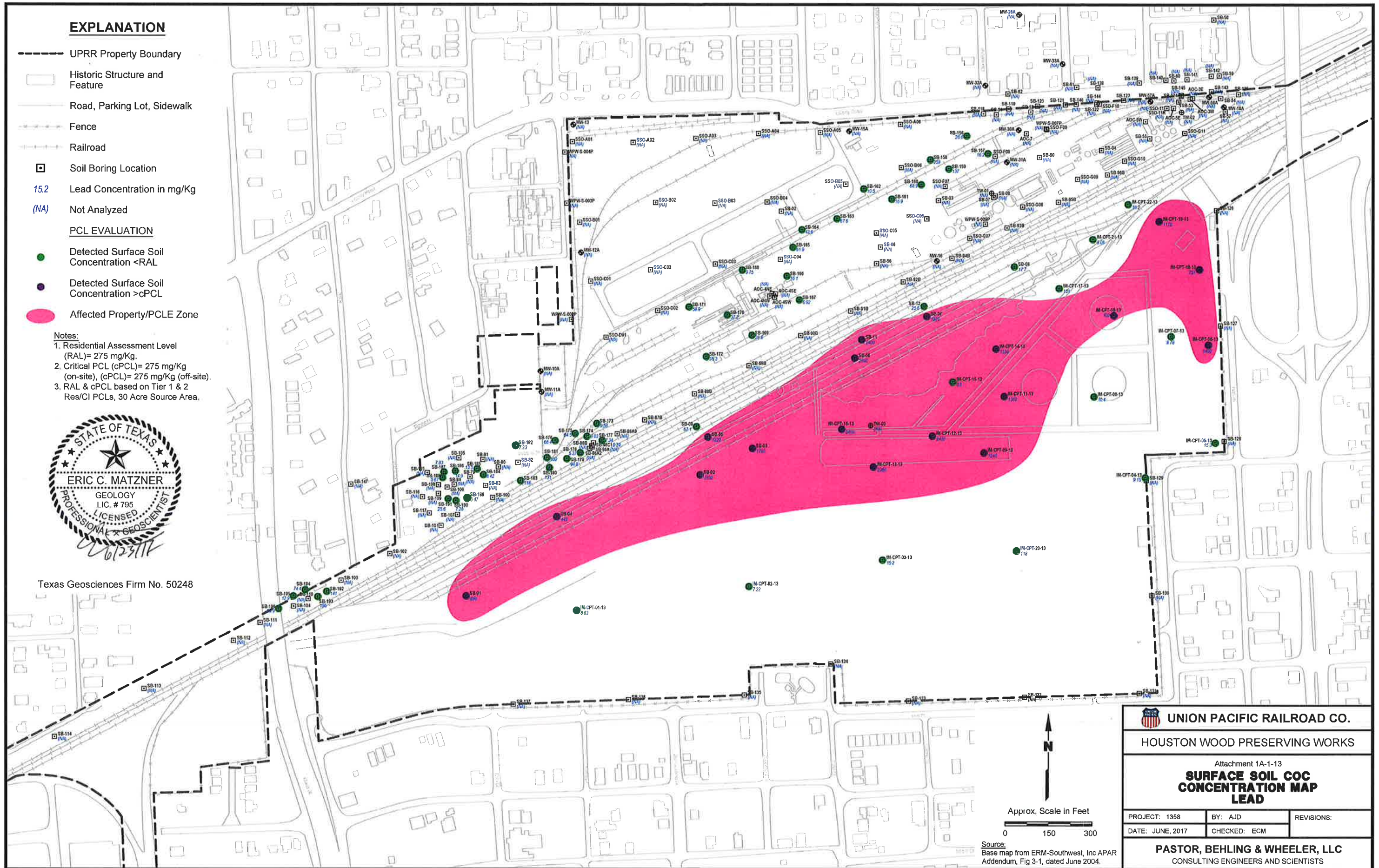
EXPLANATION

- UPRR Property Boundary
- Historic Structure and Feature
- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- Soil Boring Location
- 15.2 Lead Concentration in mg/Kg
- (NA) Not Analyzed
- PCL EVALUATION**
- Detected Surface Soil Concentration <RAL
- Detected Surface Soil Concentration >cPCL
- Affected Property/PCLE Zone

- Notes:**
1. Residential Assessment Level (RAL)= 275 mg/Kg.
 2. Critical PCL (cPCL)= 275 mg/Kg (on-site), (cPCL)= 275 mg/Kg (off-site).
 3. RAL & cPCL based on Tier 1 & 2 Res/CI PCLs, 30 Acre Source Area.



Texas Geosciences Firm No. 50248



Approx. Scale in Feet
 0 150 300

Source: Base map from ERM-Southwest, Inc APAR Addendum, Fig 3-1, dated June 2004.

UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Attachment 1A-1-13 SURFACE SOIL COC CONCENTRATION MAP LEAD		
PROJECT: 1358	BY: AJD	REVISIONS:
DATE: JUNE, 2017	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

Institutional Controls	RACR Worksheet 4.0 Page 1 of 2	
	ID No. SWR No. 31547	Report Date: 06/24/17 – Rev. 1

Complete this worksheet if an institutional control will be or has been used as part of the response action. Include in Appendix 3 copies of filed institutional controls and drafts of the proposed institutional controls, copies of landowner concurrences, and a list of landowners from whom landowner concurrence will be requested.

Specify the property for which this applies. UPRR Houston Wood Preserving Works, 4910 Liberty Road

Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control ³				Property Ownership		Anticipated or actual filing date ⁴
	Deed notice	Restrictive covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))	X				X		Within 120 days from RAP Approval
Document use of physical or institutional control under Remedy Standard B §350.31(g))	X				X		Within 120 days from RAP Approval
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))							
Document the demonstration of technical impracticability (§350.33(f)(3)(F))							
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							
Other (specify)							

³ Check the appropriate box(es) to indicate the type of institutional control required for the response action.

⁴ Specify date or amount of time after RAP approval.

Complete this worksheet if an institutional control will be or has been used as part of the response action. Include in Appendix 3 copies of filed institutional controls and drafts of the proposed institutional controls, copies of landowner concurrences, and a list of landowners from whom landowner concurrence will be requested.

Specify the property for which this applies. City of Houston ROW (Concrete Sidewalk Cap area)

Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control ⁵				Property Ownership		Anticipated or actual filing date ⁶
	Deed notice	Restrictive covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))							
Document use of physical or institutional control under Remedy Standard B §350.31(g))		X				X	Within 120 days from RAP Approval
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))							
Document the demonstration of technical impracticability (§350.33(f)(3)(F))							
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							
Other (specify)							

⁵ Check the appropriate box(es) to indicate the type of institutional control required for the response action.

⁶ Specify date or amount of time after RAP approval.

APPENDIX 3

INSTITUTIONAL CONTROLS AND LANDOWNER CONCURRENCE

DEED NOTICE

STATE OF TEXAS §
COUNTY OF § KNOW ALL MEN BY THESE PRESENTS THAT:
HARRIS §

This Notice is filed to provide information concerning certain environmental conditions and/or use restrictions pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) identified as the Former Houston Wood Preserving Works (HWPW) Site (124.8360 Acres) is described by metes and bounds on Exhibit A, attached hereto and incorporated herein by reference, and depicted on the map portion of Exhibit A.. Portions of the soil and groundwater underlying the Property contain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the TRRP. The Affected Property is shown on Exhibit B.

As detailed in the Response Action Plan (RAP) (PBW, 2015), target chemicals of concern in soil and groundwater media were detected within the Affected Property and Protective Concentration Level (PCL) Exceedance (PCLE) Zone in surface and subsurface soils.

PCLE Zones

Soils

Comparing the surface and subsurface soil analytical data to the appropriate critical PCLs, concentrations of 15 chemicals of concern exceeded their respective critical PCLs (cPCLs):

<u>Surface Soils</u>	<u>cPCL</u> <u>(mg/kg)</u>	<u>Subsurface Soils</u>	<u>cPCL</u> <u>(mg/kg)</u>
<ul style="list-style-type: none">• 1,2-Diphenylhydrazine• 2,4-Dinitrotoluene• 2-Methylnaphthalene• Benzene• Benzo(a)anthracene• Benzo(a)pyrene• Dibenzofuran• Naphthalene• Pentachlorophenol• Arsenic• Lead	<ul style="list-style-type: none">0.230.0493780.10170177431890.12200275	<ul style="list-style-type: none">• 2-Methylnaphthalene• Benzene• Naphthalene• Pentachlorophenol	<ul style="list-style-type: none">3780.1051920.12

Groundwater

Based on the maximum groundwater analytical data detailed in the RAP, concentrations of the following 23 target chemicals of concern exceeded their cPCLs:

<u>VOCs</u>	<u>cPCL</u> <u>(mg/L)</u>	<u>SVOCs</u>	<u>cPCL (mg/L)</u>
<ul style="list-style-type: none"> • Benzene • Ethylbenzene • Methylene Chloride • Toluene • Vinyl Chloride 	0.005 0.70 0.005 1 0.002	<ul style="list-style-type: none"> • 2,4-Dimethylphenol • 2,6-Dinitrotoluene • 2-Methylnaphthalene • Acenaphthene* • Anthracene * • Benzo(a)anthracene • Benzo(a)pyrene • Bis(2-chloroethoxy)methane* • Chlorobenzene • Chrysene * • Dibenzofuran • Fluoranthene * • Fluorene * • Naphthalene • Pentachlorophenol • Phenanthrene * • Phenol • Pyrene * 	1.5 0.0013 0.29 4.4 7.3 0.0028 0.0002 0.006 0.28 0.29 2.9 2.9 1.5 0.001 2.2 7.3 2.2

* - COC only detected in wells with DNAPL present

Creosote dense non-aqueous phase liquid (DNAPL) has been detected in the groundwater bearing units A-TZ, B-CZ, B-TZ, and C-TZ as noted in soil borings and monitoring wells.

This Notice is required for the following reasons:

Commercial/Industrial Land Use

The Property (124.8360 Acres), including the Affected Property, shown on Exhibit A currently meets TRRP standards for commercial/industrial land use, as the property may not be protective for residential use. If any person desires in the future to use the Property for residential purposes, the TCEQ must be notified at least 60 days in advance of such use and additional response actions may be necessary before the Property may be used for residential purposes. Persons contemplating a change in land use for the Property are encouraged to review the definitions for commercial/industrial and residential land use contained in TRRP as the definition of residential land use is broad.

Use of Physical Control on Soil

The Affected Property is subject to the TRRP requirements for properties containing

concentrations of chemicals of concern in soil and is subject to the requirements in 30 TAC §350.33(e)(2) to prevent exposure to soils that contain a chemical of concern in excess of the protective concentration level. The attached Exhibit C, which includes Exhibits C-1, C-2, C-3, and C-4, describes and provides the location and metes and bounds of the physical controls and extent of the soil that exceeds the TCEQ-approved critical protective concentration levels for certain chemicals of concern. Physical controls include the following:

- Former HWPW Operating Area:
 - Soil Cap Area (7.1168 Acres) (Exhibit C-1): An engineered soil cap consisting of a vapor barrier with geotextile fabric, and 12-inches of clayey soil with 6-inches of topsoil was constructed to protect on-site commercial/industrial receptors. The physical control covers the consolidated soil and surface soil PCLE Zone on the former HWPW operating area. The soil cap is vegetated and sloped to minimize infiltration over the surface/subsurface soil PCLE Zone. The soil cap will be maintained under the post-response action care period.
 - Asphalt Road Cap (1.0419 Acres) (Exhibit C-2): For the SDD (SWMU 2) along the southern boundary of the HWPW, UPRR constructed the Asphalt Cap to protect on-site commercial/industrial receptors from surface soils with chemicals of concern at concentrations above cPCLs. The Asphalt Cap construction consisted of grading the existing road material, compacting and stabilizing the existing road material, and applying a hot mix asphalt with at least 2-inches minimum cover approximately 16 feet wide over the length of the roadway. The Asphalt Cap, which will restrict infiltration, was constructed to drain storm water away from the Soil and Asphalt Cap areas. The Asphalt Cap will be maintained under the post-response action care to ensure no exposure to the soils within the soil PCLE Zone covered by the cap.
- Englewood Intermodal Yard Concrete Cap Area (41.1398 Acres) (Exhibit C-3): The surface and subsurface soil PCLE zone in the Englewood Intermodal Yard area is currently covered with a physical barrier (concrete pavement), preventing contact with impacted soils for on-site workers. As part of the post-response action care, the concrete pavement in the area of the surface soil PCLE Zone will be routinely inspected to ensure on-site worker protection.
- UPRR Railroad Ballast Cap Area (10.4702 Acres) (Exhibit C-4): The area between the former HWPW operating area and the Englewood Intermodal Yard is covered with railroad ballast, ties, and rail. The existing railroad ballast in this area will be used as an engineering control for preventing on-site worker exposure to impacted surface soils. The railroad ballast area will be maintained as part of normal railroad operations. The track is owned and controlled by UPRR.

For each of these areas described above, signs will be posted with language stating restrictions on construction activity within the capped areas. In the event construction activities are necessary within a capped area, a health and safety plan will be implemented to ensure worker

protection from chemicals of concern in the underlying surface soils and a soil management plan will be developed if soils are excavated as part of the construction activities.

The attached Exhibit D also describes the required maintenance and monitoring required for the physical control. This program must be implemented unless and until TCEQ approves any modification. This deed notice must not be removed or modified without prior approval from TCEQ.

Plume Management Zone

The Affected Property is subject to the TRRP requirements for properties with an area overlying a TCEQ-approved plume management zone (PMZ). A PMZ is defined as an area of groundwater containing concentrations of COCs exceeding the TCEQ-approved protective concentration levels for the site, plus any additional area allowed by the TCEQ in accordance with 30 TAC §350.33(f)(4). The undersigned has established a PMZ so that the chemicals of concern in the groundwater are managed such that human exposure is prevented and that other groundwater resources are protected. The attached Exhibit E provides the location and extent of the on-site PMZs (56.2981 Acres). The Response Action Plan (RAP) submitted for the Site describes the maintenance and monitoring required. The maintenance and monitoring is required until TCEQ approves some modification to those requirements. Exposure to groundwater within the PMZ for any purpose is not advised until such time that all of the chemicals of concern no longer exceed their respective PCLs. This deed notice must not be removed or modified without prior approval from TCEQ.

Non-Aqueous Phase Liquid

The Affected Property is subject to the TRRP requirements for the management of mobile NAPL. The attached Exhibit E provides the general location of the NAPL present at the Property. Drilling, excavation, and groundwater pumping within or into the NAPL zone is prohibited unless proper safeguards are taken to protect human health and safety from any hazards associated with the NAPL. Any NAPL removed during any future subsurface activity must be properly handled and managed in accordance with all applicable state and federal rules and regulations. This deed notice must not be removed or modified without prior approval from TCEQ.

As of the date of this notice, the record owner of fee title to the Property is

Union Pacific Railroad, 1400 Douglas Street, Omaha, Nebraska 68179.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle, Building E
Austin, TX 78753

Mail: TCEQ – MC 199
P.O. Box 13087
Austin, TX 78711-3087

TCEQ Program and Identifier No.: **SWR 31547/IHW 50343**

This Notice may be rendered of no further force or effect only by a superseding deed notice executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Notice is filed.

EXECUTED this _____ day of _____, 20_____.

Union Pacific Railroad [OWNER & RESPONDER]

By:_____

Name: Mr. Tony Love
Title: Assistant Vice President of Real Estate
Union Pacific Railroad Company, a Delaware Corporation

STATE OF NEBRASKA §
DOUGLAS COUNTY §

BEFORE ME, on this the _____ day of _____, Mr. Tony Love, Assistant Vice President of Real Estate, a representative of Union Pacific Railroad Company, a Delaware Corporation, known to me to be the person whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this ___ day of _____, 20_____.

