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*Final Report*

# Septage and Leachate Treatment Facility Site Suitability and Engineering Analysis

Prepared for  
**Matanuska-Susitna Borough**

June 2015

**CH2MHILL®**

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Anchorage, AK  
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# Contents

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Section	Page
<b>Acronyms and Abbreviations .....</b>	<b>v</b>
<b>Site Suitability and Engineering Analysis .....</b>	<b>1</b>
Introduction .....	1
Project Background.....	1
Site Evaluation .....	1
Recommendation.....	2
 <b>Attachments</b>	
1     Engineering Technical Memo	
2     Traffic Technical Memo	
3     Environmental Technical Memo	
4     Site Improvement Capital and Operations Cost Estimates	

# Acronyms and Abbreviations

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AWWU	Anchorage Water and Wastewater Utility
MSB	Matanuska-Susitna Borough
WSAB	Matanuska-Susitna Borough Wastewater & Septage Advisory Board

# Site Suitability and Engineering Analysis

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## Introduction

The purpose of this report is to present the findings from the site suitability and engineering analysis and provide a clear recommendation for preferred site for the septage and leachate treatment facility. Site suitability was determined via execution of three main tasks: 1) engineering analysis of physical conditions of the site ground surface and soils, 2) traffic impact analysis to determine impacts of increased traffic on existing roads and properties, and 3) environmental analysis to identify potential environmental impacts, public health concerns, and environmental permitting requirements. Results are summarized in this report and more detailed technical memorandums for each task are included as attachments 1, 2, and 3, respectively.

## Project Background

The Matanuska-Susitna Borough (MSB) has experienced rapid population growth over the past several decades, and a need for various types of infrastructure has grown as well. Developing a septage treatment and disposal facility in the “core area” of the Mat-Su Valley is currently one of the MSB’s most pressing infrastructure needs. This is because there is no septage treatment and disposal facility anywhere in the Borough, and the associated high cost of labor and fuel to haul all MSB septage to Anchorage for disposal. In addition, the Anchorage Water and Wastewater Utility (AWWU) has increased tipping fees and is seeking to reduce the volume of wastewater received from outside the Municipality of Anchorage.

Over the past decade the MSB has conducted several wastewater and septage studies to develop a strategy for long-term wastewater infrastructure development, in anticipation of population growth. The most recent studies address septage and leachate respectively: the 2013 Update to the 2007 Septage Treatment and Disposal Planning Study (HDR Alaska, May 2013), and the MSB Central Landfill Development Plan (CH2M HILL, October 2014).

MSB staff identified a “Septage Treatment Search Area,” and “Site Evaluation Criteria” and ranked potential sites using these criteria. The top two sites are the Central Landfill site and the Church Road site that were evaluated in this study.

## Site Evaluation

The most significant finding of this study was the poor soils at the Church Road site. Soil borings from that site showed a layer of compact silty gravel that will not be adequate for subsurface discharge of the treated effluent. This is critically important to site selection because the only alternative to subsurface discharge is surface discharge. Surface discharge at the Church Road site would flood existing wetlands and may reach existing surface water. A higher level of treatment (polishing) will be required by permitting agencies for surface discharge.

In comparison, soils at the landfill were found to be mainly coarse sand and gravel, very suitable for treated discharge via leach field. Treated discharge would be expected to percolate into the soil through a depth of approximately 130 feet before reaching groundwater. The treated water would then travel approximately 1000 feet south to the point of compliance at the southern property boundary of the site. This depth and distance will provide ample time for polishing of the effluent. Boring logs for both sites, and a photograph of the compact silty gravel at the Church Road site are included in the Engineering Analysis technical memo (Attachment 1).

Results of the traffic analysis indicated that traffic impacts related to the proposed facilities are expected to have little to no impact within the study area at both site locations. Details of the evaluation are included in Attachment 2.

Results of the environmental analysis indicated that there would be no long-term environmental impacts that would elevate selection of one site over the other. However, the potential for noise and odor impacts is higher at the Church Road site than at the Central Landfill.

Required improvements for the Central Landfill site include a site access road, graded pad around the treatment building, and a leachate transmission pipeline. Expected costs for these facilities are significant. A cost estimate for Central Landfill access road and site improvements is included in Attachment 4. Cost estimates for the leachate transmission pipeline have not yet been prepared.

Required improvements for the Church Road site include a graded pad around the treatment building and short driveway off Church Road. A cost estimate for Church Road site improvements is included in Attachment 4. Estimated costs for additional treatment (polishing) were added for the Church Road site to account for more stringent limits for surface discharge.

A major advantage of the Central Landfill site is the avoidance of trucking leachate which leads to lower operational costs. Landfill leachate can be pumped from the existing storage tanks to the site of the septage and leachate treatment facility. A comparison of operational costs is provided in Attachment 4.

A summary of site advantages and disadvantages is shown in Table 1.

TABLE 1  
**Site Advantages and Disadvantages**  
*Septage and Leachate Treatment Facility Sites*

Site	Advantages	Disadvantages
Central Landfill	No need to truck haul leachate to another site, lower operational costs Site is further from nearby homes resulting in less noise and odor impact to neighbors Centrally located to MSB population	High costs for access road and leachate transmission pipeline
Church Road	Less infrastructure required for access	Poor soils: inadequate capability for subsurface discharge of treated water Higher treatment cost for polishing treated water for surface discharge Higher operational costs with truck hauling of leachate

## Recommendation

CH2M HILL recommends that the septage and leachate treatment facility be sited at the Central Landfill because estimated construction and operations costs are lower and it is the only site that has suitable soils for subsurface discharge.

