

State of Colorado
Oil and Gas Conservation Commission

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



#7725

FOR OGCC USE ONLY

RECEIVED
3/28/2013

OGCC Employee:

Spill Complaint
Inspection NOAV

Tracking No:

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): _____

OGCC Operator Number: _____	Contact Name and Telephone: _____
Name of Operator: _____	_____
Address: _____	No: _____
City: _____ State: _____ Zip: _____	Fax: _____
API Number: _____	County: _____
Facility Name: _____	Facility Number: _____
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): _____ Latitude: _____ Longitude: _____	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): _____

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.): _____

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: _____

Potential receptors (water wells within 1/4 mi, surface waters, etc.): _____

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

Impacted Media (check):	Extent of Impact:	How Determined:
Soils	_____	_____
Vegetation	_____	_____
Groundwater	_____	_____
Surface Water	_____	_____

REMEDIALTION WORKPLAN

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

Describe how source is to be removed:

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.:



REMEDIAL WORKPLAN (Cont.)

Tracking Number: _____
Name of Operator: XTO
OGCC Operator No: _____
Received Date: API 103 11428
Well Name & No: Location ID # 336007
Facility Name & No: FRU 197-33B

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 100 feet below the ground surface. Soil samples were collected for laboratory analysis of subliner material to confirm no groundwater impact potential exists. (see Tables 1, 5 and 6).

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 I

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, Reserve and Cuttings Pits #1, #2 or #3. (see Tables 1, 5 and 6).

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

Synthetic liners from each of the pits were removed and transported to an approved offsite disposal/recycling facility. Reserve Pit, Cuttings Pit #2 and part of Cuttings Pit #3 contents were transported to an approved offsite disposal/recycling facility. Cuttings Pit #1 and part of Cuttings Pit #3 contents have been treated onsite by mix/blend processing to below Table 910-1 concentration levels and will be used for onsite fill.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 2/9/12 Date Site Investigation Completed: in progress Date Remediation Plan Submitted: 3/27/2013
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: Piceanca EH&S Supervisor

Date: 3/27/2013

OGCC Approved: _____

Title: FPS NW Region Date: 04/16/2013

ATTACHMENT I

FRU 197-33B Pit Closure Workplan, Form 27 Page 1

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 (de minimis) and associated synthetic liners were removed and transported to an offsite permitted disposal/recycling facility.
- Freshwater Pit subliner composite samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (780 mg/kg), SAR (27.6), pH (11.45) and Arsenic (10.4 mg/kg).
- Freshwater Pit subliner impacted soils were removed, treated onsite and sampled to ensure Table 910-1 concentration levels. Subliner confirmation samples were collected for TPH to ensure compliance with Table 910-1 (see Table 6).

2. Reserve Pit

- Reserve Pit contents were solidified and sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (9,073 mg/kg), Benzene (0.728 mg/kg), EC (4.940 mmhos/cm), SAR (51.5), pH (9.07) and Arsenic (2.6 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 (2,232 mg/kg), SAR (17), pH (10.48) and Arsenic (9.3 mg/kg).
- Reserve Pit subliner impacted soils were removed, treated onsite and sampled to ensure Table 910-1 concentration levels. Subliner confirmation samples were collected for TPH to ensure compliance with Table 910-1 (see Table 5).

3. Cuttings Pit #1

- Cuttings Pit #1 contents were sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (1,279

mg/kg), Benzene (0.655 mg/kg), EC (5.450 mmhos/cm), SAR (110) and Arsenic (14.0 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 pH (10.14) and Arsenic (8.7 mg/kg).

4. Cuttings Pit #2

- Cuttings Pit #2 contents were sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (1,206 mg/kg), Benzene (0.793 mg/kg), SAR (37.7) and Arsenic (12.9 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 SAR (21.9), pH (10.02) and Arsenic (8.0 mg/kg).

5. Cuttings Pit #3

- Cuttings Pit #3 contents were sampled for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for TPH (1,215 mg/kg), Benzene (1.57 mg/kg), SAR (24.7), pH (9.28) and Arsenic (8.6 mg/kg).
 - Cuttings Pit #3 subliner samples were collected and analyzed for Table 910-1 parameters. Results exceeded Table 910-1 concentration levels for SAR (16.9), pH (9.91) and Arsenic (8.9 mg/kg).
-
- Reserve Pit and Cuttings Pit #2 contents were removed from the respective pits and transported to an offsite permitted disposal/recycling facility.
 - Cuttings Pit #1 contents were removed from the pit, mix/blend processed onsite then sampled to ensure Table 910 compliance (See Table 3).
 - Cuttings Pit #3 contents were removed from the pit, mix/blend processed onsite then sampled to ensure Table 910 compliance. Material not meeting Table 910 concentration levels (MB Days 2B and 4B) was transported to an offsite permitted disposal/recycling facility (see Table 4).
 - Mix/blend processed Cuttings Pit #1 and #3 material that meets Table 910-1 concentration levels will be used onsite for backfill.
 - All associated Reserve and Cuttings Pits #1, #2 and #3 synthetic liners were removed and transported to an offsite permitted disposal/recycling facility.

