

State of Colorado  
**Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



#8439

FOR OGCC USE ONLY

RECEIVED 5/9/2014

**SITE INVESTIGATION AND REMEDIATION WORKPLAN**

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Pit Closure

OGCC Employee:

☒ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No: 437053

OGCC Operator Number: 100264

Name of Operator: XTO Energy Inc.

Address: PO Box 6501

City: Englewood State: CO Zip: 80155

Contact Name and Telephone:

Jessica Dooling

No: 970-675-4122

Fax: 970-675-4150

API Number: 05-103-11378

County: Rio Blanco

299002

Facility Name: Piceance Creek Unit

Facility Number: 414336 and 1984573 Drilling Pits

Well Name: Piceance Creek Unit

Well Number: 297-11B

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SESE, Sec. 11, T2S, R97W, 6th P.M. Latitude: 39.885222 Longitude: -108.240029

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Drill Cuttings and Fluids

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Non-Crop Land, Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Castner channery loam, 5-50% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Nearest surface water ~1250 (dry gulch), nearest water well >1 mile.

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

- ☒ Soils  
☐ Vegetation  
☐ Groundwater  
☐ Surface Water

Extent of Impact:

TPH, BTX, PAHs and Arsenic

How Determined:

Laboratory analysis

**REMEDIATION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):

Initial impacts referenced in Form 19 (Doc #400599458), see Attachments I and II and associated Tables and Figures for details regarding background Arsenic and initial action taken.

Describe how source is to be removed:

Freshwater and Reserve Pit contents/synthetic liners were removed and transported for offsite disposal at ECDC Environmental in Utah. Cuttings Pit #1, #2 and #3 contents/synthetic liners were removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO. Reserve Pit and Cuttings Pit #2 subliner impacted material will be removed and either mix/blend processed to below Table 910-1 concentration levels or transported offsite to a disposal/recycling facility.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Any remaining impacted soils will either be treated on-site or removed to a permitted disposal/recycling facility.



Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

Page 2  
**REMEDIATION WORKPLAN (Cont.)**

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Available information indicates that the uppermost groundwater bearing zone is greater than 150 feet below the ground surface. Soil samples will be collected for laboratory analysis of subliner material to confirm no groundwater impact potential exists.

**Describe reclamation plan.** Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Please see Attachment II

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

Based on subliner sample results no additional assessment will be necessary beneath the Freshwater Pit, Cuttings Pit #1, #2 or #3 (see Table 1).

Reserve Pit subliner assessment and remediation is currently underway.

**Final disposition of E&P waste** (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Synthetic liners and contents from the Freshwater and Reserve Pits were removed and transported for offsite disposal at ECDC Environmental in Utah. The Cuttings Pits #1, #2 and #3 contents and synthetic liners were removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO. Reserve Pit subliner impacted material will be removed and either transported for offsite disposal at a permitted disposal/recycling facility or mix/blend processed and sampled to ensure Table 910 compliance. Mix/blend processed material will be used for onsite fill.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 7/21/2011	Date Site Investigation Completed: TBD	Date Remediation Plan Submitted: 5/9/2014
Remediation Start Date: pending approval	Anticipated Completion Date: pending approval	Actual Completion Date: TBD

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Jessica Dooling

Signed: \_\_\_\_\_

Title: Piceance EH&S Supervisor

Date: 5/9/2014

OGCC Approved: Stanley C. Spencer

Title: EPS NW

Date: 5/19/14

## **ATTACHMENT I**

### **PCU 297-11B Pit Closure Workplan, Form 27 Page 1**

#### **Background Arsenic:**

XTO Energy herein requests consideration of site-specific background Arsenic levels as an alternative to the Table 910-1 value for the PCU 297-11B location. COGCC Table 910-1 Concentration Levels list the allowable concentration level for Arsenic in soil at 0.39 mg/kg. Footnote 1 of Table 910-1 states "Consideration shall be given to background levels in native soils and ground water". At other locations COGCC has allowed the determination of allowable levels based upon a 10% variability factor applied to background soil concentration values where the maximum allowable level is computed by multiplying the highest detected background concentration by 1.1.

1. Five representative background samples were collected from areas adjacent to the subject location. Arsenic concentrations in those samples ranged from 3.5 mg/kg to 7.0 mg/kg. Applying the 10% variability factor to the highest concentration detected results in an allowable Arsenic concentration level of 7.7 mg/kg.
2. Subliner Arsenic samples were collected from the Freshwater Pit (3.8 mg/kg), Reserve Pit (7.5 mg/kg), Cuttings Pit #1 (6.8 mg/kg), Cuttings Pit #2 (4.6 mg/kg) and Cuttings Pit #3 (4.3 mg/kg). These subliner Arsenic concentrations are within the allowable background Arsenic concentration of 7.7 mg/kg.

Please find the Lab Data Summary Tables and the Site Map indicating Arsenic sampling locations attached.

## **ATTACHMENT II**

### **PCU 297-11B Pit Closure Workplan, Form 27 Pages 1 and 2**

#### **Describe initial action taken:**

The site consists of Freshwater, Reserve and Cuttings Pits #1, #2 and #3 (see Figure 1).

