AECOM Appendix A FS Addendum

Appendix A. Boring Logs

BORING	LOCAT East	ION 18th S	St Rigl	nt of Way, NW	of Tacoma Met	als pro	operty			Boring Name	B-31
DRILLIN	IG COMF					DRIL	Jayı	men		Project Name	Tacoma Metals
DRILLIN	IG METH Geop					DRIL	L BIT(S) 2-in			Project Number	996098.00
ISOLAT	ION CAS N/A	ING				FRO	M N/A	ТО	N/A FT.	ELEVATION AND DATUM	TOTAL DEPTH
BLANK	CASING N/A					FRO	M N/A	ТО	N/A FT.	DATE STARTED	28.0 ft. bgs DATE COMPLETED
SLOTTE	D CASIN	NG				FRO		ТО	N/A FT.	3/24/05 INITIAL WATER DEPTH (FT)	3/24/05
SIZE AN	ID TYPE	OF FILT	TER PAC	CK		FRO		ТО	N/A FT.	LOGGED BY	
SEAL		onite (Chins			FRO		ТО	FT.	DKM SAMPLING METHODS	WELL COMPLETION
GROUT		511110	ornpo			FRO		ТО		MacroCore w/PVC liner	☐ SURFACE HOUSING ☐ STAND PIPE FT.
8	SAMPLES	PENETR	DEPTH	SAMPLE NUMBER	BACKFILL DETAILS	OVA	LITHOLOGY	USCS	14/71	CAMBLE DESCRIPTION AND	
TYPE	(FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	Y			LOG		SAMPLE DESCRIPTION AND	DRILLING REMARKS
_			_				\ \\ \\ \.	GW	1	graded GRAVEL green/brown, well graded g	ıravel.
- SS	3		_		_					D DEBRIS n/orange, wood material, m	edium chins to fine
_			_		-			Wood	sawdı	ust sized, no evident soil, n	
	-		_					***************************************	-		
-			5 -		-				-		
- SS	2.5		M -	B31-6-7	-	3.2		ML		elly SILT brown to gray, silty materia	I with some gravel and
-			Δ -	D31-0-7	-	3.2			↓ wood	chips, oily appearance located and odor, no evident sheen.	
_	1		_					ML	SILT		050/
			_		-				_fine_s	brown, silty material with <: and, soft, moist, no evident	
- SS	2		10-		-		==			D DEBRIS brown, wood material, bloc	ky, <10% matrix in
-			-	approx.	-					ered sample material, wet no sheen.	below ~11 feet, no evident
_			_						-		
-			_					Wood			
- SS	0		4.5								
			15 -								
									16 to	20 foot samplematerial aloy, runny) and large NAPL	bove sand is very wet blebs are present on the
- SS	2.5		_						water	surface in the sampler.	·
_	10									y graded SAND poorly graded medium sar	nd, coarsens gradually
_			X 20-	B31-19-20		100.1		:	down	wards, wet, strong creosote ce in sampler appears to in	e odor, heavy sheen on crease with depth, no
_			_						evide	nt NAPL but gloves/baggie	s are stained.
- SS	4		_		_			SP	-		
-			_		-	523.0			-		
	-		M -	D04 04 05		1 00 -			-		
-			× 25-	B31-24-25	- <i> </i>	1,292			Silty	CLAY	
- SS	3.5		_		-			CL/	Brown	n/gray, silty clay to clayey s rate plasticity, low diltatend	
-			-			8.4		ML	no sh		y, wet, no evalent odol,
NO.	TES		_				$V \perp \perp$	<u> </u>	L		
		aissand	e grour	ndwater sample E	B31-RGW screen pl	aced ~	21-25 fe	eet bgs			
1											

ORILI IN	G COMP		COITIC	r Simpson Pro	pert	у		DRI	LLER			Well Name	MW-29 / B-34
	Casc	ade							Cas		aymen	Project Name For	mer Tacoma Metals
RILLIN	G METH HSA		Probe						LL BIT(S) 9-i r	SIZE 1ch / 2-	-inch	Project Number	998098.00
OLATI	ON CAS N/A	ING						FRO		TO	N/A	ELEVATION AND DATUM	TOTAL DEPTH
_ANK (CASING	hedul	e 40 E	VC Pipe				FRO		TO	22.2 FT. 32.5	DATE STARTED	36.0 ft. bgs
OTTE	D CASIN	IG		•	10.0	امدا		FRO	OM	TO	FT.	2/14/06 INITIAL WATER DEPTH (FT)	2/15/06
ZE AN	D TYPE	OF FILT	TER PAC			JOI		FRO	22.2 DM	ТО	32.2 FT.	10.0	
EAL	Lapis	Lustr	re #2/1	2 Monterey S	and			FRO	<u>19</u> ом 1.5		32.5 19 FT.	LOGGED BY DKM	
	Pure	Gold	Bento	nite Chips					32.5		36	SAMPLING METHODS	WELL COMPLETION ■ SURFACE HOUSING
ROUT	Conc	rete						FRO)M 0	то	1.5	MacroCore w/PVC Liner	□ STAND PIPE
S TYPE	RECOV. (FEET)	PENETR.	DEPTH (FEET)	SAMPLE NUMBER	WELL	. CONS	TRUCTIO	N OVA	LITHOLOGY	, USCS LOG		SAMPLE DESCRIPTION AND	DRILLING REMARKS
IIIFL	(FEET)	BLOWS/6"	, ,			ъ 1				1	Wall-	graded SAND with gravel	
			_			. ↓ 2////	4	+		SW	Gray,	medium sand with 10-15%	
SH	2		_					0.2		Ĺ		rown woody material locally , no odor, no sheen.	r, moderately dense,
			_					4.2				D DEBRIS	
			5 -					4			size,	orown, woody material, fine locally up to 5% silt but typ	
SH	1		_							Wood	- soft, r	moist, no odor, no sheen.	
				B34-7-8				0.5		1			
			_					-				D DEBRIS	
SH	0.5		10-		${=}$			+		1	Dark	gray to dark orange/brown,	
			-					1		Wood		ally coated with silt and fine rial, moist to wet below 10 f	
			_							1	sheer	٦.	-
SH	3		_					4		╪—	Sand	y SILT	
			15-					+			Mediu	um gray/brown, silt with fine	
			_						1		mode	% sand by ~16 feet bgs, ~ rately dense overall but loo	
SH	2.5		_	D04 40 40				-		ML	no od	lor, no sheen.	
			<u> </u>	B34-18-19				0.0		""	-		
			20-					+	1				
SH	4		_]					
			_					+		†	- SILT		
			_					+		ML		silt, becomes sandier (fine sand by ~24 feet bgs, mod	
SH	2.5		25 -					_			no sh		
ЗΠ	2.3		_					_				y graded SAND medium to coarse sand at	top, primarily medium
			_					-	-	SP	sand	by ~28 feet bgs, fine sand moderately dense, wet, slig	present below ~30 feet
			_					-		ا	sheer		in dieusole uuui, nu
SH	3.5		30-	B34-30-31				57.4		1			
								1.0					
			_					-		SM		SAND silty fine sand, 15-20% silt	t, moderately dense. wet
SH	3.5		<u> </u>	B34-34-35				+		ļ	no od	lor, no sheen.	
			[∠] 35− -					0.3		SP	1	y graded SAND medium to fine sand at top	o grading to mostly
			_							_		um/coarse sand by 36 feet	

BORING				1011 4011011		<u>, </u>									
DRILLIN	Simp	son P	ropert	y center well				DRII	LER			Well Name		MW-30 / B-35	
	Caso	cade							Cas		aymen	Project Name _	Forr	mer Tacoma Metal	s
DRILLIN	HSA	/ Geo	Probe							ch / 2		Project Number		998098.00	
ISOLAT	N/A							FRO	N/A	ТО	N/A	ELEVATION AND DAT	JM	TOTAL DEPTH 44.0 ft. bgs	
BLANK (e 40 P	VC Pipe				FRO	м 0 40.7	ТО	25.7 FT. 41	DATE STARTED 2/14/06		DATE COMPLETED 2/15/06	
SLOTTE			e 40 F	VC Pipe, 0.0	10-S	lot		FRO	м 25.7	ТО	40.7 FT.	INITIAL WATER DEPTH	H (FT)	2/15/06	
SIZE AN	ID TYPE	OF FIL	TER PAC					FRO		ТО	FT.	9.0 LOGGED BY			
SEAL				•	ana			FRO	м 1.5	ТО	23 FT.	DKM SAMPLING METHODS		WELL COMPLETION	
GROUT			Denio	nite Chips				FRO		ТО	44 , _ FT.	MacroCore w/PVC I	₋iner	■ SURFACE HOUSING	
S	Cond SAMPLES	;			WELL	CONSTRUC	TION		0		1.5			☐ STAND PIPE	_ FT.
TYPE	RECOV (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL	CONOTROO	11011	OVA	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION		DRILLING REMARKS	
- - SH	1.5		-				-		·	1	_ '	graded SAND with gr n/grav. sand with 25-3		ounded gravel, some s	silt
. ЭП	1.5		-							sw		~4 feet bgs, moist, r			
			5 -						<u> </u>	L	<u> </u>				
SH	2.5			B35-6-7				0.3		SM		SAND with gravel	ar (san	ıd-sized) material mixe	
					<u>=</u>							5-20% silt and some	angul	ar gravel material, oily st, no odor, no sheen.	
- SH	2.5		10-		=		-				L \	D DEBRIS	, 111013	st, no odor, no sneen.	
		-					1							ed surfaces), blocky wo erial (5-10%) typically	bod
SH	1		- -							Wood	coatin	ig wood surfaces, we	t, no o	odor, no sheen.	
•			15-					0.5			_				
011			_				-				-				
SH	0										F				
			20 -				+				_	y graded SAND			
SH	3		_					0.4			locally			dium to coarse sand, odor, no sheen above ~	~24
			× 25	B35-23-24			1				feet b	gs.			
SH	4		25 - -					1 1			Slight	creosote odor and n	o shee	en ~24-28 feet bas	
•								1.1]	- Silgili		_ 5.700		
SH	4		30 -							SP		to moderni .		db	_
			-					1.4]		to moderate creosot gs (strongest odor ~3		r and no sheen ~28-35).)
SH	4			B35-32-33				15.5	.	1	F				
,	•		35-				-	5.6			-				
											No or	lor or shoon holow - 1	25 foot	t has	
SH	4			DOE 00 40				0.4			100 00	lor or sheen below ~3	o ieel	uys.	
			× 40-	B35-39-40			+				- SILT				
SH	4		-					0.9		ML	√ Tan/g			nd clay, stiff, moderate	
							1	8.0		SP		city and dilatency, we y graded SAND	t, no c	odor, no sheen.	
	TES Samplin	g and li	thologic	logging were p	erforr	med during	Geo	Probe	borina		Mediu	ım gray, poorly grade	d med	dium to coarse sand, w	vet,
				installed at the					3	ML	no od SILT	or, no sheen.			
										SP	Tan/g	ray, silt, minor fine sa		nd clay, stiff, moderate odor, no sheen.	
											(See	next page for litholo	gy de	escription)	

F-40.1 (6-87) (3-88) (8-90)

SHEET 1 OF 2

Boring & Well Construction Log

Kennedy/Jenks Consultants

	ct Name	For	mer Tacoma	Metals	Proje	ct Numb	er	998098.00 Well N	Name _	MW-30 / B-35
	SAMPLES PENETR.	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUC	TION OV	'A LITHOLOGY	USCS	SAMPLE DESCRIPTION A	ND DRILL	NG REMARKS
TYPE	RECOV. (FEET) PENETR. RESIST. BLOWS/6"	(FEEI)	O, WIII EE HOMBER			211102001	LOG		U DI VILLI	TO TEMP II II O
								Poorly graded SAND	nodium t	o coarse sand wet
								Medium gray, poorly graded no odor, no sheen.	neuluiii i	o coarse sand, wet,

	<u>.g</u>				<u> </u>								- · <i>J</i>	
		on Pr	operty	/ nearest Por	tland A	venue						Well Name		MW-31 / B-36
	G COMPAI Casca	de						DRIL	Cas		aymen	Project Name	Forr	mer Tacoma Metals
DRILLIN	G METHOI HSA / (robe					DRIL	L BIT(S) 9-in	size ch / 2-	inch	Project Number		998098.00
ISOLAT	ON CASING	G						FROI	M N/A	TO	N/A FT.	ELEVATION AND DATU	JM	TOTAL DEPTH
BLANK		edule	40 P	VC Pipe				FROI	м 0 32.7	ТО	22.7 FT. 33	DATE STARTED		36.0 ft. bgs
SLOTTE	D CASING			VC Pipe, 0.0	10-Slo	t		FROI		ТО	32.7 FT.	2/14/06 INITIAL WATER DEPTH	H (FT)	2/15/06
SIZE AN	ID TYPE OF	FFILTE	R PAC			•		FROI		ТО	33 FT.	LOGGED BY		
SEAL				nite Chips	Jana			FROI		ТО	20 FT. 36	SAMPLING METHODS		WELL COMPLETION
GROUT	Concre		CITO	iite Oriipa				FROI		ТО	FT. 1.5	MacroCore w/PVC L	iner	■ SURFACE HOUSING □ STAND PIPE FT.
S	AMPLES		DEPTH		WELL C	ONSTRUC	TION	OVA		USCS	1.5			
TYPE	(FEET) BL	NETR. C SIST. (OWS/6"	DEPTH (FEET)	SAMPLE NUMBER					LITHOLOGY	LOG		SAMPLE DESCRIPTIO		
-			-		Δ	Δ. Δ	-			GW/		graded GRAVEL with gravel fill with sand ar		nd sand dense, moist, no odor,
- SH	2		-				-			CM	no sh	een.		
]				1		<u> </u>	GM	- woo	D DEBRIS		
-			5-				-			Wood	_ sawd`	ge/brown, wood mate ust size, some silt pre	esent l	ocally (<5% total),
- SH -	3.5											rately loose, moist, n	o odor	r, no sheen.
		\rightarrow	7 -				$\mid + \mid$			SM	Dark			0%), gravel (10-15%), fine
- - SH	3.5	X	10-	B36-8-10				72.6			mode	rate odor with modera	ate sh	ately loose, moist to wet, een ~7-10 feet bgs, slight
- SH -	3.5		- 10-		¥			12.0			odori	but no sheen below ~	10 fee	t.
_			+				$\mid + \mid$					D DEBRIS	al coat	ed with silt and fine sand
- - SH	3										matri		ocally	variable), wet, no odor,
-			15-				-				-	o moderate oncen inc	or Cuon	ig with doptil.
- SH	1		-				-			Wood	L	blobs are locally visi	hlo on	the water surface in the
-							-	6.7				ler, increasing with de		the water surface in the
_			20-								_			
- SH	3		-											
_				B36-23-24				20.8				y graded SAND		
_			25-				-	3.4		SP	bgs, r	nedium to coarse sar	nd ~24	nostly fine sand at 23 feet -25 feet bgs, becoming
- SH	3		+				-]	creos	up to ~10%) below ~2 ote odor with heavy s	heen a	and brownish NAPL
								2.5		SP/		visible ~23-24 feet by sible NAPL blebs) be		oderate odor and sheen 24 feet bgs.
-			-									y graded SAND with		th 10-15% silt, moderately
- SH	2.5		30-					31.5		SM	dense	e, wet, slight creosote	odor,	light sheen.
				B36-31-32			1			SP	1	y graded SAND to dark gray, fine to n	nediun	n sand at top grading to
-			+				-	1.1			⊢\ mostl	v medium sand by ~3	2 feet	bgs, moderately dense, I sheen above ~31 feet
- SH -	3.5		35-	B36-34-35				0.8		SM	∖bgs, s			en with NAPL blebs visible
										SP	 Silty	SAND		
	ampling a			logging were p					boring	on		fine sand with 15-20 or, no sheen.	% silt,	moderately dense, wet,
2	/14/06. T	ne we	ıl was	installed at the	same lo	cation o	n 2/1	5/06.			(See	next page for litholo	gy de	scription)
1														

Boring & Well Construction Log

Kennedy/Jenks Consultants

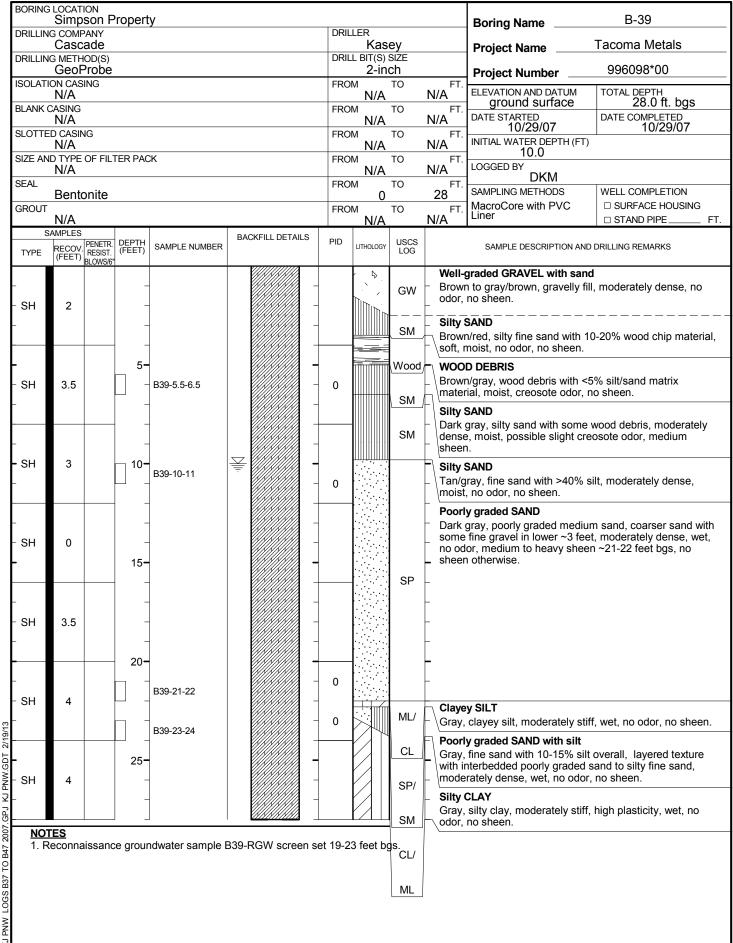
	<u></u>		_					000000000		1 MA / 6 / 1 = 11	
	ct Name	For	mer Tacoma			Numbe	r	998098.00 Wel	II Name _	MW-31 / B-36	<u>5</u>
TYPE	RECOV. PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	OVA	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION	N AND DRILLIN	NG REMARKS	
	BLOWS/6"							Poorly graded SAND			
								Gray, poorly graded mediur dense, wet, no odor, no she	n to coarse	sand, moderately	y
								derise, wet, no odor, no sne			

BORING L	Simp	son P	ropert	у						Boring Name	B-37
DRILLING	COMP Casc					DRIL	Kas				Tacoma Metals
DRILLING	METH GeoF					DRIL	L BIT(S) 2-in			Project Number	996098*00
ISOLATIO	N CASI N/A	NG				FROI	M N/A	ТО	N/A FT.	ELEVATION AND DATUM	TOTAL DEPTH
BLANK CA	ASING N/A					FROI	M N/A	ТО	N/A	ground surface	24.0 ft. bgs
SLOTTED	CASIN	IG				FROI		ТО	N/A FT.	10/29/07 INITIAL WATER DEPTH (FT)	10/29/07
SIZE AND		OF FILT	TER PAC	K		FROI		ТО	FT.	9.5 LOGGED BY	
SEAL	Bento	nite				FROI		ТО	FT. 24	DKM SAMPLING METHODS	WELL COMPLETION
GROUT	N/A	, iiic				FROI		ТО	FT.	MacroCore with PVC Liner	☐ SURFACE HOUSING ☐ STAND PIPE FT.
SAI	MPLES	PENETR	DEPTH	044401541114050	BACKFILL DETAILS	PID		USCS	IN/A	OAMBLE DESCRIPTION AND	
TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	V		LITHOLOGY	LOG		SAMPLE DESCRIPTION AND	
-			_				\$	GW		graded GRAVEL with sand n, gravel and sand fill, mois	
- SH	3.5		_						1	graded SAND with gravel	
-			-			0		sw	betwe	ed green-gray/dark gray/tal en different colored layers,	sand with 20-30% gravel
			_ 5 _				• • • •			Il (locally variable), some si e, moist, no odor, no sheen	
- SH	3			B37-5-6					14/00	D DEDDIO	
-			-					Wood	Dark	D DEBRIS prown to red-brown, wood r	
			-					L	L	x, moist, no odor, no sheen	. — — — — — — — — — — — — — — — — — —
- 011	0.5		40		¥	•		SP	Dark	y graded SAND gray, poorly graded mediur	
- SH -	2.5		10-			0			dense	e, moist to wet at ~9.5 feet	bgs, no odor, no sheen.
			_				Ų.	SM	_ Gray/	brown, silty fine sand, some rately dense, wet, no odor,	
-			-						L	y graded SAND	
- SH	2.5			B37-14-15						gray, poorly graded mediun (<1/2 inch) silt nodules in le	
-			─ 15 -			0			dense	e, wet, possible faint creoso wise no odor, no sheen.	te odor 16-20 feet,
_										, , , , , , , , , , , , , , , , , , , ,	
- SH	3		_					SP	-		
-			-								
-			20-						-		
- - SH	3			B37-21-22							
-			_			0		CL/	Silty		moderately high plasticity
									wet, r	o odor, no sheen.	moderately high plasticity,
		issanc	e grour	ndwater sample I	B37-RGW screen se	et 18-2	2 feet b	ML s.	4 11		nd, moderately dense,
								SP	wet, r	o odor, no sheen.	· · · · · · · · · · · · · · · · · · ·
									Gray,	sandy silt, moderately stiff	, low plasticity, wet, no
								IVIL	odor,	no sneen.	
NOTE 1. Re		issanc	e groun	ndwater sample I	337-RGW screen se		2 feet bo	ML gs.	Poorl Gray, wet, r Sandy Gray,	y graded SAND poorly graded medium sar o odor, no sheen. y SILT	<u> </u>

F-40.1 (6-87) (3-88) (8-90)

BORING	City of	of Tac	oma F	Right of Way							Boring Name	B-37A
DRILLIN	G COMF							LER Eli			Project Name	Tacoma Metals
		Probé					DRIL	L BIT(S) 2-in			Project Number	996098*00
ISOLATI	ON CAS N/A	SING					FRO	M N/A	ТО	N/A FT.	ELEVATION AND DATUM	TOTAL DEPTH 24.0 ft. bgs
BLANK (CASING N/A						FRO	M N/A	ТО	N/A FT.	ground surface DATE STARTED	DATE COMPLETED 1/25/08
SLOTTE	D CASIN	NG					FRO	M N/A	ТО	N/A FT.	1/25/08 INITIAL WATER DEPTH (FT	
SIZE AN	D TYPE N/A	OF FILT	TER PAC	K			FRO	M N/A	ТО	N/A	LOGGED BY	
SEAL	Bento	onite					FRO		ТО	FT. 24	RCZ SAMPLING METHODS	WELL COMPLETION
GROUT	N/A						FRO	M N/A	ТО	N/A FT.	MacroCore with PVC Liner	☐ SURFACE HOUSING ☐ STAND PIPE FT.
TYPE	RECOV (FEET)		DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DET	AILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION AN	D DRILLING REMARKS
_		BEOWORD	_			-		*	GP			and derately dense, no odor, no
- SH -	3		_			-	0		SP		y graded SAND with grav poorly graded medium-fir rately dense, no odor, no	ne sand with 5-10% gravel,
-			5 -			+			SP/	Browi	y graded SAND with silt n, sand with 30% silt, som naterial, soft, no odor, no	e organic debris and wood sheen.
- SH	2.5		_			-	0		SW	Dark Dark	graded SAND with gravel gray, sand with 50% grave no sheen.	
			_						SW/	Dark	graded SAND with silt gray to brown, sand with 3 , no odor, no sheen.	80% silt, moderately dense,
- - SH	2.3		10-		¥	-			SM	□ Dark □\ matrix	D DEBRIS brown to red-brown, wood k, moist, no odor, no shee	
-			_				0		Wood GW/	Dark	graded GRAVEL with silt gray, well graded gravel w noderately dense, wet, no	rith 10% fine sand and 20%
- - SH	1.3		_			-			 _GM_	Gray,	y graded SAND poorly graded medium sa I in upper 2 feet, grading t rately dense, wet, no odo	o fine sand by 20-21 feet,
_			15 - -			-			SP	-		
- - SH -	0.5		-			-	0			_		
- - SH	3		20 - - -			-	0			Silty	CLAY	
-			_						CL/	Gray,	silty clay, moderately stiff no odor, no sheen.	, medium-low pasticity,
<u>NO</u> 1. R		aissanc	e grour	idwater sample I	B37A-RGW s	creen	set 18-	-22 feet	bgs.	-		
			Ü	, -					•			

		son P	ropert	у							Boring Name	B-38	
	IG COMF	ade				DRIL		Kas	sey		Project Name	Tacoma Metals	
DRILLIN	IG METH GeoF					DRIL	LL E) SIZE nch		Project Number	996098*00	
	ION CAS N/A	ING				FRO		N/A	TO	N/A FT.	ELEVATION AND DATUM	TOTAL DEPTH	
BLANK	CASING N/A					FRO		N/A	TO	N/A FT.	ground surface DATE STARTED 40/20/07	28.0 ft. bgs DATE COMPLETED	
SLOTTE	D CASIN	NG				FRO	M	N/A	TO	N/A	10/29/07 INITIAL WATER DEPTH (FT)	10/29/07	
SIZE AN	N/A	OF FILT	TER PAC	CK		FRO	M	N/A	TO	N/A FT.	9.0 LOGGED BY		
SEAL	Bento	onite				FRO		С	TO	FT. 28	DKM SAMPLING METHODS	WELL COMPLETION	
GROUT						FRO		N/A	TO	FT.	MacroCore with PVC Liner	☐ SURFACE HOUSING ☐ STAND PIPE FT.	
TYPE	RECOV. (FEET)		DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID		HOLOG	LISCS		SAMPLE DESCRIPTION AND		
- - SH	3	BEOWGIO	-		_		-		GW	├ Tan, g	graded GRAVEL with sand gravelly fill material, moders or, no sheen.	I ately dense, slightly moist,	
- -			_						SP/	Dark	y graded SAND with silt gray, sand with 10-15% silt rately dense, moist, no odd		
- - SH	3		5 -	B38-5-6	_				SM	-	•		
_			_				-		SM		SAND very fine sand with 30-40% no odor, no sheen.	6 silt, moderately dense,	
- SH	2.8		10-		\(\frac{1}{2}\)	0				-			
- - SH -	3.2		- - - 15-	B38-14.5-15.5	-	0	=			- Gray, nodul	y graded SAND poorly graded medium sar es in lower ~5 feet, modera creosote odor ~15-20 feet een.	ately dense, wet, possible	
- - SH -	2.5		- - - 20 -		-	0			SP	-			
- - SH -	3.5		- - -	B38-22.5-23.5	-	0				_ _ _ _ @ ~2	3 feet bgs 1/2" thick layer c	of gray/brown silty clay	
- - SH -	4		25 - -		-				CL/	Silty (Gray, high p	CLAY silty clay, some fine sand plasticity, wet, no odor, no	locally, moderately stiff, sheen.	