- Refer to Tables 1, 3 - 6 for a summary of the laboratory results and Figures 1 through 3A (5 total) for layout of the pits and sample locations.
- Elevated Arsenic levels above Table 910-1 concentration were detected beneath the Freshwater, Reserve, and Cuttings Pits #1, #2 and #3. Please refer to the associated sundry 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.
- Material used to fill the top 3 feet of each pit will be found onsite.
- 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: FRU 197-33B
Lab Summary

Last update 3/14/2013

Analytical Parameter	Fresh Water Pit	Reserve Pit		Cuttings #1		Cuttings #2		Cuttings #3		Background								COGCC	Maximum based on Background		
(with units)	FW Pit Contents	FW Pit Subliner ⁵ 11/7/12	RP Contents 2/9/12	RP Subliner ⁶ 9/13/12	Cut #1 Pit Contents ⁷ 2/9/12	Cut #1 Pit Subliner 6/12/12	Cut #2 Pit Contents 2/9/12	Cut #2 Pit Subliner 6/4/12	Cut #3 Pit Contents ⁸ 2/9/12	Cut #3 Pit Subliner 6/4/12	#1	#2	#3	#4	#5	#6	#7	#8		Table 910-1 Concentration Levels	
Accutest Job #	De Minimis Contents	D40778	D31789	D38796	D31789	D35488	D31789	D35144	D31789	D35145	D33518 (4/9/12)								-	-	
Sample type (Composite/Discrete)		C	C	C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)		ND	133	22	189	ND	ND	116	ND	155	ND	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)		780	8940	2210	1090	56.4	1090	150	1060	59.6	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)		780	9073	2232	1279	56.4	1206	150	1215	59.6	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)		0.0321	0.728	0.14	0.655	ND	0.793	ND	1.57	0.0268	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)		0.172	3.47	0.548	8.69	ND	9.22	0.0773	9.20	0.0716	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)		0.0257	0.570	0.1	1.84	ND	1.91	ND	1.83	ND	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)		0.337	9.69	0.926	8.19	ND	8.50	ND	8.99	ND	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	0.0062	ND	ND	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(K)fluoranthene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)		0.0102	ND	0.0574	ND	ND	ND	0.0180	ND	0.0096	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)		0.0102	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)		ND	ND	ND	ND	0.0055	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)		ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)		0.120	2.42	0.20	ND	0.0320	ND	0.144	0.850	0.101	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)		0.0116	ND	0.0656	ND	ND	ND	0.0136	ND	0.0070	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)		1.520	4.940	2.13	5.450	0.736	3.410	2.310	1.380	1.440	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)		27.6	51.5	17	110	9.42	37.7	21.9	24.7	16.9	-	-	-	-	-	-	-	-	-	12	-
pH		11.45	9.07	10.48	8.71	10.14	8.88	10.02	9.28	9.91	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)		10.4	2.6	9.3	14.0	8.7	12.9	8.0	8.6	8.9	6.5	8.9	7.1	6.0	5.8	8.3	5.5	7.7	0.39	9.8	-
Barium (mg/kg)		3150	13900	5290	4040	2760	5840	6490	5900	6030	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)		<1.2	< 1.6	<1.1	< 1.3	<1.1	< 1.3	<1.1	< 1.4	<1.1	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)		65.8	5.9	60.1	13.3	43.8	15.4	35.4	17.2	48.2	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)		<1.0	1.0	<1.0	< 0.53	<1.0	< 0.52	<1.0	< 0.55	<1.0	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)		14.3	17.8	18.9	34.9	19.3	33.3	22.5	29.1	14.7	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)		10.3	< 7.9	13.2	17.5	12.4	18.3	14.3	16.2	14.1	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	<0.092	< 0.15	<0.11	< 0.13	<0.12	< 0.13	<0.12	< 0.14	<0.11	-	-	-	-	-	-	-	-	-	23	-	
Nickel (mg/kg)	23.9	7.5	26.6	18.9	21.5	18.4	19.9	14.3	22.6	-	-	-	-	-	-	-	-	-	1600	-	
Selenium (mg/kg)	<5.8	< 7.9	<5.7	< 6.5	<5.7	< 6.7	<5.4	<6.8	<5.7	-	-	-	-	-	-	-	-	-	390	-	
Silver (mg/kg)	<3.5	< 4.7	<3.4	< 3.9	<3.4	< 4.0	<3.3	< 4.1	<3.4	-	-	-	-	-	-	-	-	-	390	-	
Zinc (mg/kg)	52.2	19.8	52.8	58.2	52.8	42.4	51.2	43.9	51.8	-	-	-	-	-	-	-	-	-	23000	-	
% Solids	87.7	63.4	86.4	75.1	87.4	75.7	90.4	71.7	88.8	89.5	86.9	89.7	87.0	86.8	91.2	88.1	89.0	-	-	-	

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 site map for sample locations.

5) See Table 6 for additional information.

6) See Table 5 for additional information.