#### **1. Freshwater Pit**

- Freshwater Pit contents were mixed with the Reserve Pit contents (See Reserve Pit section for lab data.
- Freshwater Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for SAR (13.7), pH (9.87) and Arsenic (3.8 mg/kg).

#### **2. Reserve Pit**

- Reserve Pit contents were mixed with Freshwater pit contents and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (55400 mg/kg), Benzene (9.370 mg/kg), Toluene (154.0 mg/kg), Xylenes (714.0 mg/kg), Napthalene (52.9 mg/kg), SAR (20.4), pH (10.4) and Arsenic (4.1 mg/kg).
- Reserve Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (2578 mg/kg), SAR (14.6), pH (10.79) and Arsenic (7.5 mg/kg).
- Reserve Pit subliner impacted soils from 0 to 2' were removed with confirmation samples collected for TPH. Results range from 38.2 mg/kg to 1606 mg/kg (See Table 2).
- Reserve Pit assessment and remediation is currently underway.

#### **3. Cuttings Pit #1**

- Cuttings Pit #1 content samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (681 mg/kg), SAR (66.6), pH (11.49) and Arsenic (15.1 mg/kg).
- Cuttings Pit #1 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzo(A)anthracene (0.232 mg/kg), Benzo(A)pyrene (0.253

mg/kg), Dibenzo(A,H)anthracene (0.159 mg/kg), Indeno(1,2,3,C,D)pyrene (0.34 mg/kg), SAR (12.4), pH (10.21) and Arsenic (6.8 mg/kg).

- Cuttings Pit #1 subliner impacted soils from 0 to 1' were removed and confirmation samples were collected for Table 910 parameters. Results exceeded Table 910-1 concentration levels for pH (9.36) and Arsenic (6.4 mg/kg) (see Table 1).

#### **4. Cuttings Pit #2**

- Cuttings Pit #2 content samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (1.23 mg/kg), EC (5.25 mmhos/cm), pH (11.43) and Arsenic (5.1 mg/kg).
- Cuttings Pit #2 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (0.276 mg/kg, EC (5.15 mmhos/cm), SAR (15.8), pH (10.9) and Arsenic (4.6 mg/kg).
- Cuttings Pit #2 subliner impacted soils from 0 to 2' were removed and confirmation samples were collected for Benzene. Benzene sample results are Non-detect (see Table 1).

#### **5. Cuttings Pit #3**

- Cuttings Pit #3 content samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for Benzene (1.35 mg/kg), EC (8.52 mmhos/cm), pH (12.14) and Arsenic (5.0 mg/kg).
  - Cuttings Pit #3 subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for EC (5.61 mmhos/cm), SAR (15.6), pH (10.34) and Arsenic (4.3 mg/kg).
- 
- Freshwater and Reserve Pit contents and synthetic liners were removed from the pits and transported for disposal at ECDC Environmental in Utah.
  - Reserve Pit subliner impacted material will be removed and either mix/blend processed and sampled to ensure Table 910 compliance or transported offsite for disposal at a permitted disposal/recycling facility.
  - Cuttings Pit #1, #2 and #3 contents and synthetic liners were removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO.

- Cuttings Pit #1 subliner impacted soil was removed and transported for offsite disposal at Wray Gulch Landfill in Meeker, CO.
- Cuttings Pit #2 subliner impacted material was removed and will be either mix/blend processed and sampled to ensure Table 910 compliance or transported offsite for disposal at a permitted disposal/recycling facility.
- Mix/blend processed Reserve and Cuttings Pit #2 subliner material that meets Table 910-1 concentration levels will be used onsite for backfill.
- Refer to Table 1 for a summary of the laboratory results and Figures 1 – 3A (5 total) for layout of the pits and sample locations.
- Elevated Arsenic levels above Table 910-1 concentration levels were detected beneath the Freshwater, Reserve and Cuttings Pits #1, #2 and #3. Please refer to Attachment I requesting consideration of background Arsenic levels.
- Any remaining elevated levels of Electrical Conductivity, SAR and pH detected beneath the pits or in material used for backfill will be covered with a minimum 3 feet of clean, native soils per COGCC guidance. No additional treatment of these soils will be required.
- Reclamation activities will be performed in accordance with applicable COGCC 900, 1000 Series rules and as specified in the Surface Use Plan and BLM Conditions of Approval.