F-40.1 (6-87) (3-88) (8-90)

		ort Pro	perty									Boring Name	B-39A
DRILLIN	IG COMF							DRIL	Eli			Project Name	Tacoma Metals
DRILLIN	G METH GeoF	OD(S) Probe						DRIL	L BIT(S) 2-in			Project Number	996098*00
ISOLAT	ION CAS N/A	ING						FRO	M N/A	ТО	N/A FT.	ELEVATION AND DATUM	TOTAL DEPTH
BLANK	CASING N/A							FRO		ТО	N/A	ground surface DATE STARTED	28.0 ft. bgs DATE COMPLETED
SLOTTE	D CASIN	NG						FRO		ТО	FT.	1/25/08 INITIAL WATER DEPTH (FT)	1/25/08
SIZE AN		OF FILT	TER PAC	K				FRO		ТО	FT.	LOGGED BY	
SEAL	Bento	nita						FRO		ТО	FT.	RCZ SAMPLING METHODS	WELL COMPLETION
GROUT		Jinc						FRO		ТО	FT.	MacroCore with PVC Liner	☐ SURFACE HOUSING ☐ STAND PIPE FT.
	AMPLES		DEPTH	CAMPLE NUMBER	BAC	CKFILL DET	AILS	PID		USCS	IN//A	CAMPLE DECORIDED AND	
TYPE	(FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER		V	//		LITHOLOGY	LOG		SAMPLE DESCRIPTION AND	
- - SH	3									GW	- Dark	graded GRAVEL with sandorange/brown, gravelly fill erately dense, no odor, no s	with 30-40% sand,
-			_				-	0		SW/	Dark mater	graded SAND with silt orange/brown, silty fine sa rial and 10% gravel, mode no sheen.	and with 10-20% wood chip rately dense, moist, no
-			5-						· . \	SM	$\sqcap \overset{\cdot}{\smile}$	graded SAND with silt	
- SH	3							0		SW/		ray, silty fine sand with 5- e, moist, no odor, no shee	
-										S <u>M</u> _	Dark	graded SAND with silt orange/brown, fine sand we, moist, no odor, no sheel	
- - SH	2.5		10-		<u></u>		_			SW/	Brow	D DEBRIS n/red, wood debris with uprial, moist, no odor, no she	to 50% silt/sand matrix
-			_				+	0		SM Wood	r⊢	SAND gray, fine sand with 30-40% , no odor, no sheen.	6 silt, moderately dense,
-	0.5		_							SM	- Poorl Dark	y graded SAND gray, poorly graded mediu	m sand, coarsening
- SH -	2.5		15-								down'	wards to medium/coarse s moderately dense, wet, no	sand, some gravel at 24
							+				-		
_			-							SP	-		
- SH	3							•) SF	-		
			20-					0					
_											_		
- SH	2										-		
-											-		
											-		
-			25-					0			-		
- SH	3.5		-								Clave	y SILT	
										ML/	Gray,	clayey silt with 5% fine sa city, wet, no odor, no shee	ind, moderately stiff, high
	<u>rES</u> Reconna	aissanc	e groun	dwater sample l	B39A	-RGW so	creen s	set 22.	5-26.5 f	CL eet bgs]		

		east	of B36	Simpson Pro	perty					Boring Name _		B48
	NG COMP						LER Noe			Project Name _	For	mer Tacoma Metals
	NG METH Direc	t Pus	h			DRIL	L BIT(S) 2-in	ch		Project Number		996098*00
ISOLAT	ION CAS N/A	ING				FRO	M N/A	ТО	N/A FT.	ELEVATION AND DAT bgs 10.20 ft	UM	TOTAL DEPTH 15.0 ft. bgs
BLANK	CASING N/A					FRO	M N/A	TO	N/A FT.	DATE STARTED	•	DATE COMPLETED 10/7/14
SLOTTI	ED CASIN N/A	IG				FRO	M N/A	ТО	N/A FT.	10/7/14 INITIAL WATER DEPT	H (FT)	
SIZE AN	ND TYPE N/A	OF FIL	TER PAC	K		FRO	M N/A	ТО	N/A FT.	LOGGED BY	7	
SEAL	Bento	onite (Granul	es		FRO		ТО	FT. 15	DKM SAMPLING METHODS		WELL COMPLETION
GROUT	N/A					FRO	M N/A	ТО	N/A FT.	Macrocore w/liner		☐ SURFACE HOUSING ☐ STAND PIPE FT.
TYPE	RECOV. (FEET)	PENETR. RESIST.	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND	DRILLING REMARKS
- - SS -	3	BLOWS/6"	-		-	0.0		SW Wood GP	Tan/li mode WOO Brown matrix no sh	D DEBRIS (upper won/orange, wood fill (ck, moderately loose, een. y graded GRAVEL	up to moist, ood fill hips/sa slightly	awdust/shavings), no soil or moist to moist, no odor,
- - - - -	2.5		5-	B48-4.5-7 B48-7-9	-	4.8		SP/ SM	Poorl Dark	y graded SAND with	silt an sand v	with ~10-20% silt and se, moist to wet,
SS	3		10- - - - -			0.0		Wood	Mediu matrix	D DEBRIS (lower wo im gray to tan, wood k (varies locally), wet	debris	with 10-20% sandy silt

F-40.1 (6-87) (3-88) (8-90)

		of B3	6 Simp	oson Property						Boring Name	B49
	NG COMF						LER Noe			Project Name _	Former Tacoma Metals
DRILLIN	NG METH	OD(S)	h			DRIL	L BIT(S) 2-in			Project Number	996098*00
ISOLAT	ION CAS	ING				FRO	M N/A	ТО	N/A FT.	ELEVATION AND DAT	JM TOTAL DEPTH
BLANK	CASING N/A					FRO		ТО	FT. N/A	bgs 10.00 ft	. 15.0 ft. bgs DATE COMPLETED 10/7/14
SLOTTI	ED CASIN	lG				FRO		ТО	FT.	10/7/14 INITIAL WATER DEPTI	
SIZE AN	ND TYPE N/A	OF FIL	TER PAC	CK		FRO	М	ТО	FT.	8.0 LOGGED BY	
SEAL		••	2 1			FRO		ТО	FT.	DKM SAMPLING METHODS	WELL COMPLETION
GROUT		onite	Granul	es		FRO		ТО	15 FT.	Macrocore w/liner	☐ SURFACE HOUSING
	N/A SAMPLES				BACKFILL DETAILS	- DID	N/A		N/A		☐ STAND PIPE FT.
TYPE	RECOV. (FEET)	PENETR. RESIST. BI OWS/6"	DEPTH (FEET)	SAMPLE NUMBER		PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
- - SS		BLOWGIO	_		-	0.0		sw	Brown	graded SAND with graded sand with up to rately dense, slightly	ravel 50% gravel, <10% silt, moist, no odor, no sheen.
- - -	3.5		_		-	0.1		Wood	Orang matrix - slightl	k, some gravel in bott y moist, no odor, no	hips/sawdust/shavings), no soil om 6 inches, moderately loose,
SS	2.5		5-	B49-8-10		0.5		SM	debris odor i	gray to dark brown, s s, some gravel, mode n lower 2 feet, no she	
SS	<1		- 10 15-			2.6		Wood	Browr locally sheer	D DEBRIS (lower foo n, wood debris with 1 /), wet, slight to mode n, no evident NAPL.	of fill) 0-20% sitly matrix (varies erate odor, moderate to heavy
4											

		36 Sin	npson Property	/					Boring Name _	B50
	G COMPANY ESN				DRIL	Noe			Project Name _	Former Tacoma Metals
ORILLING	G METHOD(S) Direct Pus	sh			DRIL	L BIT(S) 2-in			Project Number	996098*00
SOLATIO	ON CASING N/A				FRO		ТО	N/A FT.	ELEVATION AND DAT	TOTAL DEPTH
BLANK C					FRO		TO	FT.	bgs 9.80 ft.	DATE COMPLETED
	ED CASING N/A				FRO	M	ТО	FT.	10/7/14 INITIAL WATER DEPT	10/7/14
	D TYPE OF FIL	TER PAC	K		N/A N/A FROM TO FT. N/A N/A			FT.	8.5 LOGGED BY	
SEAL	N/A	0			FRO	М	ТО	FT.	DKM SAMPLING METHODS	S WELL COMPLETION
GROUT		Granu	es		FRO		ТО	11 FT.		☐ SURFACE HOUSING
Si	N/A SAMPLES			BACKFILL DETAILS	DID	N/A		N/A		☐ STAND PIPE F
TYPE	RECOV. PENETF RESIST BLOWS/	DEPTH (FEET)	SAMPLE NUMBER		PID	LITHOLOGY	LOG		SAMPLE DESCRIPTI	ON AND DRILLING REMARKS
SS	3	- - - 5-	B50-4-5	-	0.2		SW/ SM Wood	WOO Orang matrix Silty:	D DEBRIS (upper we ge/brown, wood fill (o., moderately loose, SAND with gravel gray, silty sand with	ood fill) hips/sawdust/shavings), no soil moist, no odor, no sheen.
SS	4	-	B50-7-8 B50-8-9	¥ -	2.0		SM	woo Tan to	~4-5 feet bgs decrea D DEBRIS (lower wo	moist to wet, moderate odor sing with depth, no sheen. pod fill) with 10-20% silty matrix cally), wet, no odor, no sheen.
SS	<1	10-			0.2			_		

	ig Lo									Kennedy/Jenks Consultants
		west	of B36	6 Simpson Pro	perty					Boring NameB51
DRILLIN	IG COMPA	ANY				DRIL	LER Noe	el		Project Name Former Tacoma Metals
DRILLIN	IG METHO Direct	DD(S) Pusl	h			DRIL	L BIT(S) 2-in			Project Number 996098*00
ISOLAT	ION CASII N/A	NG				FRO	M N/A	TO	N/A FT.	ELEVATION AND DATUM TOTAL DEPTH
BLANK	CASING N/A					FRO		ТО	FT. N/A	bgs 9.40 ft. 15.0 ft. bgs DATE STARTED DATE COMPLETED
SLOTTE	D CASINO	G				FRO		ТО	N/A FT.	10/7/14 10/7/14 INITIAL WATER DEPTH (FT)
SIZE AN	ID TYPE (OF FILT	TER PAC	K		FRO		ТО	FT.	9.0 LOGGED BY
SEAL	Bento	nite (Granul	AS		FRO		ТО	FT.	DKM SAMPLING METHODS WELL COMPLETION
GROUT		1110	<u>Ji ai iai</u>	00		FRO		ТО	FT.	Macrocore w/liner □ SURFACE HOUSING □ STAND PIPE FT.
5	SAMPLES	DENIETD	DEPTH		BACKFILL DETAILS	PID		USCS	IN/A	
TYPE	RECOV. (FEET)	RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	V/////		LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION AND DRILLING REMARKS
- - - SS	3				-			SW	Brown	graded SAND with gravel n, mixed sand with gravel fill, some silt, moderately e, slightly moist, no odor, no sheen.
_			_		_	1.1	·	Wood GP	Orang	D DEBRIS (upper wood fill) ge/brown, wood fill (chips/sawdust/shavings), no soil k, no odor, no sheen.
-			5 	B51-3.5-5	_	5.3			Poorl	y graded GRAVEL crushed angular rock or concrete, no odor, no
- - SS	3.5		- -		-	3.3		SM	<10% odor t wet, s	orange/brown to dark gray, silty sand, minor gravel, wood debris including blocky wood with moderate between ~7-7.5 feet bgs, moderately dense, moist to slight odor and sheen decreasing with depth.
-			10-	B51-8.5-10	¥ -	2.7		,	Gray matrix	D DEBRIS (lower wood fill) to brown, blocky wood debris with 10-15% silty c overall (matrix % varies locally), wet, faint to rate odor, medium sheen.
- SS	<1		- -					Wood	_	
-						2.4			_	
4										

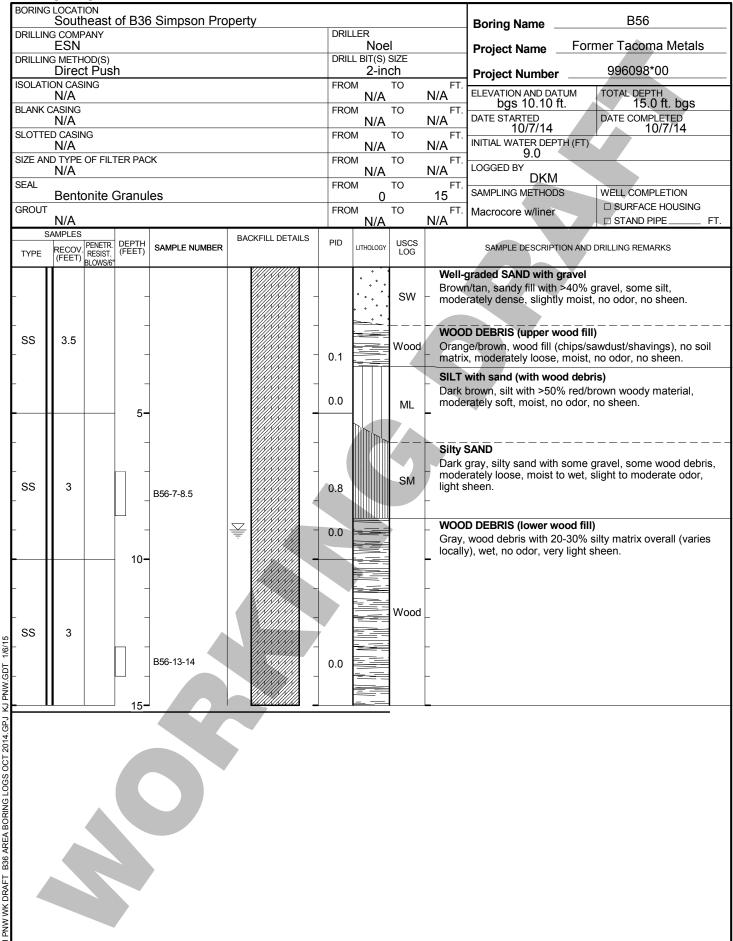
F-40.1 (6-87) (3-88) (8-90)

ORING LOCATION North of B36 JJ F	Port Property				Boring Name	B52
RILLING COMPANY ESN		DRILLE	R Noel			rmer Tacoma Metals
RILLING METHOD(S) Direct Push		DRILL E	BIT(S) SIZE 2-inch		Project Number	996098*00
SOLATION CASING N/A		FROM TO F			ELEVATION AND DATUM	TOTAL DEPTH
LANK CASING N/A		FROM TO FT.			bgs 6.80 ft. DATE STARTED	7.0 ft. bgs
SLOTTED CASING N/A		FROM	TO N/A	N/A FT.	10/7/14 INITIAL WATER DEPTH (FT)	10/7/14
IZE AND TYPE OF FILTER PAC N/A	K	FROM	TO N/A	N/A FT.	6.8 LOGGED BY	
EAL Bentonite Granul	es	FROM	то 0	FT. 7	DKM SAMPLING METHODS	WELL COMPLETION
ROUT N/A		FROM	TO N/A		Macrocore w/liner	☐ SURFACE HOUSING ☐ STAND PIPE F
SAMPLES TYPE RECOV PENETR. (FEET) BLOWS/6"	SAMPLE NUMBER BACKFILL DETAILS	DID	THOLOGY USCS LOG	1077	SAMPLE DESCRIPTION AND	
SS 2.5 - 5- SS 1.5 -	B52-3.5-5	0.0	SW SP	Poorl Brown mode	y graded SAND with graven, sand with 10-15% graven, sand with 10-15% graven rately dense, moist, no ode. D DEBRIS (lower wood fill brown, blocky wood debris, no odor, no sheen.	t, no odor, no sheen. el and <10% silt, or, no sheen.

		36 JJ F	Port Property						Boring Name _	B53
	G COMPANY ESN				DRIL	Noe			Project Name	Former Tacoma Metals
ORILLING	G METHOD(S Direct Pu	sh			DRIL	L BIT(S) 2-in			Project Number	996098*00
	ON CASING N/A				FROM TO FT.			N/A FT.	ELEVATION AND DAT	TUM TOTAL DEPTH
BLANK C					FROM TO FT.			FT.	bgs 7.00 ft	DATE COMPLETED
SLOTTE	D CASING N/A				FRO		ТО	FT.	10/7/14 INITIAL WATER DEP	10/7/14 TH (FT)
SIZE ANI	D TYPE OF FI	LTER PAC	CK		FRO		ТО	FT.	6.5 LOGGED BY	
SEAL	Bentonite	Granul	Δς		FRO		ТО	FT.	DKM SAMPLING METHOD	S WELL COMPLETION
GROUT		Granui	<u> </u>		FRO	М	ТО	FT.	Macrocore w/liner	☐ SURFACE HOUSING
SA	N/A AMPLES	DEDTH		BACKFILL DETAILS	PID	N/A	USCS	N/A		STAND PIPE F
TYPE	RECOV. PENET (FEET) RESIS' BLOWS	DEPTH (FEET)	SAMPLE NUMBER		FID	LITHOLOGY	LOG		SAMPLE DESCRIPT	ION AND DRILLING REMARKS
SS	3	-	B53-4-5	-	0.0		SW SP	Poorl Orang <10%	y graded SAND with ge/brown, medium to silt, moderately der SAND with gravel	o fine sand with 10-15% gravel, nse, moist, no odor, no sheen.
SS	2	5 -		→	0.0		SM	WOO Gray matrix	DEBRIS (lower water gray/brown, block	ood fill) by wood debris with 5-15% silty lices, wet, no odor, possible light
4										

SRILLING COMPANY ESN DRILLING METHODS) DIFFECT PUSh SOLATION CASING N/A SIANK CASING N/A SI	ORING LOCATION Northeast of B36 Simpson Property				Boring Name _	B54
DRILLI BIT(S) SIZE DIRECT PUSh Direct Push SOLATION CASING N/A SIZENC CASING N/A SIZE AND TYPE OF FILTER PACK N/A N/A N/A SIZE AND TYPE OF FILTER PACK N/A N/A SIZE AND TYPE OF FILTER PACK N/A N/A N/A SIZE AND TYPE OF FILTER PACK N/A	PRILLING COMPANY ESN		Noel			Former Tacoma Metals
SOLATION CASING NIA	PRILLING METHOD(S)	DR				00000400
SEANK CASING NIA SLOTTED CASING NIA SIZE AND TYPE OF FILTER PACK NIA SEAL Bentonite Granules FROM NIA SAMPLES SROUT NIA SAMPLES SAMPLES SAMPLE ROONS SAMPLES SAMPLE ROONS SAMPLE ROONS SAMPLE ROONS SAMPLE ROONS BACKFILL DETAILS PID UNGLOOP Wood Well - COMPLETION SAMPLE DEPTH (FT) SAMPLE DEPTH ON AND DRILLING REMARKS WELL COMPLETION SAMPLED SCRIPTION AND DRILLING REMARKS Well-graded SAND with gravel Brown, sandy, fill with up to 40% gravel, <10% slit, moderately dense, slightly moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown forange, wood debris, moderately loose, moist to wet, slight odor, no sheen. WOOD DEBRIS (upper wood fill) Brown forange, wood debris, moderately loose, moist to wet, slight odor, no sheen. WOOD DEBRIS (upper wood fill) Brown forange, wood debris, moderately loose, moist to wet, slight odor, no sheen.	SOLATION CASING	FRO	OM T	O FT.	FI EVATION AND DA	TUM TOTAL DEPTH
SEAL Bentonite Granules FROM N/A SEAL Bentonite Granules FROM N/A SAMPLES SAMPLES SAMPLES SAMPLE RECOV PRETTI SAMPLE NUMBER BACKFILL DETAILS PID Unnocoor Usc Samples Samples	LANK CASING	FRO	OM T	O FT.	bgs 10.30 f	t. 10.0 ft. bgs
SEAL Bentonite Granules FROM N/A Bentonite Granules FROM N/A SAMPLES SAMPLING METHODS Macrocore Wilner SAMPLE DESCRIPTION AND DRILLING REMARKS Well-graded SAND with gravel Brown, sandy fill with up to 40% gravel, <10% silt, moderately dense, slightly moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. FROM N/A FROM	LOTTED CASING	FRO	OM T	O FT.	10/7/14	10/7/14
Bentonite Granules FROM TO 10 10 FT. N/A SAMPLING METHODS WELL COMPLETION SAMPLING METHODS WELL COMPLETION SAMPLING METHODS WELL COMPLETION SAMPLE BENTAL PIPE FROM N/A TO N		FRO		O FT.	8.5	(H(FI)
Bentonite Granules O 10 SAMPLING METHODS Macrocore w/liner N/A SAMPLES TYPE RECOV RESIST. (FEET) SAMPLE NUMBER BACKFILL DETAILS PID UTHOLOGY SW WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. SS 1.5 B54-6-7 WOOD DEBRIS (upper wood fill) Brown/orange, wood debris, moderately loose, moist to wet, slightly moist now odor, no sheen. WELL COMPLETION SAMPLENDING STAND PIPE FROM N/A USCS SAMPLE DESCRIPTION AND DRILLING REMARKS Well-graded SAND with gravel Brown, sandy fill with up to 40% gravel, <10% silt, moderately dense, slightly moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill) Dark gray to dark brown, sand with 10-20% silt and 10-15% gravel, some wood debris, moderately loose, moist to wet, slightly door, no sheen. WOOD DEBRIS (lower wood fill) Brown to gray, blocky wood debris with 5-15% silty matrix (varies locally), wet, no odor, no sheen.		FRO			DKM	
N/A SAMPLES TYPE RECOV. RESIST (FEET) BLOWS6 SAMPLE NUMBER BACKFILL DETAILS PID UTHOLOGY RESIST (FEET) BLOWS6 SAMPLE DESCRIPTION AND DRILLING REMARKS Well-graded SAND with gravel Brown, sandy fill with up to 40% gravel, <10% silt, moderately dense, slightly moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. Angular crushed rock or concrete in sampler tip (below ~4.8' bgs) Poorly graded SAND with silt and gravel Dark gray to dark brown, sand with 10-20% silt and 10-15% gravel, some wood debris, moderately loose, moist to wet, slight odor, no sheen. WOOD DEBRIS (lower wood fill) Brown to gray, blocky wood debris with 5-15% silty matrix (varies locally), wet, no odor, no sheen.	Bentonite Granules		0	10		
TYPE RECOV PERENT (FEET) SAMPLE NUMBER SAMPLE PROCESS (UPPER WOOD Fill) Brown, sandy fill with up to 40% gravel, <10% silt, moderately dense, slightly moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. Angular crushed rock or concrete in sampler tip (below ~4.8' bgs) Poorly graded SAND with silt and gravel Dark gray to dark brown, sand with 10-20% silt and 10-15% gravel, some wood debris, moderately loose, moist to wet, slight odor, no sheen. WOOD DEBRIS (lower wood fill) Brown to gray, blocky wood debris with 5-15% silty matrix (varies locally), wet, no odor, no sheen.	N/A	- I FR		N/A	Macrocore wilner	
Well-graded SAND with gravel Brown, sandy fill with up to 40% gravel, <10% silt, moderately dense, slightly moist, no odor, no sheen. WOOD DEBRIS (upper wood fill) Brown/orange, wood fill (chips/sawdust/shavings), no soil matrix, moderately loose, moist, no odor, no sheen. Angular crushed rock or concrete in sampler tip (below ~4.8' bgs) Poorly graded SAND with silt and gravel Dark gray to dark brown, sand with 10-20% silt and 10-15% gravel, some wood debris, moderately loose, moist to wet, slight odor, no sheen. WOOD DEBRIS (lower wood fill) Brown to gray, blocky wood debris with 5-15% silty matrix (varies locally), wet, no odor, no sheen.		LL DETAILS PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPT	ION AND DRILLING REMARKS
	SS 3 5- 5- SS 1.5	0.0		SW Brow mode WOO Brow matri Angu ~4.8' Poor SP/ SM Dark 10-15 moist	n, sandy fill with up to erately dense, slightly brately dense, slightly brately dense, slightly brately dense, wood fill (ox, moderately loose, lar crushed rock or obgs) Ily graded SAND with gray to dark brown, 5% gravel, some wood to wet, slight odor, brately brately brately brately wonto gray, blocky work, slight odor, work of the pray, blocky work of the pray of the	o 40% gravel, <10% silt, y moist, no odor, no sheen. ood fill) chips/sawdust/shavings), no soil moist, no odor, no sheen. concrete in sampler tip (below in silt and gravel sand with 10-20% silt and od debris, moderately loose, no sheen. ood fill) od debris with 5-15% silty matrix

BORING	g Lo	_								Kenn	edy/Jenks Consultar
	East	of B36	Simp	son Property		55"	155			Boring Name _	B55
	ESN						LER No e			Project Name _	Former Tacoma Metals
DRILLING	G METH Direc	IOD(S)				DRIL	L BIT(S) 2-in			Project Number	
SOLATIO			-			FRO		ТО	N/A FT.	ELEVATION AND DAT	UM TOTAL DEPTH
BLANK C						FROM TO F				bgs 10.50 ft DATE STARTED	12.0 ft. bgs
SLOTTE		NG							FT.	10/7/14 INITIAL WATER DEPT	10/7/14
SIZE AND	EIZE AND TYPE OF FILTER PACK N/A							TO	FT.	10.0 LOGGED BY	
SEAL						FRO		TO	N/A FT.	DKM SAMPLING METHODS	B WELL COMPLETION
GROUT		onite C	Granul	es		FRO		TO	12 FT.	Macrocore w/liner	☐ SURFACE HOUSING
	N/A AMPLES				BACKFILL DETAILS		N/A		N/A		☐ STAND PIPE F
TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BAOM ILL DE TAILO	PID	LITHOLOGY	LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
SS	3.5		-		-	0.0		SW	Gray/ minor no sh WOO Orang matrix	D DEBRIS (upper wo ge/brown, wood fill (c , moderately loose, l	own, sand with 40-45% gravel, dense, slightly moist, no odor, ood fill) hips/sawdust/shavings), no soil moist, no odor, no sheen.
SS	2.5		5-	B55-4-5 B55-7.5-9		0.0		SP/ SM	Dark up to below odor a	20% silt, 5-10% grav	t bgs) to dark gray, sand with vel, >10% red/brown wood debriately loose, moist to wet, slight v ~7 feet bgs.
SS	1		10-	B55-10-12	¥	0.0		Wood	Brown	n, wood debris with 1	0-20% silty matrix overall odor and light sheen.



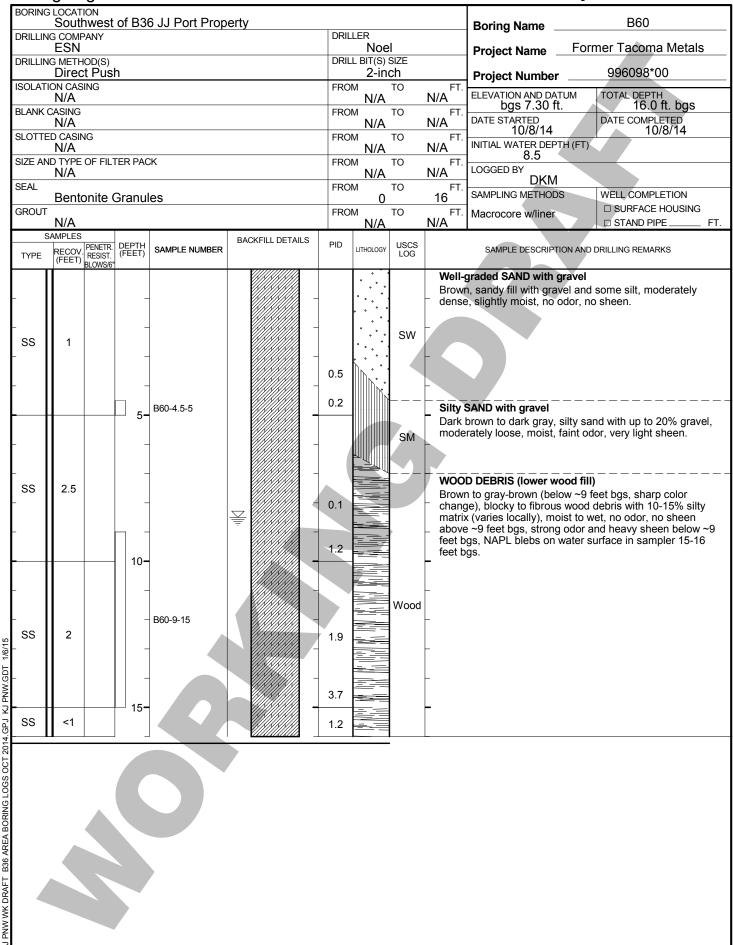
F-40.1 (6-87) (3-88) (8-90)

	ig Log									edy/Jenks Consultants
BORING	SLOCATION South of E	336 Sim	pson Propert	y					Boring Name	B57
DRILLIN	G COMPANY ESN				DRIL	Noe			Project Name _	Former Tacoma Metals
DRILLIN	G METHOD(S) Direct Pus	 sh			DRIL	L BIT(S) 2-in			Project Number	996098*00
ISOLATI	ION CASING N/A	-			FROI		ТО	N/A FT.	ELEVATION AND DAT	UM TOTAL DEPTH
BLANK (FT.	bgs 9.90 ft.	15.0 ft. bgs DATE COMPLETED
SLOTTE	ED CASING				FROM TO FT			FT.	10/7/14 INITIAL WATER DEPT	10/7/14
SIZE AN	N/A ID TYPE OF FII	LTER PAC	K		FROI		ТО	N/A FT.	8.5	11(11)
SEAL	N/A				FROI	<u>N/A</u> Μ	ТО	N/A FT.	LOGGED BY DKM	
GROUT	Bentonite	Granule	es		FROI	<u>0</u>	TO	15 FT.	SAMPLING METHODS Macrocore w/liner	WELL COMPLETION SURFACE HOUSING
	N/A SAMPLES				11101	 N/A		N/A	Macrocore Willier	☐ STAND PIPE FT.
TYPE	RECOV. PENETI (FEET) PENETI RESIST BLOWS/	R. DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG			ON AND DRILLING REMARKS
-		-		_	0.0		SW	Tan/b	graded SAND with grown, sandy fill with ge, slightly moist, no o	gravel, some silt, moderately
- SS - -	2.5	_		-	0.3		Wood	Orano	silty soil matrix, mode	hips/sawdust/shavings), up to erately loose, moist, faint odor,
		5-		_	84.6		Wood	Dark	D DEBRIS (blocky w brown/gray, blocky w arance, strong odor, h	ood with oily (stained)
- - - -	3.5		B57-7.5-8.5	≥	2.5		SM	Dark grave to me	l, some wood debris, dium sheen.	and with >30% silt, some moist to wet, slight odor, light
- - - SS -	4	10-	B57-9-12		73.3		Wood	Gray/	y) between and coatii	od fill) ith 10-15% silty matrix (varies ng wood material, soft matrix, een, small NAPL blebs locally.

F-40.1 (6-87) (3-88) (8-90)

BORING	South	nwest	of B36	6 Simpson Pro	perty					Boring Name		B58
	G COMP ESN						LER Noe			Project Name _	Form	er Tacoma Metals
	G METH Direc	t Pus	h			DRIL	L BIT(S) 2-in			Project Number		996098*00
	ON CAS N/A	ING				FRO	M N/A	ТО	N/A FT.	ELEVATION AND DATE bgs 9.30 ft.	UM	TOTAL DEPTH 20.0 ft. bgs
BLANK (N/A					FRO	M N/A	ТО	N/A FT.	DATE STARTED 10/7/14		DATE COMPLETED 10/7/14
	D CASIN					FRO	M N/A	ТО	N/A FT.	INITIAL WATER DEPTI	H (FT)	10///14
SIZE AN	D TYPE N/A	OF FILT	TER PAC	CK		FRO	M N/A	ТО	N/A FT.	LOGGED BY DKM	\neg	
SEAL	Bento	onite (Granul	es		FRO	0 0	ТО	20 FT.	SAMPLING METHODS		WELL COMPLETION
GROUT	N/A					FRO	M N/A	ТО	N/A FT.	Macrocore w/liner		☐ SURFACE HOUSING ☐ STAND PIPE FT.
TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DI	RILLING REMARKS
ss	3.5	BLOWS/6*	5=	B58-7.5-8.5		0.1 1.2 0.4 4.0 34.7 39.0 5.6		SW GP ML SP/ SM	Poorl Gray, SILT Orang (chips no od Poorl Dark mode WOO Gray/ debris surfac sheer	or, no sheen. y graded SAND with gray, sand with 10-15 rately loose, moist to D DEBRIS (lower wo silver to dark gray (va s with 5-10% silty ma	gravei moist, r crete, no d debris, r silt and 5% silt and o wet, fail od fill) aries loot trix (vari	no odor, no sheen. o odor, no sheen. o odor, no sheen. s) % wood moderatley soft, moist, I gravel and some gravel, int odor, light sheen. cally), blocky wood ies locally) coating wood odor, medium to heavy
			20					-				

ORING	LOCATION North of B36	JJ Port Property						Boring Name	B59
RILLING	G COMPANY ESN	•		DRIL	LER Noel			Project Name _	Former Tacoma Metals
RILLING	METHOD(S) Direct Push			DRIL	L BIT(S) SI. 2-inc ł			Project Number	00000000
SOLATIO	ON CASING N/A			FRO		0	N/A	ELEVATION AND DAT	UM TOTAL DEPTH
LANK C				FROM TO FT.			FT.	bgs 6.60 ft.	DATE COMPLETED
LOTTE	D CASING N/A			FROM TO FT.			FT.	10/8/14 INITIAL WATER DEPT	10/8/14 H (FT)
IZE AND	O TYPE OF FILTER	R PACK		FRO		0	FT.	7.0 LOGGED BY	
EAL	Bentonite Gr	anules		FRO		0	FT. 9.5	DKM SAMPLING METHODS	WELL COMPLETION
ROUT		anules		FRO	м т	0	FT.	Macrocore w/liner	☐ SURFACE HOUSING
9.1	N/A AMPLES	PID	N/A	USCS	N/A		STAND PIPE F		
TYPE	RECOV. PENETR. (FEET) BLOWS/6"	EPTH EET) SAMPLE NUMBER		FID	LITHOLOGY	LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
SS	2	- - - - - - - - - - - - - - - - - - -		0.1		SW SP/ SM	Poorly Dark to gravel locally	y graded SAND with prown to dark gray, s , some brick fragme , moderately dense, D DEBRIS (lower wo	silt and with >10% silt, some nts (orange/brown appearance moist, no odor, no sheen.
SS	2	-	¥.	0.2		Vood	matrix	blocky to fibrous work ((varies locally) decr vet, no odor, no shee	od debris with 10-15% silty easing to <10% below ~7 feet en.