7) See Table 3 for additional information.

8) See Table 4 for additional information.

Table 2
Location: FRU 197-33B
Lab Summary - Arsenic Summary

Last update 3/14/2013

Analytical Parameter (with units)	Cuttings #1 Discrete Arsenic					Background								COGCC	Maximum based on Background
	#1	#2	#3	#4	#5	#1	#2	#3	#4	#5	#6	#7	#8	Table 910-1 Concentration Levels	
Accutest Job #	D39586 (10/4/12)					D33518 (4/9/12)								-	-
Sample type (Composite/Discrete)	D	D	D	D	D	D	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	500	-
Benzene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Benzo(B)fluoranthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-
Benzo(K)fluoranthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Chrysene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-
pH	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	10.4	12.1	10.6	13.8	10.4	6.5	8.9	7.1	6.0	5.8	8.3	5.5	7.7	0.39	9.8
Barium (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	-
% Solids	90.7	89.5	88.7	88.8	89.2	89.5	86.9	89.7	87.0	86.8	91.2	88.1	89.0	-	-

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.

Table 3
Location: FRU 197-33B
Lab Summary - Cuttings #1 Mix/Blend

Last update 3/14/2013

Analytical Parameter (with units)	Cuttings #1 MB Trials		Cuttings #1 Mix/Blends (MB)												COGCC
	Cut #1 Pit Contents 2/9/12	Cut #1 MB Trial 1:1 (7/11/12)	MB Day 1 (8/23)	MB Day 2A (8/27)	MB Day 2B (8/27)	MB Day 3 (8/28) 8/30/12	MB Day 4 (8/30) 8/31/12	Day 4 Remix 9/13/12	MB Day 5 (8/31) 9/4/12	MB Day 6 (9/4) 9/5/12	Day 6 Remix 9/24/12	MB Day 7 (9/5) 9/6/12	Day 7 Remix 9/20/12	MB Day 8 9/7/12	Table 910-1 Concentration Levels
Accutest Job #	D31789	D36438	D38133 (8/27/12)			D38263	D38287	D38794	D38452	D38482	D39143	D38515	D39018	D38597	-
Sample type (Composite/Discrete)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-
TPH (GRO) (mg/Kg)	189	20.6	8.65	10.3	7.02	67.2	43	-	31.0	50.0	ND	45.2	7.23	6.31	-
TPH (DRO) (mg/Kg)	1090	247	275	325	295	286	446	-	298	716	207	601	285	409	-
TPH (GRO + DRO) (mg/Kg)	1279	268	284	335	302	353	489	-	329	766	207	646	292	415	500
Benzene (mg/Kg)	0.655	0.0525	0.0704	0.0728	0.0583	0.110	0.2650	0.0925	0.130	0.0401	-	0.218	0.0846	ND	0.170
Toluene (mg/Kg)	8.69	-	-	-	-	-	-	-	-	-	-	-	-	-	85
Ethylbenzene (mg/Kg)	1.84	-	-	-	-	-	-	-	-	-	-	-	-	-	100
Xylenes (total) (mg/Kg)	8.19	-	-	-	-	-	-	-	-	-	-	-	-	-	175
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Chrysene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	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)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)	5.450	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Sodium Adsorption Ratio (SAR)	110	-	-	-	-	-	-	-	-	-	-	-	-	-	12
pH	8.71	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9
Arsenic (mg/kg)	14.0	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
Barium (mg/kg)	4040	-	-	-	-	-	-	-	-	-	-	-	-	-	15000
Cadmium (mg/kg)	< 1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)	13.3	-	-	-	-	-	-	-	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)	< 0.53	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Copper (mg/kg)	34.9	-	-	-	-	-	-	-	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)	17.5	-	-	-	-	-	-	-	-	-	-	-	-	-	400
Mercury (mg/kg)	< 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Nickel (mg/kg)	18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1600
Selenium (mg/kg)	< 6.5	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Silver (mg/kg)	< 3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Zinc (mg/kg)	58.2	-	-	-	-	-	-	-	-	-	-	-	-	-	23000
% Solids	75.1	87.8	87.7	87.7	88.6	87.3	87.7	87.9	88.3	88.3	90.4	88.4	90.6	89.3	-

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.