**Attachment 1**  
**Engineering Technical Memo**

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# Engineering Analysis: MSB Septage and Leachate Facility Site Suitability and Engineering Analysis

PREPARED FOR: Mike Campfield/MSB  
PREPARED BY: Matthew Flynn  
DATE: February 16, 2015  
PROJECT NUMBER: 656753

This technical memorandum summarizes the efforts by CH2M HILL to perform an engineering analysis of potential sites for a septage and leachate treatment and disposal facility within the populous south-central part of the Matanuska-Susitna Borough (MSB). The analysis includes a thorough review of property information, topography, soil conditions, hydrology, determination of groundwater flow characteristics and elevations. Two potential sites were chosen by MSB as possible locations for a septage and leachate treatment and disposal facility (Figure 1). The analysis ranks the potential sites and provides a recommendation based on engineering factors.

## Site 1: Central Landfill

The central landfill (CLF) is located approximately three miles west of downtown Palmer, Alaska. Specifically, the CLF is located at the southern end of North 49th State Street. The total landfill facility is approximately 620 acres in size. The developed portion of the landfill is located on the northern portion of the property. The CLF property is bordered by a residential subdivision to the north; mixed commercial-residential development to the west, northeast, and east; and undeveloped land to the south (Figure 2).

### Site Description

The proposed septage and leachate treatment and disposal facility is located along the southwest edge of the property, southwest of the developed landfill within Lot A3 of Section 11, Township 17 North, Range 1 East, Seward Meridian, Alaska (Figure 2). The facility was placed at this location based on the development plan for the CLF completed in 2014 (CH2M HILL, 2014). The site is very hilly and heavily forested with birch, spruce, and cottonwood trees on the upper elevated portions of the property changing to grasses and willows and alder within the lower lying valleys. A powerline easement bisects the eastern edge of the proposed site. No other known utilities are present.

### Topography

The CLF is situated on the remnants of a glacial moraine dominated by large ridges of gravels and sands lying generally from the southwest to northeast. Elevation changes from the top of the ridges to the bottom of the generated valleys on site can range upward of 100 feet. In addition, the overall terrain for the CLF site slopes from the north to the south. The particular portion of land chosen for the treatment and disposal facility is comprised of a relatively small flat plateau, the only usable portion of the property not requiring an extensive amount of earth work. Figure 2 shows the elevation changes across the property.

### Hydrogeology

A significant amount of information is available concerning the central landfill's hydrogeology as previous investigation efforts have been completed and an on-going groundwater monitoring program is in place. However, due to the location and subsequent elevation of the proposed treatment facility, the depth to groundwater was deemed beyond the reach of conventional environmental drilling methods (estimated at 130 feet below ground surface [bgs]). Therefore, two soil borings were advanced and sampled to assess the site's unsaturated hydrogeology to ensure treated water discharged to the ground would be able to

infiltrate unhindered to the groundwater table. The first soil boring was drilled on February 9, 2015, by a track-mounted CME-65 hollow-stem auger drill rig to a depth of 72 feet bgs in the approximate location of the proposed infiltration gallery as shown on Figure 2. A second boring was drilled on February 10, 2015, to a depth of 40 feet bgs at the proposed location of the facility itself. Soil boring logs are provided in Attachment #1. At both boring locations, soil consisted of primarily sands and gravels down to approximately 30 feet (Photograph #1 in Attachment 2) where small concentrations of silt were encountered and began increasing with depth. A sieve analysis was conducted on the soil sample collected from 30 to 32 feet bgs. Laboratory testing identified the soil as a well-graded gravel with silt and sand comprised of 62 percent gravel, 32 percent sand, and 6 percent silt. A copy of the geotechnical testing results is provided in Attachment 3. Groundwater was not encountered as anticipated to the total depths drilled and no discernable hydrogeologic confining layers (i.e. silt) were observed in either boring.

The observed soil boring geology matches previous geological and hydrogeologic studies (Rowland, 1993), which confirm the site is underlain by highly permeable sands and gravels that vary from 30 to 150 feet in thickness. Silt content in the sands and gravels generally increases with depth until a confining layer of relatively impermeable clay is reached. The confining clay layer is between 45 and 100-plus feet thick, and appears to be a continuous unit underlying the site (Shannon & Wilson, 2014).

An unconfined aquifer exists above the clay layer and is thinnest (3 to 15 feet) under the northern portions of the central landfill and becomes thicker (25 to 67 feet) towards the south. Groundwater at the central landfill has been monitored since 1986. The site's monitoring wells are set in the upper unconfined aquifer. The groundwater flow direction is consistently to the south trending slightly to the southeast near the proposed treatment and disposal facility, with a groundwater seepage velocity under CLF of approximately 90 feet per year based on an average gradient of approximately 0.03 foot per foot, hydraulic conductivity of 75 centimeters per day, and porosity of 30 percent. A deeper, confined aquifer is present beneath the clay layer, and it appears that most neighboring domestic wells draw their water from this confined aquifer (Shannon & Wilson, 2014).

## Recommendation

From a hydrogeologic perspective, the proposed location at the CLF for a septage treatment and disposal facility is adequate and would result in a fair amount of time for the treated septage to reach the property boundary. The unsaturated hydrogeology suggests the treated septage would percolate downward unhindered until reaching the groundwater table where off site flow of the aquifer is shown to be 90 feet per year. However, a small risk remains whereby the treated septage infiltrating from on top of the plateau could emanate into one of the nearby valleys as a seep if the volume of treated water exceeds the soil's infiltration capability. This is a design consideration that must be addressed.