F-40.1 (6-87) (3-88) (8-90)

BORING	LOCATI	ON I wes t	of B36	3 JJ Port Prop	erty					Boring Name _	B61
DRILLIN				•	•	DRIL	LER Noe	el		Project Name	Former Tacoma Metals
DRILLIN		OD(S) t Pust	า			DRIL	L BIT(S) 2-in	SIZE ch		Project Number	996098*00
ISOLATI									N/A	ELEVATION AND DAT	TUM TOTAL DEPTH
BLANK (FRO		ТО	N/A	bgs 9.20 ft. DATE STARTED	DATE COMPLETED
SLOTTE		G				FRO	M	ТО	FT.	10/8/14 INITIAL WATER DEPT	10/8/14
SIZE AN	D TYPE (OF FILT	ER PAC	K		FRO		ТО	FT.	9.5 LOGGED BY	
SEAL	N/A	., ,				FRO		ТО	N/A FT.	DKM SAMPLING METHODS	WELL COMPLETION
GROUT		nite (Granul	es		FRO		ТО	15 FT.		☐ SURFACE HOUSING
	N/A AMPLES				BACKFILL DETAILS		N/A		N/A		☐ STAND PIPE FT.
TYPE	RECOV. (FEET)	PENETR. RESIST.	DEPTH (FEET)	SAMPLE NUMBER	BAON ILL BETAILO	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
- SS -	1	BLOWS/6*	- - - 5 -		- - -	0.1		GW	Brown		h sand n, gravel fill with >40% sand, se, slightly moist to moist, no
- - SS -	3			B61-7-8	-	0.0 0.1 0.2		ML	Dark mater WOO Brown	D DEBRIS (lower wo	with 10-15% silty matrix (varies
- - - . SS	2.5		10-			5.9		Wood	~9 fee	et bgs. oer part of 10-15' san	nple (~11-13 feet bgs); loose, ent in matrix with strong odor, IAPL blebs locally.
55	3.5		_			1.2		ML	-	y SILT n_sandv silt_modera	tely stiff, wet, slight odor, light
			15-	B61-13-14		0.9		SP	- \sheer Poorl Brown	y graded SAND	nd, moderately dense, wet, slight
TIWWWN DIANT BOUNDS BOUNDS COOL SO 17.05											

F-40.1 (6-87) (3-88) (8-90)

	ng Lo	_								Kennedy/Jenks Consultai
		of B3	36 JJ F	Port Property						Boring NameB62
	NG COMF					DRIL	Noe			Project Name Former Tacoma Metals
	NG METH Direc	t Pus	h			DRIL	L BIT(S) 2-in			Project Number 996098*00
ISOLAT	TION CAS N/A	ING				FRO	M N/A	ТО	N/A FT.	ELEVATION AND DATUM TOTAL DEPTH
BLANK	CASING N/A					N/A N/A			N/A FT.	DATE STARTED DATE COMPLETED
SLOTT	ED CASIN N/A	lG				FRO		ТО	N/A FT.	INITIAL WATER DEPTH (FT)
SIZE AI	ND TYPE N/A	OF FILT	TER PAC	K		FRO		ТО	N/A FT.	LOGGED BY
SEAL		onite (Granul	es		FRO		ТО	FT.	DKM SAMPLING METHODS WELL COMPLETION
GROU1						FRO		ТО	FT.	Macrocore w/liner □ SURFACE HOUSING □ STAND PIPE F
	SAMPLES	PENETR.	DEPTH	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION AND DRILLING REMARKS
TYPE	RECOV. (FEET)	RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	Y ///////		LITHOLOGY	LOG		
-			-		_			sw	Brown	-graded SAND with gravel vn, sandy fill with up to 40% gravel, some silt, minor debris, moderately dense, slightly moist, no odor, no en.
SS -	3		_		_	0.0				
			5 - _	B62-4-5	_	0.0			Dark	SAND with gravel brown, silty sand with 10-15% gravel, some wood is, moderately loose, moist to wet, no odor, no sheen
- SS -	2.5		_	B62-8-9	₹	0.1		SM	-	
SS	1		10- - - - -			0.0		Wood	Brown	DD DEBRIS (lower wood fill) on to gray/brown, blocky to fibrous wood debris, 5% silty matrix (varies locally), wet, no odor, no en.

	ig Lo									Kennedy/Jenks Consultants
BORING	SLOCATI South		of B36	3 JJ Port Prop	erty					Boring NameB63
	IG COMP ESN					DRIL	ler Noe	el		Project Name Former Tacoma Metals
DRILLIN	IG METH Direc	OD(S) t Pusl	h			DRIL	L BIT(S) 2-in			Project Number 996098*00
ISOLAT	ION CAS N/A	ING				FRO	M N/A	ТО	N/A FT.	ELEVATION AND DATUM TOTAL DEPTH
BLANK	CASING N/A					FRO		ТО	N/A FT.	bgs 9.00 ft. 15.0 ft. bgs DATE STARTED DATE COMPLETED
SLOTTE	D CASIN	IG				FRO		ТО	N/A FT.	10/8/14 10/8/14 INITIAL WATER DEPTH (FT)
SIZE AN	ID TYPE N/A	OF FILT	TER PAC	K		FRO		ТО	FT.	9.5 LOGGED BY
SEAL		nnite (Granul	AS		FRO		ТО	FT.	DKM SAMPLING METHODS WELL COMPLETION
GROUT) I I I I	<u>Ji ai iai</u>	00		FRO		ТО	FT.	Macrocore w/liner □ SURFACE HOUSING □ STAND PIPE FT.
5	SAMPLES	DENETD	DEPTH		BACKFILL DETAILS	PID		USCS	IN/A	
TYPE	RECOV. (FEET)	RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	V/////		LITHOLOGY	LOG		SAMPLE DESCRIPTION AND DRILLING REMARKS
- - SS	2		-		-			sw	Brown	graded SAND with gravel n to gray (below ~3 feet bgs), sandy fill with gravel ome silt, moderately dense, slightly moist, no odor, een.
-				B63-4-5	-	0.0		SP	Browr wood	y graded SAND with gravel nish gray, sand to fine gravel sized granular fill, some chips, moderately dense, slightly moist, no odor, no
- - - - - -	3		5 - - -		-	0.0		ML	Brown soft, r	(with wood debris) n, silt with up to 80% soft woody debris, moderately moist, no odor, no sheen. D DEBRIS (lower wood fill)
<u> </u>			10-	B63-10.5-11.5	¥	0.4		Wood GP	Brown to we	n to gray, blocky wood debris, <5% silty matrix, moist t, no odor, no sheen. y graded GRAVEL with sand
				200 10.0 11.0		0.0			Browr sand,	n, gravel (fine grains) with ~40% medium to coarse some silt, loose, wet, faint odor, light sheen.
SS	4.5		_					ML	Browr	y SILT n, sandy silt, soft at top grading downward to rately stiff, wet, faint odor and light sheen in upper nches, otherwise no odor and no sheen.
			15 -			0.0		SP	Mediu some	y graded SAND um gray, poorly graded medium to coarse sand, silt locally in small nodules, moderately dense, wet, or, no sheen.
-										

F-40.1 (6-87) (3-88) (8-90)

		n of B	36 Sin	npson Propert	у		Boring Name		B64				
DRILLIN	IG COMF ESN	PANY				DRIL	Noe			Project Name _	Forr	mer Tacoma Metals	
DRILLIN	IG METH Direc	IOD(S)	h			DRIL	DRILL BIT(S) SIZE 2-inch			Project Number		996098*00	
ISOLAT	ISOLATION CASING N/A							ТО	N/A FT.	ELEVATION AND DAT	JM	TOTAL DEPTH	
BLANK	BLANK CASING N/A							ТО	N/A FT.	bgs 9.60 ft.		15.0 ft. bgs DATE COMPLETED	
SLOTTE	SLOTTED CASING N/A							ТО	FT.	10/8/14 INITIAL WATER DEPT	1 (FT)	10/8/14	
SIZE AN	ID TYPE N/A	OF FILT	TER PAC	K		FRO	FROM TO FT			10.0 LOGGED BY			
SEAL		onito (Granul	00		FRO		ТО	FT.	DKM SAMPLING METHODS WELL COMPLETION			
GROUT		Jille	Jianui	es		FRO		ТО	FT.			☐ SURFACE HOUSING	
	SAMPLES		DEDTH		BACKFILL DETAILS	PID	N/A	USCS	IN/A		7	STAND PIPE FT.	
TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER		TID	LITHOLOGY	LOG		SAMPLE DESCRIPTION		DRILLING REMARKS	
- - SS	2		-		-	0.0		sw	Brown	graded SAND with grave n, sandy fill with grave e, slightly moist, no od	el and	some silt, moderately o sheen.	
- - -			5 -		- -	0.0		SP	Gray,	y graded SAND with medium to coarse sa e, moist, faint odor, no	and, m	inor gravel, moderately	
- SS -	B64-7.5-8.5							ML	Browr soft, r	(with wood debris) vn, silt with up to 70% soft woody debris, moderately moist to wet, faint odor, light sheen.			
_			10 -		¥	3.4		Wood	Greer	D DEBRIS (lower wo nish-brown to orange- silty matrix, wet, mod	.brown	n, blocky wood debris, odor, medium sheen.	
-			_			10.9	<u> </u>	GP		y graded GRAVEL w		nd nents) with ~30% sand,	
SS -	3.5		_		7	44		Wood	some	silt, wet, strong odor locally.	, heav	y sheen, small NAPL	
-				B64-14-15	_	7.6		ML	Brown	WOOD DEBRIS (lower wood fill) Brown to dark gray, wood debris with 10-15% silty matrix (varies locally), wet, moderate odor, heavy sheen.			
			15 <u>-</u>	B04-14-15		3.4	<u> </u>	SP	\vdash	s locally), wet, model / SILT	ate od	or, neavy sneen.	
										n, sandy silt, moderat	ely stif	ff, wet, slight odor, light	
									Gray,	y graded SAND poorly graded mediu light odor, light sheel		d, moderately dense,	
4				>									

F-40.1 (6-87) (3-88) (8-90)

BORING	BORING LOCATION South of B36 Simpson Property										B65
DRILLIN	IG COMP	PANY				DRIL	LER Noe	el		Boring Name Project Name	Former Tacoma Metals
DRILLIN	IG METH Direc		h			DRIL	DRILL BIT(S) SIZE 2-inch			Project Number	996098*00
ISOLATI	ISOLATION CASING N/A							TO	N/A FT.	ELEVATION AND DATE	UM TOTAL DEPTH
BLANK (BLANK CASING							ТО	FT.	bgs 9.80 ft.	20.0 ft. bgs DATE COMPLETED
SLOTTE	N/A ED CASIN	IG				FRO	N/A N/A FROM TO FT.			10/8/14 INITIAL WATER DEPT	10/8/14
SIZE AN	N/A ND TYPE	OF FILT	TER PAC	K		FRO	N/A M	ТО	N/A FT.	9.0	п(гі)
SEAL	N/A					FRO	N/A N/A FROM TO FT			LOGGED BY DKM	
GROUT		onite (Granul	es			0	TO	20	SAMPLING METHODS	WELL COMPLETION SURFACE HOUSING
	N/A				Т	FRO	N/A	10	N/A FT.	Macrocore w/liner	STAND PIPE FT.
TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
- SS -	2.5		5-	B65-3.5-4.5	-	0.0 0.8 0.1 0.0		SW Wood SM	Brown dense	e, slightly moist, no or	el and some silt, moderately dor, no sheen.
- - - SS -	3			B65-8-9	\ <u>\</u>	0.2		SP/ SM	Poorl Mediu dense Poorl Brown moist	gray, silty sand with so faint odor, no sheen by graded SAND with am gray, medium sand, moist, no odor, no sy graded SAND with the medium to coarse to wet, no odor, no so	silt nd with ~5-10% silt, moderately sheen. gravel sand with ~10-15% gravel, sheen.
014.GPJ KJ PNW.GDT 1/6/15	2		10- - - - 15-			3.3 10.9		Wood	- Dark ~9.5 f debris	eet bgs) to medium of with 10-15% silty market oder and mediur	nes) to medium brown (above gray (below ~9.5 feet bgs), wood atrix (varies locally), wet, m to heavy sheen below ~9.5
OCT 2							*	GP		y graded GRAVEL w gravel (fine grains) w	rith sand vith >30% sand, wet, slight odor,
SS SS	4			B65-17-18		3.5			light s	heen.	, , , , , ,
REA BORING			-			2.9		SP	Gray,		um sand, moderately dense, n.
KJ PNW WK DRAFT B36 AREA BORING LOGS OCT 2014, GPJ KJ PNW.GDT 1/6/15	2.9 wet, slight odor, light sheen.										

F-40.1 (6-87) (3-88) (8-90)

SHEET 1 OF 1

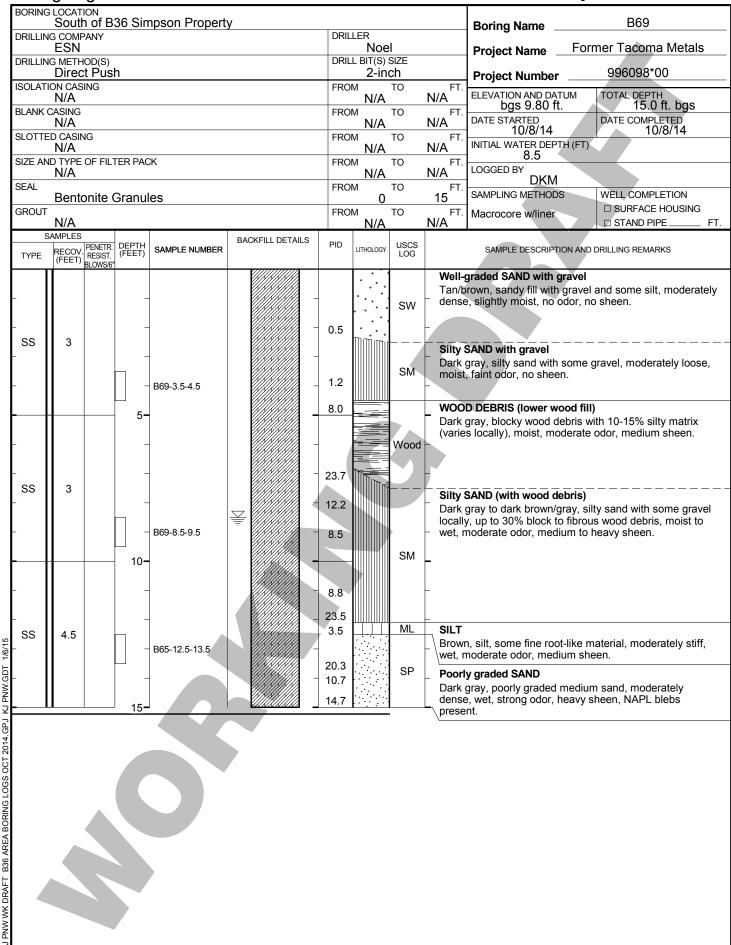
BORING	LOCATI	ON least	of B36	Simpson Pro	Boring Name _	B66					
DRILLING						DRIL	LER No e	el		Project Name _	Former Tacoma Metals
DRILLING		OD(S)	h			DRIL	DRILL BIT(S) SIZE 2-inch			Project Number	996098*00
ISOLATION	ISOLATION CASING N/A							ТО	N/A FT.	ELEVATION AND DAT	TOTAL DEPTH
BLANK CASING N/A							N/A N/A FROM TO FT. N/A N/A			bgs 10.10 ft DATE STARTED	DATE COMPLETED
SLOTTE	D CASIN	G				FRO		ТО	FT.	10/8/14 INITIAL WATER DEPT	10/8/14
SIZE AN	N/A SIZE AND TYPE OF FILTER PACK							ТО	FT.	9.0 LOGGED BY	
SEAL	N/A	••				FRO		ТО	N/A FT.	DKM SAMPLING METHODS	WELL COMPLETION
GROUT		nite (Granul	es		FRO		ТО	15 FT.		☐ SURFACE HOUSING
	N/A AMPLES				BACKFILL DETAILS	<u> </u>	N/A		N/A		☐ STAND PIPE FT.
TYPE	RECOV. (FEET)	PENETR. RESIST. RI OWS/6"	DEPTH (FEET)	SAMPLE NUMBER	B/10/11/12E B2 1/11/20	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
- SS -	2	SLOWS/6	- - 5-		-	1.3 2.8 14.0		SW Wood	WOO Block light s Well-	D DEBRIS (blocky w y wood with no matri sheen.	rel and some silt, moderately dor, no sheen. rood, no matrix) ix material, moist, slight odor, ravel rel and some silt, moderately
- SS -	2.5			B66-8-9	₹	0.5		SM	Brown	rately loose, moist to	ne gravel, some wood debris, o wet, faint odor, no sheen.
SS	3		10- - - - - 15-			38.9 22.6 29.0		Wood	Brown locally sheer samp	y), wet, moderate to s n, NAPL blebs locally	is with 5-15% silty matix (varies strong odor, medium to heavy on water surface in 10-15 foot on wood/silt surfaces.

F-40.1 (6-87) (3-88) (8-90)

BORING	South	neast	of B36	Simpson Pro	Boring Name _	B67					
DRILLIN	ESN					DRIL	Noe			Project Name _	Former Tacoma Metals
DRILLIN	G METH Direc	OD(S)	h			DRIL	DRILL BIT(S) SIZE 2-inch			Project Number	996098*00
ISOLATI	ISOLATION CASING N/A							FROM TO FT		ELEVATION AND DAT	
BLANK (BLANK CASING N/A							ТО	FT.	bgs 10.10 ft DATE STARTED	DATE COMPLETED
SLOTTE	SLOTTED CASING							ТО	FT.	10/8/14 INITIAL WATER DEPT	10/8/14
SIZE AN	N/A SIZE AND TYPE OF FILTER PACK							ТО	N/A FT.	8.5	(. 1)
SEAL	N/A					FRO	<u>N/A</u> M	ТО	N/A FT.	DKM	WELL COMPLETION
GROUT		onite (Granul	es		FRO	<u>О</u> м	ТО	15 FT.	SAMPLING METHODS Macrocore w/liner	WELL COMPLETION ☐ SURFACE HOUSING
s	N/A AMPLES				DACKELL DETAILS		N/A	<u> </u>	N/A	Wadrodore Willie	STAND PIPE FT.
TYPE		PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
-		223400	-		-	0.0		sw	Tan/b	graded SAND with grown, sandy fill with se, slightly moist, no o	gravel, some silt, moderately
SS - -	3		_	B67-4-5	-	0.0		Wood	bgs), mode	wood fill (chips/shavi	gs) to brown (below ~3.5 feet ings/sawdust), no soil matrix, aint odor and light sheen at ~4
- - SS -	3		5 - -	B67-8-9	<u>-</u>	2.2		SM	mater sheer	gray, silty fine sand v ial, moderatly loose, ı.	with up to 20% soft wood moist to wet, faint odor, light
-			10-	B67-9-13	_	0.0		ML	Gray, wet, fa	aint odor and light sh	
SS -	3							Wood	Gray/ matrix	D DEBRIS (lower wo brown, blocky to fibro (varies locally), wet	ood fill) bus wood debris with 5-15% silty , faint odor, very light sheen.

F-40.1 (6-87) (3-88) (8-90)

ng Lo									Kennedy/Jenks Consultani		
South	neast	of B36	Simpson Pro	perty					Boring NameB68		
ESN						Noel			Project Name Former Tacoma Metals		
		h			DRIL	DRILL BIT(S) SIZE 2-inch			Project Number 996098*00		
ISOLATION CASING N/A							ТО	N/A	ELEVATION AND DATUM TOTAL DEPTH		
BLANK CASING N/A							ТО	N/A	bgs 10.40 ft. 15.0 ft. bgs DATE STARTED DATE COMPLETED		
	IG				FRO	М	ТО	N/A	10/8/14 10/8/14 INITIAL WATER DEPTH (FT)		
SIZE AND TYPE OF FILTER PACK						М	ТО	FT.	LOGGED BY		
Bento	onite (Granul	es		FRO	М	ТО	FT.	SAMPLING METHODS WELL COMPLETION		
Γ					FRO	М	ТО	FT.	Macrocore w/liner □ SURFACE HOUSING □ STAND PIPE FT		
SAMPLES	PENETR.	DEPTH	SAMDI E NI IMBED	BACKFILL DETAILS	PID		USCS		SAMPLE DESCRIPTION AND DRILLING REMARKS		
(FEET)	RESIST. BLOWS/6"	(FEET)	SAWFLE NUMBER	V///////		LITHOLOGY	LOG	1 14/ 11			
								Tan/b	graded SAND with gravel prown, sandy fill with gravel and some silt, moderately		
		_					SW	dense	e, slightly moist, no odor, no sheen.		
3		-			0.0	· · · ·	L				
		_			0.2		Wood	Orang	D DEBRIS (upper wood fill) ge to brown-orange, wood fill		
						===		─ loose	s/sawdust/shavings), no soil matrix, moderately noist, faint odor in lower few inches, otherwise no		
		5_	B68-4-5		0.0	_			no sheen. SAND with gravel		
							SM	Dark	gray, silty sand with some gravel, moderately loose, t. faint odor, no sheen.		
		_					$\langle \pi \rangle$	Holst	, raint odor, no sheen.		
3		-			0.0	. ,	GW		graded GRAVEL with sand		
\parallel $$		_			0.0		SM		prown, sandy gravel, moderately loose, moist, faint no sheen.		
		_		₩					SAND . silty fine to medium sand, some wood debris,		
		10-			0.0				erately loose, moist to wet, no odor, no sheen.		
		10				1	D DEBRIS (lower wood fill) n (upper ~2 feet) to dark gray, blocky to fibrous wood				
		_				Wood		debris	s with 10-15% silty matrix (varies locally), wet, no and no sheen above ~11 feet bgs, strong odor and		
$\ \ _{2}$		-			50.3				um sheen below ~11 feet bgs.		
3		_			37.2			-			
			Dog 45		2.2 2.6			Poorl	ly graded SAND		
		15.	в68-13.5-15		4.3		SP	Gray,	, poorly graded medium sand, minor silt, moderately e, wet, slight to moderate odor, light sheen.		
	G LOCATI South South NG COMP ESN NG METH Direc FION CAS N/A	G LOCATION Southeast NG COMPANY ESN NG METHOD(S) Direct Pusl FION CASING N/A CASING N/A ED CASING N/A Bentonite (T N/A SAMPLES RECOV. PENETR. RESIST. (FEET) BLOWS/6*	G LOCATION Southeast of B36 NG COMPANY ESN NG METHOD(S) Direct Push FION CASING N/A CASING N/A ED CASING N/A Bentonite Granul T N/A SAMPLES RECOV PENETR (FEET) BLOWS65 3 3 3 10	G LOCATION Southeast of B36 Simpson Pro NG COMPANY ESN NG METHOD(S) Direct Push FION CASING N/A CASING N/A ED CASING N/A Bentonite Granules T N/A SAMPLES RECOV PENETR (FEET) BLOWS67 B68-4-5 B68-4-5 B68-13.5-15	G LOCATION Southeast of B36 Simpson Property NG COMPANY ESN NG METHOD(S) Direct Push TION CASING N/A CASING N/A Bentonite Granules T N/A SAMPLES RECOV PENTR (FEET) BLOWS6 B68-4-5 B68-4-5 B68-4-5 B68-13.5-15	GLOCATION Southeast of B36 Simpson Property No COMPANY ESN NG METHOD(S) Direct Push ITON CASING N/A CASING N/A BED CASING N/A Bentonite Granules T N/A SAMPLES RECOVI PRESIST (FEET) BLOWSE B68-4-5 B68-4-5	GLOCATION Southeast of B36 Simpson Property No COMPANY ESN NO METHOD(S) Direct Push TON CASING N/A CASING N/A RED CASING N/A ND TYPE OF FILTER PACK N/A Bentonite Granules T RECOV PENETR RECOV	GLOCATION Southeast of B36 Simpson Property No Company ESN No Company Est	GLOCATION Southeast of B36 Simpson Property SCOMPANY ESN NOE NOE NOE NOE NOE NOE NOE		



F-40.1 (6-87) (3-88) (8-90)

		Port Property						Boring Name _	B70
DRILLING COMPAN ESN					DRILLER			Project Name _	Former Tacoma Metals
DRILLING METHODO Direct P	ush			DRILL BIT(S) SIZE 2-inch				Project Number	996098*00
SOLATION CASING N/A				FROI	FROM TO FT. N/A			ELEVATION AND DAT	TOTAL DEPTH
BLANK CASING N/A	FROI	M N/A	ТО	N/A FT.	bgs 7.20 ft. DATE STARTED 10/30/14	DATE COMPLETED 10/30/14			
SLOTTED CASING N/A	FROI	FROM TO FT. N/A N/A			INITIAL WATER DEPT 6.5				
SIZE AND TYPE OF N/A	FILTER PAC	CK		FROI	N/A	ТО	N/A FT.	LOGGED BY DKM	
	e Granul	les		FRO	0	ТО	FT. 10	SAMPLING METHODS	
GROUT N/A				FROI	м N/A	ТО	N/A FT.	Macrocore w/liner	☐ SURFACE HOUSING ☐ STAND PIPE F
TYPE RECOV. RES	TR. DEPTH	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
SS 2	1.0 0 7.8		Wood Wood	Grave Dark I mode WOO	DD DEBRIS (blocky wood, no matrix) n, blocky wood debris, slight odor, no sheen. elly SILT with sand brown, sandy silt with ~10% woody debris, erately soft, moist, no odor, no sheen. DD DEBRIS (lower wood fill) n, blocky wood fill with 10-15% silty matrix material, codor and sheen locally on wood surface above ~9 ogs; otherwise no odor, no sheen.				

										Boring Name _		B71
	IG COMPA					DRIL				Project Name _	Forr	mer Tacoma Metals
DRILLIN	IG METHO Direct	D(S) Pust	า			DRIL	L BIT(S) 2-in			Project Number		996098*00
ISOLATI	ISOLATION CASING N/A							FROM TO FT N/A		ELEVATION AND DAT		TOTAL DEPTH
BLANK (BLANK CASING N/A							ТО	FT.	bgs 10.00 ft		15.0 ft. bgs
SLOTTE	SLOTTED CASING N/A							ТО	FT.	10/30/14 INITIAL WATER DEPT	H (FT)	10/30/14
SIZE AN	ID TYPE C	F FILT	ER PA	ACK		FRO	M N/A	ТО	FT.	8.0 LOGGED BY	-	
SEAL	Bento	nita (2rani	ılee		FRO		ТО	FT.	DKM SAMPLING METHODS		WELL COMPLETION
GROUT		inte C	Jiaiii	uics		FRO	М	ТО	FT.			☐ SURFACE HOUSING ☐ STAND PIPE FT.
	SAMPLES	DENIETD	DEPTH	4	BACKFILL DETAILS	PID	N/A	USCS	IN/A		7	
TYPE	RECOV. F	RESIST. LOWS/6"	DEPTI (FEET	SAMPLE NUMBER	V.////		LITHOLOGY	LOG		SAMPLE DESCRIPTION	<u> </u>	DRILLING REMARKS
- - SS	3.5			_	-	0		SW GP SP	Brown dense	e, slightly moist, no o	el and dor, no	
-				-	_	0		SM	Gray, sheer	angular crushed roc n.	k or co	oncrete, no odor, no
_				B71-4-5		0		SP/	Tan,	y graded SAND poorly graded mediur rately loose, moist, n		d, minor silt and gravel, r, no sheen.
- - SS	3				- - -	0		SM	Dark mode Poorl Dark grave	gray, sand with ~30% silt and 10-15% gravel, erately dense, moist, no odor, possible light sheen. Ty graded SAND with silt gray, medium to coarse sand with 10-15% silt, minor el, some wood debris locally (<10% overall), erately loose, moist, no odor, possible light sheen.		
-			10	B71-8.5-9.5	=	0		SM	Sandy Tan/b	y SILT		ly stiff, moist to wet, no
-			10			0			wet, r	rown, fine sand with	top of	silt, moderately dense, unit; slight odor and light
SS	4			B71-14-15		0		SP	Mediu	y graded SAND ım gray, poorly grade I, moderately dense,		dium sand, minor silt and aint odor, no sheen.

F-40.1 (6-87) (3-88) (8-90)

		west	of B36	6 Simpson Pro	operty		Boring Name _	B72					
DRILLIN	IG COMP	ANY						LER			Project Name _	Former Tacor	na Metals
DRILLIN	G METH Direc	OD(S)	h				DRIL	L BIT(S) 2-in	SIZE ch		Project Number	996098	5 *00
ISOLATI	ON CAS						FRO		ТО	N/A	ELEVATION AND DAT	UM TOTAL DEF	PTH
BLANK (FRO		ТО	N/A FT.	bgs 10.10 ft DATE STARTED	DATE COM	.0 ft. bgs PLETED
SLOTTE	D CASIN	IG					FRO		ТО	FT.	10/30/14 INITIAL WATER DEPT	1	0/30/14
SIZE AN	ID TYPE	OF FILT	TER PAC	K			FRO	M	ТО	FT.	8.0 LOGGED BY		
SEAL							FRO		ТО	N/A FT.	DKM SAMPLING METHODS	WELL COM	IDI ETION
GROUT							FRO	0 M	TO	15 FT.	Macrocore w/liner	☐ SURFAC	CE HOUSING
S	N/A SAMPLES BACKFILL DETAILS BACKFILL DETAILS						DID	N/A		N/A		☐ STAND F	PIPE FT.
TYPE	TYPE RECOV. PENETR. (FEET) BLOWS/61 SAMPLE NUMBER					PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REM	ARKS	
- - SS	3		-			-	0	• • • • • • • • • • • • • • • • • • • •	GW	Brown brick-	graded GRAVEL with a to tan, gravel fill with like fragments locally, no odor, no sheen.	h sand and some	silt, minor se, slightly
-			5 -	B72-4-5		<u>-</u>	0		SP/ SM	Dark some odor,	y graded SAND with gray, sand with 10-20 wood debris locally, no sheen.	0% silt and up to 1	
SS -	4			B72-8-9	\ <u>\</u>		0		ML	Tan/b - mode	y SILT rown, silt with 30% fi rately stiff, moist to v		
- -			10-			-	0			Mediu	y graded SAND ım gray, poorly grade ravel locally, modera ı.		
_ SS 	4.5			B72-13-14		-	0		SP	- -			
			15-		, tawa			• • • •	-				

F-40.1 (6-87) (3-88) (8-90)

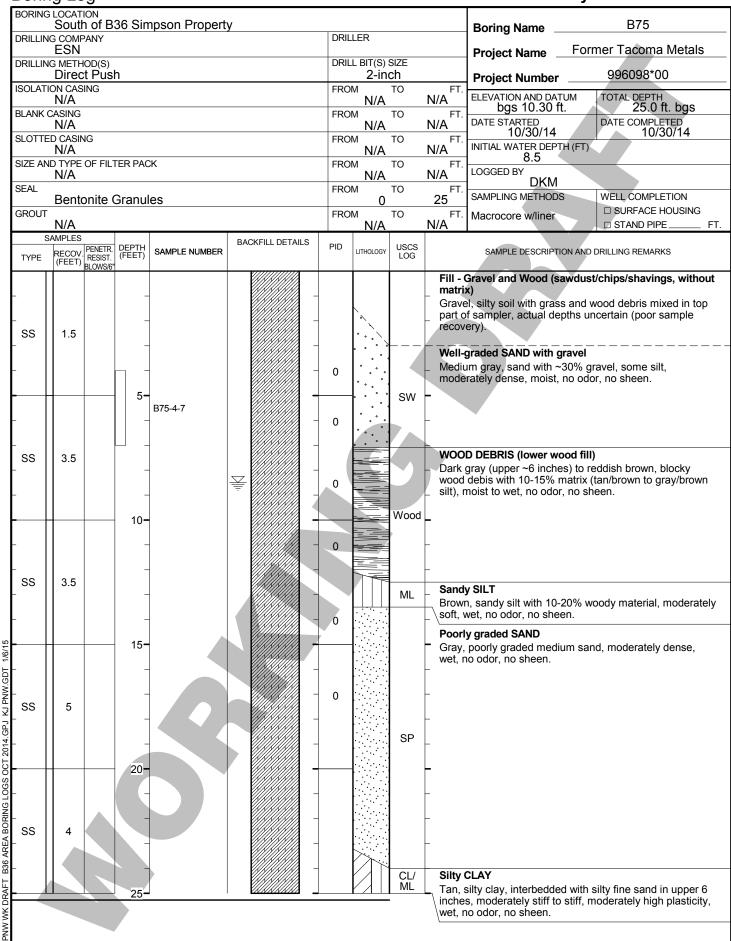
SHEET __1__OF __1__

	ig Lo									Kennedy/Jenks Consultant
BORING	SLOCATI South		36 Sin	npson Property	/		Boring NameB73			
DRILLIN	IG COMP	ANY					LER			Project Name Former Tacoma Metals
DRILLIN	IG METH Direc		h			DRIL	L BIT(S) 2-in	SIZE ch		Project Number 996098*00
ISOLAT	ION CASI N/A	ING				FROM TO FT.			N/A FT.	ELEVATION AND DATUM TOTAL DEPTH
BLANK	CASING N/A					FRO	M N/A	ТО	N/A FT.	bgs 10.50 ft. 15.0 ft. bgs DATE STARTED DATE COMPLETED
SLOTTE	D CASIN	IG				FRO		ТО	N/A FT.	10/30/14 10/30/14 INITIAL WATER DEPTH (FT)
SIZE AN	SIZE AND TYPE OF FILTER PACK N/A						M N/A	ТО	N/A FT.	LOGGED BY
SEAL	SEAL Bentonite Granules						M 0	ТО	FT.	DKM SAMPLING METHODS WELL COMPLETION
GROUT						FRO		ТО	FT.	Macrocore w/liner ☐ SURFACE HOUSING ☐ STAND PIPE FT.
TYPE	SAMPLES	PENETR. RESIST.	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION AND DRILLING REMARKS
- - - SS -	(FEET)	BLOWS/6"	- - - 5-	B73-3.5-4.5	-	0		GW Wood SM	WOO Red/b (chips odor,	graded GRAVEL with sand n, gravel fill with sand and some silt, moderately e, slightly moist, no odor, no sheen. DD DEBRIS (upper wood fill) brown, approximately 2-inch layer of fine wood debris s/sawdust/shavings), no matrix, moderately loose, no no sheen. SAND
SS	4		- - - 10-	B73-9-10	₩	0		SM	Well-q Brown coars no od Silty S Tan/b increa	gray, silty sand with minor gravel, some wood debris y, moderately loose, moist, no odor, no sheen. graded SAND with gravel n changing to gray in lower 3 inches, medium to se sand with 10-20% gravel, moderately dense, moist, dor, no sheen. SAND brown, fine sand with ~30% silt, sand content asses with depth, moderately dense, moist to wet, no no sheen.
- SS -	4		- - - 15			0		SP	Gray, mode	ly graded SAND , poorly graded medium sand with 5-10% silt, erately dense, wet, faint odor below ~14 feet bgs; wise no odor, no sheen.
-										