Table 4
Location: FRU 197-33B
Lab Summary - Cuttings #3 Mix/blend

Last update 3/14/2013

Analytical Parameter (with units)	Cuttings #3		Cuttings #3 Mix/blend (MB)															COGCC
	Cut #3 Pit Contents 2/9/12	MB Trial 3:1 7/11/12	MB Day 1 9/13/12	Day 1 Remix 10/16/12	MB Day 2A 9/17/12	Day 2A Remix 10/4/12	MB Day 2B ⁴ 9/17/12	MB Day 3A 9/18/12	MB Day 3B 9/18/12	Day 3B Remix 10/9/12	MB Day 4A 9/19/12	Day 4A Remix 10/17/12	MB Day 4B ⁴ 9/19/12	MB Day 5 9/20/12	Day 5 Remix 10/16/12	MB Day 6 9/24/12	Day 6 Remix 10/4/12	Table 910-1 Concentration Levels
Accutest Job #	D31789	D36438	D38815	D40000	D38896	D39588	D38896	D38938	D38937	D39737	D39011	D40080	D39012	D39017	D40000	D39144	D39588	-
Sample type (Composite/Discrete)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-
TPH (GRO) (mg/Kg)	155	10.5	ND	ND	9.5	ND	6.97	6.23	7.98	ND	7.24	ND	9.23	9.04	ND	ND	ND	-
TPH (DRO) (mg/Kg)	1060	168	607	182	738	246	1110	329	766	208	628	204	1070	675	147	502	458	-
TPH (GRO + DRO) (mg/Kg)	1215	179	607	182	748	246	1117	335	774	208	635	204	1079	684	147	502	458	500
Benzene (mg/Kg)	1.57	0.0296	0.081	-	0.0601	-	0.0509	ND	ND	-	0.17	ND	0.183	0.122	-	ND	-	0.170
Toluene (mg/Kg)	9.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85
Ethylbenzene (mg/Kg)	1.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
Xylenes (total) (mg/Kg)	8.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Chrysene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Fluorene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Naphthalene (mg/Kg)	0.850	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)	1.380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Sodium Adsorption Ratio (SAR)	24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
pH	9.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9
Arsenic (mg/kg)	8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
Barium (mg/kg)	5900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000
Cadmium (mg/kg)	< 1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)	17.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)	< 0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Copper (mg/kg)	29.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)	16.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400
Mercury (mg/kg)	< 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Nickel (mg/kg)	14.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600
Selenium (mg/kg)	<6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Silver (mg/kg)	< 4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390
Zinc (mg/kg)	43.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000
% Solids	71.7	90.1	89.6	90.8	89.5	90.1	90.1	89.1	88.6	90.7	88.8	90.3	88.4	89.7	91.0	89.7	90.7	-

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) Pit contents were removed and transported to an approved offsite disposal/recycling facility.

Table 5
Location: FRU 197-33B
Lab Summary - RP Subliner Assessment

Last update 3/14/2013

Analytical Parameter	Reserve Pit		Subliner Discrete Samples						Post 2' Ex.				Post 3' Ex.		Excavated Material Mix/blend (MB)								COGCC
(with units)	RP Contents 2/9/12	RP Subliner 9/13/12	RP-1	RP-2	RP-3	RP-4	RP-5	RP-6	RP-2 (-2')	RP-3 (-2')	RP-4 (-2')	RP-5 (-2')	RP-3 (-3')	RP-4 (-3')	Ex. Mtrl. 12/4/12	MB Day 1 1/22/13	MB Day 2 1/23/13	MB Day 3	MB Day 4	MB Day 5 1/28/13	MB Day 6 1/29/13	Table 910-1 Concentration Levels	
Accutest Job #	D31789	D38796	D38800 (9/13/12)						D40210 (10/22/12)				D40776 (11/7/12)		D41582	D42785	D42873	D42883 (1/24/13)		D42948	D42993	-	
Sample type (Composite/Discrete)	C	C	D	D	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	C	C	-	
TPH (GRO) (mg/Kg)	133	22	ND	11	34.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	
TPH (DRO) (mg/Kg)	8940	2210	91	1070	12300	5300	1470	35	72.2	527	746	56.7	153	341	1060	120	181	179	216	266	314	-	
TPH (GRO + DRO) (mg/Kg)	9073	2232	91	1081	12335	5300	1470	35	72.2	527	746	56.7	153	341	1060	120	181	179	216	266	314	500	
Benzene (mg/Kg)	0.728	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170	
Toluene (mg/Kg)	3.47	0.548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	
Ethylbenzene (mg/Kg)	0.570	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	
Xylenes (total) (mg/Kg)	9.69	0.926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	
Acenaphthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	
Anthracene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	
Benzo(A)anthracene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	
Benzo(A)pyrene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	
Benzo(B)fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	
Benzo(K)fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	
Chrysene (mg/Kg)	ND	0.0574	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	
Dibenzo(A,H)anthracene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022	
Fluoranthene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	
Fluorene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	
Naphthalene (mg/Kg)	2.42	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	
Pyrene (mg/Kg)	ND	0.0656	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	
Electrical Conductivity (mmhos/cm)	4.940	2.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	
Sodium Adsorption Ratio (SAR)	51.5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
pH	9.07	10.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9	
Arsenic (mg/kg)	2.6	9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	
Barium (mg/kg)	13900	5290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000	
Cadmium (mg/kg)	< 1.6	<1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	
Chromium (III) (mg/Kg)	5.9	60.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000	
Chromium (VI) (mg/Kg)	1.0	<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	
Copper (mg/kg)	17.8	18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100	
Lead (inorganic) (mg/kg)	< 7.9	13.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400	
Mercury (mg/kg)	< 0.15	<0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	
Nickel (mg/kg)	7.5	26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	
Selenium (mg/kg)	< 7.9	<5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	
Silver (mg/kg)	< 4.7	<3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	
Zinc (mg/kg)	19.8	52.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	
% Solids	63.4	86.4	85.4	85.9	86.8	87.5	82.9	85.5	92.9	96.5	96.8	91.5	89.5	93.2	93.5	88.8	89.5	88.3	88.2	87.0	87.5	-	

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.