**Table 1**  
**Location: PCU 297-11B**  
**Lab Summary**

Last Updated: 5/8/2014

Analytical Parameter	Fresh Water Pit	Reserve Pit			Cuttings Pit #1			Cuttings Pit #2			Cuttings Pit #3		Background					COGCC	Maximum based on Background	
(with units)		FW Subliner	RP Contents	RP Subliner	Initial Cut #1 Contents	Cut #1 Subliner	Cut #1 Subliner (-1')	Cut #2 Contents	Cut #2 Subliner	Cut #2 Subliner (-2')	Cut #3 Contents	Cut #3 Subliner	#1	#2	#3	#4	#5	Table 910-1 Concentration Levels		
Accutest Job #	FW Pit Contents moved to Reserve Pit	D57201 (4/24/14)	D25800 7/21/11	D56577 4/3/14	D26785 8/18/11	D27137 8/30/11	D27490 9/12/11	D26786 8/18/11	D31167 1/18/12	D57114 (4/22/14)	D26787 8/18/11	D31248 1/20/12	D26543 (8/11/11)					-	-	
Sample Type (Composite/Discrete)		C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)		ND	10,300	8.38	65.1	9.4	ND	66	16	-	42.2	7.31	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)		223	45,100	2,570	616	129	31.7	168	98.4	-	149	38	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)		223	55,400	2,578	681	138	31.7	234	114	-	191	45	-	-	-	-	-	-	500	-
Benzene (mg/Kg)		ND	9.370	ND	0.165	ND	ND	1.23	0.276	ND	1.35	ND	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)		ND	154.0	ND	2.74	ND	ND	2.01	0.643	-	2.49	ND	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)		ND	37.4	ND	0.785	ND	ND	0.216	0.0816	-	0.274	ND	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)		ND	714.0	ND	3.64	ND	ND	1.7	0.673	-	1.940	ND	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)		ND	3.06	ND	ND	ND	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)		ND	ND	ND	ND	0.0829	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)		ND	ND	ND	ND	0.232	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)		ND	ND	ND	ND	0.163	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	2.2	-
Benzo(A)Pyrene (mg/Kg)		ND	ND	ND	ND	0.253	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)		0.0027	ND	0.0315	ND	ND	ND	ND	ND	-	ND	0.0142	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)		ND	ND	ND	ND	0.159	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)		ND	ND	0.0295	ND	0.19	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)		ND	21.1	ND	ND	ND	ND	0.24	0.0393	-	ND	0.029	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)		ND	ND	ND	ND	0.34	ND	ND	ND	-	ND	ND	-	-	-	-	-	-	0.22	-
Napthalene (mg/Kg)		ND	52.9	ND	ND	ND	ND	1.41	0.233	-	0.691	0.121	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)		ND	ND	0.0206	ND	ND	ND	ND	0.0293	-	ND	0.0075	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)		0.824	1.54	1.260	3.76	2.1	1.81	5.25	5.15	-	8.52	5.61	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)		13.7	20.4	14.6	66.6	12.4	11.3	9.37	15.8	-	10.7	15.6	-	-	-	-	-	-	<12	-
pH		9.87	10.4	10.79	11.49	10.21	9.36	11.43	10.9	-	12.14	10.34	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)		3.8	4.1	7.5	15.1	6.8	6.4	5.1	4.6	-	5.0	4.3	3.5	7.0	4.7	3.9	4.1		0.39	7.7
Barium (mg/kg)		224	9,660	2780	1530	639	254	9750	4750	-	7340	5910	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)		<1.2	<2.6	<1.3	<1.5	<1.2	<1.1	<1.3	<1.1	-	<1.4	<1.1	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)		49.3	14.1	46.9	18.2	35.8	44.3	8.8	37.3	-	11.8	38.4	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)		<1.0	1.7	<1.0	<0.54	0.49	<0.44	<0.53	<0.46	-	<0.55	0.72	-	-	-	-	-	-	23	-
Copper (mg/kg)		23.0	20.9	9.5	26.6	13.6	11.4	22.1	15.2	-	24.4	13.9	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)		7.7	<13	11.7	19.5	12.5	11.8	14.8	14.6	-	74.9	12.5	-	-	-	-	-	-	400	-
Mercury (mg/kg)		<0.097	<0.26	<0.10	<0.14	<0.11	<0.12	<0.14	<0.11	-	<0.12	<0.12	-	-	-	-	-	-	23	-
Nickel (mg/kg)		23.4	10.3	19.6	17	16.9	19	11.5	16.7	-	12.9	17	-	-	-	-	-	-	1600	-
Selenium (mg/kg)		<5.8	<66	<32	<7.4	<5.8	<5.6	<34	<5.6	-	<35	<5.7	-	-	-	-	-	-	390	-
Silver (mg/kg)		<3.5	<7.9	<19	<4.5	<3.5	<3.3	<4.0	<3.4	-	<4.2	<3.4	-	-	-	-	-	-	390	-
Zinc (mg/kg)		47.6	30.1	48.0	54.1	41.1	41.5	43.2	41.7	-	50.6	41.2	-	-	-	-	-	-	23000	-
% Solids		86.3	37.6	78.9	73.0	87.4	89.9	74.1	86.1	93.2	71.5	85.9	96.5	78.1	85.2	96.8	93.5		-	-

Notes:

1) ND = not detectable to the laboratory detection limit.

2) Results highlighted in yellow exceed Table 910-1 parameters. Results highlighted in Gray exceed Table 910-1, but are below background levels.

3) "-" indicates no analysis.