F-40.1 (6-87) (3-88) (8-90)

	IG LOG								Kenr	iedy/	Jenks Consultar
	South of B	36 Sin	npson Propert	у	DRIL	LER			Boring Name _		B74
	ESN IG METHOD(S)						SIZE		Project Name	For	mer Tacoma Metals
	Direct Pus	<u>h</u>				DRILL BIT(S) SIZE 2-inch			Project Number		996098*00
	ION CASING N/A					FROM TO FT. N/A		ELEVATION AND DA bgs 9.90 fi	TUM	TOTAL DEPTH 12.5 ft. bgs	
	CASING N/A				FRO	M N/A	ТО	N/A	DATE STARTED 10/30/14		DATE COMPLETED 10/30/14
SLOTTED CASING N/A						M N/A	ТО	N/A	INITIAL WATER DEP	TH (FT)	
SIZE AND TYPE OF FILTER PACK N/A						M N/A	ТО	FT. N/A	8.5 LOGGED BY	7	
SEAL	Bentonite (Granul	les		FRO		ТО	12.5 FT.	DKM SAMPLING METHOD	S	WELL COMPLETION
GROUT					FRO	M N/A	ТО	FT. N/A	Macrocore w/liner		☐ SURFACE HOUSING ☐ STAND PIPE F
S	SAMPLES	DEPTH	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS		CAMPLE DESCRIPT	IONI AND	
TYPE	RECOV. PENETR. RESIST. BLOWS/6	DEPTH (FEET)	SAMPLE NUMBER	X/////		LITHOLOGY	LOG			\mathbf{V}	DRILLING REMARKS
						\$.		Grave	graded GRAVEL wi el fill material; depth	uncerta	ain (~3" gravel in sampler
		_	•				GW	above	e wood fill material),	no odo	r, no sheen.
SS	3	-		_			L_				
33		_		_					D DEBRIS (upper w) um brown below ~3.5 fee
		_						bgs, v	vood fill (chips/sawo rately loose, moist,	lust/sha	avings), no matrix,
		_					Wood				agments are mixed with
		5 -					7_	wood	material.		
		-		_				Silty	SAND with gravel		
			-	_				Mediu	ım to dark gray, silty rately dense, moist	/ sand \ to wet,	with some gravel, no odor, no sheen.
SS	2.5	L _					SM		,	•	,
			B74-8-9	\rightleftharpoons	0						
							,	ļ			
		10-		-				Brown	D DEBRIS (lower w n, blocky wood debr	is with	10-15% gray silty matrix,
ss	1.5	_					Wood	wet, n ⊢ bgs.	noderate odor and r	nedium	sheen below ~11 feet
33	1.5	_			0.0						
					6.3	==					
NO 1	TES Refusal at 12.5	feet bo	js.								
			4								
				7							
			7								
·0 1											

F-40.1 (6-87) (3-88) (8-90)



F-40.1 (6-87) (3-88) (8-90)

SHEET __1__OF __1_

	ig LC									eriks Corisultarits
BORING	Sout	n of B36 Sir	mpson Propert	/		Boring Name	B76			
DRILLIN	ESN				DRIL				_	ner Tacoma Metals
DRILLIN	Direc	t Push			DRIL	L BIT(S) 2-in			Project Number	996098*00
ISOLATI	ION CAS N/A	ING			FROM TO FT. N/A N/A				ELEVATION AND DATUM	TOTAL DEPTH
BLANK (FROI	FROM TO FT.			bgs 10.30 ft.	15.0 ft. bgs
SLOTTE	D CASIN	NG			FROI		ТО	N/A FT.	10/30/14 INITIAL WATER DEPTH (FT)	10/30/14
SIZE AN		OF FILTER PA	CK		FROI		ТО	FT.	9.0 LOGGED BY	
SEAL	SEAL FROM TO							FT.	DKM SAMPLING METHODS	WELL COMPLETION
GROUT	Bentonite Granules GROUT N/A						ТО	FT.	Macrocore w/liner	☐ SURFACE HOUSING
S	AMPLES	DEPTH		BACKFILL DETAILS	PID	N/A	USCS	IN/A		-
TYPE	RECOV (FEET)	PENETR. DEPTH RESIST. (FEET) BLOWS/6"	SAMPLE NUMBER		FID	LITHOLOGY	LOG		SAMPLE DESCRIPTION AND D	RILLING REMARKS
_		-	_	_			SW	Tan/b	graded SAND with gravel rown, gravel fill with sand, so s, slightly moist, no odor, no	
- SS -	3.5	-	-	-	0		Wood	Orang brown mode	D DEBRIS (upper wood fill) le/brown (above ~3.8 feet) c large wood fill (chips/sawdust/sh rately loose, no odor, no she	hanging to to dark navings) with no matrix,
<u>-</u>		5-	-	-	0		sw	Gray,	graded SAND with gravel gravelly sand, moderately d	ense, moist, no odor, no
SS - -	4		B76-8-9	¥	0		SP/ SM	Dark	y graded SAND with silt and gray, sand with 10-20% silt a material, moderately dense,	and some gravel, some
- - - SS	1.5	10-					Wood	Browr no od below	D DEBRIS (lower wood fill) a, blocky wood debris with 10 or, no sheen in upper portion ~13.5 feet bgs.	
-	1.5	15-	B76-12-14		0.1			recov	ximately 1 foot thickness of ered in sampler, exact depth en 12-14 feet bgs.	brown, soft, silt a uncertain but estimated
-							•			

F-40.1 (6-87) (3-88) (8-90)

Borin	g Lo	g									Kenn	edy/Jenks C	consultants
BORING	LOCAT	ION	of D26	Simpson Pro	norty.							B77	
DRILLING			OI DOC	Simpson Fro	perty		DRIL	LER			Boring Name _	БП	
	ESN							DDILL DIT(O) OITE			Project Name _	Former Tacor	na Metals
DRILLING		iod(s) i t Pus l	h				DRIL	DRILL BIT(S) SIZE 2-inch			Project Number	996098	*00
ISOLATION	ON CAS		•				FRO	M	TO	FT.	•		
DI ANIIC C	N/A							N/A		N/A	ELEVATION AND DAT bgs 10.20 ft	UM TOTAL DEP	0 ft. bgs
BLANK	BLANK CASING N/A						FRO	M N/A	ТО	N/A FT.	DATE STARTED	DATE COM	PLETED
SLOTTE	SLOTTED CASING						FRO		ТО	FT.	10/30/14 INITIAL WATER DEPT		0/30/14
SIZE ANI	N/A TYPE	OF FILT	TFR PAC	CK			FRO	N/A M	ТО	N/A FT.	9.0	()	
	N/A							N/A		N/A	LOGGED BY DKM		
SEAL	Bentonite Granules				FRO	М 0	TO	FT. 11	SAMPLING METHODS	WELL COM	PLETION		
GROUT	ROUT				FRO	M	ТО	FT.	Macrocore w/liner	□ SURFAC	E HOUSING		
	N/A					N/A		N/A		☐ STAND F	PIPE FT.		
	DE001/	PENETR. RESIST.	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAII	LS	PID	LITHOLOGY	USCS		SAMPLE DESCRIPTION	ON AND DRILLING REM	ARKS
TYPE	(FEET)	RESIST. BLOWS/6"	(1 LL1)						LOG				
								\$.		1	graded GRAVEL with an oray of the gravel fill with sand		odor no
-			-			+				sheer		and some siit, no	odor, no
									GW				
SS	2		_										
	-		_			4							- — — — — — -
									Wood		D DEBRIS (upper wo n/orange (above ~3.5	,	hrown wood
-			-			\exists	0	==	Wood	debris	(chips/sawdust/sha	vings) with no mat	
			_							\	rately loose, no odor	, no sheen.	
			5 -			1				_	SAND with gravel		
-			_			4					gray, silty sand with s , moderately soft to		
									SM	locally), moist to wet, sligh		
-			-			+				sheer	l.		
SS	3			D75 7 5 0 5			0.8	N		ľ			
				B75-7.5-8.5		1							
-			_		¥ ////////	-				woo	D DEBRIS (lower wo	od fill)	
					-		0.2		l.,,	Brown	n, blocky wood debris	,	matrix, wet,
-			10-			7			Wood	no od	or, no sheen.		
SS	1		_										
NOT	ES							-	-				
		at 11 fe	et bas.				7						

1. Refusal at 11 feet bgs.

F-40.1 (6-87) (3-88) (8-90)

KJ PNW WK DRAFT B36 AREA BORING LOGS OCT 2014.GPJ KJ PNW.GDT 1/6/15

	ig Lo									Kennedy/Jenks Consultants
		of B3	6 Simp	son Property						Boring NameB78
DRILLIN	IG COMP	PANY					LER			Project Name Former Tacoma Metals
DRILLIN	IG METH	OD(S) t Pusl	h			DRIL	DRILL BIT(S) SIZE 2-inch			Project Number 996098*00
ISOLAT	ION CAS N/A	ING				FRO	FROM TO FT. N/A N/A			ELEVATION AND DATUM TOTAL DEPTH
BLANK	CASING N/A					FRO	FROM TO FT.			bgs 10.60 ft. 15.0 ft. bgs DATE STARTED DATE COMPLETED
SLOTTE	ED CASIN N/A	IG				FRC	FROM TO FT.			10/30/14 10/30/14 INITIAL WATER DEPTH (FT)
SIZE AN	SIZE AND TYPE OF FILTER PACK N/A						M N/A	ТО	FT.	9.5 LOGGED BY
SEAL						FRC		ТО	FT.	DKM SAMPLING METHODS WELL COMPLETION
GROUT					FRO		ТО	FT.	Macrocore w/liner □ SURFACE HOUSING □ STAND PIPE FT.	
5	SAMPLES	DENETD	DEPTH		BACKFILL DETAILS	PID		USCS	IN/A	
TYPE	RECOV. (FEET)	RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	V/////		LITHOLOGY	USCS LOG		SAMPLE DESCRIPTION AND DRILLING REMARKS
-			-		-			GW	Grave	graded GRAVEL with sand el fill with sand and some silt (suspected based on a surface, but not recovered in sampler).
SS - -	2.5		-		-	0			Browr browr	D DEBRIS (upper wood fill) n/orange (above ~4.5 feet bgs) changing to dark n, wood debris (chips/sawdust/shavings) with no x, moderately loose, no odor, no sheen.
			5 -		-			Wood	_	
- SS -	3		_	B78-7.5-9	-	0		SM	Dark	SAND brown to dark gray, silty sand with 10-15% wood s, moderately loose, moist to wet, no odor, no sheen.
-			10 -		¥ -			Wood	Brown locally	D DEBRIS (lower wood fill) n, wood debris with 20-30% silty matrix (varies y), wet, medium to heavy sheen and medium odor v~9.5 feet bgs.
SS -	2.5		15-	B78-14-15		0	T	ML	Brown	(with wood debris) n with silvery appearance locally, silt with up to 30% debris, soft, wet, medium to heavy sheen, medium

F-40.1 (6-87) (3-88) (8-90)

SHEET __1__OF __1__

BORING	East	of B3	6 Simp	son Property			Boring Name _	B79					
DRILLIN	G COMF ESN	PANY				DRIL				Project Name _	Former Tacoma Metals		
DRILLIN	G METH Direc	OD(S)	h			DRIL	L BIT(S) 2-i n	SIZE I ch		Project Number	996098*00		
ISOLATI						FRO		TO	N/A FT.	ELEVATION AND DAT	UM TOTAL DEPTH		
BLANK (FRO	М	ТО	FT.	bgs 10.80 ft DATE STARTED	DATE COMPLETED		
SLOTTE	D CASIN	1G				FRO		ТО	FT.	10/30/14 INITIAL WATER DEPT	10/30/14		
SIZE AN		OF FIL	TER PAC	K		FRO		ТО	N/A FT.	9.3			
SEAL	N/A					FRO	<u>N/A</u> M	ТО	N/A FT.	LOGGED BY DKM			
GROUT	Bentonite Granules GROUT							TO	15 FT.	SAMPLING METHODS Macrocore w/liner	WELL COMPLETION SURFACE HOUSING		
	N/A SAMPLES BACKELL DETAILS						м <u>N/A</u>		N/A	Wacrocore Willier	STAND PIPE FT.		
TYPE	DEPTH SAMPLE NUMBER				PID	LITHOLOGY	USCS LOG			ON AND DRILLING REMARKS			
_			-					SW	Brown	graded SAND with g n, fill gravel with sand ly moist, no odor, no	I, <10% silt, moderately dense,		
SS -	5		-			0.3		Wood	Orang		ood fill) is (chips/sawdust/shavings) with e, no odor, no sheen.		
			5 -			0		SM	_ Brown	SAND with gravel n, sitly sand with som rately loose, moist, n	ne gravel and wood debris, no odor, no sheen.		
- - SS -	5			B79-7.5-8.5		0		SP/ SM	Dark s	Poorly graded SAND with silt Dark gray, sand with 10-15% silt, some wood debris, minor gravel, moderately loose, moist to wet, no odor, no sheen.			
- -			10 -		¥	0			Brown	y), soft, wet, slight to	ebris) 80% wood debris overall (varies moderate odor locally, light		
SS -	5			B79-12-14		0 0		ML	_				
0.4								SP	_ Medi∟	y graded SAND um gray, poorly grade e, wet, heavy sheen a	ed medium sand, moderately		

F-40.1 (6-87) (3-88) (8-90)

SHEET 1 OF 1

			Simpson Pro	Boring Name	B80					
DRILLIN	G COMPANY ESN	1			DRIL				Project Name _	Former Tacoma Metals
DRILLIN	G METHOD(S) ush			DRIL	L BIT(S) 2-in	SIZE ch		Project Number	996098*00
ISOLATI	ON CASING N/A	-			FRO		ТО	N/A FT.	ELEVATION AND DAT	UM TOTAL DEPTH
BLANK (FRO		ТО	FT.	bgs 10.10 ft DATE STARTED	DATE COMPLETED
SLOTTE	D CASING				FRO	М	ТО	FT.	10/30/14 INITIAL WATER DEPTI	10/30/14
SIZE AN	N/A D TYPE OF I	FILTER PAC	CK		FRO		ТО	N/A FT.	8.0 LOGGED BY	
SEAL	N/A				FRO	<u>N/A</u> M 0	ТО	N/A FT.	DKM	WELL COMPLETION
GROUT	Bentonite Granules GROUT						ТО	15 FT.	SAMPLING METHODS Macrocore w/liner	WELL COMPLETION SURFACE HOUSING
S	N/A SAMPLES			DAOMENT DETAILO	FRO	N/A	<u> </u>	N/A	Wadrodore Willier	STAND PIPE FT.
TYPE	DECOV PENETR. DEPTH SAMPLE NUMBER						USCS LOG		SAMPLE DESCRIPTION	ON AND DRILLING REMARKS
ss -	2.5	5-	B80-4-5 B80-8-9		0		SP/ SM/	Poorly Mediusilt, so wet, n WOO	chips, moderately local chips,	wn, medium sand with 10-20% ally, moderately dense, moist to od fill) s with 10-15% soft brown silt
- - SS	4		B80-12-13		0		SP/ SM	matrix Poorl Browr grave odor.	y graded SAND with n, medium to coarse l, moderately dense,	ieen. — — — — — — — — — — — — — — — —
- -		15-		-	0		ML	Brown	(with wood debris) n, silt with 50-70% woght sheen locally.	ood debris, soft, wet, faint odor

F-40.1 (6-87) (3-88) (8-90)

SHEET __1__OF __1_

AECOM Appendix B FS Addendum

Appendix B.
Data Validation Report

Memorandum

AECOM 1501 4th Ave Suite 1400 Seattle, WA 98101 www.aecom.com 206 438 2700 tel 866 495 5288 fax

То	Paul Kalina, Project Manager	Info	FINAL
	Summary Data Quality Review		
	IP – Tacoma Metals		
	Soil Sampling – October 2014		
Subject	ALS Laboratory Groups K1505210		
	Lucy A. Panteleeff, Chemist		
From	Amy L. Dahl, Chemist		
Date	June 24, 2015		

The summary data quality review of 6 soil samples collected October 7 through October 30, 2014 has been completed. The samples were submitted to the ALS Environmental (ALS) laboratory located in Kelso, Washington. Samples were analyzed for ultra low-level polycyclic aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Method 8270D modified by selected ion monitoring (SIM) and total solids (TS) by EPA Method 160.3. Select samples were analyzed for total petroleum hydrocarbons (TPH, diesel and residual range) by Washington State Department of Ecology (Ecology) Method NWTPH-Dx. The analyses were performed in general accordance with methods specified in EPA's Test Methods for Evaluating Solid Waste (SW-846), Ecology's Analytical Methods for Petroleum Hydrocarbons, June 1997, and Standard Methods for the Examination of Water and Wastewater. For this report, the sample identifications do not include the sampling date suffix. The following samples are associated with ALS laboratory group K1505210:

Sample ID	ALS ID	Parameters
B-58-S-4-100714	K1505210-001	PAHs, TS
B-69-5-4.5-100814	K1505210-002	PAHs, TS
B-49-S-7-100714	K1505210-003	PAHs, TPH, TS
B-50-S-4-100714	K1505210-004	PAHs, TS
B-55-S-4-100714	K1505210-005	PAHs, TS
B-77-S-5-103014	K1505210-006	PAHs, TPH, TS

Upon receipt by ALS, the sample jar information was compared to the associated chain-of-custody (COC). The cooler and cooler blank temperatures were recorded as part of the check-in procedure. One cooler temperature (-0.6°C) was outside the EPA-recommended limits of greater than 0°C and less than or equal to 6°C. Data were not qualified based on the cooler temperature.

Data validation is based on method performance criteria and quality control (QC) criteria as documented in the *Sampling and Analysis Plan (SAP)*, *Area E Additional Investigation*, *Near Tacoma Metals Property*, *Tacoma*, *Washington*, *October 2014* and current ALS control limits. The laboratory provided EPA Contract Laboratory Program-equivalent validatable data packages. For the summary quality assurance (QA) review, holding times, instrument performance, initial and continuing calibrations, method blanks, surrogate recoveries, laboratory control sample (LCS) results, matrix duplicate results, matrix spike/matrix spike duplicate (MS/MSD) results, and reporting limits were reviewed to assess compliance with applicable methods. Calculation checks and review of the raw data were not included in the data review. If data qualification was required, data were qualified in accordance with *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, June 2008 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, January 2010.

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Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

The data reported for laboratory group K1505210 applies to a subset of samples collected in October 2014 by AECOM that were splits of samples collected by Kennedy Jenks and fills a gap in the data (refer to the main text of the Feasibility Study Addendum for additional information). Additional data for a subset of these sample splits was reported by ALS in November 2014 as part of laboratory groups K1411111 and K1411112. As the analytical results of the split samples reported in November 2014 confirmed the Kennedy Jenks data, no data from K1411111 or K1411112 were reported except for dibenzofuran, which was not analyzed for the samples collected by Kennedy Jenks. A streamlined data review was performed for the dibenzofuran data associated with laboratory groups K1411111 and K1411112 covering the QA elements identified above but will not be discussed further in this report. No validation qualifiers for dibenzofuran results were warranted based on this review.

A summary of qualifiers assigned to results in these laboratory groups are included in Table 1. Qualifiers that may be assigned to results include:

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR Do Not Report. Another result is available that is more reliable or appropriate.

Organic Analyses

Samples were analyzed for TPH and PAHs by the methods identified in the introduction to this report.

1. Holding Times – Acceptable except as noted below:

<u>General</u> – At the request of AECOM, samples were analyzed several months outside of holding time. All data were qualified as estimated and flagged 'J' based on holding time exceedances.

PAHs by Method 8270D-SIM – B-69-S-4.5 was originally analyzed on October 27, 2014 and reported with laboratory group K1411111. The percent differences between the results for B-69-S-4.5 reported with laboratory group K1505210 and the original analysis varied from 6% to 69%. Therefore, the PAH results reported out of holding time for laboratory group K1505210 should be considered qualitative and should not be used to assess compliance with action levels.



Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

- 2. Instrument Performance (Tunes applicable to PAHs only) Acceptable
- 3. Initial Calibrations Acceptable
- Continuing Calibrations Acceptable except as noted below:

<u>PAHs by Method 8270D-SIM</u> – The percent differences for the following PAHs were outside the control limits of +/- 20% in several continuing calibration verifications.

Analysis Date:	Analyte	% Difference
June 1, 2015	Pyrene	26%
	Terphenyl-d14	24%
June 3, 2015	Benzo(g,h,i)perylene	-23%
June 4, 2015	Dibenz(a,h)anthracene	-24%
	Benzo(g,h,i)perylene	-24%

The data were not qualified based on the surrogate (terphenyl-d14) outlier. As dibenz(a,h)anthracene and benzo(g,h,i)perylene were not reported from the analysis on June 4, 2015, no data were qualified based on these continuing calibration verification results. The results for pyrene in samples B-58-S-4, B-69-4.5, and B-77-S-5 and benzo(g,h,i)perylene in samples B-49-S-7, B-50-S-4, and B-55-S-4 were qualified based on holding time exceedances; therefore, no further qualification was necessary.

- 5. Blanks Acceptable
- 6. Surrogates Acceptable except as noted below:

<u>NWTPH-Dx</u> – The percent recoveries of o-terphenyl (771%) and n-triacontane (0%) in B-77-S-5 were outside the control limits of 50-150%. As the diesel-range and residual-range TPH results for B-77-S-5 were qualified based on holding time exceedances, no further qualification was necessary.

<u>PAHs by Method 8270D-SIM</u> – The percent recoveries for several surrogates were outside the control limits in the following samples due to high PAH concentrations:

Sample ID	Fluorene-d10	Fluoranthene-d10	Terphenyl-d14		
Control Limits:	17-104%	27-106%	35-109%		
B-58-S-4	141%	110%	360%		
B-69-S-4.5	215%	ok	693%		
B-77-S-5	581%	338%	890%		
B-58-S-4 (MS)	176%	118%	334%		
B-58-S-4 (MSD)	159%	ok	275%		

ok -recovery was within control limits



Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

As the PAH results for these samples were qualified based on holding time exceedances, no further qualification was necessary.

- 7. Internal Standards (applicable to PAHs only) Acceptable
- 8. Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD) Acceptable
- 9. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Acceptable except as noted below:

<u>NWTPH-Dx</u> – An MS/MSD was not performed in association with this analysis. Precision was assessed using the duplicate results. Accuracy was assessed using the LCS results.

<u>PAHs by Method 8270D-SIM</u> – An MS/MSD was performed using B-58-S-4. The percent recoveries for all the PAHs and several relative percent differences were outside control limits.

As the concentrations for all PAHs in B-58-S-4 were more than four times the spike concentration and the PAH results were qualified based on holding time exceedances, data were not qualified for PAHs based on these MS/MSD results.

10. Laboratory Duplicate – Acceptable where applicable

<u>NWTPH-Dx</u> – A laboratory duplicate was performed using a sample from an unrelated project. Results were comparable.

11. Reporting Limits – Acceptable

<u>General</u> – The results for one or more organic analytes were flagged 'D' by the laboratory to indicate that the result was reported from a dilution of the sample. No additional qualifiers are necessary based on the 'D' qualifier assigned by the laboratory.

<u>NWTPH-Dx</u> – The results for diesel-range and/or residual-range TPH in all samples were flagged 'Z', 'to indicate that the chromatographic fingerprint did not resemble a petroleum product. No additional qualifiers are necessary based on the 'Z' qualifiers assigned by the laboratory.

Conventional Parameter

The samples were analyzed for total solids by EPA Method 160.3.

- 1. Holding Times Acceptable
- Laboratory Duplicate Acceptable

A laboratory duplicate was performed using B-58-S-4-100714. Results were comparable.

Reporting Limits – Acceptable

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Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

Overall Assessment

The data reported in this laboratory group, as qualified, are considered to be usable for meeting project objectives. The completeness for laboratory group K1505210 is 100%.



Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

Table 1. Summary of Qualified Data

Sample ID	Laboratory ID	Analyte	Laboratory	Units	Final
B-58-S-4	K1505210-001	1 Mathylpanhthalana	Result 3,100	a/l/a	Result 3,100 J
D-30-3-4	K1505210-001	1-Methylnaphthalene		ug/Kg	3,400 J
		2-Methylnaphthalene	3,400	ug/Kg	
		Acenaphthene	13,000	ug/Kg	13,000 J
		Acenaphthylene	3,900	ug/Kg	3,900 J
		Anthracene	51,000	ug/Kg	51,000 J
		Benz(a)anthracene	110,000	ug/Kg	110,000 J
		Benzo(a)pyrene	130,000	ug/Kg	130,000 J
		Benzo(b)fluoranthene	170,000	ug/Kg	170,000 J
		Benzo(g,h,i)perylene	59,000	ug/Kg	59,000 J
		Benzo(k)fluoranthene	59,000	ug/Kg	59,000 J
		Chrysene	210,000	ug/Kg	210,000 J
		Dibenz(a,h)anthracene	17,000	ug/Kg	17,000 J
		Dibenzofuran	7,700	ug/Kg	7,700 J
		Fluoranthene	150,000	ug/Kg	150,000 J
		Fluorene	10,000	ug/Kg	10,000 J
		Indeno(1,2,3-cd)pyrene	65,000	ug/Kg	65,000 J
		Naphthalene	3,800	ug/Kg	3,800 J
		Phenanthrene	71,000	ug/Kg	71,000 J
		Pyrene	170,000	ug/Kg	170,000 J
B-69-S-4.5	K1505210-002	1-Methylnaphthalene	2,200	ug/Kg	2,200 J
		2-Methylnaphthalene	3,100	ug/Kg	3,100 J
		Acenaphthene	6,500	ug/Kg	6,500 J
		Acenaphthylene	3,400	ug/Kg	3,400 J
		Anthracene	64,000	ug/Kg	6,4000 J
		Benz(a)anthracene	140,000	ug/Kg	140,000 J
		Benzo(a)pyrene	220,000	ug/Kg	220,000 J
		Benzo(b)fluoranthene	270,000	ug/Kg	270,000 J
		Benzo(g,h,i)perylene	94,000	ug/Kg	94,000 J
		Benzo(k)fluoranthene	91,000	ug/Kg	91,000 J
		Chrysene	290,000	ug/Kg	290,000 J
		Dibenz(a,h)anthracene	27,000	ug/Kg	27,000 J
		Dibenzofuran	2,200	ug/Kg	2,200 J
		Fluoranthene	150,000	ug/Kg	150,000 J
		Fluorene	6,000	ug/Kg	6,000 J
		Indeno(1,2,3-cd)pyrene	100,000	ug/Kg	100,000 J
		Naphthalene	2,200	ug/Kg	2,200 J
		Phenanthrene	20,000	ug/Kg ug/Kg	20,000 J
			· ·		
		Pyrene	180,000	ug/Kg	180,000 J

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Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

Sample ID	Laboratory ID	Analyte	Laboratory Result	Units	Final Result
B-49-S-7	K1505210-003	1-Methylnaphthalene	96	ug/Kg	96 J
		2-Methylnaphthalene	180	ug/Kg	180 J
		Acenaphthene	74	ug/Kg	74 J
		Acenaphthylene	110	ug/Kg	110 J
		Anthracene	960	ug/Kg	960 J
		Benz(a)anthracene	1,100	ug/Kg	1,100 J
		Benzo(a)pyrene	2,700	ug/Kg	2,700 J
		Benzo(b)fluoranthene	3,700	ug/Kg	3,700 J
		Benzo(g,h,i)perylene	1,300	ug/Kg	1,300 J
		Benzo(k)fluoranthene	780	ug/Kg	780 J
		Chrysene	4,000	ug/Kg	4,000 J
		Dibenz(a,h)anthracene	430	ug/Kg	430 J
		Dibenzofuran	130	ug/Kg	130 J
		Fluoranthene	920	ug/Kg	920 J
		Fluorene	74	ug/Kg	74 J
		Indeno(1,2,3-cd)pyrene	1,500	ug/Kg	1,500 J
		Naphthalene	330	ug/Kg	330 J
		Phenanthrene	630	ug/Kg	630 J
		Pyrene	1,500	ug/Kg	1,500 J
		Diesel-range TPH	160	mg/Kg	160 J
		Residual-range TPH	2,000	mg/Kg	2,000 J
3-50-S-4	K1505210-004	1-Methylnaphthalene	43	ug/Kg	43 J
		2-Methylnaphthalene	69	ug/Kg	69 J
		Acenaphthene	31	ug/Kg	31 J
		Acenaphthylene	26	ug/Kg	26 J
		Anthracene	82	ug/Kg	82 J
		Benz(a)anthracene	150	ug/Kg	150 J
		Benzo(a)pyrene	300	ug/Kg	300 J
		Benzo(b)fluoranthene	440	ug/Kg	440 J
		Benzo(g,h,i)perylene	230	ug/Kg	230 J
		Benzo(k)fluoranthene	140	ug/Kg	140 J
		Chrysene	480	ug/Kg	480 J
		Dibenz(a,h)anthracene	73	ug/Kg	73 J
		Dibenzofuran	33	ug/Kg	33 J
		Fluoranthene	290	ug/Kg	290 J
		Fluorene	25	ug/Kg	25 J
		Indeno(1,2,3-cd)pyrene	220	ug/Kg	220 J
		Naphthalene	100	ug/Kg	100 J
		Phenanthrene	140	ug/Kg	140 J
		Pyrene	440	ug/Kg	440 J

AECOM

Summary Data Quality Review IP – Tacoma Metals Soil Sampling – October 2014 ALS Laboratory Group K1505210

Sample ID	Laboratory ID	Analyte	Laboratory Result	Units	Final Result
		2-Methylnaphthalene	24	ug/Kg	24 J
		Acenaphthene	10	ug/Kg	10 J
		Acenaphthylene	6	ug/Kg	6 J
		Anthracene	11	ug/Kg	11 J
		Benz(a)anthracene	33	ug/Kg	33 J
		Benzo(a)pyrene	44	ug/Kg	44 J
		Benzo(b)fluoranthene	67	ug/Kg	67 J
		Benzo(g,h,i)perylene	28	ug/Kg	28 J
		Benzo(k)fluoranthene	21	ug/Kg	21 J
		Chrysene	75	ug/Kg	75 J
		Dibenz(a,h)anthracene	8	ug/Kg	8 J
		Dibenzofuran	15	ug/Kg	15 J
		Fluoranthene	67	ug/Kg	67 J
		Fluorene	8.9	ug/Kg	8.9 J
		Indeno(1,2,3-cd)pyrene	28	ug/Kg	28 J
		Naphthalene	39	ug/Kg	39 J
		Phenanthrene	63	ug/Kg	63 J
		Pyrene	83	ug/Kg	83 J
B-77-S-5-103014	K1505210-006	1-Methylnaphthalene	45,000	ug/Kg	45,000 J
		2-Methylnaphthalene	16,000	ug/Kg	16,000 J
		Acenaphthene	540,000	ug/Kg	540,000 J
		Acenaphthylene	30,000	ug/Kg	30,000 J
		Anthracene	380,000	ug/Kg	380,000 J
		Benz(a)anthracene	320,000	ug/Kg	320,000 J
		Benzo(a)pyrene	240,000	ug/Kg	240,000 J
		Benzo(b)fluoranthene	300,000	ug/Kg	300,000 J
		Benzo(g,h,i)perylene	110,000	ug/Kg	110,000 J
		Benzo(k)fluoranthene	110,000	ug/Kg	110,000 J
		Chrysene	420,000	ug/Kg	420,000 J
		Dibenz(a,h)anthracene	31,000	ug/Kg	31,000 J
		Dibenzofuran	330,000	ug/Kg	330,000 J
		Fluoranthene	1,300,000	ug/Kg	1,300,000 J
		Fluorene	380,000	ug/Kg	380,000 J
		Indeno(1,2,3-cd)pyrene	120,000	ug/Kg	120,000 J
		Naphthalene	21,000	ug/Kg	21,000 J
		Phenanthrene	1,800,000	ug/Kg	1,800,000 J
		Pyrene	1,000,000	ug/Kg	1,000,000 J
		Diesel-range TPH	140,000	mg/Kg	140,000 J
		Residual-range TPH	140,000	mg/Kg	140,000 J

AECOM Appendix C FS Addendum

Appendix C. Laboratory Reports



November 10, 2014

1501 4th Ave., Suite 1400 Seattle, WA 98101 ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: 1-360-577-7222 F: 1-360-636-1068 www.alsglobal.com

Analytical Report for Service Request No: K1411111

RE: IP Tacoma Metals/33764085

Dear Paul:

Paul Kalina URS Corporation

Enclosed are the results of the sample(s) submitted to our laboratory on October 9, 2014. For your reference, these analyses have been assigned our service request number **K1411111**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3375. You may also contact me via email at Janet.Malloch@alsglobal.com.