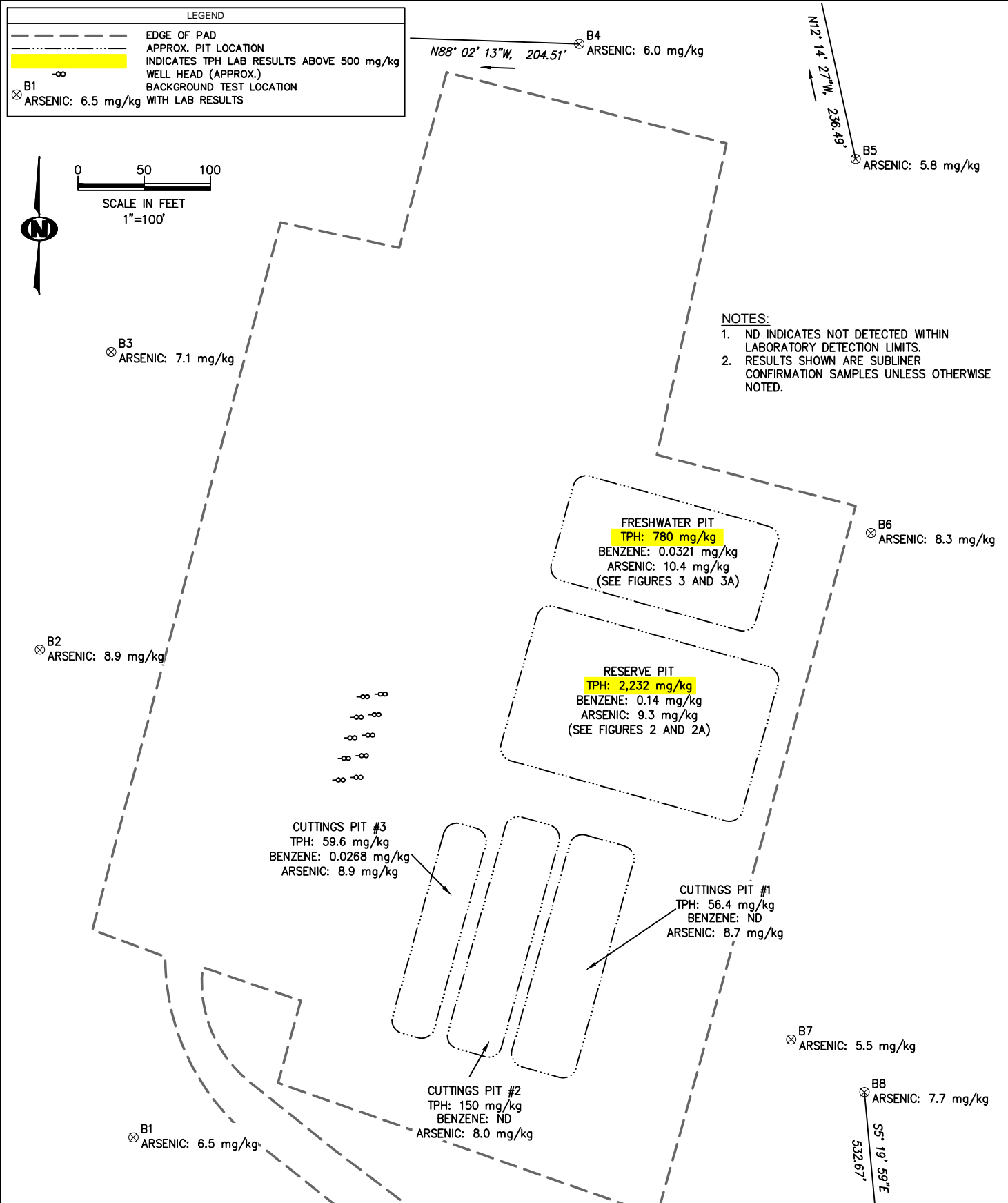
Table 6
Location: FRU 197-33B
Lab Summary - FW Subliner Assessment