Notary Public in and for the State of Nebraska

County of _____

My Commission Expires: _____

EXHIBIT "A"
LEGAL DESCRIPTION OF PROPERTY

MATAGORDA COUNTY TEXAS

AYLETT C. BUCKNER LEAGUE ABSTRACT 10

OWNERSHIP TABLE

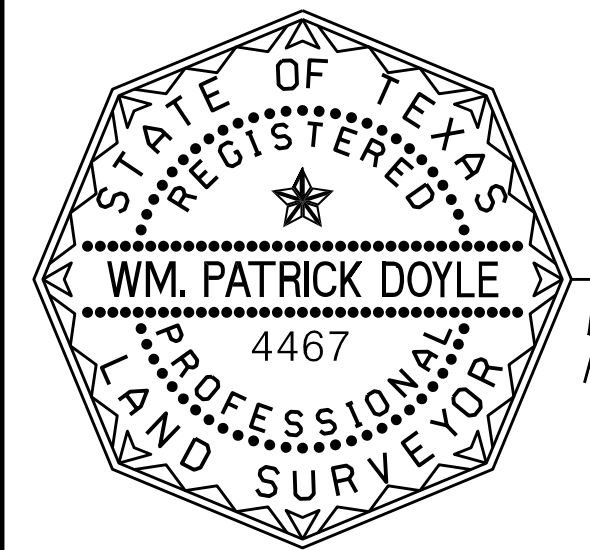
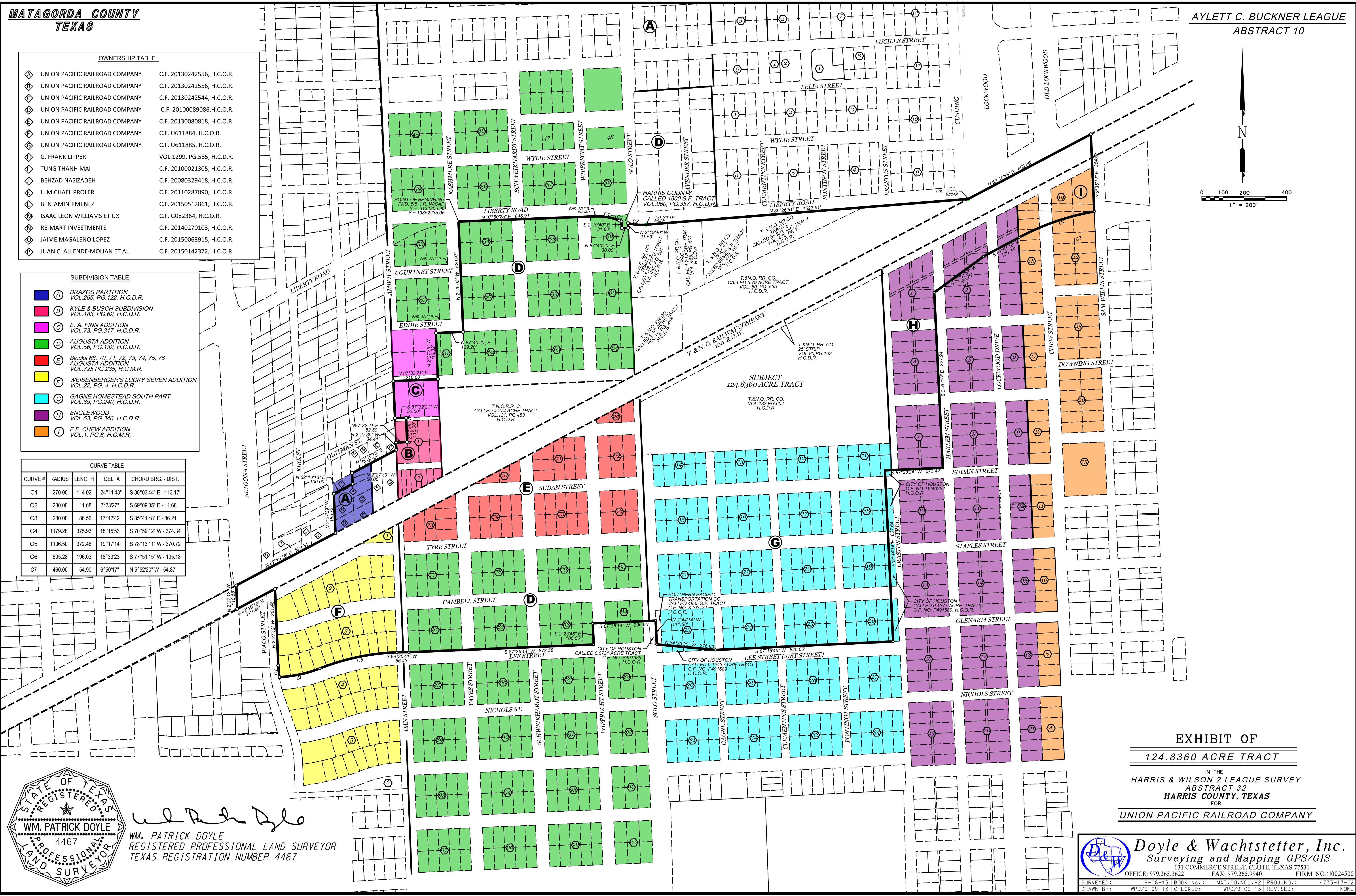
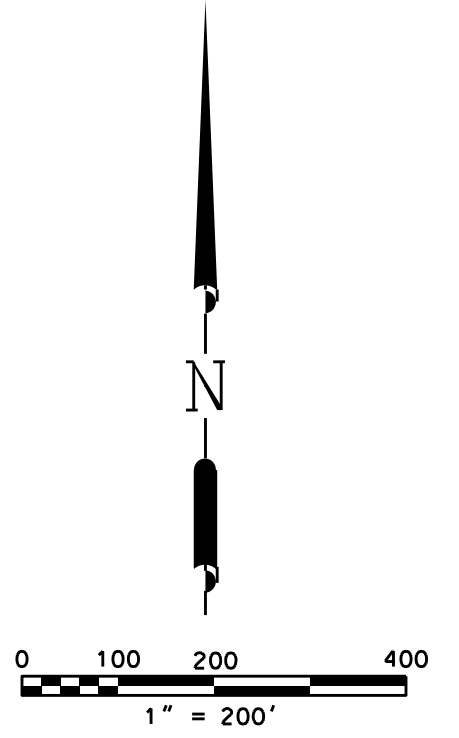
◇	UNION PACIFIC RAILROAD COMPANY	C.F. 20130242556, H.C.O.R.
◇	UNION PACIFIC RAILROAD COMPANY	C.F. 20130242556, H.C.O.R.
◇	UNION PACIFIC RAILROAD COMPANY	C.F. 20130242544, H.C.O.R.
◇	UNION PACIFIC RAILROAD COMPANY	C.F. 20100089086, H.C.O.R.
◇	UNION PACIFIC RAILROAD COMPANY	C.F. 20130080818, H.C.O.R.
◇	UNION PACIFIC RAILROAD COMPANY	C.F. U611884, H.C.O.R.
◇	UNION PACIFIC RAILROAD COMPANY	C.F. U611885, H.C.O.R.
◇	G. FRANK LIPPER	VOL.1299, PG.585, H.C.D.R.
◇	TUNG THANH MAI	C.F. 20100021305, H.C.O.R.
◇	BEHZAD NASIZADEH	C.F. 20080329418, H.C.O.R.
◇	L. MICHAEL PROLER	C.F. 20110287890, H.C.O.R.
◇	BENJAMIN JIMENEZ	C.F. 20150512861, H.C.O.R.
◇	ISAAC LEON WILLIAMS ET UX	C.F. G082364, H.C.O.R.
◇	RE-MART INVESTMENTS	C.F. 20140270103, H.C.O.R.
◇	JAIME MAGALENO LOPEZ	C.F. 20150063915, H.C.O.R.
◇	JUAN C. ALLENDE-MOLIAN ET AL	C.F. 20150142372, H.C.O.R.

SUBDIVISION TABLE

Ⓐ	BRAZOS PARTITION VOL.265, PG.122, H.C.D.R.
Ⓑ	KYLE & BUSCH SUBDIVISION VOL.183, PG.69, H.C.D.R.
Ⓒ	E. A. FINN ADDITION VOL.73, PG.317, H.C.D.R.
Ⓓ	AUGUSTA ADDITION VOL.56, PG.139, H.C.D.R.
Ⓔ	Blocks 68, 70, 71, 72, 73, 74, 75, 76 AUGUSTA ADDITION VOL.725 PG.235, H.C.M.R.
Ⓕ	WEISENBERGER'S LUCKY SEVEN ADDITION VOL.22, PG. 4, H.C.D.R.
Ⓖ	GAGNE HOMESTEAD SOUTH PART VOL.89, PG.240, H.C.D.R.
Ⓗ	ENGLEWOOD VOL.53, PG.346, H.C.D.R.
Ⓘ	F.F. CHEW ADDITION VOL.1, PG.8, H.C.M.R.

CURVE TABLE

CURVE #	RADIUS	LENGTH	DELTA	CHORD BRG. - DIST.
C1	270.00'	114.02'	24°11'43"	S 80°03'44" E - 113.17'
C2	280.00'	11.68'	2°23'27"	S 69°09'35" E - 11.68'
C3	280.00'	86.56'	17°42'42"	S 85°41'48" E - 86.21'
C4	1179.28'	375.93'	18°15'53"	S 70°59'12" W - 374.34'
C5	1106.50'	372.48'	19°17'14"	S 78°13'11" W - 370.72'
C6	605.28'	196.03'	18°33'23"	S 77°51'15" W - 195.18'
C7	460.00'	54.90'	6°50'17"	N 5°52'20" W - 54.87'



Wm. Patrick Doyle
WM. PATRICK DOYLE
 REGISTERED PROFESSIONAL LAND SURVEYOR
 TEXAS REGISTRATION NUMBER 4467

EXHIBIT OF
124.8360 ACRE TRACT
 IN THE
HARRIS & WILSON 2 LEAGUE SURVEY
ABSTRACT 32
HARRIS COUNTY, TEXAS
 FOR
UNION PACIFIC RAILROAD COMPANY

Doyle & Wachtstetter, Inc.
 Surveying and Mapping GPS/GIS
 131 COMMERCE STREET, CLUTE, TEXAS 77531
 OFFICE: 979.265.3622 FAX: 979.265.9940 FIRM NO.: 10024500
 SURVEYED: 9-06-13 BOOK No.: MAT. CO. VOL. 82 PROJ. NO.: 4733-13-02
 DRAWN BY: WPD/9-09-13 CHECKED: WPD/9-09-13 REVISED: NONE

USER: SPERSON
 DATE: 9/13/13
 PLOTNAME: 4733-13-02



Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

EXHIBIT A

UNION PACIFIC RAILROAD COMPANY

124.8360 ACRE TRACT

HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32

HARRIS COUNTY, TEXAS

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BEING ALL THAT CERTAIN 124.8360 acre tract of land, lying and situated in the Wilson and Harris 2 League Grant, Abstract 32, Harris County Texas, being a portion of that certain 100 foot wide Texas and New Orleans Railroad right-of-way, All of lots 1 through 10, Block 54, all of Lots 1 through 10, Block 55, all of Lots 4 through 6 and a part of Lots 1 through 3, Block 56, all of Lots 1 through 10, Block 58, all of Lots 1 through 10, Block 59, all of Lots 1 through 6, Block 60, all of Lots 5 and 6 and part of Lots 4 and 7, Block 61, all of Lots 1 through 10, Block 62, all of Lots 1 through 10, Block 63, all of Lots 1 through 6, Block 64, all of Lots 1 through 10, Block 77, all of Lots 1 through 10, Block 78, all of Lots 1 through 10, Block 79, all of Lots 1 through 6, Block 80, all of Lots 1 through 10, Block 81, all of Lots 1 through 10, Block 82, all of Lots 1 through 10, Block 83, all of Lots 1 through 3, Block 84, all of Courtney Street (14th Street), all of Eddie Street (15th Street), all of 60 foot wide 16th Street, and all of 60 foot wide Tyre Street (19th Street), all of 60 foot wide Campbell Street (20th Street), a portion of 60 foot wide Amboy Street (Dan Street), a portion of 60 foot wide Kashmere Street (Yates Street), a portion of 60 foot wide Schweikhart Street, a portion of 60 foot wide Wipprecht Street, and a portion of Solo Street as shown on the map of Augusta Addition, according to the map or plat recorded in Volume 56, Page 139 of the Harris County Deed Records (H.C.D.R.); All of Lots 1 through 3, Block 68, all of Lots 1 through 3, Block 70, all of Lots 1 through 8, Block 71, all of Lots 1 through 6, Block 72, all of Lots 1 through 7, Block 73, all of Lots 1 through 10, Block 74, all of Lots 1 through 10, Block 75, all of Lots 1 through 6, Block 76, all of 60 foot wide Tunis Street (17th Street), all of 60 foot wide Sudan Street (18th Street), all of 60 foot wide Tyre Street (19th Street), a portion of Amboy Street (Dan Street), all of 60 foot wide Yates Street (Elmer Street), all of 60 foot wide Schweikhart Street, all of 60 foot wide Wipprecht Street, all of Solo Street (Gus Street) as shown on the map of the Subdivision of Blocks 68, 70, 71, 72, 73, 74, 75, 76 Augusta Addition, according to the map or plat recorded in Volume 725, Page 235 of the H.C.D.R.; All of Lots 5 through 7, as shown on the map of the E. A. Finn Subdivision, according to the map or plat recorded in Volume 73, Page 317 of the H.C.D.R.; All of Lots 2 through 8, Block 1, all of Lots 1 through 8, Block 2, a portion of 15 foot wide 1st Street, all of 30 foot wide 2nd Street as shown on the map of A. H. Kyle Subdivision (a.k.a. Busch and Kyle Subdivision), according to the map or plat recorded in Volume 183, Page 68 of the H.C.D.R.; All of Block 1, all of Lots 1 through 14, Block 2, all of Lots 1 through 21, Block 3, all of Tyre Street, all of Campbell Street and all of Amboy Street (Dan Street) as shown on the map of Weisenberger's Lucky Seven Addition, according to the map or plat recorded in Volume 22, Page 4 of the H.C.D.R.; All of Block 5, all of Lots 1 through 10, Block 7, all of Lots 1, 2, 9 and 10, Block 8, all of Lots 1 through 5 and 7 through 10, and a portion of Lot 6, Block 11, all of Lots 1 through 10, Block 12, all of Lots 1 through 10, Block 13, all of Lots 1 through 10, Block 14, all of Lots 1 through 10, Block 15, all of Lots 1 through 10, Block 16, all of Lots 1 through 10, Block 17, all of Lots 1 through 4 and 7 through 10 and a portion of Lots 5 and 6, Block 18, all of Lots 1 through 4 and 7 through 10 and a portion of Lots 5 and 6, Block 19, all of Lots 1 through 10, Block 20, all of Lots 1 through 10, Block 21, all of Lots 1 through 10, Block 22, all of Lots 1 through 10, Block 23, all of Lots 1 through 10, Block 24, all of Lots 1 through 10, Block 25, all of Lots 1 through 4 and 7 through 10 and a portion of Lots 5 and 6, Block 26, all of 60 foot wide 16th Street, all of 60 foot wide 17th Street, all of 60 foot wide 18th Street, all of 60 foot wide 19th Street, all of 60 foot wide 20th Street, a portion of 40 foot wide Solo Street (Joseph Street), a portion of 40 foot wide Gagne Street, a portion of 40 foot wide Clementine Street, a portion of 40 foot wide Fontinot Street, as shown on the map of the South Part of the Gagne Homestead, according to the map or plat recorded in Volume 89, Page 240 of the H.C.D.R.; All of Lots 1 through 10, Block 1, all of Lots 1 through 4, a portion of Lots 5 through 7 and a portion of Lots 15 and 16, Block 2, all of Lots 1 and 2 and a portion of Lot 3, Block 3, all of Lots 1 through 12, Block 4, all of Lots 1 through 12 Block 7, All of 60 foot wide New Orleans Avenue, a portion of 50 foot wide Grumbach Street, a portion of 50 foot wide Tunis Street (Jones Street), a portion of Erastus Street (Sunset Avenue), a portion of 50 foot wide Harlem Street (Baer Avenue), a portion of 50 foot wide Lockwood Drive (Cushing Avenue) as shown on the map of Englewood Subdivision, according to the map or plat recorded in Volume 53, Page 346 of the H.C.D.R.; All of Lots 1 through 6, Block 17, all of Lots 1 through 10, Block 18, all of Lots 1 through 3, Block 19, a portion of Lots 1 and 10, Block 22, a portion of 60 foot wide Wallisville Road, a portion of 50 foot wide Chew Avenue, as shown on the map of F. F. Chew Addition, according to the map or plat recorded in Volume 1, Page 8 of the Harris County Map Records (H.C.M.R.); All that certain 25 foot wide strip conveyed by deed recorded on January 2, 1895 from Clementine Gagne, et al to Texas and New Orleans Railroad Company, as recorded in Volume 80, Page 103 of the H.C.D.R.; All that certain called 4.274 acre tract conveyed by deed recorded on October 29, 1901 from Ida Japhet to Texas and New Orleans Railroad Company, as recorded in Volume 131, Page 453 of the H.C.D.R.; All that certain tract of land conveyed by deed recorded on March 12, 1902 from H. M. Curtin to Texas and New Orleans

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Railroad Company, as recorded in Volume 133, Page 602 of the H.C.D.R.; All that certain called 1.28 acre tract and all that certain called 1.20 acre tract of land conveyed by deed recorded on February 8, 1921 from W. N. Reece to Texas & New Orleans Railroad Company as recorded in Volume 465, Page 501 of the H.C.D.R.; All that certain called 55,922 square foot tract of land and all that certain called 55,922 square foot tract of land conveyed by deed recorded on February 7, 1921 from W. N. Reece to Texas & New Orleans Railroad Company as recorded in Volume 472, Page 7 of the H.C.D.R.; all that certain called 1.5 acre tract of land conveyed by deed recorded on August 15, 1894 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 75, Page 286 of the H.C.D.R.; All that certain called 5.79 acre tract of land conveyed by deed recorded on July 24, 1890 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 50, Page 535 of the H.C.D.R.; All of Tracts 1 through 7 and a portion of Tract 8 of the Partition of heirs of Samuel Brazos as recorded on March 10, 1911 and recorded on Volume 265, Page 122 of the H.C.D.R., and being same following described tracts: All that certain called 0.4054 acre tract of land being Tract 1 and 2 and a portion of Tract 8 of said Samuel Brazos partition, conveyed by deed recorded on May 20, 2013 from C. C. Cody, et al to Union Pacific Railroad Company as recorded in Clerk's File No. 20130242556 of the Harris County Official Records (H.C.O.R.); All that certain 60' x 100' tract of land being Tract 3 of said Samuel Brazos partition, conveyed by deed recorded on May 20, 2013 from C. C. Cody, et al to Union Pacific Railroad Company as recorded in Clerk's File No. 20130242544 of the H.C.O.R.; All that certain 60' x 100' tract of land, being Tract 4 of said Samuel Brazos partition, conveyed by deed recorded on February 21, 2013 from C. C. Cody to Union Pacific Railroad Company as recorded in Clerk's File No. 20130080818 of the H.C.O.R.; All that certain 60' x 100' tract of land, being Tract 5 of said partition, conveyed by deed recorded on March 8, 2010 from C. C. Cody, et al to Union Pacific Railroad Company as recorded in Clerk's File No. 20100089086 of the H.C.O.R.; All that certain 60' x 100' tract of land, being Tract 6 of said Samuel Brazos partition, conveyed by deed recorded on August 30, 2011 from C. C. Cody to Union Pacific Railroad Company as recorded in Clerk's File No. 20110322055 of the H.C.O.R.; all that certain tract, being the West 50 feet of a called 136 foot by 223 foot tract conveyed by deed recorded on September 12, 2000 from Cousins Investment Company to Union Pacific Railroad Company as recorded in Clerk's File No. U618884 of the H.C.O.R., and all that certain tract described in deed recorded on September 12, 2000 from Cousins Investment Company to Union Pacific Railroad Company, as recorded in Clerk's File No. U618885 of the H.C.O.R.; a portion of all that certain called 4835 acre tract conveyed by deed recorded on September 6, 1985 from Lawyers Title Company of Houston to Southern Pacific Transportation Company as recorded in Clerk's File No. K193131 of the H.C.O.R., the herein described 124.8360 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