Respectfully submitted,

and mallock

ALS Group USA Corp. dba ALS Environmental

Janet Malloch Project Manager

Page 1 of __1337

ALS ENVIRONMENTAL

Client:URS CorporationService Request No.:K1411111Project:IP Tacoma Metals/33764085Date Received:10/09/14

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Envi ronmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When a ppropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five soil samples were received for analysis at ALS Environmental on 10/09/14. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Diesel and Residual Range Organics by NWTPH-Dx

Elevated Detection Limits:

Several samples required dilution due to the presence of elevated levels of non-target analyte. The reporting limits were adjusted to reflect the dilution.

Surrogate Exceptions:

The control criteria for o-Te rphenyl or n-Triacontane in several samples were not applicable. The analysis of the samples required a dilution, which resulted in a surrogate concentration below the reporting limit. No further corrective action was appropriate.

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) criterion for the replicate analysis of Residual Range Organics (RRO) in sample was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

Sample Notes and Discussion:

The samples did not resemble Stoddard solvent or a petroleum product.

No other anomalies associated with the analysis of these samples were observed.

Gasoline Range Organics by NWTPH-Gx

No anomalies associated with the analysis of these samples were observed.

Approved by ganet mallock

Volatile Organic Compounds by EPA Method 8260

Calibration Verification Exceptions:

The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS13\1021F003.D: Chloromethane. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are a llowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

The ALS control criterion for the following analyte was not met in Continuing Calibration Verification (CCV) MS13\1021F003.D: Dichlorodifluoromethane. In accordance with ALS standard operating procedures, an MRL check standard containing the analyte of concern was analyzed each day of analysis. The MRL check standard verifies instrument sensitivity was ade quate to detect the analyte at the MRL on the day of analysis. Because the sensitivity was shown to be adequate to detect the compound in question, and the field samples analyzed in this sequence did not contain the analyte in question, the data quality has not been significantly affected. No further corrective action was taken.

No other anomalies associated with the analysis of these samples were observed.

Polynuclear Aromatic Hydrocarbons by EPA Method 8270

Calibration Verification Exceptions:

The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS07\1028F002.D: Fluoranthene. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are a llowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

No other anomalies associated with the analysis of these samples were observed.

Approved by ganet mallock____

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Cooler Receipt and Preservation Form

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1. Sample 2. Sample	es were rece es were rece ustody seal	eived in: (ci	Mail	Fed Ex Cooler NA	UPS Box	DHI Envel	L P lope		urier	Hand	d Delivered		NA	
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5. Were c	ustody pap	ers properly	y filled out	Bubble Wi	l, etc.)?			e Dry Ice	Slee	eves _		NA NA	(D) (N)	N
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9. Were a	ppropriate	bottles/con	tainers and	volumes re	ceived for	the tests	indica	ted?				NA	\bigcirc	N
10. Were	the pH-pres	erved bottl	es (see SMC	O GEN SOP)	received a	t the app	ropriat	te pH? Indi	cate in	the tab	le below	NA	Y	N
11. Were	VOA vials	received w	ithout head	space? Ind	icate in the	table be	elow.				•	NA	Y	N
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Analytical Report

Client: URS Corporation

Service Request: K1411111 **Date Collected:** 10/8/14 **Project:** IP Tacoma Metals/33764085

Sample Matrix: Soil

Analysis Method:

Prep Method:

Units: Percent

Date Received: 10/9/14

160.3 Modified None Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
<u> </u>						
B-69-S-4.5-100814	K1411111-003	74.3	-	1	10/22/14 11:41	
B-69-S-8.5-100814	K1411111-004	50.6	-	1	10/22/14 11:41	
B-69-S-12.5-100814	K1411111-005	79.9	-	1	10/22/14 11:41	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: **URS** Corporation Service Request: K1411111

Project IP Tacoma Metals/33764085 Date Collected: 10/08/14 **Date Received:** 10/09/14

Sample Matrix:

Soil

Date Analyzed: 10/22/14

Replicate Sample Summary

General Chemistry Parameters

Sample Name:

B-69-S-12.5-100814

Units: Percent

Lab Code:

K1411111-005

Basis: As Received

Duplicate

Sample K1411111-

Sample

005DUP

Analyte Name Analysis Method

Result **MRL** 79.9

Result

RPD RPD Limit Average

Solids, Total

160.3 Modified

78.0

79.0

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:14-0000308427 rev 00

QA/QC Report

Client: URS Corporation Service Request: K1411111

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Surrogate Recovery Summary Diesel and Residual Range Organics

Extraction Method:EPA 3550BUnits:PercentAnalysis Method:NWTPH-DxLevel:Low

Sample Name	Lab Code	Sur1	Sur2
B-69-S-4.5-100814	K1411111-003	106 D #	285 D #
B-69-S-8.5-100814	K1411111-004	191 D *	103 D
B-69-S-12.5-100814	K1411111-005	134 D	117 D
Batch QC	K1411494-003	87 D	100 D
Batch QCDUP	KWG1414518-1	37 D *	40 D *
Method Blank	KWG1414518-5	82	87
Lab Control Sample	KWG1414518-4	84	86

Surrogate Recovery Control Limits (%)

Sur1 = o-Terphenyl 50-150 Sur2 = n-Triacontane 50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

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 Form 2A - Organic
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 1 of
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 SuperSet Reference:
 RR172453

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix:

Solid

Service Request: K1411111

Date Collected: NA Date Received: NA

Diesel and Residual Range Organics

Sample Name: Method Blank Lab Code: KWG1414518-5

Extraction Method:

EPA 3550B

Analysis Method: NWTPH-Dx

Units:	mg/Kg
Basis:	Dry

Level: Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	25	1	10/21/14	10/31/14	KWG1414518	
Residual Range Organics (RRO)	ND U	99	1	10/21/14	10/31/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	82	50-150	10/31/14	Acceptable
n-Triacontane	87	50-150	10/31/14	Acceptable

Comments:

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Analytical Results

Client: URS Corporation

NWTPH-Dx

Service Request: K1411111 IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Project: Date Received:** 10/09/2014

Sample Matrix: Soil

Analysis Method:

Diesel and Residual Range Organics

Sample Name: B-69-S-4.5-100814 Units: mg/Kg Lab Code: K1411111-003 Basis: Dry **Extraction Method:** EPA 3550B Level: Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	6500 DZ	1400	20	10/21/14	11/01/14	KWG1414518	
Residual Range Organics (RRO)	27000 DZ	5400	20	10/21/14	11/01/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	106	50-150	11/01/14	Acceptable
n-Triacontane	285	50-150	11/01/14	Outside Control Limits

Comments:

Printed: 11/05/2014 Form 1A - Organic 1 of 1 14:31:59 Page SuperSet Reference: RR172453

Analytical Results

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Project: Sample Matrix: Date Received:** 10/09/2014 Soil

Diesel and Residual Range Organics

Sample Name: B-69-S-8.5-100814 Units: mg/Kg Lab Code: K1411111-004 Basis: Dry **Extraction Method:** EPA 3550B Level: Low

Analysis Method: NWTPH-Dx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	49000 DZ	740	5	10/21/14	10/31/14	KWG1414518	
Residual Range Organics (RRO)	22000 DZ	3000	5	10/21/14	10/31/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	191	50-150	10/31/14	Outside Control Limits
n-Triacontane	103	50-150	10/31/14	Acceptable

Comments:

Printed: 11/05/2014 Form 1A - Organic 1 of 1 14:32:03 Page SuperSet Reference: RR172453

Analytical Results

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Project:**

Sample Matrix: Soil **Date Received:** 10/09/2014

Diesel and Residual Range Organics

Sample Name: B-69-S-12.5-100814 Units: mg/Kg Lab Code: K1411111-005 Basis: Dry **Extraction Method:** EPA 3550B Level: Low

Analysis Method: NWTPH-Dx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	9600 DZ	240	5	10/21/14	10/31/14	KWG1414518	
Residual Range Organics (RRO)	4400 DZ	940	5	10/21/14	10/31/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	134	50-150	10/31/14	Acceptable
n-Triacontane	117	50-150	10/31/14	Acceptable

Comments:

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QA/QC Report

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Project: Date Extracted:** 10/21/2014

Sample Matrix: Solid **Date Analyzed:** 11/01/2014

Duplicate Sample Summary Diesel and Residual Range Organics

Batch QC **Sample Name:** Lab Code: K1411494-003 Units: mg/Kg Basis: Dry

Extraction Method: EPA 3550B Level: Low

Analysis Method: NWTPH-Dx Extraction Lot: KWG1414518

Batch QCDUP

Analyte Name		Sample	KWG14 Duplicate		Relative Percent	RPD Limit
	MRL	Result	Result	Average	Difference	KI D Ellill
Diesel Range Organics (DRO)	640	ND	ND	ND	-	40
Residual Range Organics (RRO)	640	2100	1000	1600	69 #	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Form 3B - Organic Printed: 11/05/2014 14:32:19 Page 1 of 1 u:\Stealth\Crystal.rpt\Form3DUP.rpt SuperSet Reference: RR172453

QA/QC Report

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Solid

Service Request: K1411111 **Date Extracted:** 10/21/2014 **Date Analyzed:** 10/31/2014

Lab Control Spike Summary
Diesel and Residual Range Organics

Extraction Method:EPA 3550BUnits:mg/KgAnalysis Method:NWTPH-DxBasis:Dry

Basis: Dry Level: Low

Extraction Lot: KWG1414518

Lab Control Sample KWG1414518-4 Lab Control Spike

		Spike		%Rec
Analyte Name	Result	Amount	%Rec	Limits
Diesel Range Organics (DRO)	233	267	87	42-134
Residual Range Organics (RRO)	151	133	113	48-141

Results flagged with an asterisk $(\mbox{\ensuremath{}^{*}})$ indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: URS Corporation Service Request: K1411111

Project: IP Tacoma Metals/33764085

Cover Page - Organic Analysis Data Package Gasoline Range Organics

		Date	Date
Sample Name	Lab Code	Collected	Received
B-69-S-8.5-100814	K1411111-004	10/08/2014	10/09/2014
B-69-S-12.5-100814	K1411111-005	10/08/2014	10/09/2014
B-69-S-8.5-100814	KWG1414551-1	10/08/2014	10/09/2014

QA/QC Report

Service Request: K1411111

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Surrogate Recovery Summary Gasoline Range Organics

Extraction Method:EPA 5030A/5030BUnits:PercentAnalysis Method:NWTPH-GxLevel:Med

Sample Name	Lab Code	<u>Sur1</u>
B-69-S-8.5-100814	K1411111-004	85
B-69-S-12.5-100814	K1411111-005	86
B-69-S-8.5-100814DUP	KWG1414551-1	89
Method Blank	KWG1414551-3	81
Lab Control Sample	KWG1414551-2	83

Surrogate Recovery Control Limits (%)

Sur1 = 4-Bromofluorobenzene

50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

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SuperSet Reference:
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Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil

Analysis Method:

Service Request: K1411111

Date Collected: NA Date Received: NA

Gasoline Range Organics

Sample Name: Method Blank Lab Code: KWG1414551-3 **Extraction Method:** EPA 5030A/5030B Units: mg/Kg Basis: Dry Level: Med

NWTPH-Gx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Gasoline Range Organics-NWTPH	ND U	5.0	1	10/22/14	10/22/14	KWG1414551	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
4-Bromofluorobenzene	81	50-150	10/22/14	Acceptable	

Comments:

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Analytical Results

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Project:**

Sample Matrix: Soil **Date Received:** 10/09/2014

Gasoline Range Organics

Sample Name: B-69-S-8.5-100814 Units: mg/Kg Lab Code: K1411111-004 Basis: Dry **Extraction Method:** EPA 5030A/5030B Level: Med

Analysis Method: NWTPH-Gx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Gasoline Range Organics-NWTPH	2900 Y	590	1	10/22/14	10/22/14	KWG1414551	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	85	50-150	10/22/14	Acceptable

Comments:

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Analytical Results

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Project: Date Received:** 10/09/2014

Sample Matrix: Soil

Gasoline Range Organics

Sample Name: B-69-S-12.5-100814 Units: mg/Kg Lab Code: K1411111-005 Basis: Dry **Extraction Method:** EPA 5030A/5030B Level: Med

Analysis Method: NWTPH-Gx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Gasoline Range Organics-NWTPH	490 Y	74	1	10/22/14	10/22/14	KWG1414551	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	86	50-150	10/22/14	Acceptable

Comments:

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QA/QC Report

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111

Date Extracted: 10/22/2014

Date Analyzed: 10/22/2014

Duplicate Sample Summary Gasoline Range Organics

Sample Name: B-69-S-8.5-100814 **Lab Code:** K1411111-004

Extraction Method: EPA 5030A/5030B

Analysis Method: NWTPH-Gx

Units: mg/Kg
Basis: Dry

Level: Med

Extraction Lot: KWG1414551

B-69-S-8.5-100814DUP

		Sample	KWG14 Duplicate		Relative Percent	RPD Limit
Analyte Name	MRL	Result	Result	Average	Difference	
Gasoline Range Organics-NWTPH	590	2900	3000	2900	3	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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 SuperSet Reference:
 RR172203

QA/QC Report

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil **Date Extracted:** 10/22/2014 **Date Analyzed:** 10/22/2014

Lab Control Spike Summary **Gasoline Range Organics**

Extraction Method: EPA 5030A/5030B **Analysis Method:** NWTPH-Gx

Units: mg/Kg Basis: Dry Level: Med

Extraction Lot: KWG1414551

Lab Control Sample KWG1414551-2 Lab Control Spike

		Spike		%Rec
Analyte Name	Result	Amount	%Rec	Limits
Gasoline Range Organics-NWTPH	27.0	25.0	108	77-122

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Form 3C - Organic Printed: 10/30/2014 16:47:10 Page 1 of 1 u:\Stealth\Crystal.rpt\Form3LCS.rpt SuperSet Reference: RR172203

Client: URS Corporation Service Request: K1411111

Project: IP Tacoma Metals/33764085

Cover Page - Organic Analysis Data Package Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
B-69-S-8.5-100814	K1411111-004	10/08/2014	10/09/2014
B-69-S-12.5-100814	K1411111-005	10/08/2014	10/09/2014

QA/QC Report

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Surrogate Recovery Summary Volatile Organic Compounds

Extraction Method: EPA 5035A/5030B

Analysis Method: 8260C

Units: Percent Level: Med

Service Request: K1411111

Sample Name	Lab Code	Sur1	Sur2	Sur3
B-69-S-8.5-100814	K1411111-004	104	100	100
B-69-S-12.5-100814	K1411111-005	100	99	101
Batch QC	K1411237-001	99	98	100
Method Blank	KWG1414207-4	103	98	98
Method Blank	KWG1414698-3	101	99	97
Batch QCMS	KWG1414207-1	102	102	106
Batch QCDMS	KWG1414207-2	101	100	105
Lab Control Sample	KWG1414207-3	101	101	102
Lab Control Sample	KWG1414698-1	100	101	100
Duplicate Lab Control Sample	KWG1414698-2	100	101	102

Surrogate Recovery Control Limits (%)

Sur1	=	Dibromofluoromethane	55-132
Sur2	=	Toluene-d8	81-124
Sur3	=	4-Bromofluorobenzene	64-132

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

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 SuperSet Reference:
 RR172517

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111

Date Collected: NA **Date Received:** NA

Volatile Organic Compounds

Sample Name:Method BlankUnits:mg/KgLab Code:KWG1414207-4Basis:DryExtraction Method:EPA 5035A/5030BLevel:Med

Analysis Method: 8260C

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	*
Chloromethane	ND		0.050	1	10/21/14	10/21/14	KWG1414207	*
Vinyl Chloride	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Bromomethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Chloroethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Trichlorofluoromethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,1-Dichloroethene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Acetone	ND	U	2.0	1	10/21/14	10/21/14	KWG1414207	
Carbon Disulfide	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Methylene Chloride	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
Methyl tert-Butyl Ether	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
trans-1,2-Dichloroethene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,1-Dichloroethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
2,2-Dichloropropane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
cis-1,2-Dichloroethene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
2-Butanone (MEK)	ND	U	2.0	1	10/21/14	10/21/14	KWG1414207	
Bromochloromethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Chloroform	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Carbon Tetrachloride	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,1-Dichloropropene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Benzene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Trichloroethene (TCE)	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichloropropane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Dibromomethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Bromodichloromethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
cis-1,3-Dichloropropene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	10/21/14	10/21/14	KWG1414207	
Toluene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
trans-1,3-Dichloropropene	ND		0.050	1	10/21/14	10/21/14	KWG1414207	
1,1,2-Trichloroethane	ND		0.050	1	10/21/14	10/21/14	KWG1414207	
Tetrachloroethene (PCE)	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	

Comments:

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Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil Service Request: K1411111

Units: mg/Kg

Basis: Dry

Level: Med

Date Collected: NA Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank Lab Code: KWG1414207-4

Extraction Method: EPA 5035A/5030B

Analysis Method: 8260C								
Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	2.0	1	10/21/14	10/21/14	KWG1414207	
1,3-Dichloropropane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Dibromochloromethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,2-Dibromoethane (EDB)	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
Chlorobenzene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Ethylbenzene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,1,1,2-Tetrachloroethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
m,p-Xylenes	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
o-Xylene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Styrene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Bromoform	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Isopropylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,1,2,2-Tetrachloroethane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
Bromobenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
n-Propylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,2,3-Trichloropropane	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
2-Chlorotoluene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,3,5-Trimethylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
4-Chlorotoluene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
tert-Butylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,2,4-Trimethylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
sec-Butylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
4-Isopropyltoluene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,3-Dichlorobenzene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,4-Dichlorobenzene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
n-Butylbenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichlorobenzene	ND	U	0.050	1	10/21/14	10/21/14	KWG1414207	
1,2-Dibromo-3-chloropropane	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,2,4-Trichlorobenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
Hexachlorobutadiene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
Naphthalene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	
1,2,3-Trichlorobenzene	ND	U	0.20	1	10/21/14	10/21/14	KWG1414207	

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Comments:

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil Service Request: K1411111

Date Collected: NA Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank Units: mg/Kg Lab Code: KWG1414207-4 Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	103	55-132	10/21/14	Acceptable
Toluene-d8	98	81-124	10/21/14	Acceptable
4-Bromofluorobenzene	98	64-132	10/21/14	Acceptable

Comments:

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Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111

Units: mg/Kg

Basis: Dry

Level: Med

Date Collected: NA **Date Received:** NA

Volatile Organic Compounds

Sample Name:Method BlankLab Code:KWG1414698-3

Extraction Method: EPA 5030A/5030B

Analysis Method: 8260C

				Dilution	Date	Date	Extraction	
Analyte Name	Result	o	MRL	Factor	Extracted	Analyzed	Lot	Note
Dichlorodifluoromethane	ND		0.050	1	10/21/14	10/22/14	KWG1414698	
Chloromethane	ND		0.050	1	10/21/14	10/22/14	KWG1414698	
Vinyl Chloride	ND		0.050	1	10/21/14	10/22/14	KWG1414698	
Bromomethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Chloroethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Trichlorofluoromethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,1-Dichloroethene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Acetone	ND	U	2.0	1	10/21/14	10/22/14	KWG1414698	
Carbon Disulfide	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Methylene Chloride	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
Methyl tert-Butyl Ether	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
trans-1,2-Dichloroethene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,1-Dichloroethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
2,2-Dichloropropane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
cis-1,2-Dichloroethene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
2-Butanone (MEK)	ND	U	2.0	1	10/21/14	10/22/14	KWG1414698	
Bromochloromethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Chloroform	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Carbon Tetrachloride	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,1-Dichloropropene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Benzene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Trichloroethene (TCE)	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,2-Dichloropropane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Dibromomethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Bromodichloromethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
cis-1,3-Dichloropropene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	10/21/14	10/22/14	KWG1414698	
Toluene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
trans-1,3-Dichloropropene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,1,2-Trichloroethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Tetrachloroethene (PCE)	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	

Comments:

Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411111

Date Collected: NA Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank Units: mg/Kg Lab Code: KWG1414698-3 Basis: Dry Level: Med

Extraction Method: EPA 5030A/5030B

Analysis Method: 8260C

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
2-Hexanone	ND	U	2.0	1	10/21/14	10/22/14	KWG1414698	
1,3-Dichloropropane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Dibromochloromethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,2-Dibromoethane (EDB)	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
Chlorobenzene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Ethylbenzene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,1,1,2-Tetrachloroethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
m,p-Xylenes	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
o-Xylene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Styrene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Bromoform	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Isopropylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,1,2,2-Tetrachloroethane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
Bromobenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
n-Propylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,2,3-Trichloropropane	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
2-Chlorotoluene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,3,5-Trimethylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
4-Chlorotoluene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
tert-Butylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,2,4-Trimethylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
sec-Butylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
4-Isopropyltoluene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,3-Dichlorobenzene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,4-Dichlorobenzene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
n-Butylbenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,2-Dichlorobenzene	ND	U	0.050	1	10/21/14	10/22/14	KWG1414698	
1,2-Dibromo-3-chloropropane	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,2,4-Trichlorobenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
Hexachlorobutadiene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
Naphthalene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	
1,2,3-Trichlorobenzene	ND	U	0.20	1	10/21/14	10/22/14	KWG1414698	

Comments:

Merged

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil Service Request: K1411111 Date Collected: NA Date Received: NA

Units: mg/Kg

Basis: Dry

Volatile Organic Compounds

Sample Name: Method Blank Lab Code: KWG1414698-3

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	101	55-132	10/22/14	Acceptable
Toluene-d8	99	81-124	10/22/14	Acceptable
4-Bromofluorobenzene	97	64-132	10/22/14	Acceptable

Comments:

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Merged

Form 1A - Organic

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SuperSet Reference:

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Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411111 **Date Collected:** 10/08/2014

Date Received: 10/09/2014

Volatile Organic Compounds

Sample Name: B-69-S-8.5-100814 Units: mg/Kg Lab Code: K1411111-004 Basis: Dry

Extraction Method: EPA 5035A/5030B Level: Med

Analysis Method: 8260C

Analyte Name Result Q MRL Factor Extracted Analyzed Lot Dichlorodifluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Chloromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Vinyl Chloride ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Bromomethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Chloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Trichlorofluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Trichlorofluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Acetone ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Acetone ND U 7.3 1	NT 4
Chloromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Vinyl Chloride ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Bromomethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Chloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Trichlorofluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Acetone ND U 300 1 10/21/14 10/21/14 KWG1414207 Carbon Disulfide ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3	Note
Vinyl Chloride ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Bromomethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Chloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Trichlorofluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Acetone ND U 300 1 10/21/14 10/21/14 KWG1414207 Carbon Disulfide ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3	*
ND U 7.3 1 10/21/14 10/21/14 KWG1414207	*
Chloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Trichlorofluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Acetone ND U 300 1 10/21/14 10/21/14 KWG1414207 Carbon Disulfide ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U	
Trichlorofluoromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Acetone ND U 300 1 10/21/14 10/21/14 KWG1414207 Carbon Disulfide ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
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Acetone ND U 300 1 10/21/14 10/21/14 KWG1414207 Carbon Disulfide ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Carbon Disulfide ND U 7.3 1 10/21/14 10/21/14 KWG1414207 Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Methylene Chloride ND U 30 1 10/21/14 10/21/14 KWG1414207 Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Methyl tert-Butyl Ether ND U 7.3 1 10/21/14 10/21/14 KWG1414207 trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
trans-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207 1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
1,1-Dichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
2,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207 cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
cis-1,2-Dichloroethene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
2-Butanone (MEK) ND U 300 1 10/21/14 10/21/14 KWG1414207	
Bromochloromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Chloroform ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
1,1,1-Trichloroethane (TCA) ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Carbon Tetrachloride ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
1,1-Dichloropropene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Benzene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
1,2-Dichloroethane (EDC) ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Trichloroethene (TCE) ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
1,2-Dichloropropane ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Dibromomethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Bromodichloromethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
cis-1,3-Dichloropropene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
4-Methyl-2-pentanone (MIBK) ND U 300 1 10/21/14 10/21/14 KWG1414207	
Toluene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
trans-1,3-Dichloropropene ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
1,1,2-Trichloroethane ND U 7.3 1 10/21/14 10/21/14 KWG1414207	
Tetrachloroethene (PCE) ND U 7.3 1 10/21/14 10/21/14 KWG1414207	

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Comments:

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Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111 **Date Collected:** 10/08/2014

Date Received: 10/09/2014

Volatile Organic Compounds

 Sample Name:
 B-69-S-8.5-100814
 Units:
 mg/Kg

 Lab Code:
 K141111-004
 Basis:
 Dry

 Extraction Method:
 EPA 5035A/5030B
 Level:
 Med

Analysis Method: 8260C

Analyte Name	Result	0	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
		<u> </u>						Note
2-Hexanone	ND		300	1	10/21/14	10/21/14	KWG1414207 KWG1414207	
1,3-Dichloropropane	ND		7.3	1	10/21/14	10/21/14	KWG1414207 KWG1414207	
Dibromochloromethane	ND		7.3	1	10/21/14	10/21/14		
1,2-Dibromoethane (EDB)	ND		30	1	10/21/14	10/21/14	KWG1414207	
Chlorobenzene	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
Ethylbenzene	11		7.3	1	10/21/14	10/21/14	KWG1414207	
1,1,1,2-Tetrachloroethane	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
m,p-Xylenes	18		7.3	1	10/21/14	10/21/14	KWG1414207	
o-Xylene	10		7.3	1	10/21/14	10/21/14	KWG1414207	
Styrene	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
Bromoform	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
Isopropylbenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,1,2,2-Tetrachloroethane	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
Bromobenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
n-Propylbenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,2,3-Trichloropropane	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
2-Chlorotoluene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,3,5-Trimethylbenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
4-Chlorotoluene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
tert-Butylbenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,2,4-Trimethylbenzene	33		30	1	10/21/14	10/21/14	KWG1414207	
sec-Butylbenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
4-Isopropyltoluene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,3-Dichlorobenzene	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
1,4-Dichlorobenzene	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
n-Butylbenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichlorobenzene	ND	U	7.3	1	10/21/14	10/21/14	KWG1414207	
1,2-Dibromo-3-chloropropane	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
1,2,4-Trichlorobenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
Hexachlorobutadiene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	
Naphthalene	4500	D	590	20	10/21/14	10/22/14	KWG1414698	
1,2,3-Trichlorobenzene	ND	U	30	1	10/21/14	10/21/14	KWG1414207	

^{*} See Case Narrative

Comments:

Analytical Results

Client: URS Corporation

Service Request: K1411111 **Project:** IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Sample Matrix: Date Received:** 10/09/2014 Soil

Volatile Organic Compounds

Sample Name: B-69-S-8.5-100814 Units: mg/Kg Lab Code: K1411111-004 Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	104	55-132	10/21/14	Acceptable
Toluene-d8	100	81-124	10/21/14	Acceptable
4-Bromofluorobenzene	100	64-132	10/21/14	Acceptable

Comments:

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Form 1A - Organic Merged

SuperSet Reference: RR172517 Page

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Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411111 **Date Collected:** 10/08/2014

Date Received: 10/09/2014

Units: mg/Kg

Basis: Dry

Level: Med

Volatile Organic Compounds

Sample Name: B-69-S-12.5-100814 Lab Code: K1411111-005

Extraction Method: EPA 5035A/5030B

Analysis Method: 8260C

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	*
Chloromethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	*
Vinyl Chloride	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Bromomethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Chloroethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Trichlorofluoromethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,1-Dichloroethene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Acetone	ND U	74	1	10/21/14	10/21/14	KWG1414207	
Carbon Disulfide	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Methylene Chloride	ND U	7.4	1	10/21/14	10/21/14	KWG1414207	
Methyl tert-Butyl Ether	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
trans-1,2-Dichloroethene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,1-Dichloroethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
2,2-Dichloropropane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
cis-1,2-Dichloroethene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
2-Butanone (MEK)	ND U	74	1	10/21/14	10/21/14	KWG1414207	
Bromochloromethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Chloroform	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,1,1-Trichloroethane (TCA)	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Carbon Tetrachloride	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,1-Dichloropropene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Benzene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichloroethane (EDC)	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Trichloroethene (TCE)	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichloropropane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Dibromomethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Bromodichloromethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
cis-1,3-Dichloropropene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
4-Methyl-2-pentanone (MIBK)	ND U	74	1	10/21/14	10/21/14	KWG1414207	
Toluene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
trans-1,3-Dichloropropene	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,1,2-Trichloroethane	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	
Tetrachloroethene (PCE)	ND U	1.9	1	10/21/14	10/21/14	KWG1414207	

Comments:

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111

Date Collected: 10/08/2014 **Date Received:** 10/09/2014

Volatile Organic Compounds

 Sample Name:
 B-69-S-12.5-100814
 Units: mg/Kg

 Lab Code:
 K141111-005
 Basis: Dry

 Extraction Method:
 EPA 5035A/5030B
 Level: Med

Analysis Method: 8260C

Analyte Name	Result	0	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	<u> </u>	74	1	10/21/14	10/21/14	KWG1414207	11010
1,3-Dichloropropane	ND ND		1.9	1	10/21/14	10/21/14	KWG1414207 KWG1414207	
Dibromochloromethane	ND ND		1.9	1	10/21/14	10/21/14	KWG1414207	
	ND				10/21/14	10/21/14	KWG1414207	
1,2-Dibromoethane (EDB) Chlorobenzene	ND ND		7.4 1.9	1 1	10/21/14	10/21/14	KWG1414207 KWG1414207	
Ethylbenzene	ND ND		1.9	1	10/21/14	10/21/14	KWG1414207	
1,1,1,2-Tetrachloroethane	ND		1.9	1	10/21/14	10/21/14	KWG1414207 KWG1414207	
m,p-Xylenes	ND		1.9	1	10/21/14	10/21/14		
o-Xylene	ND		1.9	1	10/21/14	10/21/14	KWG1414207	
Styrene	ND		1.9	1	10/21/14	10/21/14	KWG1414207	
Bromoform	ND		1.9	1	10/21/14	10/21/14	KWG1414207	
Isopropylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,1,2,2-Tetrachloroethane	ND	U	1.9	1	10/21/14	10/21/14	KWG1414207	
Bromobenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
n-Propylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,2,3-Trichloropropane	ND	U	1.9	1	10/21/14	10/21/14	KWG1414207	
2-Chlorotoluene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,3,5-Trimethylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
4-Chlorotoluene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
tert-Butylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,2,4-Trimethylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
sec-Butylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
4-Isopropyltoluene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,3-Dichlorobenzene	ND	U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,4-Dichlorobenzene	ND	U	1.9	1	10/21/14	10/21/14	KWG1414207	
n-Butylbenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,2-Dichlorobenzene	ND	U	1.9	1	10/21/14	10/21/14	KWG1414207	
1,2-Dibromo-3-chloropropane	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
1,2,4-Trichlorobenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
Hexachlorobutadiene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	
Naphthalene	1600	D	300	20	10/21/14	10/21/14	KWG1414207	
1,2,3-Trichlorobenzene	ND	U	7.4	1	10/21/14	10/21/14	KWG1414207	

^{*} See Case Narrative

Comments:

Analytical Results

Client: URS Corporation

Service Request: K1411111 **Project:** IP Tacoma Metals/33764085 **Date Collected:** 10/08/2014 **Sample Matrix: Date Received:** 10/09/2014 Soil

Volatile Organic Compounds

Sample Name: B-69-S-12.5-100814 Units: mg/Kg Lab Code: K1411111-005 Basis: Dry

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	100	55-132	10/21/14	Acceptable
Toluene-d8	99	81-124	10/21/14	Acceptable
4-Bromofluorobenzene	101	64-132	10/21/14	Acceptable

Comments:

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Form 1A - Organic

SuperSet Reference: RR172517 Page

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Merged

QA/QC Report

Client: URS Corporation

Service Request: K1411111 IP Tacoma Metals/33764085 **Project: Date Extracted:** 10/21/2014 **Sample Matrix:** Soil **Date Analyzed:** 10/21/2014

> Lab Control Spike Summary **Volatile Organic Compounds**

Extraction Method: EPA 5035A/5030B

Analysis Method: 8260C Units: mg/Kg Basis: Dry Level: Med

Extraction Lot: KWG1414207

Lab Control Sample KWG1414207-3 Lab Control Spike

A 1 / N	TO 10	Spike	0/15	%Rec
Analyte Name	Result	Amount	%Rec	Limits
Dichlorodifluoromethane	0.705	1.00	71	21-143
Chloromethane	0.704	1.00	70	50-121
Vinyl Chloride	0.835	1.00	84	53-125
Bromomethane	0.916	1.00	92	29-171
Chloroethane	1.01	1.00	101	53-134
Trichlorofluoromethane	0.764	1.00	76	42-119
1,1-Dichloroethene	0.989	1.00	99	67-141
Acetone	5.56	5.00	111	47-142
Carbon Disulfide	1.90	2.00	95	48-140
Methylene Chloride	0.850	1.00	85	69-121
Methyl tert-Butyl Ether	0.979	1.00	98	64-126
trans-1,2-Dichloroethene	0.963	1.00	96	76-128
1,1-Dichloroethane	1.01	1.00	101	70-124
2,2-Dichloropropane	0.955	1.00	96	49-136
cis-1,2-Dichloroethene	0.941	1.00	94	77-124
2-Butanone (MEK)	5.25	5.00	105	65-139
Bromochloromethane	0.978	1.00	98	73-117
Chloroform	0.952	1.00	95	73-125
1,1,1-Trichloroethane (TCA)	0.936	1.00	94	61-136
Carbon Tetrachloride	0.941	1.00	94	72-140
1,1-Dichloropropene	0.963	1.00	96	65-130
Benzene	0.956	1.00	96	70-134
1,2-Dichloroethane (EDC)	0.976	1.00	98	70-126
Trichloroethene (TCE)	0.911	1.00	91	69-126
1,2-Dichloropropane	0.936	1.00	94	73-121
Dibromomethane	0.975	1.00	98	75-124
Bromodichloromethane	0.960	1.00	96	76-128
cis-1,3-Dichloropropene	0.968	1.00	97	57-132
4-Methyl-2-pentanone (MIBK)	5.05	5.00	101	73-126
Toluene	0.930	1.00	93	74-118
trans-1,3-Dichloropropene	0.853	1.00	85	55-129
1,1,2-Trichloroethane	0.949	1.00	95	73-118
Tetrachloroethene (PCE)	0.930	1.00	93	65-126
2-Hexanone	4.67	5.00	93	54-123
1,3-Dichloropropane	0.919	1.00	92	70-121
1,5 2 10 11 or opropuls	0.717	1.00	/-	,0121

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Form 3C - Organic Printed: 11/06/2014 12:14:35 Page 1 of 2 u:\Stealth\Crystal.rpt\Form3LCS.rpt SuperSet Reference: RR172517

QA/QC Report

URS Corporation **Client:**

Service Request: K1411111 IP Tacoma Metals/33764085 **Project: Date Extracted:** 10/21/2014 **Date Analyzed:** 10/21/2014

Sample Matrix: Soil

Lab Control Spike Summary **Volatile Organic Compounds**

Extraction Method: EPA 5035A/5030B

Analysis Method: 8260C Units: mg/Kg Basis: Dry Level: Med

Extraction Lot: KWG1414207

Lab Control Sample KWG1414207-3 Lab Control Spike

		Spike		%Rec
Analyte Name	Result	Amount	%Rec	Limits
Dibromochloromethane	0.951	1.00	95	64-126
1,2-Dibromoethane (EDB)	0.973	1.00	97	70-122
Chlorobenzene	0.951	1.00	95	72-115
Ethylbenzene	0.943	1.00	94	72-121
1,1,1,2-Tetrachloroethane	0.952	1.00	95	71-120
m,p-Xylenes	1.98	2.00	99	74-124
o-Xylene	0.992	1.00	99	73-123
Styrene	1.02	1.00	102	77-122
Bromoform	0.987	1.00	99	54-141
Isopropylbenzene	0.977	1.00	98	68-121
1,1,2,2-Tetrachloroethane	0.918	1.00	92	63-127
Bromobenzene	0.937	1.00	94	66-118
n-Propylbenzene	0.919	1.00	92	61-134
1,2,3-Trichloropropane	0.957	1.00	96	76-128
2-Chlorotoluene	0.960	1.00	96	68-127
1,3,5-Trimethylbenzene	0.976	1.00	98	68-129
4-Chlorotoluene	0.903	1.00	90	66-121
tert-Butylbenzene	0.947	1.00	95	65-131
1,2,4-Trimethylbenzene	0.975	1.00	98	69-123
sec-Butylbenzene	0.917	1.00	92	57-132
4-Isopropyltoluene	0.980	1.00	98	68-127
1,3-Dichlorobenzene	0.922	1.00	92	69-117
1,4-Dichlorobenzene	0.918	1.00	92	69-114
n-Butylbenzene	0.926	1.00	93	52-142
1,2-Dichlorobenzene	0.923	1.00	92	75-114
1,2-Dibromo-3-chloropropane	0.842	1.00	84	46-132
1,2,4-Trichlorobenzene	0.916	1.00	92	55-134
Hexachlorobutadiene	0.917	1.00	92	52-136
Naphthalene	0.814	1.00	81	48-144
1,2,3-Trichlorobenzene	0.975	1.00	98	49-149

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411111 **Date Extracted:** 10/21/2014

Date Analyzed: 10/22/2014

Lab Control Spike/Duplicate Lab Control Spike Summary **Volatile Organic Compounds**

Extraction Method: EPA 5030A/5030B

Analysis Method: 8260C Units: mg/Kg Basis: Dry

Level: Med

Extraction Lot: KWG1414698

Lab Control Sample KWG1414698-1 Lab Control Spike

Duplicate Lab Control Sample KWG1414698-2 **Duplicate Lab Control Spike**

		control spine			c Ento Control	эртие			
A. J. A. N.	D14	Spike Amount	%Rec	D14	Spike Amount	%Rec	%Rec Limits	RPD	RPD Limit
Analyte Name	Result			Result					
Dichlorodifluoromethane	0.688	1.00	69	0.625	1.00	63	21-143	10	40
Chloromethane	0.719	1.00	72	0.676	1.00	68	50-121	6	40
Vinyl Chloride	0.863	1.00	86	0.801	1.00	80	53-125	7	40
Bromomethane	0.847	1.00	85	0.850	1.00	85	29-171	0	40
Chloroethane	1.03	1.00	103	0.991	1.00	99	53-134	3	40
Trichlorofluoromethane	0.814	1.00	81	0.746	1.00	75	42-119	9	40
1,1-Dichloroethene	1.05	1.00	105	0.982	1.00	98	67-141	7	40
Acetone	5.50	5.00	110	5.58	5.00	112	47-142	1	40
Carbon Disulfide	1.98	2.00	99	1.87	2.00	93	48-140	6	40
Methylene Chloride	0.891	1.00	89	0.849	1.00	85	69-121	5	40
Methyl tert-Butyl Ether	1.06	1.00	106	1.07	1.00	107	64-126	1	40
trans-1,2-Dichloroethene	1.02	1.00	102	0.969	1.00	97	76-128	5	40
1,1-Dichloroethane	1.04	1.00	104	1.02	1.00	102	70-124	2	40
2,2-Dichloropropane	1.02	1.00	102	0.976	1.00	98	49-136	4	40
cis-1,2-Dichloroethene	0.972	1.00	97	0.940	1.00	94	77-124	3	40
2-Butanone (MEK)	5.59	5.00	112	5.72	5.00	114	65-139	2	40
Bromochloromethane	1.03	1.00	103	1.02	1.00	102	73-117	1	40
Chloroform	0.973	1.00	97	0.953	1.00	95	73-125	2	40
1,1,1-Trichloroethane (TCA)	1.02	1.00	102	0.980	1.00	98	61-136	4	40
Carbon Tetrachloride	1.00	1.00	100	0.939	1.00	94	72-140	6	40
1,1-Dichloropropene	1.01	1.00	101	0.960	1.00	96	65-130	5	40
Benzene	0.999	1.00	100	0.960	1.00	96	70-134	4	40
1,2-Dichloroethane (EDC)	0.973	1.00	97	0.952	1.00	95	70-126	2	40
Trichloroethene (TCE)	0.965	1.00	97	0.937	1.00	94	69-126	3	40
1,2-Dichloropropane	0.955	1.00	96	0.933	1.00	93	73-121	2	40
Dibromomethane	0.979	1.00	98	0.990	1.00	99	75-124	1	40
Bromodichloromethane	0.978	1.00	98	0.963	1.00	96	76-128	2	40
cis-1,3-Dichloropropene	0.990	1.00	99	0.981	1.00	98	57-132	1	40
4-Methyl-2-pentanone (MIBK)	5.53	5.00	111	5.66	5.00	113	73-126	2	40
Toluene	0.963	1.00	96	0.934	1.00	93	74-118	3	40
trans-1,3-Dichloropropene	0.877	1.00	88	0.875	1.00	88	55-129	0	40
1,1,2-Trichloroethane	0.963	1.00	96	0.981	1.00	98	73-118	2	40
Tetrachloroethene (PCE)	0.979	1.00	98	0.933	1.00	93	65-126	5	40
2-Hexanone	5.13	5.00	103	5.42	5.00	108	54-123	6	40
1,3-Dichloropropane	0.924	1.00	92	0.928	1.00	93	70-121	0	40
1,5 Diemoropropane	0.724	1.00	12	0.720	1.00	75	10-121	U	טד

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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SuperSet Reference:

RR172517

QA/QC Report

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111 **Date Extracted:** 10/21/2014 **Date Analyzed:** 10/22/2014

Lab Control Spike/Duplicate Lab Control Spike Summary Volatile Organic Compounds

Extraction Method: EPA 5030A/5030B

Analysis Method: 8260C

Units: mg/Kg
Basis: Dry

Level: Med

Extraction Lot: KWG1414698

Lab Control Sample KWG1414698-1 Lab Control Spike Duplicate Lab Control Sample KWG1414698-2 Duplicate Lab Control Spike

		Control Spike		Dupitcati	Lab Control	эріке			
Analyte Name	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec	%Rec Limits	RPD	RPD Limit
Dibromochloromethane	0.966	1.00	97	0.968	1.00	97	64-126	0	40
1,2-Dibromoethane (EDB)	0.968	1.00	97	0.984	1.00	98	70-122	2	40
Chlorobenzene	0.961	1.00	96	0.956	1.00	96	72-115	1	40
Ethylbenzene	0.973	1.00	97	0.944	1.00	94	72-121	3	40
1,1,1,2-Tetrachloroethane	0.972	1.00	97	0.976	1.00	98	71-120	0	40
m,p-Xylenes	2.04	2.00	102	2.00	2.00	100	74-124	2	40
o-Xylene	1.02	1.00	102	1.00	1.00	100	73-123	1	40
Styrene	1.07	1.00	107	1.05	1.00	105	77-122	2	40
Bromoform	0.990	1.00	99	1.04	1.00	104	54-141	5	40
Isopropylbenzene	1.00	1.00	100	0.982	1.00	98	68-121	2	40
1,1,2,2-Tetrachloroethane	0.926	1.00	93	0.920	1.00	92	63-127	1	40
Bromobenzene	0.942	1.00	94	0.927	1.00	93	66-118	2	40
n-Propylbenzene	0.962	1.00	96	0.917	1.00	92	61-134	5	40
1,2,3-Trichloropropane	0.948	1.00	95	0.955	1.00	96	76-128	1	40
2-Chlorotoluene	0.985	1.00	99	0.954	1.00	95	68-127	3	40
1,3,5-Trimethylbenzene	1.02	1.00	102	0.984	1.00	98	68-129	4	40
4-Chlorotoluene	0.936	1.00	94	0.908	1.00	91	66-121	3	40
tert-Butylbenzene	0.996	1.00	100	0.947	1.00	95	65-131	5	40
1,2,4-Trimethylbenzene	1.06	1.00	106	1.02	1.00	102	69-123	4	40
sec-Butylbenzene	0.960	1.00	96	0.904	1.00	90	57-132	6	40
4-Isopropyltoluene	1.05	1.00	105	1.01	1.00	101	68-127	4	40
1,3-Dichlorobenzene	0.936	1.00	94	0.917	1.00	92	69-117	2	40
1,4-Dichlorobenzene	0.934	1.00	93	0.906	1.00	91	69-114	3	40
n-Butylbenzene	1.05	1.00	105	0.990	1.00	99	52-142	5	40
1,2-Dichlorobenzene	0.950	1.00	95	0.919	1.00	92	75-114	3	40
1,2-Dibromo-3-chloropropane	0.971	1.00	97	0.972	1.00	97	46-132	0	40
1,2,4-Trichlorobenzene	1.02	1.00	102	1.01	1.00	101	55-134	0	40
Hexachlorobutadiene	0.982	1.00	98	0.923	1.00	92	52-136	6	40
Naphthalene	1.06	1.00	106	1.05	1.00	105	48-144	0	40
1,2,3-Trichlorobenzene	1.07	1.00	107	1.03	1.00	103	49-149	4	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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 SuperSet Reference:
 RR172517

Client: URS Corporation Service Request: K1411111

Project: IP Tacoma Metals/33764085

Cover Page - Organic Analysis Data Package Semi-Volatile Organic Compounds by GC/MS

		Date	Date
Sample Name	Lab Code	Collected	Received
B-69-S-4.5-100814	K1411111-003	10/08/2014	10/09/2014
B-69-S-8.5-100814	K1411111-004	10/08/2014	10/09/2014
B-69-S-12.5-100814	K1411111-005	10/08/2014	10/09/2014

QA/QC Report

Client: URS Corporation Service Request: K1411111

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil

> **Surrogate Recovery Summary** Semi-Volatile Organic Compounds by GC/MS

EPA 3541 Units: Percent **Extraction Method: Analysis Method:** 8270D Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
B-69-S-4.5-100814	K1411111-003	70	70	99
B-69-S-8.5-100814	K1411111-004	80 D	67 D	85 D
B-69-S-12.5-100814	K1411111-005	63	67	85
Method Blank	KWG1414210-3	53	53	66
Lab Control Sample	KWG1414210-1	60	65	74
Duplicate Lab Control Sample	KWG1414210-2	66	61	71

Surrogate Recovery Control Limits (%)

Sur1	=	Nitrobenzene-d5	29-116
Sur2	=	2-Fluorobiphenyl	32-104
Sur3	=	Terphenyl-d14	37-133

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Form 2A - Organic 1 of 1 Printed: 11/03/2014 13:37:59 Page $u:\Stealth\Crystal.rpt\Form2.rpt$ SuperSet Reference: RR172356 105

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411111

Date Collected: NA

Date Received: NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank **Lab Code:** KWG1414210-3

Extraction Method: EPA 3541 **Analysis Method:** 8270D

Units: mg/KgBasis: DryLevel: Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
2-Methylnaphthalene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Acenaphthylene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Acenaphthene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Dibenzofuran	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Fluorene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Phenanthrene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Anthracene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Fluoranthene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Pyrene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Benz(a)anthracene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Chrysene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Benzo(b)fluoranthene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Benzo(k)fluoranthene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Benzo(a)pyrene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Dibenz(a,h)anthracene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	ND U	0.33	1	10/21/14	10/27/14	KWG1414210	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	53	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	53	32-104	10/27/14	Acceptable
Terphenyl-d14	66	37-133	10/27/14	Acceptable

Comments:

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Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

 Service Request:
 K1411111

 Date Collected:
 10/08/2014

 Date Received:
 10/09/2014

Semi-Volatile Organic Compounds by GC/MS

 Sample Name:
 B-69-S-4.5-100814
 Units:
 mg/Kg

 Lab Code:
 K141111-003
 Basis:
 Dry

 Extraction Method:
 EPA 3541
 Level:
 Low

 Analysis Method:
 8270D

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	4.3	2.6	1	10/21/14	10/27/14	KWG1414210	
2-Methylnaphthalene	9.5	2.6	1	10/21/14	10/27/14	KWG1414210	
Acenaphthylene	11	2.6	1	10/21/14	10/27/14	KWG1414210	
Acenaphthene	14	2.6	1	10/21/14	10/27/14	KWG1414210	
Dibenzofuran	6.0	2.6	1	10/21/14	10/27/14	KWG1414210	
Fluorene	15	2.6	1	10/21/14	10/27/14	KWG1414210	
Phenanthrene	28	2.6	1	10/21/14	10/27/14	KWG1414210	
Anthracene	95 D	13	5	10/21/14	10/29/14	KWG1414210	
Fluoranthene	160 D	13	5	10/21/14	10/29/14	KWG1414210	*
Pyrene	270 D	51	20	10/21/14	10/29/14	KWG1414210	
Benz(a)anthracene	200 D	13	5	10/21/14	10/29/14	KWG1414210	
Chrysene	460 D	51	20	10/21/14	10/29/14	KWG1414210	
Benzo(b)fluoranthene	460 D	51	20	10/21/14	10/29/14	KWG1414210	
Benzo(k)fluoranthene	150 D	51	20	10/21/14	10/29/14	KWG1414210	
Benzo(a)pyrene	350 D	51	20	10/21/14	10/29/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	170 D	13	5	10/21/14	10/29/14	KWG1414210	
Dibenz(a,h)anthracene	45	2.6	1	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	140 D	13	5	10/21/14	10/29/14	KWG1414210	

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	70	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	70	32-104	10/27/14	Acceptable
Terphenyl-d14	99	37-133	10/27/14	Acceptable

Comments:

Page

Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411111 **Date Collected:** 10/08/2014 **Date Received:** 10/09/2014

Semi-Volatile Organic Compounds by GC/MS

Sample Name: B-69-S-8.5-100814 Units: mg/Kg Lab Code: K1411111-004 Basis: Dry **Extraction Method:** EPA 3541 Level: Low

Analysis Method: 8270D

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	3400	D	200	50	10/21/14	10/29/14	KWG1414210	
2-Methylnaphthalene	1700	D	200	50	10/21/14	10/29/14	KWG1414210	
Acenaphthylene	29	D	20	5	10/21/14	10/27/14	KWG1414210	
Acenaphthene	1200	D	200	50	10/21/14	10/29/14	KWG1414210	
Dibenzofuran	570	D	39	10	10/21/14	10/29/14	KWG1414210	
Fluorene	1000	D	200	50	10/21/14	10/29/14	KWG1414210	
Phenanthrene	3000	D	200	50	10/21/14	10/29/14	KWG1414210	
Anthracene	780	D	39	10	10/21/14	10/29/14	KWG1414210	
Fluoranthene	1400	D	200	50	10/21/14	10/29/14	KWG1414210	*
Pyrene	1300	D	200	50	10/21/14	10/29/14	KWG1414210	
Benz(a)anthracene	320	D	20	5	10/21/14	10/27/14	KWG1414210	
Chrysene	290	D	20	5	10/21/14	10/27/14	KWG1414210	
Benzo(b)fluoranthene	240	D	20	5	10/21/14	10/27/14	KWG1414210	
Benzo(k)fluoranthene	81	D	20	5	10/21/14	10/27/14	KWG1414210	
Benzo(a)pyrene	190	D	20	5	10/21/14	10/27/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	75	D	20	5	10/21/14	10/27/14	KWG1414210	
Dibenz(a,h)anthracene	24	D	20	5	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	68	D	20	5	10/21/14	10/27/14	KWG1414210	

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	80	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	67	32-104	10/27/14	Acceptable
Terphenyl-d14	85	37-133	10/27/14	Acceptable

Comments:

Merged

Page

1 of 1

Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

8270D

Sample Matrix: Soil

Analysis Method:

Service Request: K1411111 **Date Collected:** 10/08/2014 **Date Received:** 10/09/2014

Semi-Volatile Organic Compounds by GC/MS

Sample Name: B-69-S-12.5-100814 Units: mg/Kg Lab Code: K1411111-005 Basis: Dry **Extraction Method:** EPA 3541 Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	370	D	120	50	10/21/14	10/29/14	KWG1414210	
2-Methylnaphthalene	260	D	120	50	10/21/14	10/29/14	KWG1414210	
Acenaphthylene	4.7		2.4	1	10/21/14	10/27/14	KWG1414210	
Acenaphthene	340	D	120	50	10/21/14	10/29/14	KWG1414210	
Dibenzofuran	180	D	12	5	10/21/14	10/28/14	KWG1414210	
Fluorene	320	D	120	50	10/21/14	10/29/14	KWG1414210	
Phenanthrene	1000	D	120	50	10/21/14	10/29/14	KWG1414210	
Anthracene	150	D	12	5	10/21/14	10/28/14	KWG1414210	
Fluoranthene	440	D	120	50	10/21/14	10/29/14	KWG1414210	*
Pyrene	370	D	120	50	10/21/14	10/29/14	KWG1414210	
Benz(a)anthracene	110	D	12	5	10/21/14	10/28/14	KWG1414210	
Chrysene	86	D	12	5	10/21/14	10/28/14	KWG1414210	
Benzo(b)fluoranthene	81	D	12	5	10/21/14	10/28/14	KWG1414210	
Benzo(k)fluoranthene	28	D	12	5	10/21/14	10/28/14	KWG1414210	
Benzo(a)pyrene	67	D	12	5	10/21/14	10/28/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	24		2.4	1	10/21/14	10/27/14	KWG1414210	
Dibenz(a,h)anthracene	7.4		2.4	1	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	22		2.4	1	10/21/14	10/27/14	KWG1414210	

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	63	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	67	32-104	10/27/14	Acceptable
Terphenyl-d14	85	37-133	10/27/14	Acceptable

Comments:

SuperSet Reference:

QA/QC Report

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411111 **Date Extracted:** 10/21/2014 **Date Analyzed:** 10/27/2014

Lab Control Spike/Duplicate Lab Control Spike Summary Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3541 **Analysis Method:** 8270D

Units: mg/Kg Basis: Dry

Level: Low

Extraction Lot: KWG1414210

Lab Control Sample KWG1414210-1 Lab Control Spike

Duplicate Lab Control Sample KWG1414210-2 **Duplicate Lab Control Spike**

Lau	Control Spike		Duplicati	c Lab Control	эріке			
Result	Spike Amount	%Rec	Result	Spike Amount	%Rec	%Rec Limits	RPD	RPD Limit
2.19	3.33	66	2.13	3.33	64	44-92	3	40
2.23	3.33	67	2.12	3.33	64	44-95	5	40
2.54	3.33	76	2.23	3.33	67	48-105	13	40
2.53	3.33	76	2.14	3.33	64	49-97	17	40
2.62	3.33	78	2.24	3.33	67	47-101	15	40
2.63	3.33	79	2.23	3.33	67	46-103	17	40
2.82	3.33	84	2.67	3.33	80	52-108	5	40
2.98	3.33	89	2.73	3.33	82	53-106	9	40
3.01	3.33	90	2.86	3.33	86	47-117	5	40
2.79	3.33	84	2.53	3.33	76	53-124	10	40
2.73	3.33	82	2.61	3.33	78	54-109	4	40
2.72	3.33	82	2.51	3.33	75	53-109	8	40
2.82	3.33	85	2.61	3.33	78	53-110	8	40
2.52	3.33	75	2.53	3.33	76	52-112	0	40
2.66	3.33	80	2.69	3.33	81	51-114	1	40
2.91	3.33	87	2.71	3.33	81	53-112	7	40
2.69	3.33	81	2.69	3.33	81	53-114	0	40
2.80	3.33	84	2.70	3.33	81	50-110	4	40
	Result 2.19 2.23 2.54 2.53 2.62 2.63 2.82 2.98 3.01 2.79 2.73 2.72 2.82 2.52 2.66 2.91 2.69	Result Spike Amount 2.19 3.33 2.23 3.33 2.54 3.33 2.53 3.33 2.62 3.33 2.82 3.33 2.98 3.33 2.79 3.33 2.79 3.33 2.72 3.33 2.82 3.33 2.52 3.33 2.52 3.33 2.66 3.33 2.91 3.33 2.69 3.33	Result Amount %Rec 2.19 3.33 66 2.23 3.33 67 2.54 3.33 76 2.53 3.33 78 2.62 3.33 79 2.82 3.33 84 2.98 3.33 89 3.01 3.33 90 2.79 3.33 84 2.73 3.33 82 2.72 3.33 82 2.82 3.33 85 2.52 3.33 75 2.66 3.33 80 2.91 3.33 87 2.69 3.33 81	Spike Amount %Rec Result 2.19 3.33 66 2.13 2.23 3.33 67 2.12 2.54 3.33 76 2.23 2.53 3.33 76 2.14 2.62 3.33 79 2.23 2.82 3.33 84 2.67 2.98 3.33 89 2.73 3.01 3.33 90 2.86 2.79 3.33 84 2.53 2.73 3.33 82 2.61 2.72 3.33 82 2.51 2.82 3.33 85 2.61 2.52 3.33 85 2.61 2.52 3.33 85 2.61 2.52 3.33 85 2.61 2.52 3.33 87 2.71 2.66 3.33 80 2.69 2.91 3.33 87 2.71 2.69 <td< td=""><td>Result Spike Amount %Rec Result Spike Amount 2.19 3.33 66 2.13 3.33 2.23 3.33 67 2.12 3.33 2.54 3.33 76 2.23 3.33 2.53 3.33 76 2.14 3.33 2.62 3.33 78 2.24 3.33 2.63 3.33 79 2.23 3.33 2.82 3.33 84 2.67 3.33 2.98 3.33 89 2.73 3.33 3.01 3.33 90 2.86 3.33 2.79 3.33 84 2.53 3.33 2.79 3.33 82 2.61 3.33 2.72 3.33 82 2.61 3.33 2.82 3.33 85 2.61 3.33 2.52 3.33 75 2.53 3.33 2.52 3.33 75 2.53 3.33</td><td>Result Spike Amount %Rec Result Spike Amount %Rec 2.19 3.33 66 2.13 3.33 64 2.23 3.33 67 2.12 3.33 64 2.54 3.33 76 2.23 3.33 67 2.53 3.33 76 2.14 3.33 64 2.62 3.33 78 2.24 3.33 67 2.63 3.33 79 2.23 3.33 80 2.98 3.33 84 2.67 3.33 80 2.98 3.33 89 2.73 3.33 82 3.01 3.33 89 2.73 3.33 86 2.79 3.33 84 2.53 3.33 76 2.73 3.33 82 2.61 3.33 78 2.72 3.33 82 2.51 3.33 75 2.82 3.33 85 2.61 3.</td><td>Result Spike Amount %Rec Result Spike Amount %Rec Limits 2.19 3.33 66 2.13 3.33 64 44-92 2.23 3.33 67 2.12 3.33 64 44-95 2.54 3.33 76 2.23 3.33 67 48-105 2.53 3.33 76 2.14 3.33 67 47-101 2.62 3.33 78 2.24 3.33 67 47-101 2.63 3.33 79 2.23 3.33 80 52-108 2.82 3.33 84 2.67 3.33 80 52-108 2.98 3.33 89 2.73 3.33 82 53-106 3.01 3.33 89 2.73 3.33 86 47-117 2.79 3.33 84 2.53 3.33 76 53-124 2.73 3.33 82 2.61 3.33 78</td><td>Result Spike Amount %Rec Result Spike Amount %Rec Limits RPD 2.19 3.33 66 2.13 3.33 64 44-92 3 2.23 3.33 67 2.12 3.33 64 44-95 5 2.54 3.33 76 2.23 3.33 67 48-105 13 2.53 3.33 76 2.14 3.33 64 49-97 17 2.62 3.33 78 2.24 3.33 67 47-101 15 2.63 3.33 79 2.23 3.33 80 52-108 5 2.82 3.33 84 2.67 3.33 80 52-108 5 2.98 3.33 89 2.73 3.33 82 53-106 9 3.01 3.33 84 2.53 3.33 86 47-117 5 2.79 3.33 84 2.53 3.33</td></td<>	Result Spike Amount %Rec Result Spike Amount 2.19 3.33 66 2.13 3.33 2.23 3.33 67 2.12 3.33 2.54 3.33 76 2.23 3.33 2.53 3.33 76 2.14 3.33 2.62 3.33 78 2.24 3.33 2.63 3.33 79 2.23 3.33 2.82 3.33 84 2.67 3.33 2.98 3.33 89 2.73 3.33 3.01 3.33 90 2.86 3.33 2.79 3.33 84 2.53 3.33 2.79 3.33 82 2.61 3.33 2.72 3.33 82 2.61 3.33 2.82 3.33 85 2.61 3.33 2.52 3.33 75 2.53 3.33 2.52 3.33 75 2.53 3.33	Result Spike Amount %Rec Result Spike Amount %Rec 2.19 3.33 66 2.13 3.33 64 2.23 3.33 67 2.12 3.33 64 2.54 3.33 76 2.23 3.33 67 2.53 3.33 76 2.14 3.33 64 2.62 3.33 78 2.24 3.33 67 2.63 3.33 79 2.23 3.33 80 2.98 3.33 84 2.67 3.33 80 2.98 3.33 89 2.73 3.33 82 3.01 3.33 89 2.73 3.33 86 2.79 3.33 84 2.53 3.33 76 2.73 3.33 82 2.61 3.33 78 2.72 3.33 82 2.51 3.33 75 2.82 3.33 85 2.61 3.	Result Spike Amount %Rec Result Spike Amount %Rec Limits 2.19 3.33 66 2.13 3.33 64 44-92 2.23 3.33 67 2.12 3.33 64 44-95 2.54 3.33 76 2.23 3.33 67 48-105 2.53 3.33 76 2.14 3.33 67 47-101 2.62 3.33 78 2.24 3.33 67 47-101 2.63 3.33 79 2.23 3.33 80 52-108 2.82 3.33 84 2.67 3.33 80 52-108 2.98 3.33 89 2.73 3.33 82 53-106 3.01 3.33 89 2.73 3.33 86 47-117 2.79 3.33 84 2.53 3.33 76 53-124 2.73 3.33 82 2.61 3.33 78	Result Spike Amount %Rec Result Spike Amount %Rec Limits RPD 2.19 3.33 66 2.13 3.33 64 44-92 3 2.23 3.33 67 2.12 3.33 64 44-95 5 2.54 3.33 76 2.23 3.33 67 48-105 13 2.53 3.33 76 2.14 3.33 64 49-97 17 2.62 3.33 78 2.24 3.33 67 47-101 15 2.63 3.33 79 2.23 3.33 80 52-108 5 2.82 3.33 84 2.67 3.33 80 52-108 5 2.98 3.33 89 2.73 3.33 82 53-106 9 3.01 3.33 84 2.53 3.33 86 47-117 5 2.79 3.33 84 2.53 3.33

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Form 3C - Organic Printed: 11/03/2014 13:38:32 Page 1 of 1 u:\Stealth\Crystal.rpt\Form3DLC.rpt SuperSet Reference: RR172356



November 10, 2014

1501 4th Ave.,Suite 1400 Seattle, WA 98101 ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: 1-360-577-7222 F: 1-360-636-1068 www.alsglobal.com

Analytical Report for Service Request No: K1411112

RE: IP Tacoma Metals/33764085

Dear Paul:

Paul Kalina URS Corporation

Enclosed are the results of the sample(s) submitted to our laboratory on October 9, 2014. For your reference, these analyses have been assigned our service request number **K1411112**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3375. You may also contact me via email at Janet.Malloch@alsglobal.com.