4) See Figure(s) for sample locations

**Table 2**  
**Location: PCU 297-11B**  
**Lab Summary - Reserve Pit Subliner Assessment**

Updated 5/8/2014

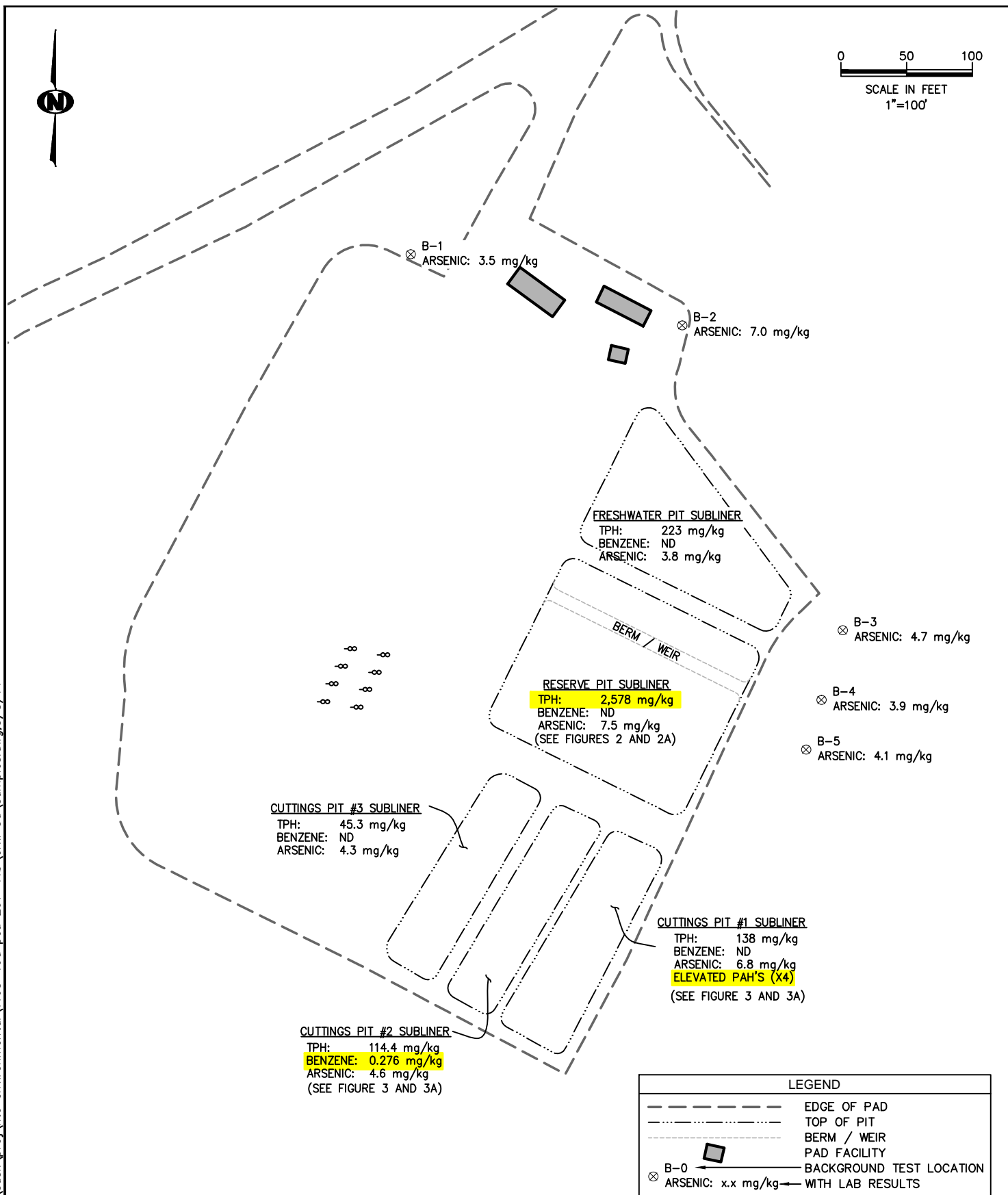
Analytical Parameter	RP Subliner	RP Subliner Discrete Samples						Post 2' Excavation			COGCC	Background
(with units)	RP Subliner	RP #1	RP #2	RP #3	RP #4	RP #5	RP #6	RP #1 (-2')	RP #2 (-2')	RP #6 (-2')	Table 910-1 Concentration Levels	Maximum based on Background
Accutest Job #	D56577 (4/3/14)	D56747 (4/3/14)						D57112 (4/22/14)			-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	8.38	ND	22.7	ND	ND	ND	ND	15.8	ND	ND	-	-
TPH (DRO) (mg/Kg)	2,570	597	1580	444	25.5	262	1330	1590	587	38.2	-	-
TPH (GRO + DRO) (mg/Kg)	2,578	597	1603	444	25.5	262	1330	1606	587	38.2	500	-
Benzene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(A)Pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	0.0315	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.0295	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.0206	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	1.260	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	14.6	-	-	-	-	-	-	-	-	-	12	-
pH	10.79	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	7.5	-	-	-	-	-	-	-	-	-	0.39	7.7
Barium (mg/kg)	2780	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<1.3	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	46.9	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	9.5	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	11.7	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.10	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	19.6	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<32	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<19	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	48.0	-	-	-	-	-	-	-	-	-	23000	-
% Solids	78.9	80.9	80.9	79.5	81.2	79.7	71.0	87.3	88.4	87.9	-	-

Notes:

- 1) ND = not detectable to the laboratory detection limit.
- 2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.
- 3) "-" indicates no analysis.
- 4) See Figure(s) for sample locations.