BEGINNING at a 5/8" iron rod found marking the northwest corner of Block 54 of said Augusta Addition, located at the intersection of the southern right-of-way boundary line of Liberty Road with the eastern right-of-way boundary line of 60 foot wide Kashmere Street, for the northwest corner of the herein described 124.8360 acre tract, at position X=31334356.21 and Y=13852234.79;

THENCE North 87°50'25" East, coincident with the southern right-of-way boundary line of said Liberty Road, a distance of 646.91 feet to a 5/8" iron rod found marking the point of curvature of a curve to the right, having a radius of 270.00 feet, at position X=3135002.60 and Y=13852259.17;

THENCE in an easterly direction, coincident with the southern right-of-way boundary line of said Liberty Road, along said curve to the right, having a radius of 270.00 feet, a central angle of 24°11'43", an arc length of 114.02 feet and chord bearing and distance of South 80°03'44" E - 113.17 feet to the point of curvature of a reverse curve to the left, having a radius of 180.00 feet, at position X=3135114.06 and Y=13852239.64;

THENCE in an easterly direction, coincident with the southern right-of-way boundary line of said Liberty Road, along said curve to the left, having a radius of 280.00 feet, a central angle of 2°23'27", an arc length of 11.68 feet and chord bearing and distance of South 69°09'35" E - 11.68 feet to a point for corner, located in the western boundary line of all that certain called 1800 square foot tract of land, conveyed by deed recorded on August 18, 1934 from Bettie J. Pullen, et al to the County of Harris, as recorded in Volume 960, Page 357 of the H.C.D.R., at position X=3135124.98 and Y=13852235.49; ;

THENCE South 2°19'40" East, coincident with the western boundary line of said County of Harris called 1800 square foot tract of land, a distance of 31.80 feet to an angle corner of the herein described 124.8360 acre tract, at position X=3135126.27 and Y=13852203.71;

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THENCE North $87^{\circ}40'20''$ East, coincident with the southern boundary line of said County of Harris called 1800 square foot tract of land, a distance of 30.00 feet to point located on the eastern boundary line of said County of Harris called 1800 square foot tract of land, same being the eastern boundary line of Lot 3, Block 56 of said Augusta Addition, for an angle corner of the herein described 124.8360 acre tract, at position X=3135156.24 and Y=13852204.93;

THENCE North $2^{\circ}19'40''$ West, coincident with the eastern boundary line of said County of Harris called 1800 square foot tract of land, same being the eastern boundary line of Lot 3, Block 56 of said Augusta Addition, a distance of 21.63 feet to a point located in the southern right-of-way boundary line of said Liberty Road, located on a curve to the left, having a radius of 280.00 feet, for an angle corner of the herein described 124.8360 acre tract, at position X=3135155.36 and Y=13852226.54;

THENCE in an easterly direction, coincident with the southern right-of-way boundary line of said Liberty Road, along said curve to the left, having a radius of 280.00 feet, a central angle of $17^{\circ}42'42''$, an arc length of 86.56 feet and chord bearing and distance of South $85^{\circ}41'48''$ E - 86.21 feet to a point for corner, at position X=3135241.32 and Y=13852220.07;

THENCE North $85^{\circ}26'51''$ East, coincident with the southern boundary right-of-way boundary line of said Liberty Road, same being the northern boundary line of said Texas and New Orleans Railway Company called 1.28 acre tract, said Texas and New Orleans Railway Company called 1.20 acre tract, said Texas and New Orleans Railway Company called 55,922 square foot tract (Tract 1), said Texas and New Orleans Railway Company called 55,922 square foot tract (Tract 2), said Texas and New Orleans Railway Company called 5.79 acre tract, a distance of 1523.61 feet to a point located on the northeastern right-of-way boundary line of said Texas and New Orleans Railroad Company 100 foot wide right-of-way, for an angle corner of the herein described 124.8360 acre tract, at position X=3136759.96 and Y=13852340.99;

THENCE North $62^{\circ}10'18''$ East, coincident with the southeastern right-of-way boundary line of said Liberty Road same being the northwestern boundary line of said Texas and New Orleans Railroad Company 100 foot wide right-of-way, a distance of 653.86 feet to the intersection of said southeastern right-of-way boundary line of said Liberty Road, the northwestern boundary line of said Texas and New Orleans 100 foot wide right-of-way and the northerly extension of the western right-of-way boundary line of Sam Mills Street (Berry Street) as shown on the said plat of F. F. Chew Addition, for the northeast corner of the herein described 124.8360 acre tract, at position X=3137338.15 and Y=13852646.20;

THENCE South $2^{\circ}35'12''$ East, coincident with the northerly extension of the western right-of-way boundary line of said Sam Mills Street (Berry Street) as shown on the said plat of F. F. Chew Addition, a distance of 364.63 feet to a point located in the northern right-of-way boundary line of Wallisville Road (right-of-way varies), on a curve to the left, having a radius of 1179.28 feet, for an angle corner of the herein described 124.8360 acre tract, at position X=3137354.60 and Y=13852281.98;

THENCE in a southwesterly direction, coincident with the northwestern right-of-way boundary line of said Wallisville Road along said curve to the left, having a radius of 1179.28 feet, a central angle of $18^{\circ}15'53''$, an arc length of 375.93 feet and chord bearing and distance of South $70^{\circ}59'12''$ West - 374.34 feet to a point for corner, at position X=3137000.72 and Y=13852160.04;

THENCE South $61^{\circ}51'16''$ West, coincident with the northwestern right-of-way boundary line of said Wallisville Road, a distance of 190.34 feet to an angle corner of the herein described 124.8360 acre tract, at position X=3136832.90 and Y=13852070.26;

THENCE South $53^{\circ}51'57''$ West, coincident with the northern right-of-way boundary line of said Wallisville Road, a distance of 288.79 feet to a point located on the western right-of-way boundary line of 50 foot wide Harlem Street (Baer Avenue) as shown on the map of Englewood, same being the eastern boundary line of Block 1 of said Englewood subdivision, for an angle corner of the herein described 124.8360 acre tract, at position X=3136599.69 and Y=13851899.99;

THENCE South $2^{\circ}49'16''$ East, coincident with the western right-of-way boundary line of said 50 foot wide Harlem Street (Baer Avenue), a distance of 827.94 feet to the intersection of the western right-of-way boundary line of said 50 foot wide Harlem Street and the northern right-of-way boundary line of 50 foot wide Sudan Street (Wilson St.), for the southeast corner of Block 7 of said Englewood subdivision and an angle corner of the herein described 124.8360 acre tract, at position X=3136640.44 and Y=13851073.13;

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THENCE South 87°28'24" West, coincident with the northern right-of-way boundary line of 50 foot wide Sudan Street (Wilson St.), at a distance of 210.00 feet pass the West right-of-way boundary line of said Erastus Street as shown on the plat of said Englewood subdivision, same being the eastern boundary line of Block 11 of the South Part of Gagne Homestead, continuing a total distance of 273.42 feet to a point located in the western right-of-way boundary line of Erastus Street, conveyed by deed recorded on December 31, 1970 from Southern Pacific Transportation Company to the City of Houston, as recorded in Clerk's File No. D240252 of the H.C.O.R., for an angle corner of the herein described 124.8360 acre tract, at position X=3136367.32 and Y=13851061.08;

THENCE South 2°44'14" East, coincident with the western right-of-way boundary line of Erastus Street, being a 30 foot wide strip conveyed by Southern Pacific Transportation Company to the City of Houston, as recorded in Clerk's File No. D240252 and a 30 foot wide strip conveyed by deed recorded on October 7, 1993 from Southern Pacific Transportation Company to the City of Houston in Clerk's File No. P491689 of the H.C.O.R., a distance of 807.64 feet to a point located in the northern right-of-way boundary line of 60 foot wide Lee Street, same being the southern boundary line of Block 26 of said South Part of Gagne Homestead, for an angle corner of the herein described 124.8360 acre tract, at position X=3136405.88 and Y=13850254.45;

THENCE South 87°15'46" West, coincident with the northern right-of-way boundary line of said 60 foot wide Lee Street, same being the southern boundary line of Blocks 24, 25 and 26 of said South Part of Gagne Homestead, a distance of 840.00 feet to the southeast corner of Block 23 of said South Part of Gagne Homestead, same being the East corner of all that certain called 0.1243 acre tract of land conveyed by deed recorded on October 7, 1993 from Southern Pacific Transportation Company to the City of Houston in Clerk's File No. P491689 of the H.C.O.R., for an angle corner of the herein described 124.8360 acre tract, at position X=3135566.93 and Y=13850214.33;

THENCE North 84°33'30" West, coincident with the northern boundary line of said City of Houston, called 0.1243 acre tract, a distance of 276.99 feet to a point located in the western boundary line of said South Pacific Transportation Company called 4835 square foot tract, same being the eastern right-of-way boundary line of Solo Street, for an angle corner of the herein described 124.8360 acre tract, at position X=3135291.22 and Y=13850240.60;

THENCE North 2°44'14" West, coincident with the western right-of-way boundary line of said Solo Street, same being the eastern boundary line of said Southern Pacific Transportation Company called 4835 square foot tract, a distance of 111.88 feet to an angle corner of the herein described 124.8360 acre tract, at position X=3135285.88 and Y=13850352.35;

THENCE South 87°36'14" West, at a distance of 60.00 feet pass the southeast corner of Lot 3, Block 84, at a distance of 236.90 feet pass the southwest corner of Lot 1, Block 84, continuing for a total distance of 296.90 feet to the southeast corner of Lot 5, same being the northeast corner of Lot 6, Block 83 of said Augusta Addition, located in the western right-of-way boundary line of 60 foot wide Wipprecht Street, for an angle corner of the herein described 124.8360 acre tract, at position X=3134989.26 and Y=13850339.94;

THENCE South 2°23'46" East, coincident with the eastern boundary line of said Lot 6, Block 83 of said Augusta Addition, same being the western right-of-way boundary line of said 60 foot wide Wipprecht Street, a distance of 100.00 feet to a point located on the northern right-of-way boundary line of said 60 foot wide Lee Street, for the southeast corner of said Lot 6, Block 83 of Augusta Addition, for angle corner of the herein described 124.8360 acre tract, at position X=3134993.71 and Y=13850239.77;

THENCE South 87°36'14" West, coincident with the northern right-of-way boundary line of said 60 foot wide Lee Street, same being the southern boundary line of Blocks 81, 82 and 83 of said Augusta Addition, a distance of 872.58 feet to southwest corner of Lot 10, Block 81 of Augusta Addition, located on the eastern right-of-way boundary line of 60 foot wide Amboy Street (Dan Street), for an angle corner of the herein described 124.8360 acre tract, at position X=3134121.72 and Y=13850203.56;

THENCE South 89°35'41" West, a distance of 56.43 feet to the southeast corner of Lot 11, Block 3 of said Weisenberger's Lucky Seven Addition, same being the northern right-of-way boundary line of said 60 foot wide Lee Street, on a curve to the left, having a radius of 1206.50 feet, for an angle corner of the herein described 124.8360 acre tract, at position X=3134065.30 and Y=13850203.16;

**UNION PACIFIC RAILROAD COMPANY
124.8360 ACRE TRACT
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HARRIS COUNTY, TEXAS
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THENCE in a westerly direction, coincident with the northern right-of-way boundary line of said 60 foot wide Lee Street, same being the southern boundary line of said Block 3 of Weisenberger's Lucky Seven Addition, along said curve to the left, having a radius of 1106.50 feet, a central angle of 19°17'14", an arc length of 372.48 feet and chord bearing and distance of South 78°13'11" West - 370.72 feet to a point of reverse curve to the right, having a radius of 605.28 feet, at position X=3133702.43 and Y=13850127.48;

THENCE in a westerly direction, coincident with the northern right-of-way boundary line of said 60 foot wide Lee Street, same being the southern boundary line of said Block 3 of Weisenberger's Lucky Seven Addition, along said curve to the right, having a radius of 605.28 feet, a central angle of 18°33'24", an arc length of 196.03 feet and chord bearing and distance of South 77°51'16" West - 195.18 feet to a the southwest corner of Lot 21, Block 3 of said Weisenberger's Lucky Seven Addition, located on the eastern right-of-way boundary line of Altoona Street (right-of-way varies) and a curve to the right, having a radius of 460.95 feet, at position X=3133511.64 and Y=13850086.42;

THENCE in a northerly direction, coincident with the eastern right-of-way boundary line of Altoona Street (a.k.a. Waco Street) (right-of-way varies), same being the western boundary line Block 3 of said Weisenberger's Lucky Seven Addition, and along said curve to the right, having a radius of 460.95 feet, a central angle of 6°50'17", an arc length of 54.90 feet and chord bearing and distance of North 5°52'20" W - 54.87 feet to an angle corner of the herein described 124.8360 acre tract, at position X=3133506.03 and Y=13850140.99;

THENCE North 2°27'12" West, coincident with the eastern right-of-way boundary line of Altoona Street (right-of-way varies), same being the western boundary line Block 2 and 3 of said Weisenberger's Lucky Seven Addition, a distance of 361.48 feet to a point located on the southern boundary line of the Texas and New Orleans Railroad 100 foot right-of-way, same being the northern right-of-way boundary line of 50 foot wide Tyre Street, for an angle corner of the herein described 124.8360 acre tract, at position X=3133490.55 and Y=13850502.10;

THENCE South 62°10'18" West, coincident with the southern boundary line of the Texas and New Orleans Railroad 100 foot right-of-way, a distance of 201.40 feet to an angle corner of the herein described 124.8360 acre tract, at position X=3133312.46 and Y=13850408.09;

THENCE North 2°27'12" West, a distance of 110.68 feet to a point located on the northern boundary line of said Texas and New Orleans Railroad 100 foot right-of-way, for an angle corner of the herein described 124.8360 acre tract, at position X=3133307.73 and Y=13850518.66;

THENCE North 62°10'18" East, coincident with the northern boundary line of said Texas and New Orleans Railroad 100 foot right-of-way, same being the southern boundary line of said Reserve "A" of Abernathy Court, the southern boundary line of all that certain Tract 2 conveyed by deed recorded on January 3, 1944 from Alfred Philo Howard, Jr. to G. Frank Lipper as recorded in Volume 1299, Page 585 of the H.C.D.R., the southern boundary line of all that certain called 0.1721 acre tract, conveyed by deed recorded on January 19, 2010 from the City of Houston, et al to Tung Thanh Mai as recorded in Clerk's File No. 2010-0021305 of the H.C.O.R., the southern boundary line of all that certain called 0.1148 acre tract conveyed by deed recorded on June 24, 2008 from the City of Houston, et al to Behzad Nasizadeh as recorded in Clerk's File No. 2008-0329418 of the H.C.O.R., the southern boundary line of all that certain called 1492 acre tract, conveyed by deed recorded on July 13, 2011 from the City of Houston, et al to L. Michael Proler as recorded in Clerk's File No. 2011-0287890 of the H.C.O.R., a distance of 529.31 feet to the southwest corner of Tract 5 of said Brazos Partition, located on the eastern right-of-way boundary line of a 20 foot wide roadway (a.k.a. Wayne Street) for an angle corner of the herein described 124.8360 acre tract, at position X=3133775.77 and Y=13850765.72;

THENCE North 2°27'39" West, coincident with the eastern boundary line of said 20 foot wide roadway (a.k.a. Wayne Street), same being the western boundary line of Tracts 5 through 8 of said Samuel Brazos partition, a distance of 185.73 feet to the southwest corner of that certain 50' x 100' tract out of Tract 8 of said Samuel Brazos partition, conveyed by deed recorded on November 10, 2015 from Harris County, et al to Benjamin Jimenez, as recorded in Clerk's File No. 2015-0512861 of the H.C.O.R., for an angle corner of the herein described 124.8360 acre tract, at position X=3133767.80 and Y=13850951.26;

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HARRIS COUNTY, TEXAS
PAGE 6 OF 7**

THENCE North 62°10'18" East, coincident with the southern boundary line of said Benjamin Jimenez tract, a distance of 100.00 feet to the southeast corner of said Benjamin Jimenez tract, located on the eastern boundary line of said Tract 8, same being the western boundary line of said Tract 1 of the Samuel Brazos partition, for an angle corner of the herein described 124.8360 acre tract, at position X=3133856.23 and Y=13850997.94;

THENCE North 2°27'39" West, coincident with the eastern boundary line of said Benjamin Jimenez tract, the eastern boundary line of said Tract 8, same being the western boundary line of said Tract 1 of the Samuel Brazos partition, a distance of 50.00 feet to a point located on the southern boundary line of all that certain tract of land conveyed by deed recorded on May 16, 1979 from George Ferguson, et al to Isaac Leon Williams, et ux, as recorded in Clerk's File No. G082364 of the H.C.O.R., for the northeast corner of said Benjamin Jimenez tract and said Tract 8, the northwest corner of said Tract 1 of said Samuel Brazos partition, for an angle corner of the herein described 124.8360 acre tract, at position X=3133854.08 and Y=13851047.89;