Last update 3/14/2013

Analytical Parameter		Fresh Water Pit		FW Subliner Discrete				Post 2' Ex.		FW Excavated Material Mix/blend (MB)										COGCC
(with units)	FW Pit Contents	FW Pit Subliner 11/7/12	FW-1	FW-2	FW-3	FW-4	FW-1 (- 2')	FW-2 (- 2')	FW Ex. MTRL 12/20/12	MB Day 1 1/15/13	MB Day 1 Remix 1 1/31/13	MB Day 1 Remix 2 2/1/13	MB Day 2 1/16/13	MB Day 2 Remix 1 2/4/13	MB Day 2 Remix 2 2/5/13	MB Day 3 1/16/13	MB Day 3 Remix 1 2/7/13	MB Day 3 Remix 2	MB Day 3 Remix 3	Table 910-1 Concentration Levels
Accutest Job #	De Minimis Contents	D40778	D40779 (11/07/12)				D41768 (12/10/12)		D42112	D42679	D43045	D43089	D42704	D43185	D43190	D42704	D43355	D43489 (2/12/13)		-
Sample type (Composite/Discrete)		C	D	D	D	D	D	D	C	C	C	C	C	C	C	C	C	C	C	-
TPH (GRO) (mg/Kg)		ND	15.5	ND	ND	ND	ND	ND	18.4	15.8	ND	ND	11.0	ND	ND	17.1	ND	ND	ND	-
TPH (DRO) (mg/Kg)		780	1850	1030	365	48.4	195	16.5	2870	1220	53.9	83.2	1160	368	333	1180	319	304	457	-
TPH (GRO + DRO) (mg/Kg)		780	1866	1030	365	48.4	195	16.5	2888	1236	53.9	83.2	1171	368	333	1197	319	304	457	500
Benzene (mg/Kg)		0.0321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.170
Toluene (mg/Kg)		0.172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85
Ethylbenzene (mg/Kg)		0.0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
Xylenes (total) (mg/Kg)		0.337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175
Acenaphthene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Anthracene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Benzo(A)anthracene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(A)pyrene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Benzo(B)fluoranthene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Benzo(K)fluoranthene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Chrysene (mg/Kg)		0.0102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Dibenzo(A,H)anthracene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.022
Fluoranthene (mg/Kg)		0.0102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Fluorene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Indeno(1,2,3,C,D)pyrene (mg/Kg)		ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Naphthalene (mg/Kg)		0.120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Pyrene (mg/Kg)		0.0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000
Electrical Conductivity (mmhos/cm)		1.520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Sodium Adsorption Ratio (SAR)		27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
pH		11.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6-9
Arsenic (mg/kg)		10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39
Barium (mg/kg)		3150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15000
Cadmium (mg/kg)		<1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Chromium (III) (mg/Kg)		65.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120000
Chromium (VI) (mg/Kg)		<1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Copper (mg/kg)		14.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3100
Lead (inorganic) (mg/kg)		10.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	400
Mercury (mg/kg)	<0.092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	
Nickel (mg/kg)	23.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	
Selenium (mg/kg)	<5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	
Silver (mg/kg)	<3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	
Zinc (mg/kg)	52.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	
% Solids	87.7	84.9	88.5	87.6	89.4	86.4	86.1	86.7	87.8	86.2	86.9	86.9	87.4	88.1	85.5	87.4	88.6	87.3	-	

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 site map for sample locations.



c:\krcw\fru_197-33b\confirmation.dwg, 3/14/13

GPS:	CHECKED:	FIGURE 1	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:			
3/14/13	DRF			
FILE NAME:	SHEET NO.	1 of 5		
confirmation				
PROJECT NO.	SCALE:			
1202-01	1" = 100'			

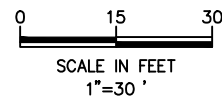
KRW CONSULTING, INC.
8000 W. 14TH AVENUE, SUITE 200
LAKEWOOD, COLORADO
(303) 239-9011

FIGURE 1
PICEANCE CREEK
FRU 197-33B
SAMPLE LOCATIONS WITH
ARSENIC LEVELS
PREPARED FOR XTO ENERGY

c:\krcw\fru 197-33b\reserve conf.dwg,3/14/13



LEGEND	
-----	EDGE OF PAD
- - - - -	APPROX. PIT LOCATION
-----	BERM / WEIR
● 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	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS GREATER THAN 500 mg/kg