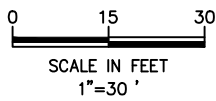


\\hyper-v03\kwd-co\sdk\proj\cto environmental\1105-19a pcu 297-11b\civil 3d\samples.dwg,5/8/14

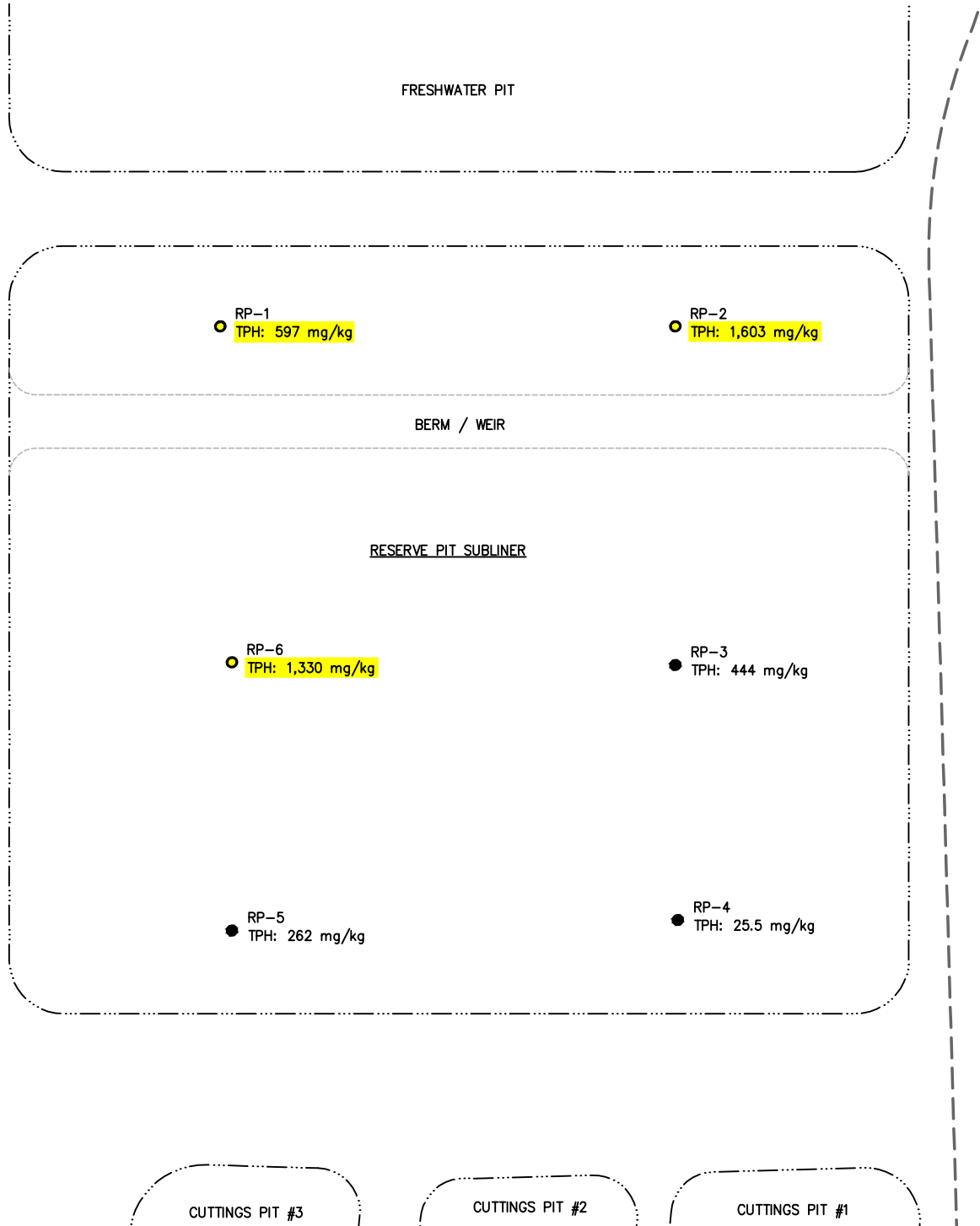


DESIGNED:	CHECKED:	FIGURE	DATE	REVISIONS
DF	DK	1		
DATE:	DRAWN:			
5/8/14	DF			
FILE NAME:	SHEET NO.			
samples	1 of 5			
PROJECT NO.	SCALE:			
1105-19A	1" = 100'			