THENCE North 62°10'18" East, coincident with the southern boundary line of said Isaac Leo William, et ux tract, the southern boundary line of all that certain tract conveyed by deed recorded on June 23, 2014 from Harris County, et al to Re-Mart Investment as recorded in Clerk's File No. 2014-0270103 of the H.C.O.R., the southern boundary line of all that certain tract of land conveyed by deed recorded on February 17, 2015 from Melbourne Street, LLC to Jaime Magdaleno Lopez as recorded in Clerk's File No. 2015-0063915 of the H.C.O.R., the southern boundary line of all that certain tract of land conveyed by deed recorded on April 7, 2015 from UrboCorp, LLC TO Juan C. Allende-Molina, et al, as recorded in Clerk's File No. 2015-0142372 of the H.C.O.R., a distance of 236.00 feet to a point located on the western boundary line of Lot 8, Block 1 of said A. H. Kyle Subdivision, for the southeast corner of said Juan C. Allende-Molina, et al tract, for an angle corner of the herein described 124.8360 acre tract, at position X=3134062.77 and Y=13851158.05 ;

THENCE North 2°27'39" West, coincident with the eastern boundary line of said Juan C. Allende-Molian et al tract, same being the western boundary line of said Lot 8, Block 1 of said A. H. Kyle Subdivision, a distance of 34.41 feet to the northwest corner of said Lot 8, Block 1, same being the southwest corner of Lot 1, Block 1 of said A. H. Kyle Subdivision, for an angle corner of the herein described 124.8360 acre tract, at position X=3134061.29 and Y=13851192.43 ;

THENCE North 87°32'21" East, coincident with the southern boundary line of said Lot 1, Block 1, same being the northern boundary line of said Lot 8, Block 1 of said A. H. Kyle Subdivision, a distance of 52.50 feet to the common corner of Lots 1, 2, 7 and 8, Block 1 of said A. H. Kyle Subdivision, for an angle corner of the herein described 124.8360 acre tract, at position X=3134113.73 and Y=13851194.68;

THENCE North 2°27'39" West, coincident with the eastern boundary line of said Lot 1, the western boundary line of said Lot 2, Block 1 of said A. H. Kyle Subdivision, at a distance of 100.00 feet pass the northeast corner of said Lot 1, the northwest corner of said Lot 2 of Block 1, same being the southern right-of-way boundary line of 15 foot wide 1st Street, continuing for a total distance of 115.00 feet to a point located on the northern right-of-way boundary line of 15 foot wide 1st Street, same being the southern boundary line of Lot 7 of said E. A. Finn Subdivision, for an angle corner of the herein described 124.8360 acre tract, at position X=3134108.80 and Y=13851309.56;

THENCE South 87°32'21" West, coincident with the northern right-of-way boundary line of 15 foot wide 1st Street, same being the southern boundary line of Lot 7 of said E. A. Finn Subdivision, a distance of 52.50 feet to the southwest corner of said Lot 7, and an angle corner of the herein described 124.8360 acre tract, at position X=3134056.35 and Y=13851307.31;

THENCE North 2°27'39" West, coincident with the western boundary line of said Lot 7 of the E. A. Finn Subdivision, a distance of 174.86 feet to a point located on the southern boundary line of a 22 foot wide right-of-way, for the northwest corner of said Lot 7 and an angle corner of the herein described 124.8360 acre tract, at position X=3134048.85 and Y=13851481.99;

THENCE North 87°32'21" East, coincident with the southern boundary line of a 22 foot wide right-of-way, same being the northern boundary line of Lots 5, 6 and 7 of said E. A. Finn Subdivision, a distance of 210.00 feet to the northeast corner of said Lot 5 of the E. A. Finn Subdivision, for an angle corner of the herein described 124.8360 acre tract, at position X=3134258.63 and Y=13851491.00;

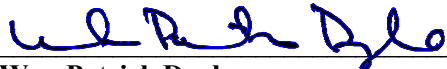
EXHIBIT A

**UNION PACIFIC RAILROAD COMPANY
124.8360 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 7 OF 7**

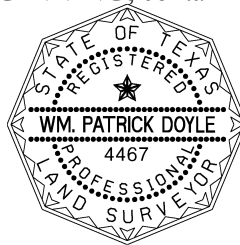
THENCE North 2°27'39" West, at a distance of 22.00 feet, pass the southeast corner of Lot 3 of said E. A. Finn Subdivision, continuing coincident with the eastern boundary line of said Lot 3 and Lot 2, a total distance of 218.32 feet to a point located on the southern right-of-way boundary line of 60 foot wide Eddie Street (15th Street), same being the northern boundary line of Block 61 of said Augusta Addition, for an angle corner of the herein described 124.8360 acre tract, at position X=3134249.26 and Y=13851709.10;

THENCE North 87°40'20" East, a distance of 129.20 feet to the northwest corner of Block 62, located on the eastern right-of-way boundary line of 60 foot wide Kashmere Street, for an angle corner of the herein described 124.8360 acre tract, at position X=3134378.34 and Y=13851714.35 ;

THENCE North 2°26'03" West, coincident with the eastern right-of-way boundary line of said 60 foot wide Kashmere Street, same being the western boundary line of Blocks 54 and 58 boundary line, a distance of 520.97 feet to the **POINT OF BEGINNING**, containing 124.8360 acres of land, more or less.



**Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
April 6, 2016**

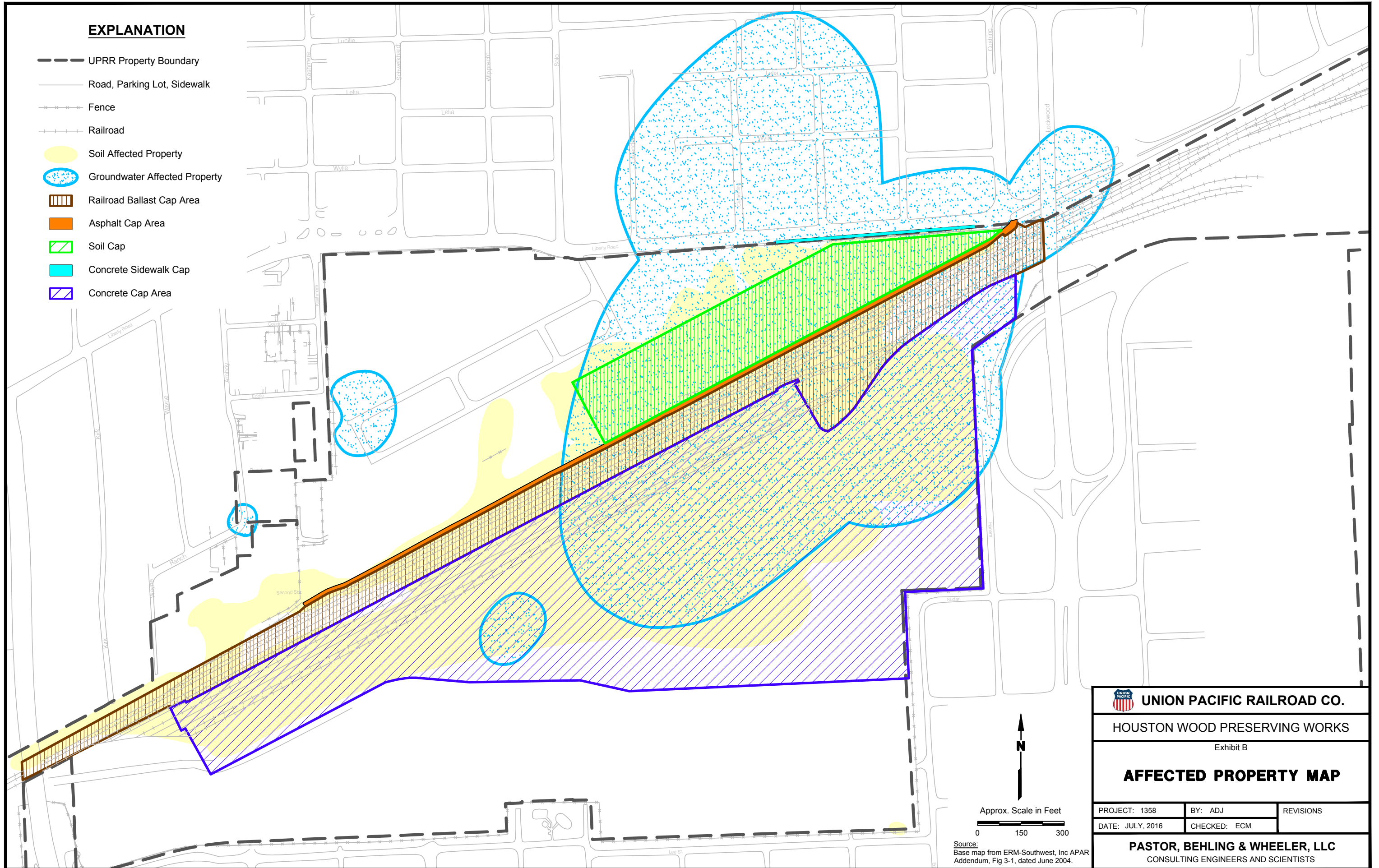


*This description is based on a survey, dated December 23, 2015 is on file in the office of Doyle & Wachtstetter, Inc.
V:\Pat\Pastor Behling & Wheeler\UPPR Englewood Yard 124.8360 acre tract.doc*

EXHIBIT "B"
AFFECTED PROPERTY MAP

EXPLANATION

- UPRR Property Boundary
- Road, Parking Lot, Sidewalk
- *-*- Fence
- +—+ Railroad
- Soil Affected Property
- Groundwater Affected Property
- ▨ Railroad Ballast Cap Area
- Asphalt Cap Area
- ▧ Soil Cap
- Concrete Sidewalk Cap
- ▨ Concrete Cap Area



UNION PACIFIC RAILROAD CO.		
HOUSTON WOOD PRESERVING WORKS		
Exhibit B		
AFFECTED PROPERTY MAP		
PROJECT: 1358	BY: ADJ	REVISIONS
DATE: JULY, 2016	CHECKED: ECM	
PASTOR, BEHLING & WHEELER, LLC CONSULTING ENGINEERS AND SCIENTISTS		

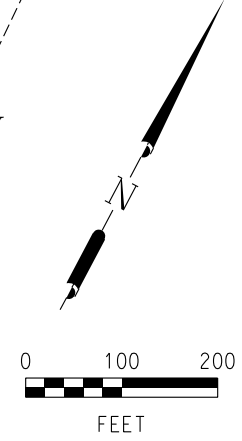
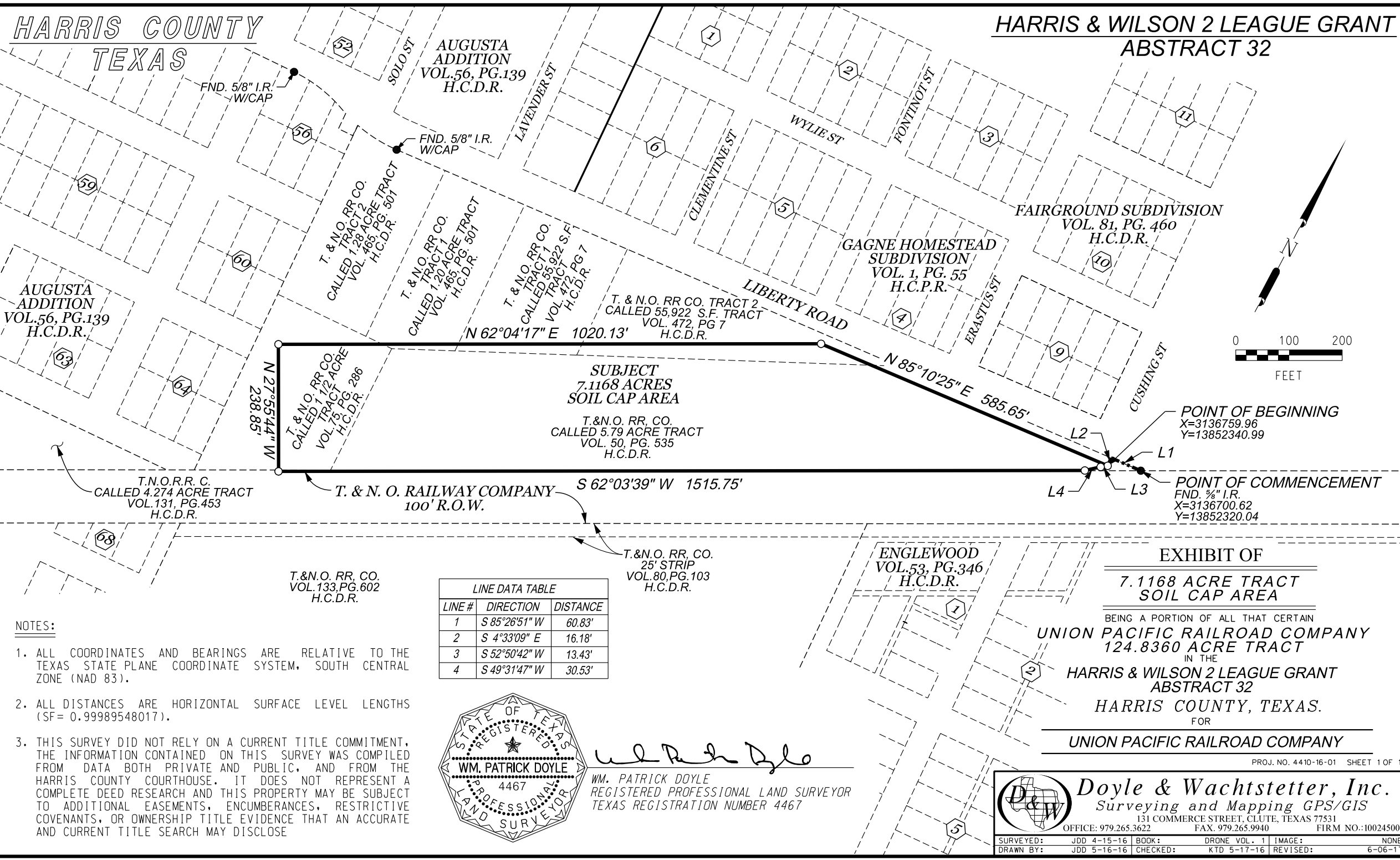
Approx. Scale in Feet
 0 150 300
 Source:
 Base map from ERM-Southwest, Inc APAR
 Addendum, Fig 3-1, dated June 2004.

EXHIBITS "C-1, C-2, C-3, AND C-4"
LEGAL DESCRIPTIONS OF USE OF PHYSICAL CONTROLS FOR SOIL

HARRIS COUNTY TEXAS

HARRIS & WILSON 2 LEAGUE GRANT ABSTRACT 32

USER: Untitled Workspace DATE: 6/6/2017 G:\DON\PB&W\Environmental\UPRR Houston Wood Perserving 4910 Liberty\UPRR Houston Wood 2016 Capped Boundary\Plats\Survey Plat UPRR Soil Cap 7.1168 acres Rev1.dgn



SUBJECT
7.1168 ACRES
SOIL CAP AREA
T. & N.O. RR. CO.
CALLED 5.79 ACRE TRACT
VOL. 50, PG. 535
H.C.D.R.