## Site 2: Church Road

The second piece of land evaluated is located approximately 3.5 miles northwest of down town Wasilla, Alaska, and is part of Tract A within Section 30 of Township 18 North, Range 30 West of the Seward Meridian, Alaska owned by MSB. The property is situated on northwest corner of the intersection of Church Road and West Seldon Road (Figure 3).

## Site Description

The Church Road property is heavily forested ranging from primarily birch trees along the eastern edge of the property adjacent Church Road trending toward white spruce and then black spruce the further south and west you travel until the terrain begins to climb back up and the vegetation returns to spruce trees. There are a few local wetlands to the west and northwest of the proposed location of the treatment and disposal facility that are the result of low-lying terrain. There are four previously installed gravel pads and two access driveways present at the site.



## Topography

Topography of the Church Road site trends downward from Church Road in the east to a low lying area along the southern edge of property running westward until reaching a wetland directly west of the proposed treatment and disposal facility. Figure 3 shows the elevation changes across the property.

## Hydrogeology

Two soil borings were advanced and sampled on February 4, 2015, at the Church Road property to assess the hydrogeology of the site. Copies of the soil boring logs are provided in Attachment 1. No known geologic information was available for this property. The first soil boring was drilled adjacent to an existing gravel pad approximately 500 feet west of Church Road, the anticipated location of the treatment and disposal facility's infiltration gallery. The geology consisted of a moist silt with gravel and sand in the upper 10 feet of the soil column changing to a well-graded gravel with sand until approximately 17 feet bgs where the soil changed to a well-graded gravel with silt and sand that was very dense and tightly packed (photograph #2 of Attachment 2) all the way to the bottom of the boring at 55 feet bgs. No groundwater was observed in this soil boring, however, a very moist (but not saturated) layer was noted situated on top of the dense silty gravel at approximately 14.5 feet bgs.

The second soil boring was drilled approximately 1,300 feet west of Church Road. The geology in the upper 15 feet of the boring was similar to the first boring. However, where the first boring encountered the very dense silty gravel at 17 feet, the second boring only saw a very slow increase of silt with depth until a small lense of groundwater was encountered at 29 feet situated on top of the dense silty gravel encountered at approximately 31 feet bgs.

With no real discernable aquifer present at the Church Road site, no further investigation regarding aquifer properties was conducted. Given the elevation change across the site, the dense silty gravel encountered in both borings is likely restricting the downward migration of surface moisture resulting in the presence of the wetlands and surface water to the west of the proposed site.

## Recommendation

From a hydrogeological standpoint, the Church Road property does not meet the requirements necessary for successful disposal of treated septage through infiltration. Assuming the infiltration gallery is installed at a depth of approximately 10 feet bgs, the treated water would only be able to infiltrate through approximately 5-7 feet of gravel before reaching the top of the shallow dense silty gravel limiting the volume of water that could be treated. Secondly, the treated water, once reaching the dense silty gravel, would flow over the silty gravel westward until reaching the wetland. The treated septage would likely daylight and mix with surface water within the wetland potentially adding additional water to the wetland and changing the surface water geochemistry thereby possibly changing the ecology of the area. Daylighting of the treated water would mean additional regulatory concerns.

## References

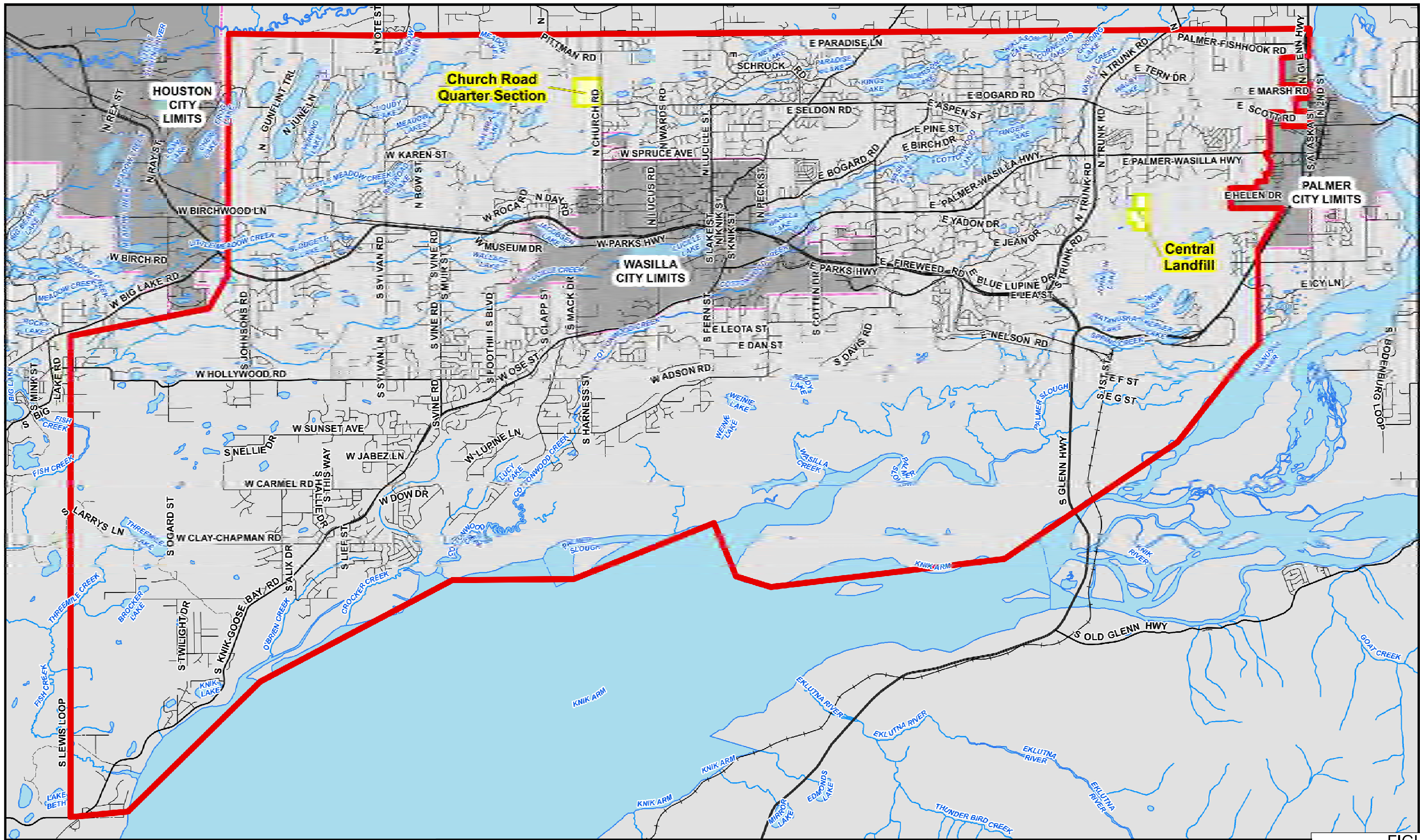
CH2M HILL. 2014. *Matanuska-Susitna Borough Central Landfill Development Plan*. October.