**KRW CONSULTING, INC.**  
8000 W. 14TH AVENUE, SUITE 200  
LAKEWOOD, COLORADO  
(303) 239-9011



LEGEND	
	EDGE OF PAD
	TOP OF PIT
	BERM / WEIR
	PAD FACILITY
	RP-0 TPH: < 500 mg/kg
	RP-0 TPH: ≥ 500 mg/kg
	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg
	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS GREATER THAN 500 mg/kg

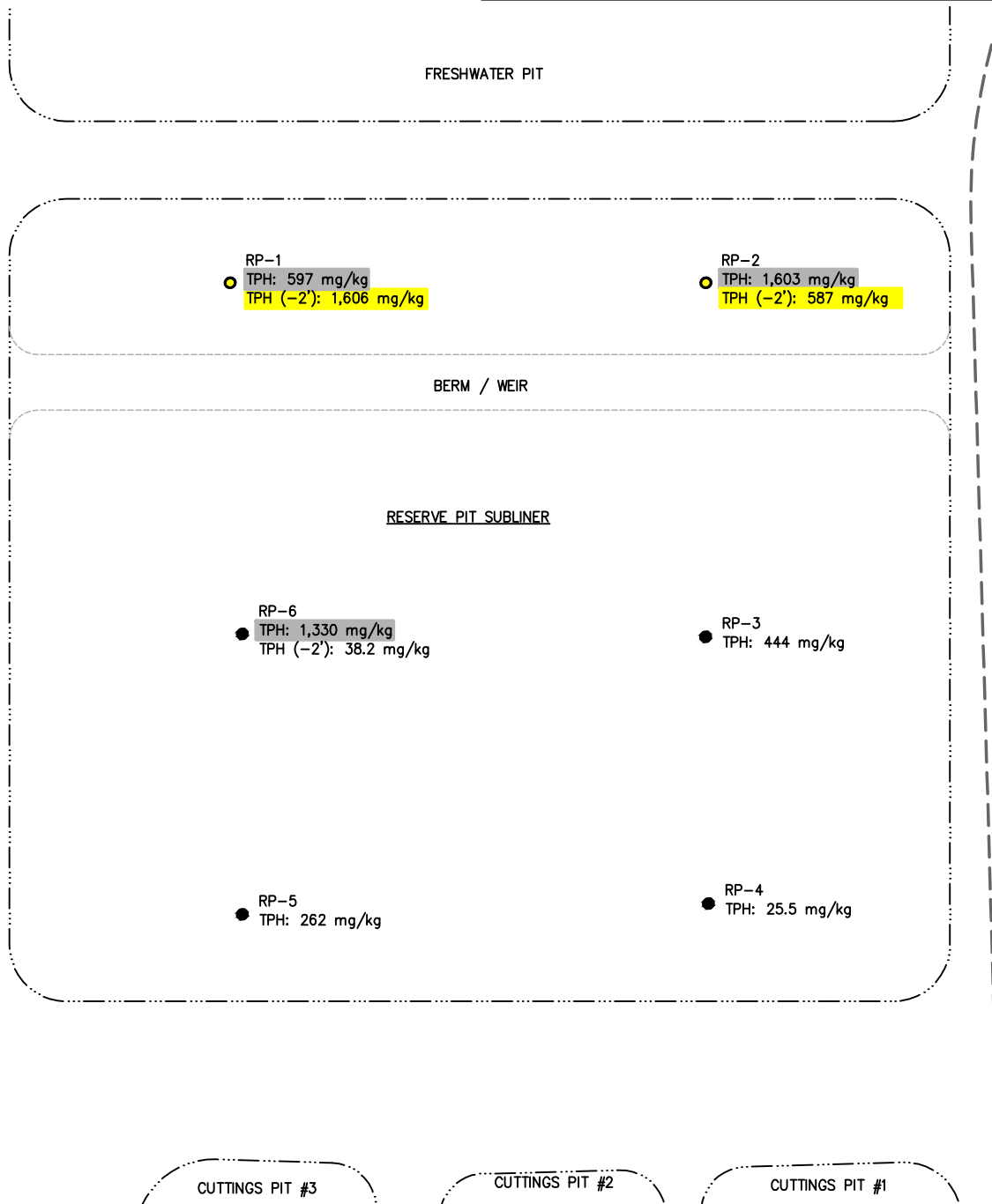


DESIGNED: DF	CHECKED: DK	FIGURE 2	DATE	REVISIONS	<b>KRW CONSULTING, INC.</b> 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 2 PICEANCE CREEK PCU 297-11B RESERVE PIT SUBLINER  PREPARED FOR XTO ENERGY
DATE: 5/8/14	DRAWN: DF					
FILE NAME: rsrv						
PROJECT NO. 1105-19A						
		SHEET NO. 2 of 5				
		SCALE: 1" = 30'				

0 15 30  
SCALE IN FEET  
1"=30'