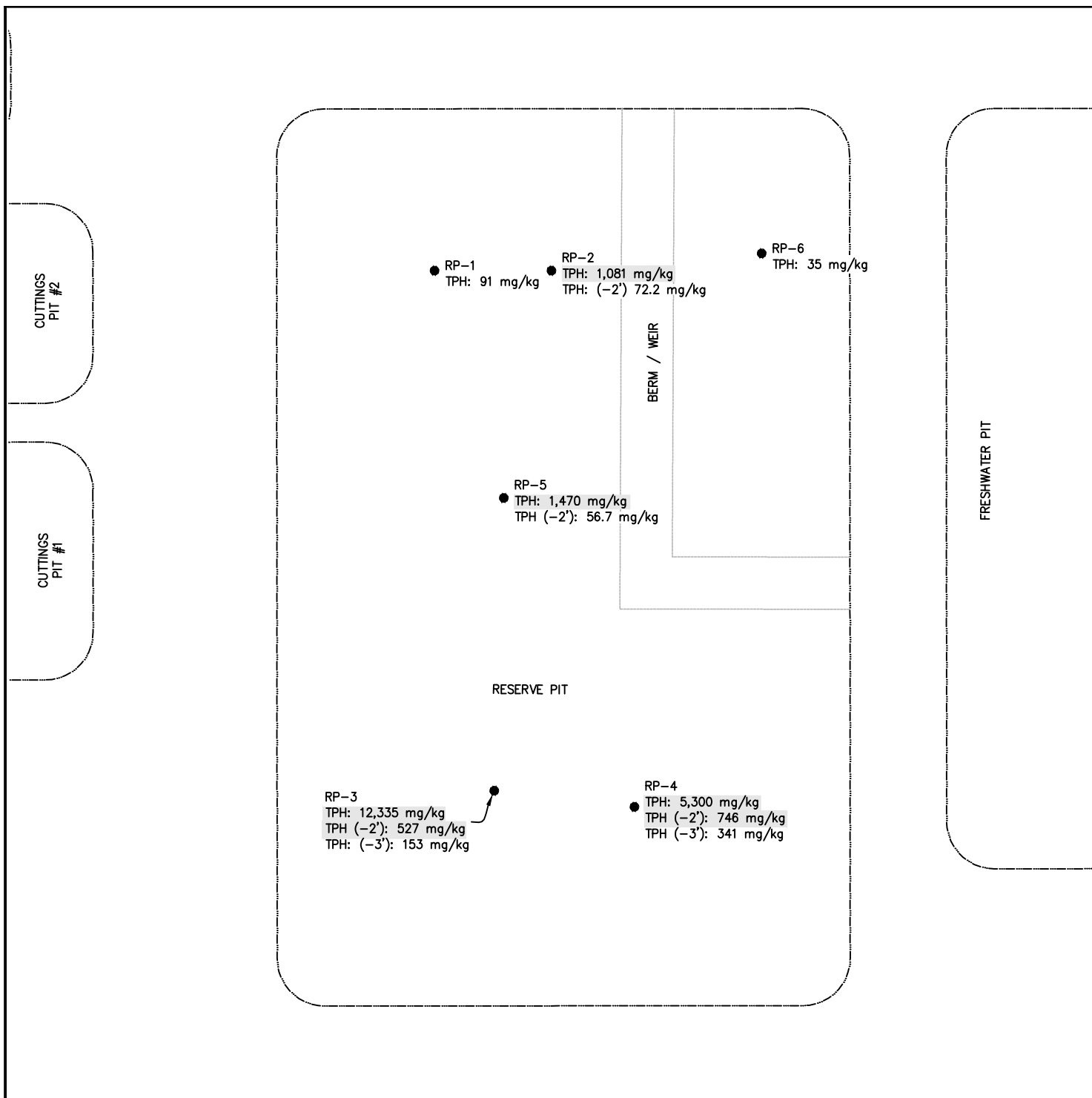


GPS:	CHECKED:	FIGURE	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:	2		
3/14/13	DRF			
FILE NAME:	SHEET NO.	2 of 5		
reserve conf				
PROJECT NO.	SCALE:	1" = 30'		
1202-01				

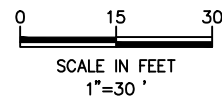
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8000 W. 14TH AVENUE, SUITE 200
LAKEWOOD, COLORADO
(303) 239-9011

FIGURE 2
PICEANCE CREEK
FRU 197-33B
RESERVE PIT
SUBLINER CONFIRMATION DATA
PREPARED FOR XTO ENERGY

c:\krc\fru 197-33b\reserve conf r1.dwg,3/14/13



LEGEND	
	EDGE OF PAD
	APPROX. PIT LOCATION
	BERM / WEIR
	PREVIOUS LABORATORY RESULTS ABOVE 500 mg/kg
	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg
	RP-0 TPH: ≤ 500 mg/kg



GPS:	CHECKED:	FIGURE 2A	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:			
3/14/13	DRF			
FILE NAME:	SHEET NO.	3 of 5		
reserve conf r1				
PROJECT NO.	SCALE:			
1202-01	1" = 30'			

KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 2A PICEANCE CREEK FRU 197-33B RESERVE PIT SUBLINER CONFIRMATION DATA PREPARED FOR XTO ENERGY

RESERVE PIT

FRESHWATER PIT

FW-1
TPH: 1,866 mg/kg

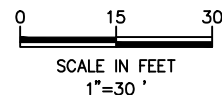
FW-2
TPH: 1,030 mg/kg

FW-3
TPH: 365 mg/kg

FW-4
TPH: 48.4 mg/kg

LEGEND

---	EDGE OF PAD
---	APPROX. PIT / TRENCH LOCATION
● FW-0 TPH: ≤ 500 mg/kg	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg
● FW-0 TPH: > 500 mg/kg	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS GREATER THAN 500 mg/kg