Rowland, S.R., P.E. 1993. *Hydrogeologic Investigation and Monitor Well Installation, Central Landfill*. July.

Shannon & Wilson, Inc. 2014. *Groundwater Monitoring Program First Quarter 2014, Matanuska-Susitna Borough, Central Landfill, Palmer Alaska*. May.

**Attachment 1**  
**Figures**

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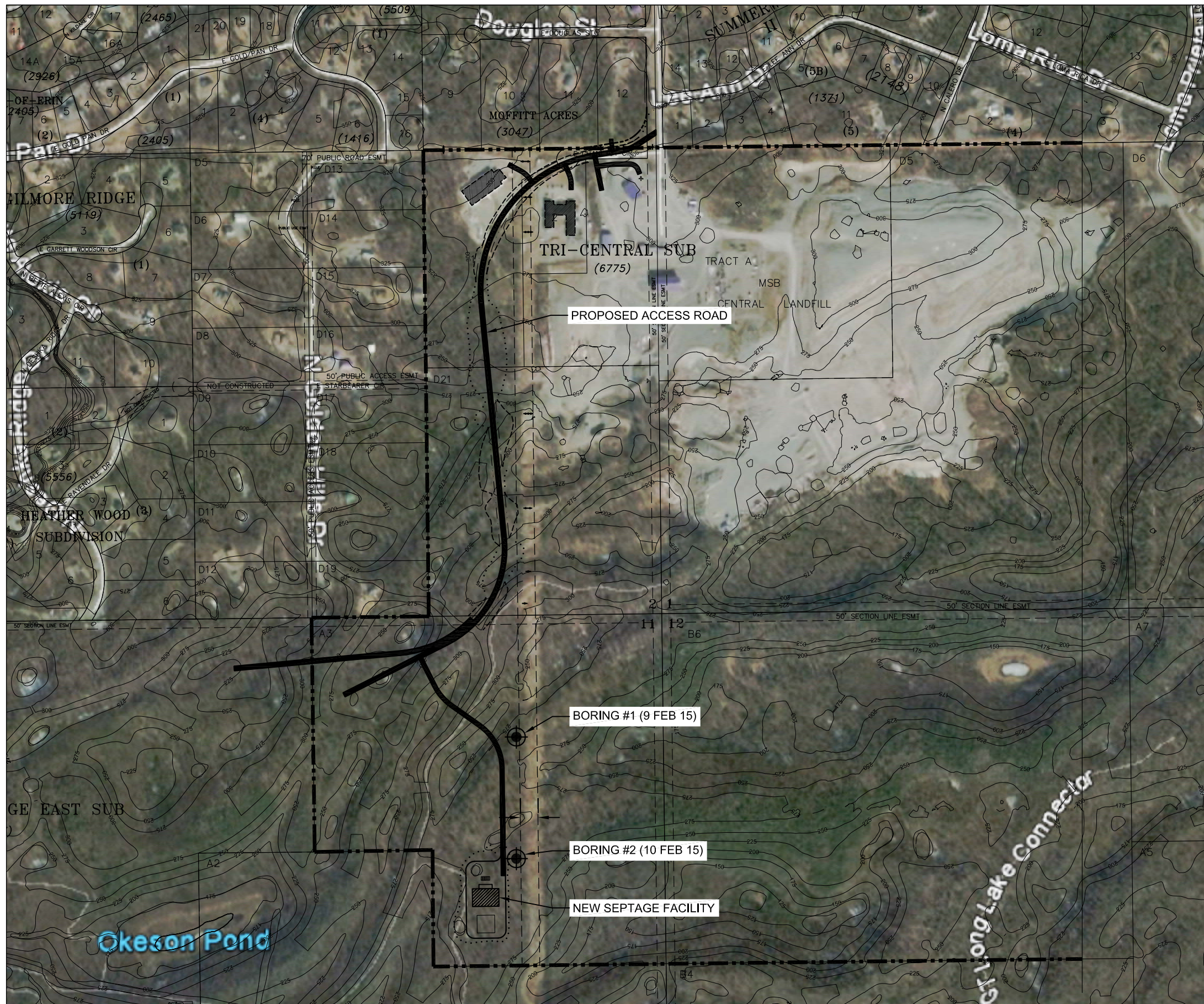