POINT OF BEGINNING
X=3136759.96
Y=13852340.99

POINT OF COMMENCEMENT
FND. 5/8" I.R.
X=3136700.62
Y=13852320.04

T. & N. O. RAILWAY COMPANY
100' R.O.W.
S 62°03'39" W 1515.75'

LINE #	DIRECTION	DISTANCE
1	S 85°26'51" W	60.83'
2	S 4°33'09" E	16.18'
3	S 52°50'42" W	13.43'
4	S 49°31'47" W	30.53'

- NOTES:
- ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
 - ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF= 0.99989548017).
 - THIS SURVEY DID NOT RELY ON A CURRENT TITLE COMMITMENT, THE INFORMATION CONTAINED ON THIS SURVEY WAS COMPILED FROM DATA BOTH PRIVATE AND PUBLIC, AND FROM THE HARRIS COUNTY COURTHOUSE. IT DOES NOT REPRESENT A COMPLETE DEED RESEARCH AND THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL EASEMENTS, ENCUMBRANCES, RESTRICTIVE COVENANTS, OR OWNERSHIP TITLE EVIDENCE THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE



Wm. Patrick Doyle
WM. PATRICK DOYLE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4467

EXHIBIT OF
**7.1168 ACRE TRACT
SOIL CAP AREA**
BEING A PORTION OF ALL THAT CERTAIN
**UNION PACIFIC RAILROAD COMPANY
124.8360 ACRE TRACT**
IN THE
**HARRIS & WILSON 2 LEAGUE GRANT
ABSTRACT 32**
HARRIS COUNTY, TEXAS.
FOR
UNION PACIFIC RAILROAD COMPANY

PROJ. NO. 4410-16-01 SHEET 1 OF 1

Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FAX: 979.265.9940 FIRM NO.: 10024500

SURVEYED:	JDD 4-15-16	BOOK:	DRONE VOL. 1	IMAGE:	NONE
DRAWN BY:	JDD 5-16-16	CHECKED:	KTD 5-17-16	REVISED:	6-06-17



Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

**UNION PACIFIC RAILROAD COMPANY
SOIL CAP AREA – 7.1168 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 1 OF 1**

BEING ALL THAT CERTAIN 7.1168 acre tract of land, lying and situated in the Harris and Wilson 2 League Grant, Abstract 32, Harris County Texas, being located within the right-of-way of 60 foot wide Liberty Road, being a portion of all that certain called 1.28 acre tract and all that certain called 1.20 acre tract of land conveyed by deed recorded on February 8, 1921 from W. N. Reece to Texas & New Orleans Railroad Company as recorded in Volume 465, Page 501 of the H.C.D.R.; all that certain called 55,922 square foot tract of land and all that certain called 55,922 square foot tract of land conveyed by deed recorded on February 7, 1921 from W. N. Reece to Texas & New Orleans Railroad Company as recorded in Volume 472, Page 7 of the H.C.D.R.; all that certain called 1.5 acre tract of land conveyed by deed recorded on August 15, 1894 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 75, Page 286 of the H.C.D.R.; all that certain called 5.79 acre tract of land conveyed by deed recorded on July 24, 1890 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 50, Page 535 of the H.C.D.R.; the herein described 7.1168 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

COMMENCING at 5/8" iron rod found marking the intersection of the southern right-of-way boundary line of said 60 foot wide Liberty Road with the northwestern right-of-way boundary line of the 100 foot wide Texas and New Orleans Rail Road Company right-of-way, same being the southeastern boundary line of said Texas and New Orleans Rail Road Company called 5.79 acre tract, said Point of Commencement being located at Texas State Plane coordinate X=3136759.96 and Y=13852340.99;

THENCE South 85°26'51" West, coincident with the southern right-of-way boundary line of said 60 foot wide Liberty Road, a distance of 60.83 feet to an angle point, at position X=3136699.34 and Y=13852336.16;

THENCE South 4°33'09" East, a distance of 16.18 feet to East corner and the **POINT OF BEGINNING** of the herein described 7.1168 acre tract, at position X=3136700.62 and Y=13852320.04;

THENCE South 52°50'42" West, a distance of 13.43 feet to an angle corner of the herein described 7.1168 acre tract, at position X=3136689.92 and Y=13852311.93;

THENCE South 49°31'47" West, a distance of 30.53 feet to an angle corner of the herein described 7.1168 acre tract, at position X=3136666.69 and Y=13852292.11;

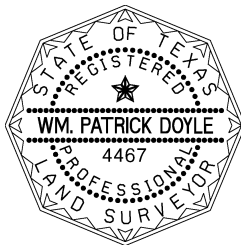
THENCE South 62°03'39" West, a distance of 1515.75 feet to the South corner of the herein described 7.1168 acre tract, at position X=3135327.75 and Y=13851582.01;

THENCE North 27°55'44" West, a distance of 238.85 feet to West corner of the herein described 7.1168 acre tract, at position X=3135215.89 and Y=13851793.02;

THENCE North 62°04'17" East, a distance of 1020.13 feet to an angle corner of the herein described 7.1168 acre tract, at position X=3136117.11 and Y=13852270.77;

THENCE North 85°10'25" East, a distance of 585.65 feet to the **POINT OF BEGINNING**, containing 7.1168 acres of land, more or less.

Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
June 23, 2016



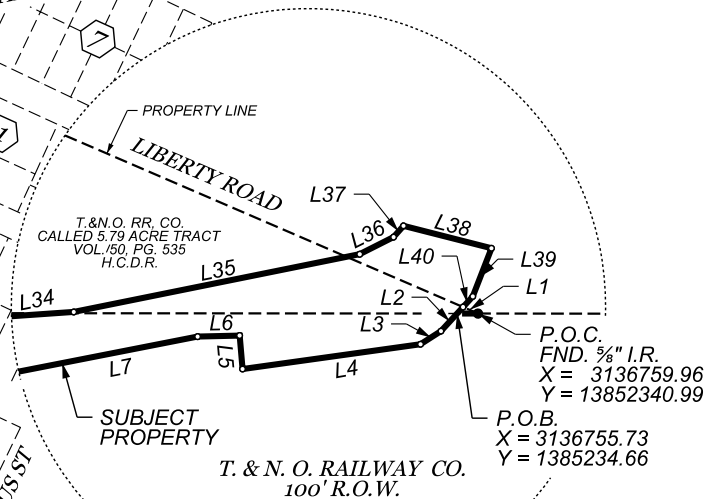
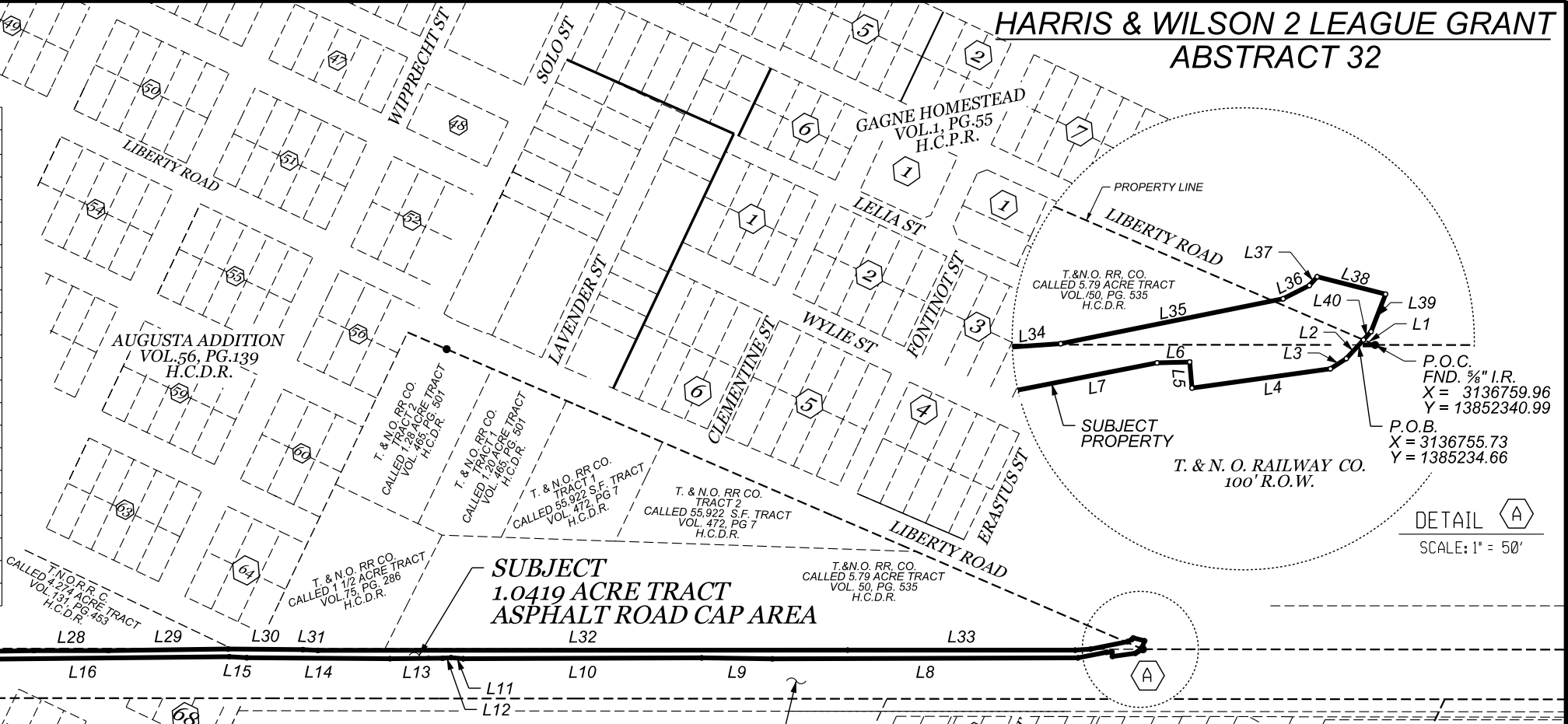
This description is based on an exhibit, dated June 23, 2016 is on file in the office of Doyle & Wachtstetter, Inc.
V:\Pat\Pastor Behling & Wheeler\UPPR Liberty Road Sidewalk tract 0.1318 acre.doc

HARRIS COUNTY TEXAS

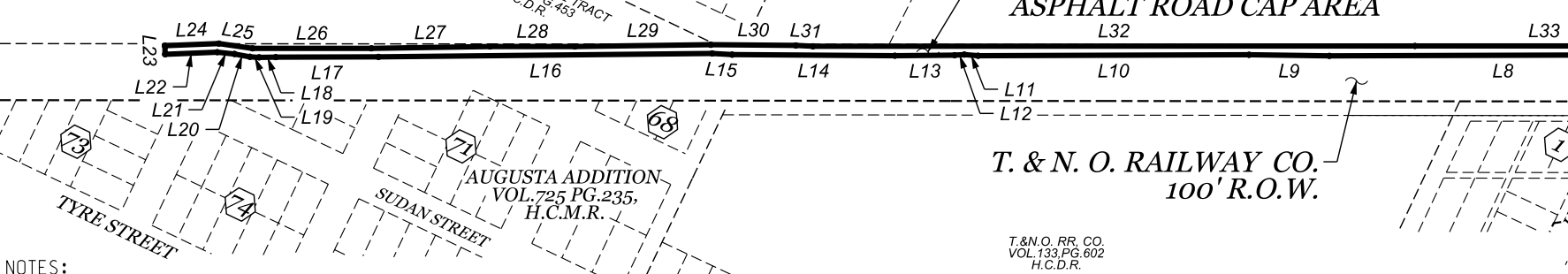
HARRIS & WILSON 2 LEAGUE GRANT ABSTRACT 32

LINE #	DIRECTION	LENGTH
L1	S 86°26'51" W	4.25'
L2	S 14°40'24" W	8.50'
L3	S 29°23'15" W	6.33'
L4	S 54°11'53" W	46.80'
L5	N 32°51'31" W	8.76'
L6	S 60°39'24" W	10.96'
L7	S 51°04'35" W	58.69'
L8	S 61°56'31" W	613.96'
L9	S 62°54'22" W	142.13'
L10	S 61°55'12" W	479.21'
L11	S 67°03'52" W	24.28'
L12	S 58°32'12" W	17.21'
L13	S 61°37'54" W	105.67'
L14	S 62°29'25" W	287.83'
L15	S 65°35'29" W	35.19'
L16	S 61°31'56" W	590.15'
L17	S 61°59'05" W	181.71'
L18	S 61°22'47" W	29.30'
L19	S 65°38'37" W	16.53'
L20	S 72°24'44" W	27.78'

LINE #	DIRECTION	LENGTH
L21	S 68°04'30" W	30.51'
L22	S 59°48'14" W	92.27'
L23	N 29°33'31" W	15.17'
L24	N 59°48'53" E	95.54'
L25	N 70°15'38" E	60.14'
L26	N 62°07'21" E	210.22'
L27	N 61°12'15" E	209.88'
L28	N 62°09'00" E	149.93'
L29	N 61°23'02" E	240.32'
L30	N 62°36'22" E	150.43'
L31	N 64°52'14" E	30.22'
L32	N 62°05'30" E	1064.63'
L33	N 62°08'24" E	457.12'
L34	N 58°08'18" E	30.97'
L35	N 50°42'05" E	76.01'
L36	N 35°17'11" E	9.87'
L37	N 13°31'05" E	3.91'
L38	N 76°25'52" E	23.65'
L39	S 6°43'41" E	13.45'
L40	S 14°40'24" W	3.77'



DETAIL A
SCALE: 1" = 50'



- NOTES:
1. ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
 2. ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF= 0.99989548017).
 3. THIS SURVEY DID NOT RELY ON A CURRENT TITLE COMMITMENT, THE INFORMATION CONTAINED ON THIS SURVEY WAS COMPILED FROM DATA BOTH PRIVATE AND PUBLIC, AND FROM THE HARRIS COUNTY COURTHOUSE. IT DOES NOT REPRESENT A COMPLETE DEED RESEARCH AND THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL EASEMENTS, ENCUMBRANCES, RESTRICTIVE COVENANTS, OR OWNERSHIP TITLE EVIDENCE THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE



Wm. Patrick Doyle
WM. PATRICK DOYLE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4467

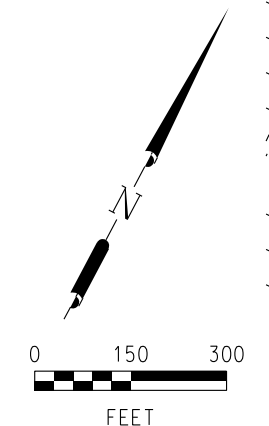


EXHIBIT OF
1.0419 ACRE TRACT ASPHALT ROAD CAP AREA
BEING A PORTION OF ALL THAT CERTAIN
UNION PACIFIC RAILROAD COMPANY
124.8360 ACRE TRACT &
LIBERTY ROAD
IN THE
HARRIS & WILSON 2 LEAGUE GRANT
ABSTRACT 32
HARRIS COUNTY, TEXAS.
FOR
UNION PACIFIC RAILROAD COMPANY

PROJ. NO. 4410-16-01 SHEET 1 OF 1

Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FAX: 979.265.9940 FIRM NO.: 10024500

SURVEYED: JDD 4-15-16	BOOK: DRONE VOL. 1	IMAGE: NONE
DRAWN BY: JDD 5-16-16	CHECKED: KTD 5-17-16	REVISED: 6-06-17

USER: Untitled Workspace TIME: 3:38:47 PM DATE: 6/6/2017 G:\DON\PB&W\Environmental\UPRR Houston Wood 2016 Capped Boundary\Plats\Survey Plot\UPRR Asphalt Road 1.0419 acres Rev2.dgn



Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

**UNION PACIFIC RAILROAD COMPANY
 ASPHALT ROAD CAP AREA – 1.0419 ACRE TRACT
 HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
 HARRIS COUNTY, TEXAS
 PAGE 1 OF 3**

BEING ALL THAT CERTAIN 1.0419 acre tract of land, lying and situated in the Harris and Wilson 2 League Grant, Abstract 32, Harris County Texas, being located within the right-of-way of 60 foot wide Liberty Road, within the Texas and New Orleans 100 foot wide railroad right-of-way, being a portion of all that certain called 5.79 acre tract of land conveyed by deed recorded on July 24, 1890 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 50, Page 535 of the H.C.D.R. and a portion of all that certain called 4.274 acre tract conveyed by deed recorded on October 29, 1901 from Ida Japhet to Texas and New Orleans Railroad Company, as recorded in Volume 131, Page 453 of the H.C.D.R., the herein described 1.0419 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

COMMENCING at 5/8" iron rod found marking the intersection of the southern right-of-way boundary line of said 60 foot wide Liberty Road with the northwestern right-of-way boundary line of the 100 foot wide Texas and New Orleans Rail Road Company right-of-way, same being the southeastern boundary line of said Texas and New Orleans Rail Road Company called 5.79 acre tract, said Point of Commencement being located at Texas State Plane coordinate X=3136759.96 and Y=13852340.99;

THENCE South 85°26'51" West, coincident with the southern right-of-way boundary line of said 60 foot wide Liberty Road, a distance of 4.25 feet to the **POINT OF BEGINNING** of the herein described 1.0419 acre tract, at position X=3136755.73 and Y=13852340.66;

THENCE South 14°40'24" West, a distance of 8.50 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136753.58 and Y=13852332.43;

THENCE South 29°23'15" West, a distance of 6.33 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136750.47 and Y=13852326.92;

THENCE South 54°11'53" West, a distance of 46.80 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136712.51 and Y=13852299.54;

THENCE North 32°51'31" West, a distance of 8.76 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136707.76 and Y=13852306.90;

THENCE South 60°39'24" West, a distance of 10.96 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136698.21 and Y=13852301.53;

THENCE South 51°04'35" West, a distance of 58.69 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136652.56 and Y=13852264.66;

THENCE South 61°56'31" West, a distance of 613.96 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136110.82 and Y=13851975.91;

THENCE South 62°54'22" West, a distance of 142.13 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135984.30 and Y=13851911.18;

THENCE South 61°55'12" West, a distance of 479.21 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135561.54 and Y=13851685.64;

THENCE South 67°03'52" West, a distance of 24.28 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135539.18 and Y=13851676.18;

THENCE South 58°32'12" West, a distance of 17.21 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135524.50 and Y=13851667.19;

**UNION PACIFIC RAILROAD COMPANY
ASPHALT ROAD CAP AREA – 1.0419 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 2 OF 3**

THENCE South 61°37'54" West, a distance of 105.67 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135431.52 and Y=13851616.99;

THENCE South 62°29'25" West, a distance of 287.83 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135176.27 and Y=13851484.05;

THENCE South 65°35'29" West, a distance of 35.19 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135144.23 and Y=13851469.52;

THENCE South 61°31'56" West, a distance of 590.15 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134625.49 and Y=13851188.24;

THENCE South 61°59'05" West, a distance of 181.71 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134465.09 and Y=13851102.89;

THENCE South 61°22'47" West, a distance of 29.30 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134439.37 and Y=13851088.86;

THENCE South 65°38'37" West, a distance of 16.53 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134424.32 and Y=13851082.05;

THENCE South 72°24'44" West, a distance of 27.78 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134397.83 and Y=13851073.65;

THENCE South 68°04'30" West, a distance of 30.51 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134369.53 and Y=13851062.26;

THENCE South 59°48'14" West, a distance of 92.27 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134289.80 and Y=13851015.86;

THENCE North 29°33'31" West, a distance of 15.17 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134282.31 and Y=13851029.05;

THENCE North 59°48'53" East, a distance of 95.54 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134364.89 and Y=13851077.09;

THENCE North 70°15'38" East, a distance of 60.14 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134421.50 and Y=13851097.40;

THENCE North 62°07'21" East, a distance of 210.22 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134607.30 and Y=13851195.68;

THENCE North 61°12'15" East, a distance of 209.88 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134791.20 and Y=13851296.77;

THENCE North 62°09'00" East, a distance of 149.93 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3134923.75 and Y=13851366.80;

THENCE North 61°23'02" East, a distance of 240.32 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135134.70 and Y=13851481.89;

THENCE North 62°36'22" East, a distance of 150.43 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135268.25 and Y=13851551.09;

THENCE North 64°52'14" East, a distance of 30.22 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3135295.60 and Y=13851563.93;

**UNION PACIFIC RAILROAD COMPANY
 ASPHALT ROAD CAP AREA – 1.0419 ACRE TRACT
 HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
 HARRIS COUNTY, TEXAS
 PAGE 3 OF 3**

THENCE North 62°05'30" East, a distance of 1064.63 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136236.31 and Y=13852062.18;

THENCE North 62°08'24" East, a distance of 457.12 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136640.40 and Y=13852275.77;

THENCE North 58°08'18" East, a distance of 30.97 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136666.69 and Y=13852292.11;

THENCE North 50°42'05" East, a distance of 76.01 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136725.51 and Y=13852340.25;

THENCE North 35°17'11" East, a distance of 9.87 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136731.21 and Y=13852348.31;

THENCE North 13°31'05" East, a distance of 3.91 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136732.13 and Y=13852352.11;

THENCE North 76°25'52" East, a distance of 23.65 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136755.11 and Y=13852357.66;

THENCE South 6°43'41" East, a distance of 13.45 feet to an angle corner of the herein described 1.0419 acre tract, at position X=3136756.69 and Y=13852344.30;

THENCE South 14°40'24" West, a distance of 3.77 feet to the **POINT OF BEGINNING**, containing 1.0419 acre of land, more or less.