Respectfully submitted,

ganet mallock

ALS Group USA Corp. dba ALS Environmental

Janet Malloch Project Manager

Page 1 of __801

ALS ENVIRONMENTAL

Client:URS CorporationService Request No.:K1411112Project:IP Tacoma Metals/33764085Date Received:10/09/14

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 10/09/14. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Diesel and Residual Range Organics by NWTPH-Dx

Elevated Detection Limits:

Several samples required dilution due to the presence of elevated levels of non-target analytes. The reporting limits were adjusted to reflect the dilution.

Surrogate Exceptions:

The control criteria for n-Triacontane in several samples were not applicable. The analysis of the samples required a dilution, which resulted in a surrogate concentration below the reporting limit. No further corrective action was appropriate.

Sample Notes and Discussion:

The samples did not resemble a Stoddard solvent fingerprint nor a petroleum product.

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) criterion for the replicate analysis of Residual Range Organics (RRO) in sample Batch QC was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

No other anomalies associated with the analysis of these samples were observed.

Approved by ganet mallock

Polynuclear Aromatic Hydrocarbons by EPA Method 8270

Calibration Verification Exceptions:

The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS07\1028F002.D: Fluoranthene. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Elevated Detection Limits:

Sample B-57-S-9-100714 required dilution due to the presence of elevated levels of target analyte. The reporting limits were adjusted to reflect the dilution.

No other anomalies associated with the analysis of these samples were observed.

Approved by gamet mallock

CHAIN OF CUSTODY

Lab# 161411112 coc 1 of 3

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

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B-48-5-7-100714			0935		2		X						X													
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B-49-5-8-100714		The state of the s	0855	The state of the s	2		X						X													
8-50-5-4-100714		-	1005		1		X						X													
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APEX LABS

CHAIN OF CUSTODY

Lab# <u>K141112</u> coc <u>Z of 5</u>

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

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B-57-5-7.5-100714			1425		2		×						X													
B-57-5-9-100714		1	1435	V	1		X						X													
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Cooler Receipt and Preservation Form

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. Were	custody pape	ers properly	y filled out	(ink, sign	ed, etc	.)?						NA	D	N
. Did al	ll bottles arri	ve in good	condition (unbroken)? Inc	licate ir	n the to	able bei	low.			NA	8	N
. Were a	all sample lal	bels comple	ete (i.e ana	lysis, pres	ervatio	n, etc.)	?					NA	D	N
. Did all	l sample labe	els and tags	agree with	custody j	papers'	? Indic	ate ma	jor disc	crepancies i	n the table	on page 2.	NA	(R	N
. Were	appropriate l	bottles/cont	tainers and	volumes	receive	ed for th	ne tests	indica	ted?			NA	$\langle \mathcal{P} \rangle$	N
0. Were	the pH-pres	erved bottle	es (see SMC	O GEN SOI	P) rece	ived at	the app	propria	te pH? Indi	cate in the i	able below	NA	Y	N
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	Sample ID			Count Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume	Page and the Company of the Company		iitials	Time
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Analytical Report

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None **Service Request:** K1411112

Date Collected: 10/7/14

Date Received: 10/9/14

Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
B-49-S-8-100714	K1411112-005	45.7	-	1	10/22/14 11:41	
B-57-S-7.5-100714	K1411112-019	37.9	-	1	10/22/14 11:41	
B-57-S-9-100714	K1411112-020	41.7	-	1	10/22/14 11:41	

QA/QC Report

Client: URS Corporation

Project IP Tacoma Metals/33764085

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request:K1411112

Date Collected:NA
Date Received:NA

Units:Percent

Basis: As Received

Replicate Sample Summary Solids, Total

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
Batch QC	K1411111-005DUP	-	79.9	78.0	79.0	2	20	10/22/14
Batch QC	K1411224-012DUP	-	22.5	22.4	22.5	<1	20	10/22/14

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Client: URS Corporation Service Request: K1411112

Project: IP Tacoma Metals/33764085

Cover Page - Organic Analysis Data Package Diesel and Residual Range Organics

		Date	Date
Sample Name	Lab Code	Collected	Received
B-49-S-8-100714	K1411112-005	10/07/2014	10/09/2014
B-57-S-7.5-100714	K1411112-019	10/07/2014	10/09/2014
B-57-S-9-100714	K1411112-020	10/07/2014	10/09/2014

QA/QC Report

Client: URS Corporation Service Request: K1411112

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil

> **Surrogate Recovery Summary Diesel and Residual Range Organics**

EPA 3550B Units: Percent **Extraction Method: Analysis Method:** NWTPH-Dx Level: Low

Sample Name	Lab Code	Sur1	Sur2
B-49-S-8-100714	K1411112-005	91 D #	141 D #
B-57-S-7.5-100714	K1411112-019	98 D #	245 D #
B-57-S-9-100714	K1411112-020	129 D	168 D *
Batch QC	K1411494-003	87 D	100 D
Batch QCDUP	KWG1414518-1	37 D *	40 D *
Method Blank	KWG1414518-5	82	87
Lab Control Sample	KWG1414518-4	84	86

Surrogate Recovery Control Limits (%)

Sur1 = o-Terphenyl 50-150 Sur2 = n-Triacontane 50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Form 2A - Organic Printed: 11/05/2014 14:37:39 Page 1 of 1 $u:\Stealth\Crystal.rpt\Form2.rpt$ SuperSet Reference: RR172454 21

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix:

Solid

Service Request: K1411112

Date Collected: NA
Date Received: NA

Diesel and Residual Range Organics

Sample Name:Method BlankLab Code:KWG1414518-5

Extraction Method: Analysis Method:

EPA 3550B

NWTPH-Dx

Units:	mg/Kg
Basis:	Dry
Level:	Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	25	1	10/21/14	10/31/14	KWG1414518	
Residual Range Organics (RRO)	ND U	99	1	10/21/14	10/31/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	82	50-150	10/31/14	Acceptable
n-Triacontane	87	50-150	10/31/14	Acceptable

Comments:

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1 of 1

Page

Analytical Results

Client: URS Corporation

Service Request: K1411112 IP Tacoma Metals/33764085 **Date Collected:** 10/07/2014 **Project:**

Sample Matrix: Soil **Date Received:** 10/09/2014

Diesel and Residual Range Organics

Sample Name: B-49-S-8-100714 Units: mg/Kg Lab Code: K1411112-005 Basis: Dry **Extraction Method:** EPA 3550B Level: Low

Analysis Method: NWTPH-Dx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	20000 DZ	2200	20	10/21/14	11/01/14	KWG1414518	
Residual Range Organics (RRO)	32000 DZ	8800	20	10/21/14	11/01/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	91	50-150	11/01/14	Acceptable
n-Triacontane	141	50-150	11/01/14	Acceptable

Comments:

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Analytical Results

Client: URS Corporation

Service Request: K1411112 IP Tacoma Metals/33764085 **Date Collected:** 10/07/2014 **Project:**

Sample Matrix: Soil **Date Received:** 10/09/2014

Diesel and Residual Range Organics

Sample Name: B-57-S-7.5-100714 Units: mg/Kg Lab Code: K1411112-019 Basis: Dry **Extraction Method:** EPA 3550B Level: Low

Analysis Method: NWTPH-Dx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	11000 DZ	2700	20	10/21/14	11/01/14	KWG1414518	
Residual Range Organics (RRO)	60000 DZ	11000	20	10/21/14	11/01/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	98	50-150	11/01/14	Acceptable
n-Triacontane	245	50-150	11/01/14	Outside Control Limits

Comments:

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1 of 1

Analytical Results

Client: URS Corporation

Service Request: K1411112 IP Tacoma Metals/33764085 **Date Collected:** 10/07/2014 **Project: Sample Matrix: Date Received:** 10/09/2014 Soil

Diesel and Residual Range Organics

Sample Name: B-57-S-9-100714 Units: mg/Kg Lab Code: K1411112-020 Basis: Dry **Extraction Method:** EPA 3550B Level: Low

Analysis Method: NWTPH-Dx

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	34000 DZ	1200	5	10/21/14	10/31/14	KWG1414518	
Residual Range Organics (RRO)	22000 DZ	4800	5	10/21/14	10/31/14	KWG1414518	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	129	50-150	10/31/14	Acceptable
n-Triacontane	168	50-150	10/31/14	Outside Control Limits

Comments:

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QA/QC Report

Client: URS Corporation

Service Request: K1411112 IP Tacoma Metals/33764085 **Project: Date Extracted:** 10/21/2014

Sample Matrix: Solid **Date Analyzed:** 11/01/2014

Duplicate Sample Summary Diesel and Residual Range Organics

Batch QC **Sample Name:** Lab Code: K1411494-003 Units: mg/Kg Basis: Dry

Extraction Method: EPA 3550B **Analysis Method:** NWTPH-Dx Level: Low

Extraction Lot: KWG1414518

Batch OCDUP

		Sample	KWG14 Duplicate	14518-1	Relative Percent	RPD Limit
Analyte Name	MRL	Result	Result	Average	Difference	
Diesel Range Organics (DRO)	640	ND	ND	ND	-	40
Residual Range Organics (RRO)	640	2100	1000	1600	69 #	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Form 3B - Organic Printed: 11/05/2014 14:37:43 Page 1 of 1 u:\Stealth\Crystal.rpt\Form3DUP.rpt SuperSet Reference: RR172454

QA/QC Report

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Solid

Service Request: K1411112 **Date Extracted:** 10/21/2014 **Date Analyzed:** 10/31/2014

Lab Control Spike Summary
Diesel and Residual Range Organics

Extraction Method:EPA 3550BUnits:mg/KgAnalysis Method:NWTPH-DxBasis:Dry

Level: Low

Extraction Lot: KWG1414518

Lab Control Sample KWG1414518-4 Lab Control Spike

		Spike		%Rec
Analyte Name	Result	Amount	%Rec	Limits
Diesel Range Organics (DRO)	233	267	87	42-134
Residual Range Organics (RRO)	151	133	113	48-141

Results flagged with an asterisk $(\mbox{\ensuremath{}^{*}})$ indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: URS Corporation Service Request: K1411112

Project: IP Tacoma Metals/33764085

Cover Page - Organic Analysis Data Package Semi-Volatile Organic Compounds by GC/MS

		Date	Date
Sample Name	Lab Code	Collected	Received
B-49-S-8-100714	K1411112-005	10/07/2014	10/09/2014
B-57-S-7.5-100714	K1411112-019	10/07/2014	10/09/2014
B-57-S-9-100714	K1411112-020	10/07/2014	10/09/2014

QA/QC Report

Client: URS Corporation Service Request: K1411112

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil

> **Surrogate Recovery Summary** Semi-Volatile Organic Compounds by GC/MS

EPA 3541 Units: Percent **Extraction Method: Analysis Method:** 8270D Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
B-49-S-8-100714	K1411112-005	64	73	88
B-57-S-7.5-100714	K1411112-019	71	74	93
B-57-S-9-100714	K1411112-020	61 D	61 D	77 D
Method Blank	KWG1414210-3	53	53	66
Lab Control Sample	KWG1414210-1	60	65	74
Duplicate Lab Control Sample	KWG1414210-2	66	61	71

Surrogate Recovery Control Limits (%)

Sur1	=	Nitrobenzene-d5	29-116
Sur2	=	2-Fluorobiphenyl	32-104
Sur3	=	Terphenyl-d14	37-133

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Form 2A - Organic 1 of 1 Printed: 11/03/2014 13:46:08 Page $u:\Stealth\Crystal.rpt\Form2.rpt$ SuperSet Reference: RR172358 42

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411112

Date Collected: NA

Date Received: NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name:Method BlankLab Code:KWG1414210-3

Extraction Method: EPA 3541 **Analysis Method:** 8270D

Units:	mg/Kg
Basis:	Dry

Level: Low

Dilution Date Date Extraction

			Dilution	Date	Date	Extraction	
Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
ND	U	0.33	1	10/21/14	10/27/14	KWG1414210	
	ND N	Result Q ND U ND U	ND U 0.33 ND U 0.33	Result Q MRL Factor ND U 0.33 1 ND U 0.33 1	Result Q MRL Factor Extracted ND U 0.33 1 10/21/14 ND U 0.33 1 10/21/1	Result Q MRL Factor Extracted Analyzed ND U 0.33 1 10/21/14 10/27/14 ND U	Result Q MRL Factor Extracted Analyzed Lot ND U 0.33 1 10/21/14 10/27/14 KWG1414210 ND U 0.33 1 10/21/14

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	53	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	53	32-104	10/27/14	Acceptable
Terphenyl-d14	66	37-133	10/27/14	Acceptable

Comments:

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Page

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Date Collected: 10/07/2014 **Date Received:** 10/09/2014

Semi-Volatile Organic Compounds by GC/MS

 Sample Name:
 B-49-S-8-100714
 Units:
 mg/Kg

 Lab Code:
 K1411112-005
 Basis:
 Dry

 Extraction Method:
 EPA 3541
 Level:
 Low

Analysis Method: 8270D

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	46	4.4	1	10/21/14	10/27/14	KWG1414210	
2-Methylnaphthalene	21	4.4	1	10/21/14	10/27/14	KWG1414210	
Acenaphthylene	ND U	4.4	1	10/21/14	10/27/14	KWG1414210	
Acenaphthene	31	4.4	1	10/21/14	10/27/14	KWG1414210	
Dibenzofuran	13	4.4	1	10/21/14	10/27/14	KWG1414210	
Fluorene	22	4.4	1	10/21/14	10/27/14	KWG1414210	
Phenanthrene	57	4.4	1	10/21/14	10/27/14	KWG1414210	
Anthracene	320 D	22	5	10/21/14	10/28/14	KWG1414210	
Fluoranthene	250 D	22	5	10/21/14	10/28/14	KWG1414210	*
Pyrene	330 D	22	5	10/21/14	10/28/14	KWG1414210	
Benz(a)anthracene	170 D	22	5	10/21/14	10/28/14	KWG1414210	
Chrysene	550 D	87	20	10/21/14	10/28/14	KWG1414210	
Benzo(b)fluoranthene	210 D	22	5	10/21/14	10/28/14	KWG1414210	
Benzo(k)fluoranthene	72 D	22	5	10/21/14	10/28/14	KWG1414210	
Benzo(a)pyrene	150 D	22	5	10/21/14	10/28/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	64	4.4	1	10/21/14	10/27/14	KWG1414210	
Dibenz(a,h)anthracene	22	4.4	1	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	56	4.4	1	10/21/14	10/27/14	KWG1414210	

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	64	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	73	32-104	10/27/14	Acceptable
Terphenyl-d14	88	37-133	10/27/14	Acceptable

Comments:

Merged

1 of 1

Page

Analytical Results

Client: URS Corporation

IP Tacoma Metals/33764085 **Project:**

Sample Matrix: Soil Service Request: K1411112 **Date Collected:** 10/07/2014

Date Received: 10/09/2014

Semi-Volatile Organic Compounds by GC/MS

Sample Name: B-57-S-7.5-100714 Units: mg/Kg Lab Code: K1411112-019 Basis: Dry **Extraction Method:** EPA 3541 Level: Low

Analysis Method: 8270D

Analyte Name	Result Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
· · · · ·			1			KWG1414210	11010
Naphthalene	ND U	21	1	10/21/14	10/27/14		
2-Methylnaphthalene	21	21	1	10/21/14	10/27/14	KWG1414210	
Acenaphthylene	28	21	1	10/21/14	10/27/14	KWG1414210	
Acenaphthene	31	21	1	10/21/14	10/27/14	KWG1414210	
Dibenzofuran	ND U	21	1	10/21/14	10/27/14	KWG1414210	
Fluorene	45	21	1	10/21/14	10/27/14	KWG1414210	
Phenanthrene	120	21	1	10/21/14	10/27/14	KWG1414210	
Anthracene	1000 D	110	5	10/21/14	10/28/14	KWG1414210	
Fluoranthene	260	21	1	10/21/14	10/27/14	KWG1414210	
Pyrene	710 D	110	5	10/21/14	10/28/14	KWG1414210	
Benz(a)anthracene	910 D	110	5	10/21/14	10/28/14	KWG1414210	
Chrysene	3400 D	1100	50	10/21/14	10/28/14	KWG1414210	
Benzo(b)fluoranthene	1500 D	110	5	10/21/14	10/28/14	KWG1414210	
Benzo(k)fluoranthene	510 D	110	5	10/21/14	10/28/14	KWG1414210	
Benzo(a)pyrene	1200 D	110	5	10/21/14	10/28/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	630 D	110	5	10/21/14	10/28/14	KWG1414210	
Dibenz(a,h)anthracene	290	21	1	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	540 D	110	5	10/21/14	10/28/14	KWG1414210	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	71	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	74	32-104	10/27/14	Acceptable
Terphenyl-d14	93	37-133	10/27/14	Acceptable

Comments:

Page

1 of 1

Analytical Results

Client: URS Corporation

Project: IP Tacoma Metals/33764085

Sample Matrix: Soil

Service Request: K1411112 **Date Collected:** 10/07/2014 **Date Received:** 10/09/2014

Units: mg/Kg

Basis: Dry

Level: Low

Semi-Volatile Organic Compounds by GC/MS

 Sample Name:
 B-57-S-9-100714

 Lab Code:
 K1411112-020

 Extraction Method:
 EPA 3541

Analysis Method: 8270D

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	1400	D	240	50	10/21/14	10/28/14	KWG1414210	
2-Methylnaphthalene	810	D	48	10	10/21/14	10/28/14	KWG1414210	
Acenaphthylene	ND	U	24	5	10/21/14	10/27/14	KWG1414210	
Acenaphthene	720	D	48	10	10/21/14	10/28/14	KWG1414210	
Dibenzofuran	280	D	24	5	10/21/14	10/27/14	KWG1414210	
Fluorene	460	D	24	5	10/21/14	10/27/14	KWG1414210	
Phenanthrene	1700	D	240	50	10/21/14	10/28/14	KWG1414210	
Anthracene	990	D	240	50	10/21/14	10/28/14	KWG1414210	
Fluoranthene	900	D	48	10	10/21/14	10/28/14	KWG1414210	*
Pyrene	760	D	48	10	10/21/14	10/28/14	KWG1414210	
Benz(a)anthracene	220	D	24	5	10/21/14	10/27/14	KWG1414210	
Chrysene	440	D	24	5	10/21/14	10/27/14	KWG1414210	
Benzo(b)fluoranthene	180	D	24	5	10/21/14	10/27/14	KWG1414210	
Benzo(k)fluoranthene	55	D	24	5	10/21/14	10/27/14	KWG1414210	
Benzo(a)pyrene	140	D	24	5	10/21/14	10/27/14	KWG1414210	
Indeno(1,2,3-cd)pyrene	60	D	24	5	10/21/14	10/27/14	KWG1414210	
Dibenz(a,h)anthracene	ND	U	24	5	10/21/14	10/27/14	KWG1414210	
Benzo(g,h,i)perylene	56	D	24	5	10/21/14	10/27/14	KWG1414210	

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Nitrobenzene-d5	61	29-116	10/27/14	Acceptable
2-Fluorobiphenyl	61	32-104	10/27/14	Acceptable
Terphenyl-d14	77	37-133	10/27/14	Acceptable

Comments:

Page



June 08, 2015

Paul Kalina AECOM ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue

Kelso, WA 98626 **T**:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

Analytical Report for Service Request No: K1505210

RE: IP Tacoma Metals / 33764085.

1501 4th Ave., Suite 1400

Seattle, WA 98101

Dear Paul,

Enclosed are the results of the sample(s) submitted to our laboratory October 08, 2014 For your reference, these analyses have been assigned our service request number **K1505210**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3375. You may also contact me via email at Janet.Malloch@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janet Malloch Project Manager For JM

ALS ENVIRONMENTAL

 Client:
 AECOM
 Service Request No.:
 K1505210

 Project:
 IP Tacoma Metals/ 33764085.
 Date Received:
 10/08/14-10/31/14

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six soil samples were received for analysis at ALS Environmental between 10/08/14 and 10/31/14. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory. These samples were originally logged under Service Requests K1411110, K1411111, K1411112, and K14123304.

Diesel Range Organics by Method NWTPH-Dx

Holding Time Exceptions:

The samples were received past holding time. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Surrogate Exceptions:

The control criteria for o-Terphenyl and n-Triacontane in sample B-77-S-5-103014 were not applicable. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the reporting limit. No further corrective action was appropriate.

Elevated Detection Limits:

The detection limit was elevated for Diesel Range Organics (DRO) and Residual Range Organics (RRO) in all field samples. The sample extracts were diluted prior to instrumental analysis to protect the instrument injection port from unnecessary fouling. The extracts were highly colored, which suggested the presence of elevated levels of higher-boiling components and indicated the need to perform a dilution prior to injection into the instrument.

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) criterion for the replicate analysis of Residual Range Organics (RRO) in sample Batch QC was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

No other anomalies associated with the analysis of these samples were observed.

Approved by

Polynuclear Aromatic Hydrocarbons by EPA Method 8270

Holding Time Exceptions:

The analysis of all samples was initially performed past the recommended holding time. The extraction was not requested within the holding time of the samples. Efforts were made to analyze the samples as soon as possible once the extraction was requested. The data was flagged to indicate the holding time violation.

Calibration Verification Exceptions:

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS14\0601F002.D: Pyrene and Terphenyl-d14. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS14\0603F003.D: Benzo(g,h,i)perylene. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS14\0604F002.D: Dibenz(a,h)anthracene and Benzo(g,h,i)perylene. In accordance with the EPA Method, 80% or more of the CCV analytes must have passed within 20% of the true value. The remaining analytes are allowed a 40% difference as per the ALS SOP. The CCV met these criteria. No further corrective action was required.

Surrogate Exceptions:

The control criteria for Fluorene-d10, Fluoranthene-d10, and Terphenyl-d14 in samples B-58-S-4-100714, B-58-S-4-100714MS, B-58-S-4-100714DMS, B-69-S-4.5-100814 and B-77-S-5-103014 were not applicable. The analysis of the sample required a dilution, which resulted in a surrogate concentration below the reporting limit. No further corrective action was appropriate.

Matrix Spike Recovery Exceptions:

The control criteria for matrix spike recovery of all analytes for sample B-58-S-4-100714 were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) for Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Acenaphthene, and Dibenzofuran in the replicate matrix spike analyses of sample B-58-S-4-100714 was outside control criteria. All spike recoveries and the RPD for the analytes in question were within acceptance limits in the LCS/DLCS, indicating the analytical batch was in control. No further corrective action was taken.

Elevated Detection Limits:

The detection limit was elevated for all analytes in samples B-58-S-4-100714, B-58-S-4-100714MS, B-58-S-4-100714DMS, B-69-S-4.5-100814, and B-77-S-5-103014. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. The extract was highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. Clean-up of the extract was performed within the scope of the method, but did not eliminate enough of the background components to prevent dilution. The results were flagged to indicate the matrix interference.

Sample B-58-S-4-100714 required dilution due to the presence of elevated levels of Chrysene. The reporting limits were adjusted to reflect the dilution.

Approved by

Sample B-49-S-7-100714 required dilution due to the presence of elevated levels of Chrysene, Benzo(b)fluoranthene, and Benzo(a)pyrene. The reporting limits were adjusted to reflect the dilution.

Sample B-77-S-5-103014 required dilution due to the presence of elevated levels of Acenaphthene, Phenanthrene, Fluoranthene, and Pyrene. The reporting limits were adjusted to reflect the dilution.

The detection limit for all analytes for samples B-58-S-4-100714 and B-55-S-4-100714 was elevated due to less than optimal sample mass extracted for analysis. The sample contained low percent solids which prevented extraction of the sample mass necessary to achieve target detection limits.

No other anomalies associated with the analysis of these samples were observed.

Approved by

CHAIN OF CUSTODY

Lab# K1411110 coc 3 of 5

-12232 S.W. Garden Place, Tigard, OR 97223 Ph. 503-718-2323 Fax: 503-718-0333

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APEX LABS

CHAIN OF CUSTODY

Lab # <u>K1411110</u> coc 4 of 5

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

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Blank, Surrogate,	, as					Dissol	ved Met	tals: Al	As	Sb B	за Ве	ВС	a Cd	Co	Cr Cı	ال Fe	Pb N	Лg М	In M	o Ni	K Ag	j Na	Se (Sr TI	Sn V Z	Zn Hg
required						*INC	JICAT	E STA	TE H	YDRC	CAR	BON	PROC	EDU	RE:	AK (SA V	VI (f	VORT	HWE	STO	THER			_(CIRCLI	E ONE)
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			equested Rep	ort Date		□s	ample	e Ship	men	t cont	ains l	JSDA	₹ regu	ılated	soil s	sampl	es (ch	ieck ł	oox if	appli	icable	∌)				
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Bret Waldren Printed Name	Date/Tir ビ Firm	<u> </u>	JA	ed Name			irm	12	2	-		ted Na			Firr						ed Na			Firm		



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Client / Pr	oject:	URS						Serv	vice Re	equest I	X14		[(
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I Sample	es were rec	eived via?	Mail	/ / Fed Ex	r	PS .	DH	r i	PDX	Couri	or Ha	nd Delivere			
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24.3	2007	<u> </u>	3.7	0.7		,									1
4. Packin	g material:	Inserts	Baggies	Bubble 19	Vrap)	Gel Pa	cks	Wet I	ce Dr	y Ice	Sleeves				
5. Were o	custody pap	ers properl	y filled out	(ink, signe	ed, etc.)?							NA	(D)	N
6. Did all	bottles arr	ive in good	condition (unbroken)	? Ind	icate in	the to	able be	low.				NA	X)	N
		-	ete (i.e anal										NA	Z¥?	N
	-	_	s agree with		_					cies in ti	he table o	n page 2.	NA	(R)	N
			tainers and										NA	(D)	N
	-		les (see SMC						ite pH?	Indicat	e in the ta	ble below	NA	Y	N
			ithout head	space? In	dicate	in the t	able b	elow.					NA.	Y	N
12. Was C	C12/Res neg	gative?		Landet este a consum 6/2005	Salaki Orni Histori	ereconstruct v	Manager Co.	engedu i por constitu	ne ochobe. Ugo	manageneed Visigo	aguenio revige otypo.	er ett er til film film ett ett ett ett ett ett ett ett ett et	(NA	Y	N
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			Bottle	Count	Out of	Head.			Language Company	486555	Volume	Reagent	rot -		Referencial and the control of the c
	Sample ID)				space	Broke	рН	Rea	gent	added	Numbe		itials	Time
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votes, Dis	crepancie	s, & Keso	tutions:												

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ALS Environmental

CHAIN OF CUSTODY

Lab # 1411112 coc 1 of 5

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

	Company: URS			Project N	Mgr: F	dul	Kali	~~					Proje	ect Na	ıme:	[P	- T.	مرم	nc Meta	ls		Pro	ject #	3 37	640	285		
	Address: 1501 4th Ave. Ste	1400,	Secitle.	WA 9	8101	-322	5			Phor	ie: 20	06-	436	3 -21	72	Fax:	860	6-4	95-5282	Ema	il: p	ميدا	, ka	lina	@ `~	<u>~≤, c</u>	own	
	Sampled by: Bret Waldron							500.10											S REQUEST					Č.				
	Site Location: OR WA	LAB ID #	рате	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOC	8260 RBDM VOCs	8260 BTEX	8270 SVOC	8270 SUM PAHS	8082 PCBs	OTT 009	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z							
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6	B-50-5-4-100714		11-	1005		ī		X						χ									 					
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	Signature: BANC	Date: /	10/8/14	Signature	ane	74	lall	07	Date:	48		Signa	ure:						Date:	Signatu	ıre:		·		Date:			
	Signature: Btall Printed Name: Bretwaldron	Time:	1825	Primed Nai	nea n	et	Ma	lloze	Ume:	83	0	Printe	d Nam	ıe:					Time:	Printed	Name	::			Time:			
- 1	Company: URS			Company:								Comp	any:			·				Compa	ıny:					·		

ALS Environmental

APEX LABS

CHAIN OF CUSTODY

Lab# <u>K141112</u> coc <u>Z of 5</u>

12232 S.W. Garden Place, Tigard, OR 97223 Ph. 503-718-2323 Fax: 503-718-0333

Company: URS			Project N	Agr: 👇	ا لىد	حدان	۸حر					Proje	ect Na	me:	Ιŧ	٥-٦	ردی	ma Me	tals	5	Proj	ect#Z	376	₀ 40	८८		
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Sampled by: Bret Waldren													Y.			ĀŅĀI	LYSI	S REQUES									
Site Location: OR WA	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOC	8260 RBDM VOCs	8260 BTEX	8270 SVOC	8270 SIM PAHS	8082 PCBs	600 TTO	RCRA Metals (8)	Meta	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb. Hg, Mg, Mn, Mo, Ni, K, Se, As, Na, Ti, V, Zn, Co, Tree Property of the Control	S10.	1200-Z							
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Printed Name: Bretarddon	Time:	1825	Printed Na	an et	-Ma	lloz	4	Time:	50		Printe	d Nam	ie:		•			Time:	Printed	l Name				Time:			
Company: [LR S			Company:								Comp	any:			·				Compa	any:					···		