**Matanuska - Susitna Borough**  
 Capital Projects & Land & Resource Management  
 Septage Treatment Facility Search Area

-  **Borough Lands**
-  **Potential Septage Facility Sites**
-  **City Limits**
-  **Search Area for Septage Facility Site**





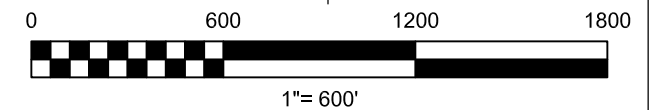
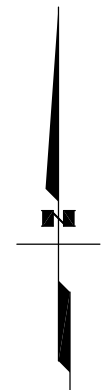
**FIGURE 1**  
**POTENTIAL SEPTAGE FACILITY SITES**





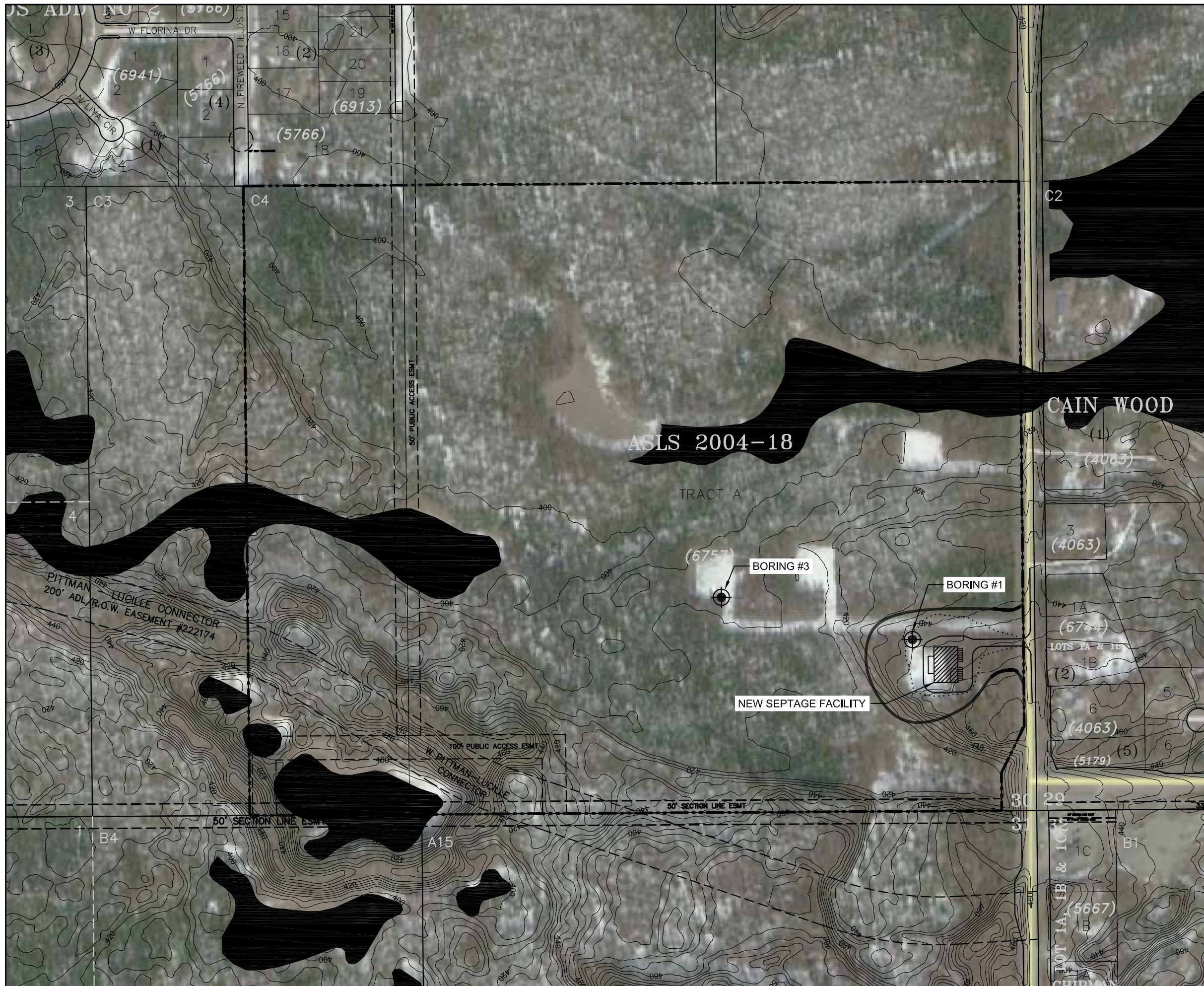
**LEGEND**

-  PROPERTY LINE
-  SOIL BORING



**FIGURE 2**  
CENTRAL LANDFILL SITE PLAN





CAIN WOOD

ASLS 2004-18



TRACT A

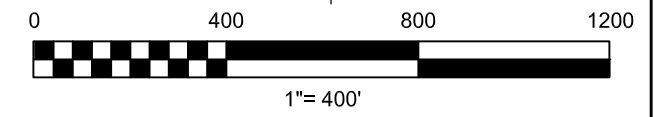
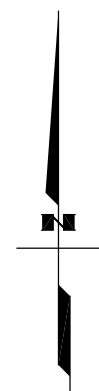
BORING #3