Wm. Patrick Doyle

**Wm. Patrick Doyle
 Registered Professional Land Surveyor
 Texas Registration Number 4467
 June 23, 2016**

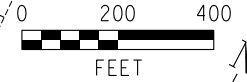
*This description is based on a plat, dated June 23, 2016 is on file in the office of Doyle & Wachtstetter, Inc.
 V:\Pat\Pastor Behling & Wheeler\UPPR Liberty Road Asphalt Road tract 1.0419 acres Rev1.doc*

HARRIS COUNTY TEXAS

HARRIS & WILSON 2 LEAGUE GRANT ABSTRACT 32

NOTES:

1. ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
2. ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF= 0.99989548017).
3. THIS SURVEY DID NOT RELY ON A CURRENT TITLE COMMITMENT. THE INFORMATION CONTAINED ON THIS SURVEY WAS COMPILED FROM DATA BOTH PRIVATE AND PUBLIC, AND FROM THE HARRIS COUNTY COURTHOUSE. IT DOES NOT REPRESENT A COMPLETE DEED RESEARCH AND THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL EASEMENTS, ENCUMBRANCES, RESTRICTIVE COVENANTS, OR OWNERSHIP TITLE EVIDENCE THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE



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Y = 13 852 340.99

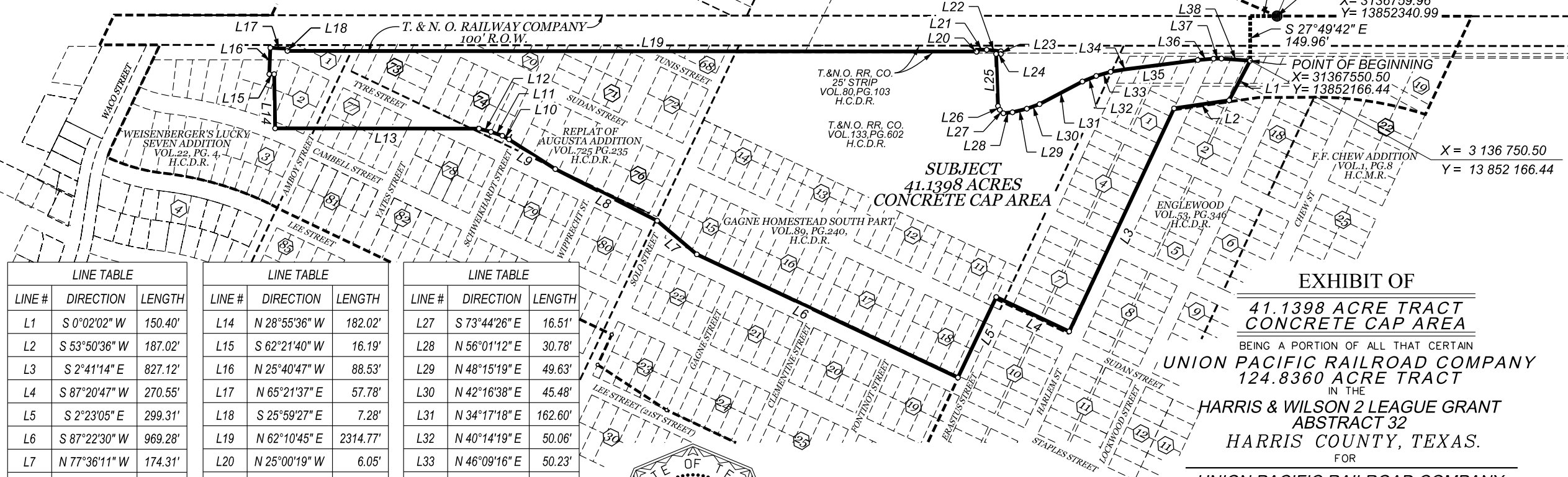
S 62°10'18" W
89.87'

POINT OF COMMENCEMENT
FND. 5/8" I.R. W/CAP
X= 3136759.96
Y= 13852340.99

S 27°49'42" E
149.96'

POINT OF BEGINNING
X= 31367550.50
Y= 13852166.44

X = 3 136 750.50
Y = 13 852 166.44



LINE #	DIRECTION	LENGTH
L1	S 0°02'02" W	150.40'
L2	S 53°50'36" W	187.02'
L3	S 2°41'14" E	827.12'
L4	S 87°20'47" W	270.55'
L5	S 2°23'05" E	299.31'
L6	S 87°22'30" W	969.28'
L7	N 77°36'11" W	174.31'
L8	S 89°01'46" W	383.56'
L9	N 85°15'27" W	184.19'
L10	N 89°19'03" W	25.74'
L11	S 81°05'07" W	40.48'
L12	S 77°12'08" W	41.52'
L13	S 62°11'46" W	684.47'

LINE #	DIRECTION	LENGTH
L14	N 28°55'36" W	182.02'
L15	S 62°21'40" W	16.19'
L16	N 25°40'47" W	88.53'
L17	N 65°21'37" E	57.78'
L18	S 25°59'27" E	7.28'
L19	N 62°10'45" E	2314.77'
L20	N 25°00'19" W	6.05'
L21	N 62°13'44" E	32.41'
L22	N 68°12'09" E	47.98'
L23	S 26°46'44" E	9.01'
L24	S 62°08'04" W	15.88'
L25	S 29°58'59" E	174.76'
L26	S 53°20'30" E	14.15'

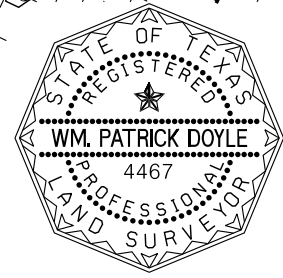
LINE #	DIRECTION	LENGTH
L27	S 73°44'26" E	16.51'
L28	N 56°01'12" E	30.78'
L29	N 48°15'19" E	49.63'
L30	N 42°16'38" E	45.48'
L31	N 34°17'18" E	162.60'
L32	N 40°14'19" E	50.06'
L33	N 46°09'16" E	50.23'
L34	N 52°33'35" E	47.88'
L35	N 54°46'14" E	247.27'
L36	N 57°15'43" E	53.32'
L37	N 61°04'08" E	26.55'
L38	N 66°28'12" E	96.58'

EXHIBIT OF

**41.1398 ACRE TRACT
CONCRETE CAP AREA**

BEING A PORTION OF ALL THAT CERTAIN
**UNION PACIFIC RAILROAD COMPANY
124.8360 ACRE TRACT**
IN THE
**HARRIS & WILSON 2 LEAGUE GRANT
ABSTRACT 32**
HARRIS COUNTY, TEXAS.
FOR
UNION PACIFIC RAILROAD COMPANY

PROJ. NO. 4410-16-01
SHEET 1 OF 1



WM. Patrick Doyle
WM. PATRICK DOYLE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4467



Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FAX: 979.265.9940 FIRM NO.: 10024500

SURVEYED:	JDD 4-15-16	BOOK:	DRONE VOL. 1	IMAGE:	NDNE
DRAWN BY:	JDD 5-16-16	CHECKED:	KTD 5-17-16	REVISED:	6-06-17

USER: Untitled Workspace DATE: 6/6/2017 3:19:17 PM
 C:\DGN\PB&W_Environmental\UPRR Houston Wood Perserving 4910 Liberty\UPRR Houston Wood 2016 Capped Boundary\Plots\Survey plot UPRR Concrete Cap 41.1398 acres Rev2.dgn



Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

**UNION PACIFIC RAILROAD COMPANY
CONCRETE CAP AREA – 41.1398 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 1 OF 3**

BEING ALL THAT CERTAIN 41.1398 acre tract of land, lying and situated in the Harris and Wilson 2 League Grant, Abstract 32, Harris County Texas, being a portion of that certain 25 foot wide strip conveyed by deed recorded on January 2, 1895 from Clementine Gagne, et al to Texas and New Orleans Railroad Company, as recorded in Volume 80, Page 103 of the Harris County Deed Records (H.C.D.R.), a portion of all that certain tract of land conveyed by deed recorded on March 12, 1902 from H. M. Curtin to Texas and New Orleans Railroad Company, as recorded in Volume 133, Page 602 of the H.C.D.R., a portion of Lots 1 through 4 and all of Lots 5 through 10, Block 1, a portion of Lots 1, 2 and 3 and a portion of Lot 15 and 16 through 4, Block 2, all of Lots 1 through 6 and a portion of Lots 7 through 12, Block 4, all of Lots 1 through 6 and a portion of Lots 7 through 12, Block 7, a portion of Eratus Street and a portion of 50 foot wide Harlem Street (Baer Avenue) as shown on the map of Englewood Subdivision, according to the map or plat recorded in Volume 53, Page 346 of the H.C.D.R., all of Lots 1 through 4 and Lots 7 through 10, and a portion of Lots 5 and 6, Block 11, all of Lots 1 through 10, Block 12, all of Lots 1 through 10, Block 13, all of Lots 1 through 10, Block 14, all of Lots 1 through 8 and a portion of Lot 9 and 10, Block 15, all of Lots 1 through 10, Block 16, all of Lots 1 through 10, Block 17, all of Lots 1 through 4 and 7 through 10 and a portion of Lots 5 and 6, Block 18, all of 60 foot wide 16th Street, all of 60 foot wide 17th Street, all of 60 foot wide 18th Street, a portion of 60 foot wide 19th Street, a portion of 40 foot wide Solo Street (Joseph Street), a portion of 40 foot wide Gagne Street, a portion of 40 foot wide Clementine Street, a portion of 40 foot wide Fontinot Street, as shown on the map of the South Part of the Gagne Homestead, according to the map or plat recorded in Volume 89, Page 240 of the H.C.D.R., a portion of Lots 1 through 3, Block 68, a portion of Lots 1 through 3, Block 70, a portion of Lots 1, 4, and 5, all of Lots 2 and 3, all of Lots 6, 7 and 8, Block 71, all of Lots 1 through 6 Lot 72, a portion of Lots 1 through 5 and all of Lot 6 and 7, Block 73, a portion of Lots 6, 7 and 8, all of Lots 1 through 5 and all of Lots 9 and 10, Block 74, all of Lots 1 through 7 and a portion of Lots 8, 9 and 10, Block 75, all of Lots 1 through 6, Block 76, a portion of 60 foot wide Tunis Street (17th Street), a portion of 60 foot wide Sudan Street (18th Street), all of 60 foot wide Tyre Street (19th Street), a portion of Amboy Street (Dan Street), a portion of 60 foot wide Yates Street (Elmer Street), a portion of 60 foot wide Schweikhart Street, a portion of 60 foot wide Wipprecht Street, and a portion of Solo Street (Gus Street) as shown on the map of the Subdivision of Blocks 68, 70, 71, 72, 73, 74, 75, 76 Augusta Addition, according to the map or plat recorded in Volume 725, Page 235 of the H.C.D.R., a portion of Lots 3, 4 and 5, a portion of Lots 8, 9 and 10, all of Lots 1 and 2, Block 77, a portion of Lot 1, Block 78, a portion of 60 foot wide Tyre Street, a portion of Amboy Street (Dan Street), a portion of 60 foot wide Yates Street (Elmer Street), f as shown on the map of Augusta Division, as recorded in Volume 56, Page 139 of the H.C.D.R., a portion of Block 1, a portion of Lots 8, 9, 10, 13 and 14, all of Lots 11 and 12, Block 2, a portion of 50 foot – 60 foot wide Tyre Street and a portion of 60 foot wide Campbell Street, as shown on the map of Weisenberger's Lucky Seven Addition, according to the map or plat recorded in Volume 22, Page 4 of the H.C.D.R., the herein described 41.1398 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

COMMENCING at 5/8" iron rod found marking the intersection of the southern right-of-way boundary line of said 60 foot wide Liberty Road with the northwestern right-of-way boundary line of the 100 foot wide Texas and New Orleans Rail Road Company right-of-way, same being on the southeastern boundary line of all that certain called 5.79 acre tract of land conveyed by deed recorded on July 24, 1890 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 50, Page 535 of the H.C.D.R.; said Point of Commencement being located at Texas State Plane coordinate X=3136759.96 and Y=13852340.99;

THENCE South 62°10'18" West, coincident northern boundary line of said 100 foot wide Texas and New Orleans Rail Road Company right-of-way, same being the southern boundary line of said Texas and New Orleans Rail Road Company called 5.79 acre, a distance of 89.87 to an angle point at position X=3136680.50 and Y=13852299.04;

THENCE South 27°49'42" East, a distance of 149.96 feet to the North corner and the **POINT OF BEGINNING**, of the herein described 41.1398 acre tract, at position X=3136750.50 and Y=13852166.44

THENCE South 0°02'02" West, a distance of 150.40 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136750.41 and Y=13852016.05;

**UNION PACIFIC RAILROAD COMPANY
CONCRETE CAP AREA – 41.1398 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 2 OF 3**

THENCE South 53°50'36" West, a distance of 187.02 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136599.42 and Y=13851905.72;

THENCE South 2°41'14" East, a distance of 827.12 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136638.20 and Y=13851079.60;

THENCE South 87°20'47" West, a distance of 270.55 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136367.96 and Y=13851067.08;

THENCE South 2°23'05" East, a distance of 299.31 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136380.41 and Y=13850768.06;

THENCE South 87°22'30" West, a distance of 969.28 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135412.26 and Y=13850723.67;

THENCE North 77°36'11" West, a distance of 174.31 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135242.03 and Y=13850761.09;

THENCE South 89°01'46" West, a distance of 383.56 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3134858.57 and Y=13850754.59;

THENCE North 85°15'27" West, a distance of 184.19 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3134675.03 and Y=13850769.82;

THENCE North 89°19'03" West, a distance of 25.74 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3134649.30 and Y=13850770.13;

THENCE South 81°05'07" West, a distance of 40.48 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3134609.31 and Y=13850763.85;

THENCE South 77°12'08" West, a distance of 41.52 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3134568.82 and Y=13850754.66;

THENCE South 62°11'46" West, a distance of 684.47 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3133963.44 and Y=13850435.42;

THENCE North 28°55'36" West, a distance of 182.02 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3133875.41 and Y=13850594.72;

THENCE South 62°21'40" West, a distance of 16.19 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3133861.07 and Y=13850587.21;

THENCE North 25°40'47" West, a distance of 88.53 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3133822.71 and Y=13850666.99;

THENCE North 65°21'37" East, a distance of 57.78 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3133875.22 and Y=13850691.08;

THENCE South 25°59'27" East, a distance of 7.28 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3133878.41 and Y=13850684.53;

THENCE North 62°10'45" East, a distance of 2314.77 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135925.40 and Y=13851764.75;

THENCE North 25°00'19" West, a distance of 6.05 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135922.84 and Y=13851770.23;

THENCE North 62°13'44" East, a distance of 32.41 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135951.51 and Y=13851785.32;

THENCE North 68°12'09" East, a distance of 47.98 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135996.06 and Y=13851803.14;

**UNION PACIFIC RAILROAD COMPANY
 CONCRETE CAP AREA – 41.1398 ACRE TRACT
 HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
 HARRIS COUNTY, TEXAS
 PAGE 3 OF 3**

THENCE South 26°46'44" East, a distance of 9.01 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136000.12 and Y=13851795.10;

THENCE South 62°08'04" West, a distance of 15.88 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3135986.08 and Y=13851787.68;

THENCE South 29°58'59" East, a distance of 174.76 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136073.41 and Y=13851636.32;

THENCE South 53°20'30" East, a distance of 14.15 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136084.76 and Y=13851627.87;

THENCE South 73°44'26" East, a distance of 16.51 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136100.60 and Y=13851623.25;

THENCE North 56°01'12" East, a distance of 30.78 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136126.12 and Y=13851640.45;

THENCE North 48°15'19" East, a distance of 49.63 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136163.15 and Y=13851673.50;

THENCE North 42°16'38" East, a distance of 45.48 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136193.74 and Y=13851707.15;

THENCE North 34°17'18" East, a distance of 162.60 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136285.34 and Y=13851841.47;

THENCE North 40°14'19" East, a distance of 50.06 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136317.67 and Y=13851879.68;

THENCE North 46°09'16" East, a distance of 50.23 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136353.89 and Y=13851914.48;

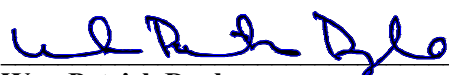
THENCE North 52°33'35" East, a distance of 47.88 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136391.91 and Y=13851943.58;

THENCE North 54°46'14" East, a distance of 247.27 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136593.87 and Y=13852086.21;

THENCE North 57°15'43" East, a distance of 53.32 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136638.72 and Y=13852115.04;

THENCE North 61°04'08" East, a distance of 26.55 feet to an angle corner of the herein described 41.1398 acre tract, at position X=3136661.95 and Y=13852127.88;

THENCE North 66°28'12" East, a distance of 96.58 feet to the **POINT OF BEGINNING**, containing 41.1398 acres of land, more or less.