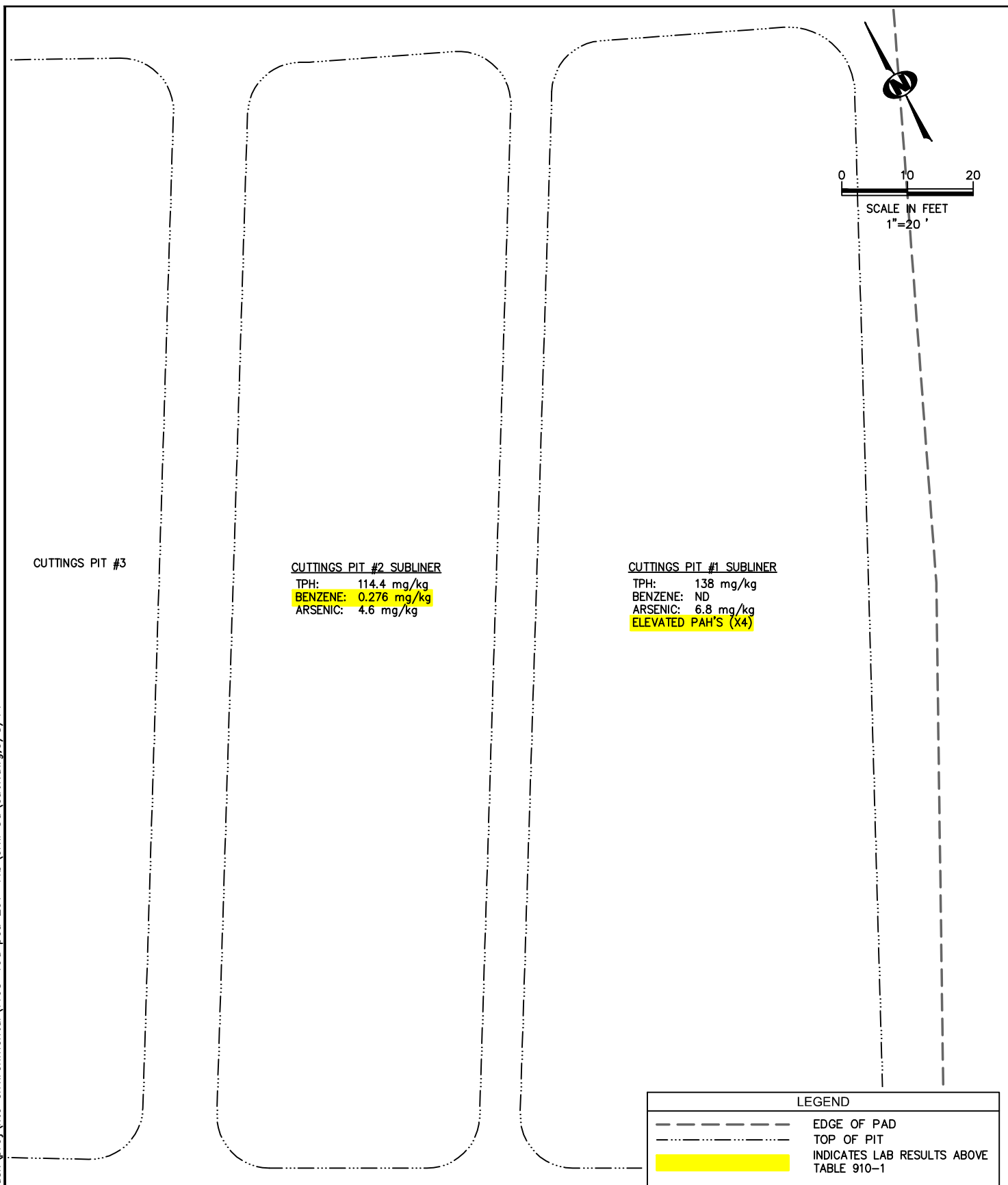


LEGEND	
	EDGE OF PAD
	TOP OF PIT
	BERM / WEIR
	PAD FACILITY
● RP-0 TPH: < 500 mg/kg	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg
● RP-0 TPH: > 500 mg/kg TPH: ≤ 500 mg/kg	SIDEWALL SAMPLE LOCATION WITH PREVIOUS TPH LAB RESULTS GREATER THAN 500 mg/kg AND CURRENT RESULTS BELOW 500 mg/kg
● RP-0 TPH: > 500 mg/kg TPH (-X'): > 500 mg/kg	DISCRETE SAMPLE LOCATION WITH PREVIOUS TPH LAB RESULTS GREATER THAN 500 mg/kg AND CURRENT RESULTS GREATER THAN 500 mg/kg