BORING #1

NEW SEPTAGE FACILITY

**LEGEND**

-  PROPERTY LINE
-  SOIL BORING



**FIGURE 3**  
**CHURCH ROAD SITE PLAN**



**Attachment 2**  
**Boring Logs**

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PROJECT NUMBER  
656753.A1.01

BORING NUMBER Boring #1 SHEET 1 OF 3

SOIL BORING LOG

PROJECT: MSB SPTage Siting

ELEVATION: TBD

DRILLING CONTRACTOR: Discovery Drilling

DRILLING METHOD AND EQUIPMENT USED: CME 35 No. well mounted HSA

WATER LEVELS: NA START: 2.9.15 END: 2.9.15 1430

LOGGER: A. Seay

DEPTH BELOW SURFACE (FT)	RECOVERY (ft)	Blow counts #	SOIL DESCRIPTION	USCS code		(time began)	COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
				BREATHING ZONE	HEAD SPACE		
0		01 SS	Well graded gravel with sand, light brown/gray, dry, rounded gravel max 1.5". well graded med-coarse sand. Bottom 6" or interval: silt with organics, olive grey, very stiff, dry	GW		(1050)	
5	18"	02 SS 6/9/11/10	Well graded sand w/ gravel, light gray, med-coarse grained, wet, dry interval max 2.5"	ML SW		(1055)	
10	12"	03 SS 10/15/14/17	Well graded gravel with sand, light gray, dry, round-sub rounded gravel max 2" well graded med-coarse grained sand	GW		(1105)	
15	20"	04 SS 14/15/10/11	Well graded gravel with sand, light gray, dry, round-subround gravel max 1.5" well graded med-coarse grained gravel, some fine grained interval Oxidation and organics 'charcoal' at 7 ft	GW		(1115)	
20	28"	05 SS 15/17/16/18	Well graded gravel with sand and silt. light gray/brown. Dry to slightly moist. Subrounded to rounded gravel max 1.5" well graded med to coarse grained sand with intermixed fine grained sands	GW GM		(1125)	
25							



PROJECT NUMBER <b>1056753.A1.01</b>	BORING NUMBER <b>Landfill Boring #1</b> SHEET <b>2</b> OF <b>3</b>
<b>SOIL BORING LOG</b>	

PROJECT: **MSB Seepage Siting**  
 ELEVATION: **TBD**  
 DRILLING METHOD AND EQUIPMENT USED: **CME 75 Nodwell mounted HSA**  
 WATER LEVELS: **NA** START: **2.9.15** END: **2.9.15 1430**  
 DRILLING CONTRACTOR: **Discovery Drilling**  
 LOGGER: **A. Seay**

DEPTH BELOW SURFACE (FT)	RECOVERY (inches)	Blow counts	Sample ID	SOIL DESCRIPTION	USCS Code	(time began)
				<small>SOIL NAME (USCS SYMBOL); COLOR; GRAIN SIZE (COARSE-GRAINED SOIL ONLY); GRADING (COARSE-GRAINED SOIL ONLY); ANGULARITY (COARSE-GRAINED SOIL ONLY); DENSITY (COARSE-GRAINED); CONSISTENCY (FINE-GRAINED); MOISTURE; PLASTICITY (FINE-GRAINED SOIL ONLY); DILATANCY (FINE-GRAINED SOIL ONLY); CEMENTATION; STRUCTURE; STAINING/ODOR</small>	<small>BREATHING NONE</small> <small>HEAD FACE</small>	<small>COMMENTS (e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)</small>
25	No recovery	50	06 SS	No recovery	NA	(1155) Bell cap stripped out (bolt hole stripped, one cracked) bit refusal
30	20"	11/15/16/12	07 SS	Well graded gravel with silt and sand, light grey, moist, round-subround gravel max 2.5", well graded sand med-coarse	GM	(1210)
35		7/9/11/12	08 SS	Well graded gravel with silt and sand. moist, <sup>AS</sup> light grey, rounded and subrounded gravel max 2", well graded coarse grained sands, some orange iron oxidation	GM	(1230)
40	5"	6/7/13/17	09 S	gravel and cobbles with silt 'smear'd' on them		(1235) poor recovery, hard drilling, looks like hit drilling through cobbles
45	20"	19/25/27/32	10 SS	well graded gravel with sand, olive gray, dm, rounded gravel max 1.5" well graded med-coarse grained sand	GW	(1250) Drilled through boulder
50						





PROJECT NUMBER <b>656753-A1-01</b>	BORING NUMBER <b>Boring #1 Landfill</b>	SHEET <b>Sheet 3 of 3</b>
<b>SOIL BORING LOG</b>		

PROJECT: **MSB Septage Siting**  
 ELEVATION: **TBD**  
 DRILLING METHOD AND EQUIPMENT USED:  
 WATER LEVELS: **NA** START: **2.9.15** END: **2.9.15 1430** DRILLING CONTRACTOR: **Discovery Drilling** LOGGER: **A. Seay**

DEPTH BELOW SURFACE (FT)	RECOVERY (%)	Blow Count <small>Standard Penetration Test</small>	Sample ID	SOIL DESCRIPTION	USCS Code		COMMENTS <small>(e.g.: DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)</small>
					BREATHING ZONE	HEAD SOURCE	
50	0	50	11	No recovery			Drove 0'. Absolute refusal (1310)
55	20	43/38/35/40	12	well graded gravel with sand, light gray, dry, subround gravel max 2"	GW	GM	(1315) hard drilling, broke split spoon sampler
60	20	11/30/50 drove 4 in	13	well graded fine to coarse grained sand loose sand; trace amounts of fine grained sand intermixed with med-coarse grained sand	GW	GM	(1330) hard drilling broke split spoon sampler sample dumped on table
65	20	19/21/30/33	14	well graded gravel with sand and silt. Same as above; gravel size max decreases to 1.5"	GW	GM	(1355)
70	20	21/19/21/33	15	well graded gravel with sand and silt. light gray, dry to slightly moist. subangular to rounded gravel max 2". well graded fine to coarse grained sand. Cobble max 3.5"	GW	GM	(1415)
				end of boring at 72 ft bop			Note: hammer weight 340 lb.