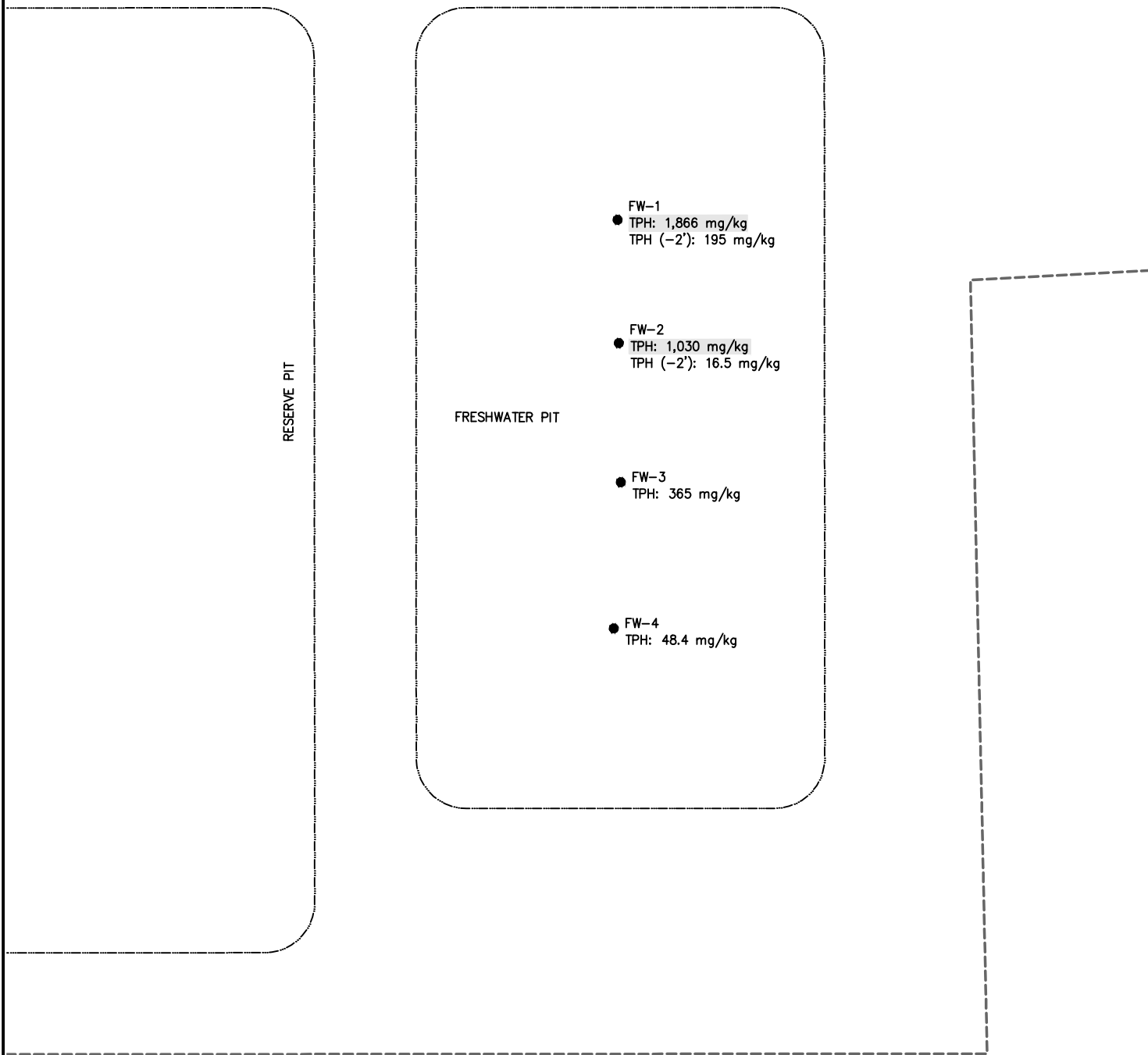


GPS:	CHECKED:	FIGURE 3	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:			
3/14/13	DRF			
FILE NAME:	SHEET NO.			
fw	4 of 5			
PROJECT NO.	SCALE:			
1202-01	1" = 30'			

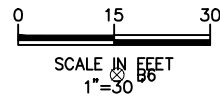
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LAKEWOOD, COLORADO
(303) 239-9011

FIGURE 3
PICEANCE CREEK
FRU 197-33B
FRESHWATER PIT
SUBLINER CONFIRMATION DATA
PREPARED FOR XTO ENERGY

c:\krcw\fru 197-33b\fw r1.dwg,3/14/13



LEGEND	
	EDGE OF PAD
	APPROX. PIT / TRENCH LOCATION
	PREVIOUS LABORATORY RESULTS ABOVE 500 mg/kg
	DISCRETE SAMPLE LOCATION WITH TPH LAB RESULTS LESS THAN OR EQUAL TO 500 mg/kg



GPS:	CHECKED:	FIGURE 3A	DATE	REVISIONS
TRIMBLE	DK			
DATE:	DRAWN:			
3/14/13	MRH			
FILE NAME:				
fw r1		SHEET NO. 5 of 5		
PROJECT NO.		SCALE:		
1202-01		1" = 30'		

KRW CONSULTING, INC. 8000 W. 14TH AVENUE, SUITE 200 LAKEWOOD, COLORADO (303) 239-9011	FIGURE 3A PICEANCE CREEK FRU 197-33B FRESHWATER PIT SUBLINER CONFIRMATION DATA PREPARED FOR XTO ENERGY