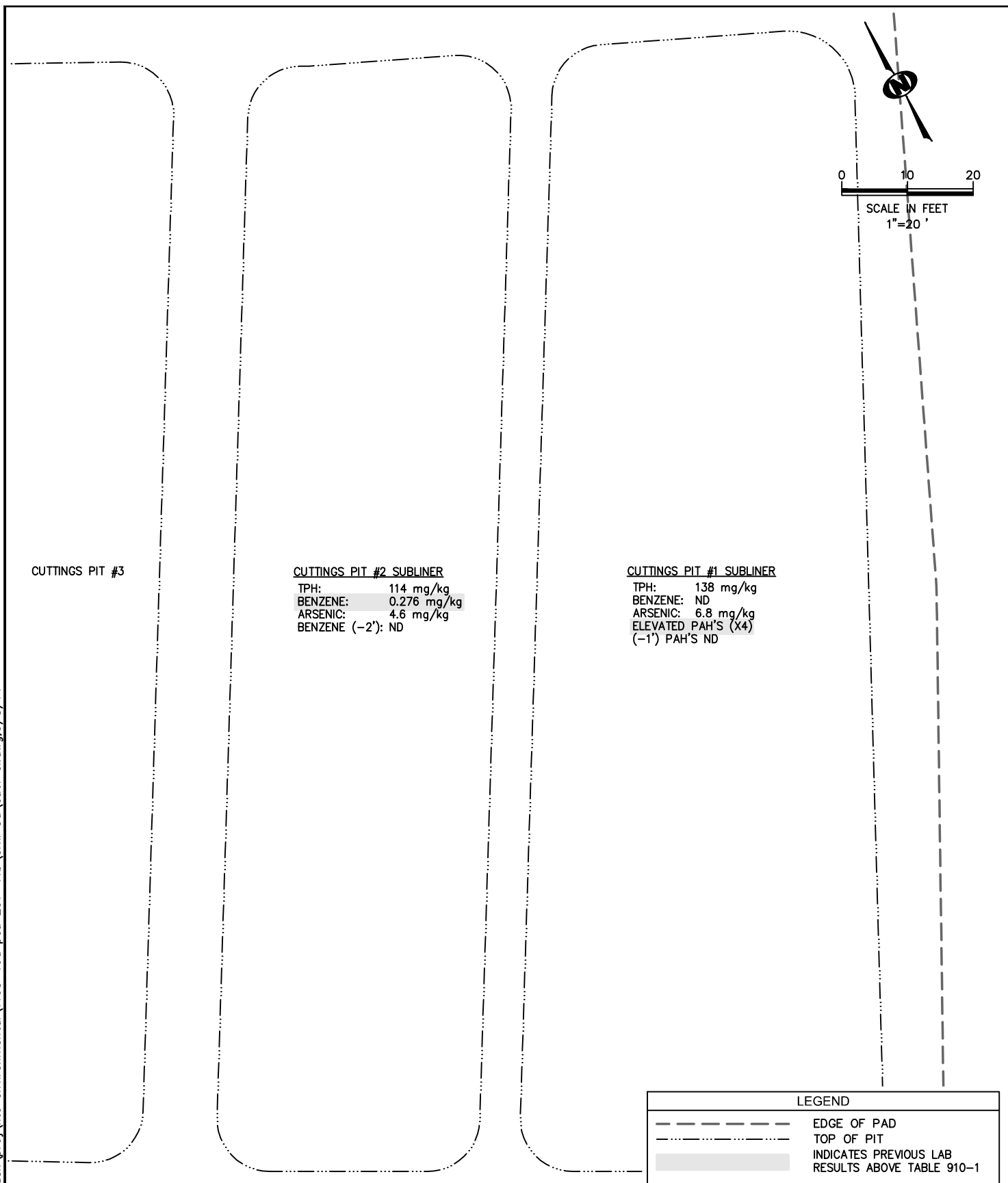
DESIGNED: DF	CHECKED: DK	FIGURE 2A	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 2A PICEANCE CREEK PCU 297-11B RESERVE PIT SUBLINER  PREPARED FOR XTO ENERGY
DATE: 5/8/14	DRAWN: DF					
FILE NAME: rsrv cl						
PROJECT NO. 1105-19A						
		SHEET NO. 3 of 5				
		SCALE: 1" = 30'				

\\hyper-v03\lkw-d-co\sdk\proj\cto environmental\1105-19a pcu 297-11b\civil 3d\cut1.dwg,5/8/14



DESIGNED: DF	CHECKED: DK	FIGURE 3	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 3 PICEANCE CREEK PCU 297-11B CUTTINGS PIT #1 AND #2 SUBLINER PREPARED FOR XTO ENERGY
DATE: 5/8/14	DRAWN: DF					
FILE NAME: cut1						
PROJECT NO. 1105-19A						
		SHEET NO. 4 of 5				
		SCALE: 1" = 20'				

\\hyper-v03\lkw-d-co\sdk\proj\cto environmental\1105-19a pcu 297-11b\civil 3d\cut1 cl.dwg.5/8/14



DESIGNED: DF	CHECKED: DK	FIGURE 3A	DATE	REVISIONS	KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 3A PICEANCE CREEK PCU 297-11B CUTTINGS PIT #1 AND #2 SUBLINER PREPARED FOR XTO ENERGY
DATE: 5/8/14	DRAWN: DF					
FILE NAME: cut1 cl						
PROJECT NO. 1105-19A						
		SHEET NO. 5 of 5				
		SCALE: 1" = 20'				