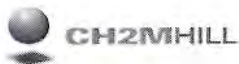


PROJECT NUMBER <b>656753.A1.01</b>	BORING NUMBER <b>Landfill Boring #2</b>
SHEET <b>1</b> OF <b>2</b>	
<b>SOIL BORING LOG</b>	

PROJECT: **MSB Septage Siting**  
 ELEVATION: **TBD**  
 DRILLING METHOD AND EQUIPMENT USED: **CME 75 No-dwell mounted HSA**  
 WATER LEVELS: **Not encountered** START: **8:10-15** END: **2:10-15 1120**  
 DRILLING CONTRACTOR: **Discovery Drilling**  
 LOGGER: **A. Seay**

Interval	DEPTH BELOW SURFACE (FT)	RECOVERY (min)	Blow count	Sample #	SOIL DESCRIPTION	USCS	COMMENTS (time began)
	0				SOIL NAME (USCS SYMBOL); COLOR; GRAIN SIZE (COARSE-GRAINED SOIL ONLY); GRADING (COARSE-GRAINED SOIL ONLY); ANGULARITY (COARSE-GRAINED SOIL ONLY); DENSITY (COARSE-GRAINED); CONSISTENCY (FINE-GRAINED); MOISTURE, PLASTICITY (FINE-GRAINED SOIL ONLY); DILATANCY (FINE-GRAINED SOIL ONLY); CEMENTATION; STRUCTURE; STAINING/ODOR.		
	0						topsoil observed from ground surface to 2 1/2 ft bgs
	0						(1000)
	2 1/2		3/8/16/19	01	4" silt with organics and fine gravel. Brown, moist gravel rounded max 0.75" (1/8")	ML	
	2 1/2				Well graded sand with gravel. Light brown, dry, med. to coarse grained sand. Rounded gravel max 3/4"	SW	
	5				6" cobble at 4 1/2-5' bgs		
	5				Well graded gravel with sand. Light brown, moist rounded to subrounded gravel max 2"	GW	(1005)
	5		4/24/18/15	02	med. to coarse well graded sand. Some oxidation		
	10				Well graded sand with gravel. Light brown moist loose, med. coarse grained sand. Round to subrounded gravel max 1.5"; oxidation at 11' bgs	SW	(1015)
	10		13/10/22/20	03			
	15				Well graded gravel with sand and silt. Moist, light brown. rounded to subrounded gravel max 1.75". Well graded med to coarse grained sand slightly dense	GM	(1030) drilled through cobble (w/ 6") at top of interval hard drilling
	15		20/28/12/14	04			
	20				Same as above. Large cobbles broken in interval (max 3")	GM	(1045)
	20		6/10/21/13	05			
	20						
	25						

As  
2.10.15



PROJECT NUMBER <b>656753.A1.01</b>	BORING NUMBER <b>Landfill Boring #2</b>	SHEET <b>2</b> OF <b>2</b>
<b>SOIL BORING LOG</b>		

PROJECT: **MSB Septage Siting**  
 ELEVATION: **TBD**  
 DRILLING METHOD AND EQUIPMENT USED: **CME 75 Rodwell mounted HSA**  
 WATER LEVELS: **NA** START **2.10.15** END **2.10.15 1120**  
 DRILLING CONTRACTOR: **Discovery Drilling**  
 LOGGER: **A. Seay**

DEPTH BELOW SURFACE (FT)	RECOVERY (in.)	Blow Count	SPT	0945	SOIL DESCRIPTION	USGS code	(time began)
					SOIL NAME (USCS SYMBOL); COLOR; GRAIN SIZE (COARSE-GRAINED SOIL ONLY); GRADING (COARSE-GRAINED SOIL ONLY); ANGULARITY (COARSE-GRAINED SOIL ONLY); DENSITY (COARSE-GRAINED); CONSISTENCY (FINE-GRAINED); MOISTURE; PLASTICITY (FINE-GRAINED SOIL ONLY); DILATANCY (FINE-GRAINED SOIL ONLY); CEMENTATION; STRUCTURE; STAINING/ODOR.	PID (ppm)	COMMENTS (e.g. DRILLING FLUID LOSS, TESTS, OR DRILLER COMMENTS, ETC.)
25	18"	20/16/20/23	06/SS	Same as above. decrease in cobble size and frequency.	GM	(1055)	
30	18"	18/14/15/20	07/SS	Same as above. 3" cobble at 30' bgs	GM	(1110)	
35				end of boring at 32 feet bgs			
40				AL			
45							
50							