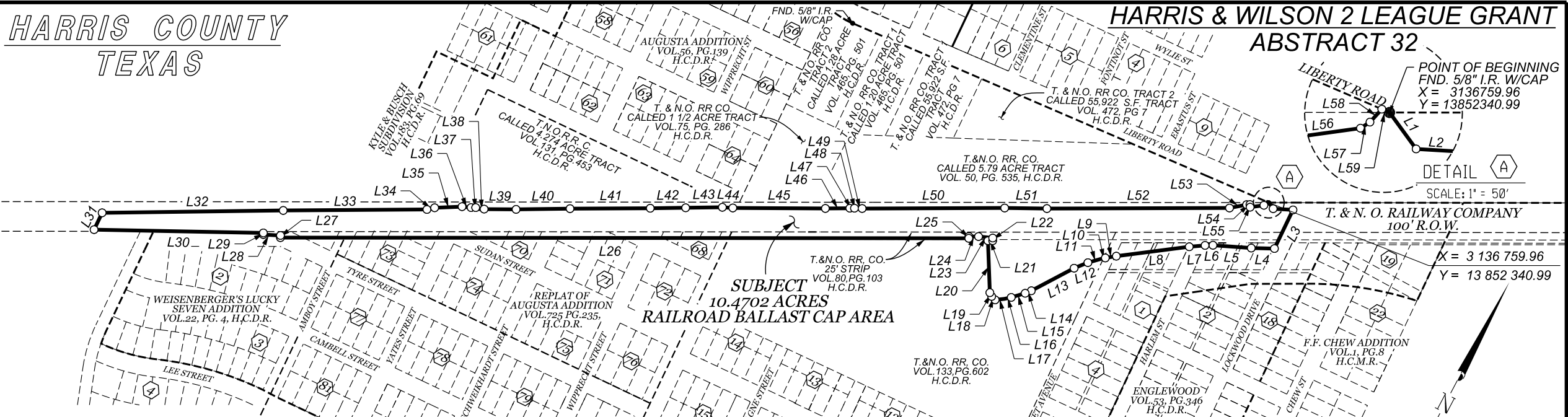


Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
June 23, 2016



HARRIS COUNTY TEXAS

HARRIS & WILSON 2 LEAGUE GRANT ABSTRACT 32



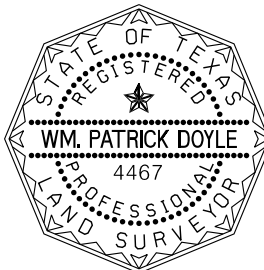
LINE #	DIRECTION	LENGTH
L1	S 63°55'58" E	25.27'
L2	N 65°31'24" E	66.87'
L3	S 2°12'59" E	144.33'
L4	S 63°23'00" W	77.90'
L5	S 66°18'08" W	129.20'
L6	S 61°04'08" W	26.55'
L7	S 57°15'43" W	53.32'
L8	S 54°46'14" W	247.27'
L9	S 52°55'52" W	37.51'
L10	S 51°13'07" W	10.38'
L11	S 46°09'16" W	50.23'
L12	S 40°14'19" W	50.06'
L13	S 34°17'18" W	162.60'
L14	S 40°06'28" W	22.40'
L15	S 45°29'36" W	48.88'
L16	S 50°09'24" W	23.89'
L17	S 56°01'12" W	30.78'
L18	N 73°44'26" W	16.51'
L19	N 53°20'30" W	14.15'
L20	N 29°58'59" W	174.76'

LINE #	DIRECTION	LENGTH
L21	N 62°08'04" E	15.88'
L22	N 26°46'44" W	9.01'
L23	S 68°12'09" W	47.98'
L24	S 62°13'44" W	32.41'
L25	S 25°00'19" E	6.05'
L26	S 62°10'45" W	2314.77'
L27	N 25°59'27" W	7.28'
L28	S 65°21'37" W	57.78'
L29	N 25°40'47" W	5.37'
L30	S 63°14'08" W	569.28'
L31	N 02°27'12" W	62.75'
L32	N 61°23'11" E	609.08'
L33	N 61°44'19" E	483.24'
L34	N 49°23'57" E	26.50'
L35	N 59°48'14" E	92.27'
L36	N 68°04'30" E	30.51'
L37	N 72°24'44" E	27.78'
L38	N 62°42'50" E	16.52'
L39	N 62°36'31" E	107.46'
L40	N 61°20'35" E	181.43'

LINE #	DIRECTION	LENGTH
L41	N 61°49'55" E	269.76'
L42	N 61°23'11" E	119.07'
L43	N 61°22'49" E	123.43'
L44	N 65°35'29" E	35.19'
L45	N 62°26'43" E	311.23'
L46	N 61°33'27" E	82.27'
L47	N 52°35'58" E	6.67'
L48	N 66°04'19" E	18.88'
L49	N 65°03'41" E	15.97'
L50	N 61°55'12" E	479.21'
L51	N 62°54'22" E	142.13'
L52	N 61°56'31" E	613.96'
L53	N 51°04'35" E	58.69'
L54	N 60°39'24" E	10.96'
L55	S 32°51'31" E	8.76'
L56	N 54°11'53" E	46.80'
L57	N 29°23'15" E	6.33'
L58	N 14°40'24" E	9.82'
L59	N 85°26'51" E	4.71'

NOTES:

- ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
- ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF= 0.999989548017).
- THIS EXHIBIT DID NOT RELY ON A CURRENT TITLE COMMITMENT THE INFORMATION CONTAINED ON THIS SURVEY WAS COMPILED FROM DATA BOTH PRIVATE AND PUBLIC, AND FROM THE HARRIS COUNTY COURTHOUSE. IT DOES NOT REPRESENT A COMPLETE DEED RESEARCH AND THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL EASEMENTS, ENCUMBRANCES, RESTRICTIVE COVENANTS, OR OWNERSHIP TITLE EVIDENCE THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.



Wm. Patrick Doyle
 WM. PATRICK DOYLE
 REGISTERED PROFESSIONAL LAND SURVEYOR
 TEXAS REGISTRATION NUMBER 4467



EXHIBIT OF
10.4702 ACRE TRACT RAILROAD BALLAST CAP AREA
 BEING A PORTION OF ALL THAT CERTAIN
UNION PACIFIC RAILROAD COMPANY
124.8360 ACRE TRACT
 IN THE
HARRIS & WILSON 2 LEAGUE GRANT
ABSTRACT 32
HARRIS COUNTY, TEXAS.
 FOR
UNION PACIFIC RAILROAD COMPANY

PROJ. NO. 4410-16-01
 SHEET 1 OF 1

Doyle & Wachtstetter, Inc.
 Surveying and Mapping GPS/GIS
 131 COMMERCE STREET, CLUTE, TEXAS 77531
 OFFICE: 979.265.3622 FAX: 979.265.9940 FIRM NO.: 10024500

SURVEYED: JDD 4-15-16	BOOK: DRONE VOL. 1	IMAGE: NONE
DRAWN BY: JDD 5-16-16	CHECKED: KTD 5-17-16	REVISED: 6-06-17



Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

**UNION PACIFIC RAILROAD COMPANY
RAILROAD BALLAST CAP AREA – 10.4702 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 1 OF 4**

BEING ALL THAT CERTAIN 10.4702 acre tract of land, lying and situated in the Harris and Wilson 2 League Grant, Abstract 32, Harris County Texas, being located within the Texas and New Orleans 100 foot wide railroad right-of-way, being a portion of that certain 25 foot wide strip conveyed by deed recorded on January 2, 1895 from Clementine Gagne, et al to Texas and New Orleans Railroad Company, as recorded in Volume 80, Page 103 of the Harris County Deed Records (H.C.D.R.), a portion of all that certain tract of land conveyed by deed recorded on March 12, 1902 from H. M. Curtin to Texas and New Orleans Railroad Company, as recorded in Volume 133, Page 602 of the H.C.D.R., a portion of Lots 1 through 4, Block 1, a portion of Lots 1 through 4, Block 2, a portion of Sunset Avenue, a portion of 50 foot wide Harlem Street (Baer Avenue), and a portion of 50 foot wide Lockwood Drive, as shown on the map of Englewood Subdivision, according to the map or plat recorded in Volume 53, Page 346 of the H.C.D.R.; a portion of Lots 1 through 3, Block 68, a portion of Lots 1 through 3, Block 70, a portion of Lots 1 and 5, Block 71, a portion of Lots 1 through 5, Block 73, a portion of 60 foot wide Tunis Street (17th Street), a portion of 60 foot wide Sudan Street (18th Street), all of 60 foot wide Tyre Street (19th Street), a portion of Amboy Street (Dan Street), a portion of 60 foot wide Yates Street (Elmer Street), a portion of 60 foot wide Schweikhart Street, a portion of 60 foot wide Wipprecht Street, and a portion of Solo Street (Gus Street) as shown on the map of the Subdivision of Blocks 68, 70, 71, 72, 73, 74, 75, 76 Augusta Addition, according to the map or plat recorded in Volume 725, Page 235 of the H.C.D.R., all of Block 1 and a portion of Tyre Street, as shown on the map of Weisenberger's Lucky Seven Addition, according to the map or plat recorded in Volume 22, Page 4 of the H.C.D.R., the herein described 10.4702 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

BEGINNING at 5/8" iron rod found marking the intersection of the southern right-of-way boundary line of said 60 foot wide Liberty Road with the northwestern right-of-way boundary line of the 100 foot wide Texas and New Orleans Rail Road Company right-of-way, same being the southeastern boundary line of said Texas and New Orleans Rail Road Company called 5.79 acre tract, said Point of Beginning being located at Texas State Plane coordinate position X=3136759.96 and Y=13852340.99;

THENCE South 63°55'58" East, a distance of 25.27 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136782.66 and Y=13852329.89;

THENCE North 65°31'24" East, a distance of 66.87 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136843.51 and Y=13852357.59;

THENCE South 2°12'59" East, a distance of 144.33 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136849.09 and Y=13852213.39;

THENCE South 63°23'00" West, a distance of 77.90 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136779.46 and Y=13852178.49;

THENCE South 66°18'08" West, a distance of 129.20 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136661.16 and Y=13852126.57;

THENCE South 61°04'08" West, a distance of 26.55 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136637.92 and Y=13852113.72;

THENCE South 57°15'43" West, a distance of 53.32 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136593.08 and Y=13852084.89;

THENCE South 54°46'14" West, a distance of 247.27 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136391.12 and Y=13851942.27;

THENCE South 52°55'52" West, a distance of 37.51 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136361.19 and Y=13851919.66;

**UNION PACIFIC RAILROAD COMPANY
RAILROAD BALLAST CAP AREA – 10.4702 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 2 OF 4**

THENCE South 51°13'07" West, a distance of 10.38 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136353.10 and Y=13851913.16;

THENCE South 46°09'16" West, a distance of 50.23 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136316.88 and Y=13851878.37;

THENCE South 40°14'19" West, a distance of 50.06 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136284.54 and Y=13851840.16;

THENCE South 34°17'18" West, a distance of 162.60 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136192.95 and Y=13851705.83;

THENCE South 40°06'28" West, a distance of 22.40 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136178.52 and Y=13851688.70;

THENCE South 45°29'36" West, a distance of 48.88 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136143.67 and Y=13851654.44;

THENCE South 50°09'24" West, a distance of 23.89 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136125.33 and Y=13851639.14;

THENCE South 56°01'12" West, a distance of 30.78 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136099.81 and Y=13851621.94;

THENCE North 73°44'26" West, a distance of 16.51 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136083.96 and Y=13851626.56;

THENCE North 53°20'30" West, a distance of 14.15 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136072.61 and Y=13851635.01;

THENCE North 29°58'59" West, a distance of 174.76 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135985.29 and Y=13851786.36;

THENCE North 62°08'04" East, a distance of 15.88 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135999.32 and Y=13851793.78;

THENCE North 26°46'44" West, a distance of 9.01 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135995.27 and Y=13851801.82;

THENCE South 68°12'09" West, a distance of 47.98 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135950.72 and Y=13851784.01;

THENCE South 62°13'44" West, a distance of 32.41 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135922.05 and Y=13851768.91;

THENCE South 25°00'19" East, a distance of 6.05 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135924.60 and Y=13851763.43;

THENCE South 62°10'45" West, a distance of 2314.77 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133877.61 and Y=13850683.22;

THENCE North 25°59'27" West, a distance of 7.28 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133874.42 and Y=13850689.76;

THENCE South 65°21'37" West, a distance of 57.78 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133821.91 and Y=13850665.67;

THENCE North 25°40'47" West, a distance of 5.37 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133819.59 and Y=13850670.51;

THENCE South 63°14'08" West, a distance of 569.28 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133311.35 and Y=13850414.18;

**UNION PACIFIC RAILROAD COMPANY
RAILROAD BALLAST CAP AREA – 10.4702 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 3 OF 4**

THENCE North 2°27'12" West, a distance of 62.75 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133308.67 and Y=13850476.86;

THENCE North 61°23'11" East, a distance of 609.08 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3133843.30 and Y=13850768.52;

THENCE North 61°44'19" East, a distance of 483.24 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134268.89 and Y=13850997.30;

THENCE North 49°23'57" East, a distance of 26.50 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134289.00 and Y=13851014.54;

THENCE North 59°48'14" East, a distance of 92.27 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134368.74 and Y=13851060.95;

THENCE North 68°04'30" East, a distance of 30.51 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134397.04 and Y=13851072.34;

THENCE North 72°24'44" East, a distance of 27.78 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134423.52 and Y=13851080.73;

THENCE North 62°42'50" East, a distance of 16.52 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134438.20 and Y=13851088.30;

THENCE North 62°36'31" East, a distance of 107.46 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134533.60 and Y=13851137.74;

THENCE North 61°20'35" East, a distance of 181.43 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134692.79 and Y=13851224.73;

THENCE North 61°49'55" East, a distance of 269.76 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3134930.58 and Y=13851352.06;

THENCE North 61°23'11" East, a distance of 119.07 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135035.10 and Y=13851409.08;

THENCE North 61°22'49" East, a distance of 123.43 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135143.44 and Y=13851468.20;

THENCE North 65°35'29" East, a distance of 35.19 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135175.47 and Y=13851482.74;

THENCE North 62°26'43" East, a distance of 311.23 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135451.37 and Y=13851626.70;

THENCE North 61°33'27" East, a distance of 82.27 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135523.71 and Y=13851665.88;

THENCE North 52°35'58" East, a distance of 6.67 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135529.01 and Y=13851669.93;

THENCE North 66°04'19" East, a distance of 18.88 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135546.26 and Y=13851677.59;

THENCE North 65°03'41" East, a distance of 15.97 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135560.74 and Y=13851684.32;

THENCE North 61°55'12" East, a distance of 479.21 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3135983.50 and Y=13851909.86;

THENCE North 62°54'22" East, a distance of 142.13 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136110.02 and Y=13851974.59;

**UNION PACIFIC RAILROAD COMPANY
RAILROAD BALLAST CAP AREA – 10.4702 ACRE TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 4 OF 4**

THENCE North 61°56'31" East, a distance of 613.96 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136651.77 and Y=13852263.34;

THENCE North 51°04'35" East, a distance of 58.69 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136697.42 and Y=13852300.21;

THENCE North 60°39'24" East, a distance of 10.96 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136706.97 and Y=13852305.58;

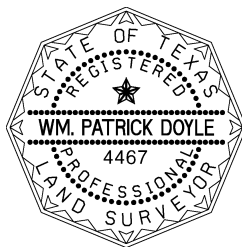
THENCE South 32°51'31" East, a distance of 8.76 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136711.72 and Y=13852298.22;

THENCE North 54°11'53" East, a distance of 46.80 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136749.68 and Y=13852325.60;

THENCE North 29°23'15" East, a distance of 6.33 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136752.79 and Y=13852331.12;

THENCE North 14°40'24" East, a distance of 9.82 feet to an angle corner of the herein described 10.4702 acre tract, at position X=3136755.27 and Y=13852340.62;

THENCE North 85°26'51" East, a distance of 4.71 feet to the **POINT OF BEGINNING**, containing 10.4702 acres of land, more or less.