Cooler Receipt and Preservation Form

PC JM

Page____of___

lient / Pr	oject:	URS						Ser	vice Requ	est K	4	//	1112	>		
eceived:	10/8	1/14	Opened:	10/8	/14		Ву:	_ W	Ur	nloade	d: <u>/</u> 0	19/19	By	1: 1h		
Sample		eived via? eived in: (ci ls on cooler	_	Fed Ex Cooler		UPS ox	DH Enve	lope	PDX Other			and Delive	ered	N.	1	
		stody seals		IIA	Y	N	1,		esent, were			nd dated?		Y	•	 N
Raw	Corrected.	Raw	Corrected	Corr.	Т І	nermon	neter	Z1.00.0 NA. 0 NA.	er/COC ID	Contract to the second			ng Num	ber .		7.5%
ooler Temp	Cooler Temp		Temp Blank	Facto		- 10 345			- 1	AA			1540 1540 X		NA	File
2.8	2.7	5.5	5.4	-0.1		3 <i>25</i>										
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Packing	material:	Inserts	Reference	Rubbla	Wran	Cal P	acks	Wat I	ce Dry I	Con S	leeves					L
		ers properly			. ~		uens	11 61 1	ce Diyî	ce Si	eeves		N.	A (S	 列	N
		ive in good		-		•	in the t	able be	elow.				N.		_	N
		bels comple											N	_	0	N
Did all	sample lab	els and tags	agree with	custody	papers	? Indic	cate mo	ijor dis	crepancie	s in the	table o	n page 2.	N.	а (S	\$	N
Were a	ppropriate	bottles/cont	tainers and	volumes	receiv	ed for t	he test	s indica	ated?				N.	$A \subseteq$)	N
Were t	he pH-pres	served bottle	es <i>(see SMC</i>	GEN SO	P) rece	ived at	the ap	propria	ite pH? In	dicate .	in the ta	ible belov	ν <u>Μ</u>	A Y	r	N
Were v	VOA vials	received wi	ithout head	space? In	ndicate	in the	table b	elow.				•	Ø	A Y	r	N
Was C	12/Res neg	gative?											(N	<u>Α</u> Σ	7	N
	Sample ID c	n Bottle			Sam	ple ID o	n COC					Identified	il by:		1997	
	Sample ID			Count Type	Out of Temp	Head- space	Broke	рН	Reage		Volume added	Reage Num	nt Lot iber	Initials	Tin	ne
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CHAIN OF CUSTODY

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PROJECT HAME IP - Tacoma /	Metals	FRS 12 SIN PAIN			1650(] 508(] HCO ₃ (] Financi Ethener	H = H = H = H				
PROJECT NUMBER 33764085		W.S. S.	8151		508[]	′ / / /				
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SAMPLER'S SIGNATURE	968-775-720x	NUMBER OF C. Semivolatile Of C. Semivolatile Of S. S. Semisolatile Of S.	Character Control Cont	Ciricia Description De	Alkallnity (2) COS Diovins/Furans 1613 (2) 8290 (2) PSK 175 (2) Methans	/ /				
SAMPLE I.D. DATE T	Fr.c Storkerson	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		ŔŢŖŊŖŎŢŎŢ		/ REMARKS				
- Company of the Comp	345 S	it with	A Grease-THPH 1864 S. Arochos HEM 1964 S. Arochos Herbicoles Chlorobendics B141C B14	1 1 1 1		f				
										
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B-72-5-4-103014 9	145	LIXIX								
13-72-5-8-103014 9	40	II K X								
B-72-5-13-10394 9	3.5	I X X								
	705									
	207									
13-74-5-8-103014 V 10	720 V									
REPORT REQUIREMENTS	INVOICE INFORMATION	Circle which metals are to be a	nalyzed:							
	20.# 33764085 Bill To: Paul Kalina	Total Metals: Al As Sb	Ba Be B Ca Cd Co Cr (Cu Fe Pb Mg Mn M	Mo Ni K Ag Na Se S	Sr Ti Sn V Zn Hg				
Blank, Surrogate, as	mile. The Nation	Dissolved Metals: Al As Sb	Ba Be B Ca Cd Co Cr (Cu Fe Pb Mg Mn I	Mo Ni K Ag Na Se :	SrTI Sn V Zn Hg				
required			ROCARBON PROCEDURE:			(CIRCLE ONE)				
II. Report Dup., MS, MSD as required	URNAROUND REQUIREMEN									
	24 hr 48 hr.			, ,		ng n				
III. CLP Like Summary (no raw data)	5 day	1 Hold	upon rece	2.yst						
IV. Data Validation Report	Standard (15 working days)		¥	*						
V. EDD	Provide FAX Results									
	Requested Report Date	─ ☐ Sample Shipment co	ntains USDA regulated soil	samples (check box	if applicable)					
RELINQUISHED BY:	17 } /	RECEIVED BY:	RELINQUISHE	ED BY:	RECEIV	ED BY:				
10/30/14		ll 193414 CA3O								
Signature Date/Time Conc. Starks Kan. AECON Printed Name Firm	Signature Signature	Date/Jime		ate/Time	Signature	Date/Time				
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IV. Data Validation F	teport		vide FAX Res																							
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Cooler Receipt and Preservation Form Client / Project:	
Received: By: By: By: By: By: By: By: By: By: By	
1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered 2. Samples were received in: (circle) Cooler Box Envelope Other NA 3. Were custody seals on coolers? NA Y N If yes, how many and where? NA If present, were custody seals intact? Y N If present, were they signed and dated? Y Raw Corrected Raw Corrected Cooler Temp Cooler Temp Blank Temp Blank Factor ID NA NA NA	
2. Samples were received in: (circle) Cooler Box Envelope Other NA 3. Were custody seals on coolers? NA Y N If yes, how many and where? Y N If present, were custody seals intact? Y N If present, were they signed and dated? Y Raw Corrected Cooler Temp Cooler Temp Blank Temp Blank Factor ID NA NA	
2. Samples were received in: (circle) Cooler Box Envelope Other NA 3. Were custody seals on coolers? NA Y N If yes, how many and where? Y N If present, were custody seals intact? Y N If present, were they signed and dated? Y Raw Corrected. Raw Corrected Cooler Temp Blank Temp Blank Factor ID NA NA	
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4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves	L
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y)	N
5. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y	N
7. Were all sample labels complete (i.e analysis, preservation, etc.)?	N
3. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA	N
D. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y	N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y	N
11. Were VOA vials received without headspace? <i>Indicate in the table below.</i>	N
12. Was C12/Res negative?	N
2. Was C12/Res negative:	
Sample ID on Bottle Sample ID on COC Identified by:	
Bottle Count Out of Head- Volume Reagent Lot	
Sample ID Bottle Type Temp space Broke pH Reagent added Number Initials Tir	ne
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Notes, Discrepancies, & Resolutions:	نـــــن
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Analytical Report

Client: AECOM/URS Corporation

Date Collected: 10/07/14 - 10/30/14 **Project:** IP Tacoma Metals/33764085. **Date Received:** 10/08/14 - 10/31/14

Sample Matrix: Soil

Analysis Method:

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Service Request: K1505210

Solids, Total

					Date	
Sample Name	Lab Code	Result	MRL	Dil.	Analyzed	Q
B-58-S-4-100714	K1505210-001	49.9	-	1	05/27/15 11:44	
B-69-S-4.5-100814	K1505210-002	79.7	-	1	05/27/15 11:44	
B-49-S-7-100714	K1505210-003	66.9	-	1	05/27/15 11:44	
B-50-S-4-100714	K1505210-004	69.1	-	1	05/27/15 11:44	
B-55-S-4-100714	K1505210-005	49.2	-	1	05/27/15 11:44	
B-77-S-5-103014	K1505210-006	53.1	-	1	05/27/15 11:44	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: AECOM/URS Corporation Service Request: K1505210

Project IP Tacoma Metals/33764085. Date Collected: 10/07/14

Sample Matrix: Soil Date Received: 10/08/14
Date Analyzed: 05/27/15

Replicate Sample Summary

Replicate Sample Summary
General Chemistry Parameters

Sample Name: B-58-S-4-100714 Units: Percent

Lab Code: K1505210-001 Basis: As Received

Duplicate Sample K1505210-001DUP

Sample 001DUP

Analyte Name Analysis Method MRL Result Result Average RPD RPD Limit

Solids, Total 160.3 Modified - 49.9 51.8 50.9 4 20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: AECOM/URS Corporation Service Request: K1505210

Project: IP Tacoma Metals/33764085.

Cover Page - Organic Analysis Data Package Diesel and Residual Range Organics

		Date	Date
Sample Name	Lab Code	Collected	Received
B-49-S-7-100714	K1505210-003	10/07/2014	10/08/2014
B-77-S-5-103014	K1505210-006	10/30/2014	10/31/2014

QA/QC Report

Service Request: K1505210

Client: AECOM/URS Corporation

Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Surrogate Recovery Summary Diesel and Residual Range Organics

Extraction Method:EPA 3550BUnits:PercentAnalysis Method:NWTPH-DxLevel:Low

Lab Code	Sur1	Sur2
K1505210-003	100 D	103 D
K1505210-006	711 D #	0 D #
K1505236-002	114	118
KWG1504510-1	114	122
KWG1504510-3	106	108
KWG1504510-2	115	106
	K1505210-003 K1505210-006 K1505236-002 KWG1504510-1 KWG1504510-3	K1505210-003 100 D K1505210-006 711 D # K1505236-002 114 KWG1504510-1 114 KWG1504510-3 106

Surrogate Recovery Control Limits (%)

Sur1 = o-Terphenyl 50-150 Sur2 = n-Triacontane 50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Sediment

Pate Collected: NA

Date Received: NA

NA

Diesel and Residual Range Organics

Sample Name: Method Blank Lab Code: KWG1504510-3

Extraction Method: EPA 3550B **Analysis Method:** NWTPH-Dx

Units: mg/Kg
Basis: Dry

Level: Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	ND U	25	1	05/22/15	06/01/15	KWG1504510	
Residual Range Organics (RRO)	ND U	100	1	05/22/15	06/01/15	KWG1504510	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	106	50-150	06/01/15	Acceptable
n-Triacontane	108	50-150	06/01/15	Acceptable

Comments:

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Page 1 of 1

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Collected:** 10/07/2014 **Date Received:** 10/08/2014

Diesel and Residual Range Organics

Sample Name: B-49-S-7-100714 **Lab Code:** K1505210-003

Extraction Method: EPA 3550B **Analysis Method:** NWTPH-Dx

Units: mg/Kg Basis: Dry

Level: Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	160 DZ	76	2	05/22/15	06/02/15	KWG1504510	*
Residual Range Organics (RRO)	2000 DZ	310	2	05/22/15	06/02/15	KWG1504510	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note	
o-Terphenyl	100	50-150	06/02/15	Acceptable	
n-Triacontane	103	50-150	06/02/15	Acceptable	

Comments:

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Page 1 of 1

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Collected:** 10/30/2014 **Date Received:** 10/31/2014

Diesel and Residual Range Organics

Sample Name: B-77-S-5-103014 **Lab Code:** K1505210-006

Extraction Method: EPA 3550B **Analysis Method:** NWTPH-Dx

Units: mg/Kg
Basis: Dry

Level: Low

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Diesel Range Organics (DRO)	140000 DZ	5200	20	05/22/15	06/01/15	KWG1504510	*
Residual Range Organics (RRO)	140000 DZ	21000	20	05/22/15	06/01/15	KWG1504510	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	711	50-150	06/01/15	Outside Control Limits
n-Triacontane	0	50-150	06/01/15	Outside Control Limits

Comments:

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QA/QC Report

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Sediment

Service Request: K1505210 **Date Extracted:** 05/22/2015 **Date Analysis** 06/01/2015

Date Analyzed: 06/01/2015

Duplicate Sample Summary Diesel and Residual Range Organics

Sample Name: Batch QC Lab Code: K1505236-002

K1303230-002

Extraction Method: EPA 3550B **Analysis Method:** NWTPH-Dx

Units: mg/Kg Basis: Dry

Level: Low

Extraction Lot: KWG1504510

Batch QCDUP

		Sample	KWG150	04510-1	Relative Percent	RPD Limit
Analyte Name	MRL	Result	Result	Average	Difference	
Diesel Range Organics (DRO)	33	67	68	67	2	40
Residual Range Organics (RRO)	130	250	260	260	2 #	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed: 06/02/2015 17:43:42 Form 3B 3 Organic Page 1 of 1 u:\Stealth\Crystal.rpt\Form3DUP.rpt SuperSet Reference: RR178529

QA/QC Report

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Sediment

 Service Request:
 K1505210

 Date Extracted:
 05/22/2015

 Date Analyzed:
 06/01/2015

Lab Control Spike Summary
Diesel and Residual Range Organics

Extraction Method: EPA 3550B **Analysis Method:** NWTPH-Dx

Units: mg/Kg
Basis: Dry
Level: Low

Extraction Lot: KWG1504510

Lab Control Sample KWG1504510-2 Lab Control Spike

		Spike		%Rec
Analyte Name	Result	Amount	%Rec	Limits
Diesel Range Organics (DRO)	290	267	109	42-134
Residual Range Organics (RRO)	140	133	105	48-141

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: AECOM/URS Corporation Service Request: K1505210

Project: IP Tacoma Metals/33764085.

Cover Page - Organic Analysis Data Package Polynuclear Aromatic Hydrocarbons

		Date	Date
Sample Name	Lab Code	Collected	Received
B-58-S-4-100714	K1505210-001	10/07/2014	10/08/2014
B-69-S-4.5-100814	K1505210-002	10/08/2014	10/08/2014
B-49-S-7-100714	K1505210-003	10/07/2014	10/08/2014
B-50-S-4-100714	K1505210-004	10/07/2014	10/08/2014
B-55-S-4-100714	K1505210-005	10/07/2014	10/08/2014
B-77-S-5-103014	K1505210-006	10/30/2014	10/31/2014
B-58-S-4-100714MS	KWG1504770-1	10/07/2014	10/08/2014
B-58-S-4-100714DMS	KWG1504770-2	10/07/2014	10/08/2014

QA/QC Report

Service Request: K1505210

AECOM/URS Corporation **Client:** IP Tacoma Metals/33764085.

Project:

Sample Matrix: Soil

> **Surrogate Recovery Summary** Polynuclear Aromatic Hydrocarbons

EPA 3541 Units: Percent **Extraction Method: Analysis Method:** 8270D SIM Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
B-58-S-4-100714	K1505210-001	141 D #	110 D #	360 D #
B-69-S-4.5-100814	K1505210-002	215 D #	79 D #	693 D #
B-49-S-7-100714	K1505210-003	62	57	63
B-50-S-4-100714	K1505210-004	72	65	67
B-55-S-4-100714	K1505210-005	58	57	60
B-77-S-5-103014	K1505210-006	581 D #	338 D #	890 D #
Method Blank	KWG1504770-5	63	73	59
B-58-S-4-100714MS	KWG1504770-1	176 D #	118 D #	334 D #
B-58-S-4-100714DMS	KWG1504770-2	159 D #	90 D #	275 D #
Lab Control Sample	KWG1504770-3	69	73	68
Duplicate Lab Control Sample	KWG1504770-4	68	73	69

Surrogate Recovery Control Limits (%)

Sur1	=	Fluorene-d10	17-104
Sur2	=	Fluoranthene-d10	27-106
Sur3	=	Terphenyl-d14	35-109

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

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Analytical Results

Client: AECOM/URS Corporation IP Tacoma Metals/33764085. **Project:**

Sample Matrix: Soil Service Request: K1505210

Date Collected: NA Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank Lab Code: KWG1504770-5

Extraction Method: EPA 3541 **Analysis Method:** 8270D SIM

Basis: Dry Level: Low

Units: ug/Kg

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
2-Methylnaphthalene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
1-Methylnaphthalene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Acenaphthylene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Acenaphthene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Dibenzofuran	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Fluorene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Phenanthrene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Anthracene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Fluoranthene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Pyrene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Benz(a)anthracene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Chrysene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Benzo(b)fluoranthene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Benzo(k)fluoranthene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Benzo(a)pyrene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Indeno(1,2,3-cd)pyrene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Dibenz(a,h)anthracene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	
Benzo(g,h,i)perylene	ND	U	2.5	1	05/28/15	06/03/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	17-104	06/03/15	Acceptable
Fluoranthene-d10	73	27-106	06/03/15	Acceptable
Terphenyl-d14	59	35-109	06/03/15	Acceptable

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

8270D SIM

Sample Matrix: Soil

Analysis Method:

Service Request: K1505210 **Date Collected:** 10/07/2014 **Date Received:** 10/08/2014

Polynuclear Aromatic Hydrocarbons

 Sample Name:
 B-58-S-4-100714
 Units: ug/Kg

 Lab Code:
 K1505210-001
 Basis: Dry

 Extraction Method:
 EPA 3541
 Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	3800	D	510	100	05/28/15	06/01/15	KWG1504770	*
2-Methylnaphthalene	3400	D	510	100	05/28/15	06/01/15	KWG1504770	*
1-Methylnaphthalene	3100	D	510	100	05/28/15	06/01/15	KWG1504770	*
Acenaphthylene	3900	D	510	100	05/28/15	06/01/15	KWG1504770	*
Acenaphthene	13000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Dibenzofuran	7700	D	510	100	05/28/15	06/01/15	KWG1504770	*
Fluorene	10000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Phenanthrene	71000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Anthracene	51000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Fluoranthene	150000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Pyrene	170000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Benz(a)anthracene	110000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Chrysene	210000	D	2600	500	05/28/15	06/01/15	KWG1504770	*
Benzo(b)fluoranthene	170000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Benzo(k)fluoranthene	59000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Benzo(a)pyrene	130000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Indeno(1,2,3-cd)pyrene	65000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Dibenz(a,h)anthracene	17000	D	510	100	05/28/15	06/01/15	KWG1504770	*
Benzo(g,h,i)perylene	59000	D	510	100	05/28/15	06/01/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	141	17-104	06/01/15	Outside Control Limits
Fluoranthene-d10	110	27-106	06/01/15	Outside Control Limits
Terphenyl-d14	360	35-109	06/01/15	Outside Control Limits

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

8270D SIM

Sample Matrix: Soil

Analysis Method:

Service Request: K1505210 **Date Collected:** 10/08/2014 **Date Received:** 10/08/2014

Polynuclear Aromatic Hydrocarbons

 Sample Name:
 B-69-S-4.5-100814
 Units: ug/Kg

 Lab Code:
 K1505210-002
 Basis: Dry

 Extraction Method:
 EPA 3541
 Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	2200	D	780	250	05/28/15	06/01/15	KWG1504770	*
2-Methylnaphthalene	3100	D	780	250	05/28/15	06/01/15	KWG1504770	*
1-Methylnaphthalene	2200	D	780	250	05/28/15	06/01/15	KWG1504770	*
Acenaphthylene	3400	D	780	250	05/28/15	06/01/15	KWG1504770	*
Acenaphthene	6500	D	780	250	05/28/15	06/01/15	KWG1504770	*
Dibenzofuran	2200	D	780	250	05/28/15	06/01/15	KWG1504770	*
Fluorene	6000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Phenanthrene	20000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Anthracene	64000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Fluoranthene	150000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Pyrene	180000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Benz(a)anthracene	140000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Chrysene	290000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Benzo(b)fluoranthene	270000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Benzo(k)fluoranthene	91000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Benzo(a)pyrene	220000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Indeno(1,2,3-cd)pyrene	100000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Dibenz(a,h)anthracene	27000	D	780	250	05/28/15	06/01/15	KWG1504770	*
Benzo(g,h,i)perylene	94000	D	780	250	05/28/15	06/01/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	215	17-104	06/01/15	Outside Control Limits
Fluoranthene-d10	79	27-106	06/01/15	Acceptable
Terphenyl-d14	693	35-109	06/01/15	Outside Control Limits

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Collected:** 10/07/2014 **Date Received:** 10/08/2014

1 of 1

Polynuclear Aromatic Hydrocarbons

 Sample Name:
 B-49-S-7-100714
 Units: ug/Kg

 Lab Code:
 K1505210-003
 Basis: Dry

 Extraction Method:
 EPA 3541
 Level: Low

Analysis Method: 8270D SIM

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	330	3.7	1	05/28/15	06/03/15	KWG1504770	*
2-Methylnaphthalene	180	3.7	1	05/28/15	06/03/15	KWG1504770	*
1-Methylnaphthalene	96	3.7	1	05/28/15	06/03/15	KWG1504770	*
Acenaphthylene	110	3.7	1	05/28/15	06/03/15	KWG1504770	*
Acenaphthene	74	3.7	1	05/28/15	06/03/15	KWG1504770	*
Dibenzofuran	130	3.7	1	05/28/15	06/03/15	KWG1504770	*
Fluorene	74	3.7	1	05/28/15	06/03/15	KWG1504770	*
Phenanthrene	630	3.7	1	05/28/15	06/03/15	KWG1504770	*
Anthracene	960	3.7	1	05/28/15	06/03/15	KWG1504770	*
Fluoranthene	920	3.7	1	05/28/15	06/03/15	KWG1504770	*
Pyrene	1500	3.7	1	05/28/15	06/03/15	KWG1504770	*
Benz(a)anthracene	1100	3.7	1	05/28/15	06/03/15	KWG1504770	*
Chrysene	4000 D	37	10	05/28/15	06/04/15	KWG1504770	*
Benzo(b)fluoranthene	3700 D	37	10	05/28/15	06/04/15	KWG1504770	*
Benzo(k)fluoranthene	780	3.7	1	05/28/15	06/03/15	KWG1504770	*
Benzo(a)pyrene	2700 D	37	10	05/28/15	06/04/15	KWG1504770	*
Indeno(1,2,3-cd)pyrene	1500	3.7	1	05/28/15	06/03/15	KWG1504770	*
Dibenz(a,h)anthracene	430	3.7	1	05/28/15	06/03/15	KWG1504770	*
Benzo(g,h,i)perylene	1300	3.7	1	05/28/15	06/03/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	17-104	06/03/15	Acceptable
Fluoranthene-d10	57	27-106	06/03/15	Acceptable
Terphenyl-d14	63	35-109	06/03/15	Acceptable

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Collected:** 10/07/2014 **Date Received:** 10/08/2014

Polynuclear Aromatic Hydrocarbons

 Sample Name:
 B-50-S-4-100714
 Units: ug/Kg

 Lab Code:
 K1505210-004
 Basis: Dry

 Extraction Method:
 EPA 3541
 Level: Low

Analysis Method: 8270D SIM

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	100	3.6	1	05/28/15	06/03/15	KWG1504770	*
2-Methylnaphthalene	69	3.6	1	05/28/15	06/03/15	KWG1504770	*
1-Methylnaphthalene	43	3.6	1	05/28/15	06/03/15	KWG1504770	*
Acenaphthylene	26	3.6	1	05/28/15	06/03/15	KWG1504770	*
Acenaphthene	31	3.6	1	05/28/15	06/03/15	KWG1504770	*
Dibenzofuran	33	3.6	1	05/28/15	06/03/15	KWG1504770	*
Fluorene	25	3.6	1	05/28/15	06/03/15	KWG1504770	*
Phenanthrene	140	3.6	1	05/28/15	06/03/15	KWG1504770	*
Anthracene	82	3.6	1	05/28/15	06/03/15	KWG1504770	*
Fluoranthene	290	3.6	1	05/28/15	06/03/15	KWG1504770	*
Pyrene	440	3.6	1	05/28/15	06/03/15	KWG1504770	*
Benz(a)anthracene	150	3.6	1	05/28/15	06/03/15	KWG1504770	*
Chrysene	480	3.6	1	05/28/15	06/03/15	KWG1504770	*
Benzo(b)fluoranthene	440	3.6	1	05/28/15	06/03/15	KWG1504770	*
Benzo(k)fluoranthene	140	3.6	1	05/28/15	06/03/15	KWG1504770	*
Benzo(a)pyrene	300	3.6	1	05/28/15	06/03/15	KWG1504770	*
Indeno(1,2,3-cd)pyrene	220	3.6	1	05/28/15	06/03/15	KWG1504770	*
Dibenz(a,h)anthracene	73	3.6	1	05/28/15	06/03/15	KWG1504770	*
Benzo(g,h,i)perylene	230	3.6	1	05/28/15	06/03/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	72	17-104	06/03/15	Acceptable
Fluoranthene-d10	65	27-106	06/03/15	Acceptable
Terphenyl-d14	67	35-109	06/03/15	Acceptable

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Collected:** 10/07/2014 **Date Received:** 10/08/2014

Polynuclear Aromatic Hydrocarbons

 Sample Name:
 B-55-S-4-100714
 Units: ug/Kg

 Lab Code:
 K1505210-005
 Basis: Dry

 Extraction Method:
 EPA 3541
 Level: Low

Analysis Method: 8270D SIM

			Dilution	Date	Date	Extraction	
Analyte Name	Result Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	39	5.1	1	05/28/15	06/03/15	KWG1504770	*
2-Methylnaphthalene	24	5.1	1	05/28/15	06/03/15	KWG1504770	*
1-Methylnaphthalene	16	5.1	1	05/28/15	06/03/15	KWG1504770	*
Acenaphthylene	6.0	5.1	1	05/28/15	06/03/15	KWG1504770	*
Acenaphthene	10	5.1	1	05/28/15	06/03/15	KWG1504770	*
Dibenzofuran	15	5.1	1	05/28/15	06/03/15	KWG1504770	*
Fluorene	8.9	5.1	1	05/28/15	06/03/15	KWG1504770	*
Phenanthrene	63	5.1	1	05/28/15	06/03/15	KWG1504770	*
Anthracene	11	5.1	1	05/28/15	06/03/15	KWG1504770	*
Fluoranthene	67	5.1	1	05/28/15	06/03/15	KWG1504770	*
Pyrene	83	5.1	1	05/28/15	06/03/15	KWG1504770	*
Benz(a)anthracene	33	5.1	1	05/28/15	06/03/15	KWG1504770	*
Chrysene	75	5.1	1	05/28/15	06/03/15	KWG1504770	*
Benzo(b)fluoranthene	67	5.1	1	05/28/15	06/03/15	KWG1504770	*
Benzo(k)fluoranthene	21	5.1	1	05/28/15	06/03/15	KWG1504770	*
Benzo(a)pyrene	44	5.1	1	05/28/15	06/03/15	KWG1504770	*
Indeno(1,2,3-cd)pyrene	28	5.1	1	05/28/15	06/03/15	KWG1504770	*
Dibenz(a,h)anthracene	8.0	5.1	1	05/28/15	06/03/15	KWG1504770	*
Benzo(g,h,i)perylene	28	5.1	1	05/28/15	06/03/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	58	17-104	06/03/15	Acceptable
Fluoranthene-d10	57	27-106	06/03/15	Acceptable
Terphenyl-d14	60	35-109	06/03/15	Acceptable

Analytical Results

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Collected:** 10/30/2014 **Date Received:** 10/31/2014

Polynuclear Aromatic Hydrocarbons

 Sample Name:
 B-77-S-5-103014

 Lab Code:
 K1505210-006

Extraction Method: EPA 3541 **Analysis Method:** 8270D SIM

Units: ug/Kg
Basis: Dry

Level: Low

				Dilution	Date	Date	Extraction	
Analyte Name	Result	Q	MRL	Factor	Extracted	Analyzed	Lot	Note
Naphthalene	21000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
2-Methylnaphthalene	16000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
1-Methylnaphthalene	45000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Acenaphthylene	30000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Acenaphthene	540000	D	12000	2500	05/28/15	06/01/15	KWG1504770	*
Dibenzofuran	330000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Fluorene	380000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Phenanthrene	1800000	D	12000	2500	05/28/15	06/01/15	KWG1504770	*
Anthracene	380000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Fluoranthene	1300000	D	12000	2500	05/28/15	06/01/15	KWG1504770	*
Pyrene	1000000	D	12000	2500	05/28/15	06/01/15	KWG1504770	*
Benz(a)anthracene	320000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Chrysene	420000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Benzo(b)fluoranthene	300000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Benzo(k)fluoranthene	110000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Benzo(a)pyrene	240000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Indeno(1,2,3-cd)pyrene	120000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Dibenz(a,h)anthracene	31000	D	1200	250	05/28/15	06/01/15	KWG1504770	*
Benzo(g,h,i)perylene	110000	D	1200	250	05/28/15	06/01/15	KWG1504770	*

^{*} See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	581	17-104	06/01/15	Outside Control Limits
Fluoranthene-d10	338	27-106	06/01/15	Outside Control Limits
Terphenyl-d14	890	35-109	06/01/15	Outside Control Limits

Comments:

RR178597

QA/QC Report

Client: AECOM/URS Corporation IP Tacoma Metals/33764085. **Project:**

Sample Matrix: Soil Service Request: K1505210 **Date Extracted:** 05/28/2015 **Date Analyzed:** 06/01/2015

Matrix Spike/Duplicate Matrix Spike Summary Polynuclear Aromatic Hydrocarbons

Sample Name: B-58-S-4-100714 Lab Code: K1505210-001

Extraction Method: EPA 3541

Analysis Method: 8270D SIM Units: ug/Kg

Basis: Dry

Level: Low Extraction Lot: KWG1504770

B-58-S-4-100714MS KWG1504770-1 **Matrix Spike**

B-58-S-4-100714DMS KWG1504770-2 **Duplicate Matrix Spike**

Analyte Name	Sample Result	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	3800	7880	498	818 #	4640	498	168 #	23-114	52 *	40
2-Methylnaphthalene	3400	4600	498	232 #	2610	498	-168 #	24-115	55 *	40
1-Methylnaphthalene	3100	3220	498	33 #	1810	498	-250 #	26-133	56 *	40
Acenaphthylene	3900	8430	498	901 #	6230	498	460 #	32-117	30	40
Acenaphthene	13000	5790	498	-1403 #	3780	498	-1806 #	33-118	42 *	40
Dibenzofuran	7700	4450	498	-649 #	2900	498	-961 #	34-131	42 *	40
Fluorene	10000	4940	498	-1058 #	4240	498	-1200 #	33-125	15	40
Phenanthrene	71000	24200	498	-9328 #	17600	498	-10652#	29-125	31	40
Anthracene	51000	31100	498	-4091 #	30300	498	-4253 #	30-127	3	40
Fluoranthene	150000	76300	498	-15015#	74100	498	-15458#	35-139	3	40
Pyrene	170000	111000	498	-12593#	110000	498	-12796#	27-134	1	40
Benz(a)anthracene	110000	94800	498	-2558 #	87300	498	-4057 #	35-122	8	40
Chrysene	210000	214000	498	1223 #	187000	498	-4098 #	36-126	13	40
Benzo(b)fluoranthene	170000	215000	498	8060 #	184000	498	1944 #	35-124	15	40
Benzo(k)fluoranthene	59000	69600	498	2048 #	63300	498	796 #	38-124	9	40
Benzo(a)pyrene	130000	172000	498	8208 #	147000	498	3262 #	37-123	15	40
Indeno(1,2,3-cd)pyrene	65000	97400	498	6562 #	78200	498	2715 #	28-133	22	40
Dibenz(a,h)anthracene	17000	23500	498	1324 #	20100	498	639 #	32-125	16	40
Benzo(g,h,i)perylene	59000	94300	498	6997 #	74700	498	3064 #	33-128	23	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: AECOM/URS Corporation
Project: IP Tacoma Metals/33764085.

Sample Matrix: Soil

Service Request: K1505210 **Date Extracted:** 05/28/2015 **Date Analyzed:** 06/01/2015

Lab Control Spike/Duplicate Lab Control Spike Summary Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541 **Analysis Method:** 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Leve

Level: Low Extraction Lot: KWG1504770

Lab Control Sample KWG1504770-3 Lab Control Spike Duplicate Lab Control Sample KWG1504770-4 Duplicate Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	347	500	69	330	500	66	32-124	5	40
2-Methylnaphthalene	341	500	68	321	500	64	27-126	6	40
1-Methylnaphthalene	334	500	67	316	500	63	37-129	5	40
Acenaphthylene	371	500	74	348	500	70	38-126	6	40
Acenaphthene	371	500	74	350	500	70	39-124	6	40
Dibenzofuran	366	500	73	346	500	69	41-130	6	40
Fluorene	382	500	76	366	500	73	39-129	4	40
Phenanthrene	370	500	74	352	500	70	39-123	5	40
Anthracene	387	500	77	369	500	74	38-130	5	40
Fluoranthene	394	500	79	376	500	75	39-135	5	40
Pyrene	436	500	87	423	500	85	39-134	3	40
Benz(a)anthracene	423	500	85	401	500	80	46-120	5	40
Chrysene	407	500	81	391	500	78	49-120	4	40
Benzo(b)fluoranthene	443	500	89	425	500	85	51-121	4	40
Benzo(k)fluoranthene	401	500	80	375	500	75	55-120	7	40
Benzo(a)pyrene	396	500	79	371	500	74	49-122	6	40
Indeno(1,2,3-cd)pyrene	372	500	74	333	500	67	40-128	11	40
Dibenz(a,h)anthracene	390	500	78	363	500	73	43-125	7	40
Benzo(g,h,i)perylene	404	500	81	379	500	76	49-122	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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