Wm. Patrick Doyle

**Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
June 23, 2016**

*This description is based on an exhibit, dated June 23, 2016 is on file in the office of Doyle & Wachtstetter, Inc.
V:\Pat\Pastor Behling & Wheeler\UPPR Liberty Railroad Ballast Cap 10.4702 acres Rev1.doc*

EXHIBIT “D”

MAINTENANCE AND MONITORING OF THE PHYSICAL CONTROLS FOR SOIL

EXHIBIT “D”

MAINTENANCE AND MONITORING OF THE PHYSICAL CONTROLS FOR SURFACE/SUBSURFACE SOIL

The cap inspection and maintenance program will be developed to ensure the integrity of the cap and vegetative cover. UPRR will submit annual reports to the TCEQ (unless this frequency is modified by subsequent TCEQ correspondence) documenting the physical control conditions, maintenance, repair, replacement, and the continued effectiveness of the remedy. The maintenance program will consist of the following:

I. Soil Cap Area - HWPW

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis and after all major storms. The inspections will focus on the following major issues:

- 1) Erosion of the cap (gullies, rills, or other erosional features on the cap surface or in drainages)
- 2) Sideslope sloughing (slippage)
- 3) Settling/subsidence
- 4) Vegetation deterioration
- 5) Damage from animals (i.e., rodents)
- 6) Groundwater monitoring equipment (wells) (semi-annual basis)

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE COVER AND VEGETATION

The cover and vegetation will be maintained by:

- 1) Preventing ponding
- 2) Maintaining design slopes and grades
- 3) Fertilizing, as necessary
- 4) Mowing, as necessary
- 5) Replanting, as necessary
- 6) Controlling animals (rodents, hogs) and insects

Routine repairs of the cover and maintenance of the slopes and grades will be performed to prevent ponding and drainage problems. Vegetation may require periodic application of fertilizer, mulch or seed. Vegetation will target pollinator seed mixes to attract pollinator species. Mowing will be performed as needed but less frequently than a grass covered cap and only periodically to promote the growth of desired vegetation and to block the growth of trees or shrubs which could penetrate the cover soil with their roots.

EROSION CONTROL

Maintenance of the drainage and diversion portions of the cap will be performed. Erosion of soil by water and/or wind will be repaired as soon as practicable.

II. Asphalt Road Cap – HWPW

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

- 1) Erosion of the asphalt roadway (potholes, exposed soils)

- 2) Settling/subsidence
- 3) Cracks in asphalt roadway

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE ASPHALT CAP

The asphalt cover will be maintained by:

- 1) Crack repair/sealing;
- 2) Pothole patching; and
- 3) Controlling vegetation.

III. Concrete Pavement – Englewood Intermodal Yard (On-Site)

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

- 1) Step separation in the concrete;
- 2) Settling/subsidence;
- 3) Cracks in the concrete; and
- 4) Openings in the pavement.

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE CONCRETE PAVEMENT

The concrete pavement will be maintained by:

- 1) Crack repair/sealing;
- 2) Replacing panels as needed; and
- 3) Controlling vegetation growing through cracks/along edges of sidewalk.

IV. Railroad Ballast Area – (HWPW/Englewood Intermodal Yard)

VISUAL INSPECTIONS

Inspections will be performed on a quarterly basis. The inspections will focus on the following major issues:

- 1) Ballast removed with exposed soil.

Locations where deficiencies are found shall be marked and repaired as soon as practicable.

MAINTAINING THE RAILROAD BALLAST

The railroad ballast will be maintained by:

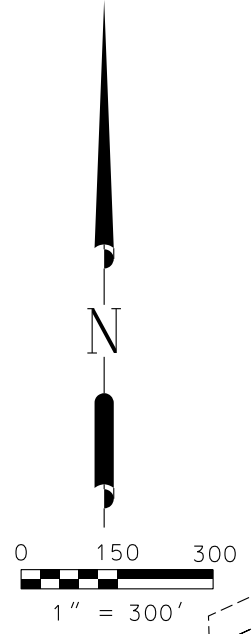
- 1) Adding railroad ballast where areas of soil are exposed;
- 2) Controlling vegetation.

The ballast areas will be maintained in accordance with UPRR Engineering Standards for Roadbase Section for Wood Tie Track Construction (UPRR, 2006).

EXHIBIT "E"
LEGAL DESCRIPTION OF EXTENT OF PMZ AND NAPL AREAS

HARRIS COUNTY TEXAS

HARRIS & WILSON 2 LEAGUE SURVEY ABSTRACT 32



I, Wm. PATRICK DOYLE, REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE ABOVE AND FOREGOING PLAT IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY SUPERVISION, ON THE GROUND, AND THAT THERE ARE NO EXCESSES NOR INTRUSIONS ON THIS PROPERTY, EXCEPT AS SHOWN HEREON.
DATE SURVEYED: JANUARY 12, 2016.

- NOTES:
1. ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
 2. ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF= 0.99989548017).
 3. THIS SURVEY DID NOT RELY ON A CURRENT TITLE COMMITMENT, THE INFORMATION CONTAINED ON THIS SURVEY WAS COMPILED FROM DATA BOTH PRIVATE AND PUBLIC, AND FROM THE HARRIS COUNTY COURTHOUSE. IT DOES NOT REPRESENT A COMPLETE DEED RESEARCH AND THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL EASEMENTS, ENCUMBRANCES, RESTRICTIVE COVENANTS, OR OWNERSHIP TITLE EVIDENCE THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE



Wm. Patrick Doyle
WM. PATRICK DOYLE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4467

EXHIBIT OF
**ONSITE PMZ TRACTS
52.4295 ACRE TRACT &
3.8686 ACRE TRACT**
IN THE
**HARRIS & WILSON 2 LEAGUE SURVEY
ABSTRACT 32
HARRIS COUNTY, TEXAS**
FOR
UNION PACIFIC RAILROAD COMPANY

Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FAX: 979.265.9940 FIRM NO.: 10024500

SURVEYED:	1-12-16	BOOK:	BOOK	IMAGE:	NONE
DRAWN BY:	JAM	CHECKED:	JAM	REVISED:	

USER: Untitled Workspace TIME: 7:27:36 AM
 DATE: 6/30/2016
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Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

**UNION PACIFIC RAILROAD COMPANY
52.4295 ACRE ONSITE PMZ TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 1 OF 3**

BEING ALL THAT CERTAIN 52.4295 acre tract of land, lying and situated in the Wilson and Harris 2 League Grant, Abstract 32, Harris County Texas, being a portion of that certain 100 foot wide Texas and New Orleans Railroad right-of-way; a portion of Block 11 and Block 18, all of Block 12, 13, 14, 15, 16 and 17, a portion of Solo Street (Joseph Street), a portion of 40 foot wide Gagne Street, a portion of 40 foot wide Clementine Street, a portion of 40 foot wide Fontinot Street, as shown on the map of the South Part of the Gagne Homestead, according to the map or plat recorded in Volume 89, Page 240 of the Harris County Deed Records (H.C.D.R.), a portion of Block 2, all of Block 1, Block 4 and Block 7, all of 60 foot wide New Orleans Avenue, a portion of 50 foot wide Grumbach Street, a portion of 50 foot wide Tunis Street (Jones Street), a portion of Erastus Street (Sunset Avenue), a portion of 50 foot wide Harlem Street (Baer Avenue), a portion of 50 foot wide Lockwood Drive (Cushing Avenue) as shown on the map of Englewood Subdivision, according to the map or plat recorded in Volume 53, Page 346 of the H.C.D.R., a portion of Block 18 and Block 22 and all of Block 19, a portion of 60 foot wide Wallisville Road, a portion of 50 foot wide Chew Avenue, as shown on the map of F. F. Chew Addition, according to the map or plat recorded in Volume 1, Page 8 of the Harris County Map Records (H.C.M.R.), all that certain 25 foot wide strip conveyed by deed recorded on January 2, 1895 from Clementine Gagne, et al to Texas and New Orleans Railroad Company, as recorded in Volume 80, Page 103 of the H.C.D.R., all that certain tract of land conveyed by deed recorded on March 12, 1902 from H. M. Curtin to Texas and New Orleans Railroad Company, as recorded in Volume 133, Page 602 of the H.C.D.R., all that certain called 1.28 acre tract and all that certain called 1.20 acre tract of land conveyed by deed recorded on February 8, 1921 from W. N. Reece to Texas & New Orleans Railroad Company as recorded in Volume 465, Page 501 of the H.C.D.R., all that certain called 55,922 square foot tract of land and all that certain called 55,922 square foot tract of land conveyed by deed recorded on February 7, 1921 from W. N. Reece to Texas & New Orleans Railroad Company as recorded in Volume 472, Page 7 of the H.C.D.R., all that certain called 1.5 acre tract of land conveyed by deed recorded on August 15, 1894 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 75, Page 286 of the H.C.D.R.; All that certain called 5.79 acre tract of land conveyed by deed recorded on July 24, 1890 from R. B. Baer to Texas & New Orleans Railroad Company as recorded in Volume 50, Page 535 of the H.C.D.R.; the herein described 52.4295 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

BEGINNING at 5/8" iron rod found marking the intersection of the southeastern right-of-way boundary line of said 60 foot wide Liberty Road with the northwestern right-of-way boundary line of the 100 foot wide Texas and New Orleans Rail Road Company right-of-way, same being the southeastern boundary line of said Texas and New Orleans Rail Road Company called 5.79 acre tract, for an interior corner of the herein described 52.4295 acre tract, said Point of Beginning being located at Texas State Plane coordinate X=3136759.96 and Y=13852340.99;

**UNION PACIFIC RAILROAD COMPANY
52.4295 ACRE ONSITE PMZ TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 2 OF 3**

THENCE North $62^{\circ}10'18''$ East, coincident with the southeastern right-of-way boundary line of said 60 foot wide Liberty Road, same being the northwestern boundary line of the 100 foot wide Texas and New Orleans Rail Road Company right-of-way, a distance of 653.86 feet to an angle point at the intersection of the southeastern right-of-way boundary line of said 60 foot wide Liberty Road with the northern extension of the western right-of-way boundary line of 50 foot wide Sam Willis Street, for the northeast corner of the herein described 52.4295 acre tract, at position $X=3137338.15$ and $Y=13852646.20$;

THENCE South $2^{\circ}35'12''$ East, coincident with the northern extension of the western right-of-way boundary line of said 50 foot wide Sam Willis Street, a distance of 364.63 feet to a point located on the eastern boundary line of said Block 22 of the F. F. Chew Addition, to the point of curvature of a non-tangent curve to the left, having a radius of 1179.16 feet, at position $X=3137354.60$ and $Y=13852281.98$;

THENCE in an westerly direction, along said curve to the left, having a radius of 1179.28 feet, an arc length of 375.93 feet, a central angle of $18^{\circ}15'53''$, and a chord bearing and distance of South $70^{\circ}59'12''$ West – 374.34 feet to an angle corner of the herein described 52.4295 acre tract, at position $X=3137000.72$ and $Y=13852160.04$;

THENCE South $61^{\circ}51'16''$ West, a distance of 190.34 feet to an angle corner of the herein described 52.4295 acre tract, at position $X=3136832.90$ and $Y=13852070.26$;

THENCE South $53^{\circ}51'57''$ West, a distance of 288.79 feet to a point located on the western right-of-way boundary line of 50 foot wide Harlem Street, same being the eastern boundary line of said Block 1 of Englewood Subdivision for an interior corner of the herein described 52.4295 acre tract, at position $X=3136599.69$ and $Y=13851899.99$;

THENCE South $2^{\circ}49'16''$ East, coincident with the western right-of-way boundary line of said 50 foot wide Harlem Street, same being the eastern boundary line of Block 1, Block 4 and Block 7 of said Englewood Subdivision, a distance of 827.94 feet to a point at the intersection of said western right-of-way boundary line of said Harlem Street with the northern right-of-way boundary line of 50 foot wide Sudan Street, for the southeast corner of said Block 7, for an exterior corner of the herein described 52.4295 acre tract, at position $X=3136640.44$ and $Y=13851073.13$;

THENCE South $87^{\circ}28'24''$ West, coincident with northern right-of-way boundary line of said 50 foot wide Sudan Street, same being the southern boundary line of said Block 7 of Englewood Subdivision, a distance of 273.42 feet to a point located on the western right-of-way boundary line of Erastus Street, right-of-way varies, located within Block 11 of said Subdivision of the South Part of the Gagne Homestead, for an interior corner of the herein described 52.4295 acre tract, at position $X=3136367.32$ and $Y=13851061.08$;

**UNION PACIFIC RAILROAD COMPANY
52.4295 ACRE ONSITE PMZ TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 3 OF 3**

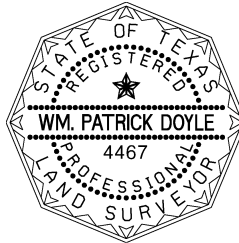
THENCE South 2°44'14" East, coincident with the western right-of-way boundary line of said Erastus Street, a distance of 287.64 feet to a point at the intersection of the western right-of-way boundary line of said Erastus Street and the northern right-of-way boundary line 19th Street, same being the southern boundary line of Block 18 of said Subdivision of the South Part of the Gagne Homestead, for the southeast corner of the herein described 52.4295 acre tract, at position X=3136381.05 and Y=13850773.80;

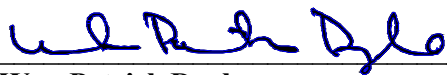
THENCE South 87°18'14" West, coincident with the northern right-of-way boundary line of said 19th Street, same being the southern boundary line of Block 18, Block 17, Block 16 and Block 15 of said Subdivision of the South Part of the Gagne Homestead, a distance of 1115.27 feet to a point located in Solo Street, right-of-way varies, for the southwest corner of the herein described 52.4295 acre tract, at position X=3135267.13 and Y=13850721.35;

THENCE North 2°44'14" West, coincident with the western boundary line of said Subdivision of the South Part of the Gagne Homestead, the western boundary line of said T. & N. O. Rail Road Company tract, recorded in Volume 133, Page 602, of the H.C.D.R., the western boundary line of said T. & N. O. Rail Road Company 25 foot wide strip, the western boundary line of said T. & N. O. Rail Road Company called 1.5 acre tract and the western boundary line of said T. & N. O. Rail Road Company called 1.28 acre tract, a distance of 1500.71 feet to a point located on the southern right-of-way boundary line of said 60 foot wide Liberty Road, on a curve to the left, having a radius of 280.00 feet, at position X=3135195.47 and Y=13852220.19;

THENCE in an easterly direction, coincident with the southern right-of-way boundary line of said 60 foot wide Liberty Road, along said curve to the left, having a radius of 280.00 feet, an arc length of 45.91 feet, a central angle of 9°23'40" and a chord bearing and distance of South 89°51'19" East – 45.86 feet to a found 5/8" iron rod, at position X=3135241.32 and Y=13852220.07;

THENCE North 85°26'51" East, coincident with the southern right-of-way boundary line of said 60 foot wide Liberty Road, a distance of 1523.61 feet to the **POINT OF BEGINNING**, containing 52.4295 acres of land, more or less





Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
June 29, 2016



Doyle & Wachtstetter, Inc

Surveying and Mapping • GPS/GIS

**UNION PACIFIC RAILROAD COMPANY
3.8686 ACRE ONSITE PMZ TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 1 OF 2**

BEING ALL THAT CERTAIN 3.8686 acre tract of land, lying and situated in the Wilson and Harris 2 League Grant, Abstract 32, Harris County Texas, being a portion of all that certain called 4.274 acre tract conveyed by deed recorded on October 29, 1901 from Ida Japhet to Texas and New Orleans Railroad Company, as recorded in Volume 131, Page 453 of the Harris County Deed Records (H.C.D.R.), a portion of Block 58, Block 59, Block 6, Block 62 and Block 63, a portion of 60 foot wide 16th Street, a portion of 60 foot wide of Eddie Street (15th Street), a portion of 60 foot wide Kashmere Street (Yates Street), a portion of 60 foot wide Schweikhart Street, as shown on the map of Augusta Addition, according to the map or plat recorded in Volume 56, Page 139 of the Harris County Deed Records (H.C.D.R.), the herein described 3.8686 acre tract land hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths (S.F.= 0.99989548017) as follows:

COMMENCING at a 5/8" iron rod found marking the northwest corner of Block 54 of said Augusta Addition, located at the intersection of the southern right-of-way boundary line of Liberty Road with the eastern right-of-way boundary line of 60 foot wide Kashmere Street, for the northwest corner of the herein described 124.8360 acre tract, said Point of Commencement being at Texas State Plane coordinate position X=31334356.21 and Y=13852234.79;

THENCE South 2°26'03" East, coincident with the eastern right-of-way boundary line of said 60 foot wide Kashmere Street, same being the western boundary line of Block 54 and Block 58 of said Augusta Addition, a distance of 476.71 feet to the **POINT OF BEGINNING** of the herein described 3.8686 acre tract, a position X=3134376.46 and Y=13851758.56;

THENCE North 30°35'22" East, a distance of 257.68 feet to the North corner of the herein described 3.8686 acre tract, at position X=3134507.57 and Y=13851980.36;

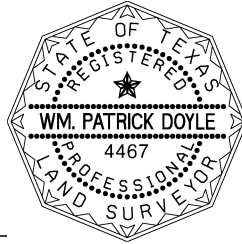
THENCE South 56°11'48" East, a distance of 367.00 feet to the East corner of the herein described 3.8686 acre tract, at position X=3134812.50 and Y=13851776.20;

THENCE South 29°37'41" West, a distance of 503.41 feet to the South corner of the herein described 3.8686 acre tract, at position X=3134563.66 and Y=13851338.66;

THENCE North 42°09'52" West, a distance of 392.51 feet to the West corner of the herein described 3.8686 acre tract, at position X=3134300.21 and Y=13851629.57;

**UNION PACIFIC RAILROAD COMPANY
3.8686 ACRE ONSITE PMZ TRACT
HARRIS AND WILSON 2 LEAGUE GRANT, ABSTRACT 32
HARRIS COUNTY, TEXAS
PAGE 2 OF 2**

THENCE North 30°35'22" East, a distance of 149.86 feet to the **POINT OF BEGINNING**, containing 3.8686 acres of land, more or less.



A handwritten signature in blue ink, appearing to read "Wm. Patrick Doyle", is written over a horizontal line.

**Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
June 29, 2016**

*This description is based on a plat, dated June 29, 2016, is on file in the office of Doyle & Wachtstetter, Inc.
V:\Pat\Pastor Behling & Wheeler\UPPR Englewood Yard Onsite PMZ 3.8686 acre tract.doc*