*AL*  
*2.10.15*



CH2MHILL

PROJECT NUMBER

656753-AI-01

BORING NUMBER

Boring #1

SHEET 1 OF 2

SOIL BORING LOG

PROJECT: MSB Septage Siting

LOCATION: Church Road

ELEVATION: TBD

DRILLING CONTRACTOR: DISARM

DRILLING METHOD AND EQUIPMENT USED: CME 75 Truck LKA 24" SS

WATER LEVELS: NA

START: 8:00A 2/4/15

END: 12:15 P. 4.15

LOGGER: Mmf

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. GVM (ppm): <i>time taken</i> %G %S %F
	RECOVERY (IN)	#/TYPE			
5	0	01 SS	8/26/84 20	No recovery. Large rock in spoon. Frozen.	489 unfrozen @ 6'
10	18"	02 SS	20/13/12/12	Silt with gravel and sand. Brown moist. Gravel 1/2 to 3+ subrounded.	902A
15	8"	03 SS	21/11/13/11	Well-graded Gravel w/ sand. Brownish gray. Moist (very @ sand). 1/2" to 2 1/2" rounded gravel. well-graded sand med to coarse.	910A
20	12"	04 SS	24/35/23	well-graded Gravel w/ silt and sand. Moist. Brown. 1" to 3" rounded gravel. med to coarse sand. Dues @ 15'	922A Stopped & turning. Stopped.
25	20"	05 SS	20/49/89	Same as above. Possibly more silt. Very dense.	9:38A Collect Sewer
	18"	06 SS	21/45/10	Same as above. Every silt.	1000A



CH2MHILL

PROJECT NUMBER

650753.A1.01

BORING NUMBER

Boring #1

SHEET 2 OF 2

SOIL BORING LOG

PROJECT: MSB Septage Siting

LOCATION: Church Road

ELEVATION: TBD

DRILLING CONTRACTOR: Discovery

DRILLING METHOD AND EQUIPMENT USED: CME 75 Truck HSA 2.55

WATER LEVELS: NA

START: 830 A 2.4.15

END: 1215 2.4.15

LOGGER: MME, AS

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): <i>none began</i> %G %S %F
	RECOVERY (IN)	#/TYPE			
30-25	22"	07 SS	15/26/38 <i>silty clay (MC) clay, moist, very dense, sub rounded, coarse grained sand, rounded gravel</i>	1020	<i>intermixed coarse gravel and gravel max 2 inch</i>
35-30	22"	08 SS	30/44/27	1052	<i>Same as above, increase in gravel frequency, lobble at 37.5" - 38" bgs, decrease in coarse grained sand</i>
40	20"	09 SS	22/37/32	1105	<i>Same as above, gravel frequency same as above, no coarse grained sand</i>
45	18"	10 SS	18/31/40	1125	<i>Same as above, decrease in <sup>6"</sup> gravel (gravel max 2"), frequency</i>
50	8" 4"	11 SS	33/20	1145	<i>Last drive was only 2"</i>
55					<i>end of boring at 55' bgs APS</i>



CH2MHILL

PROJECT NUMBER

056753.A1.01

BORING NUMBER

Boring #3

SHEET 1 OF 2

SOIL BORING LOG

PROJECT: MSB Septage Siting

LOCATION: Church Road

ELEVATION: TBD

DRILLING CONTRACTOR: Discovery Drilling

DRILLING METHOD AND EQUIPMENT USED: CME Truck USA 24" S

WATER LEVELS: NA

START: 10/20/24/15

END: 11/20/24/15

LOGGER: A. Smith

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. GWL (ppm): <i>first bag</i> %G %S %F
	RECOVERY (IN)	#/TYPE			
5	20"	01 SS	11/10/8/9	Sand/silt mixture (SM), light brown, fine to very fine, moist, medium dense, some frozen clumps at 2 1/2 - 3 ft bgs	1420
10	18"	02 SS	22/13/4/8	same as above, increase in moisture, intermixed rounded gravel max 0.75"	1430
15	18"	03 SS	13/17/19/18	well graded gravel with sand (GW), olive gray, moist, rounded gravel max 0.75", well graded sand medium to coarse	1440 Drilled through large gravel 3-4" max
20	5"	04 SS	9/40/8	Same as above	1450 very poor recovery
25	18"	05 SS	17/29/47	Well graded gravel with sand and silt (GM) olive gray, very moist, 1-2" rounded-subrounded gravel, well graded medium-coarse grained sand, fine grained silt intermixed orange iron oxidation staining and trace organics (benzene)	1510
30	12"	06 SS	2/15/30/21	Well graded gravel with sand and silt (GM) olive gray to dark brown, very wet, sub-bank to rounded gravel max 2", well graded medium-coarse sand, silt intermixed	1520 29 ft bgs (GWL estimated by driller)

(cont'd pg. 2)



CH2MHILL

PROJECT NUMBER  
050753.A1.01

BORING NUMBER  
Boring #3

SHEET 1 OF 2

### SOIL BORING LOG

PROJECT: MSB Septage Siting

LOCATION: Church Road

ELEVATION: TBD

DRILLING CONTRACTOR: Discovery Drilling

DRILLING METHOD AND EQUIPMENT USED: CMF Truck HSA 25"SS

WATER LEVELS: N/A

START: 11:20 2-4-15

END: 11:40 2-4-15

LOGGER: A Seay

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. GVM (ppm)    %G   %S   %F
	RECOVERY (IN)	#/TYPE			
30	X	NA	DT SS	29/59	Same as above, decrease in saturation (no standing water)
32 1/2					end of boring at 32 1/2 ft bag Abs
35					1542; Sample had to be 'hammered' over of split spoon as it would not open

**Attachment 3**  
**Photographs**

---





Photograph #1: Well-graded gravel with sand and silt from 30-32 feet bgs from Landfill boring #1



Photograph #2: Very dense silty gravel from 22-24 feet below ground surface at Church Road boring #1.

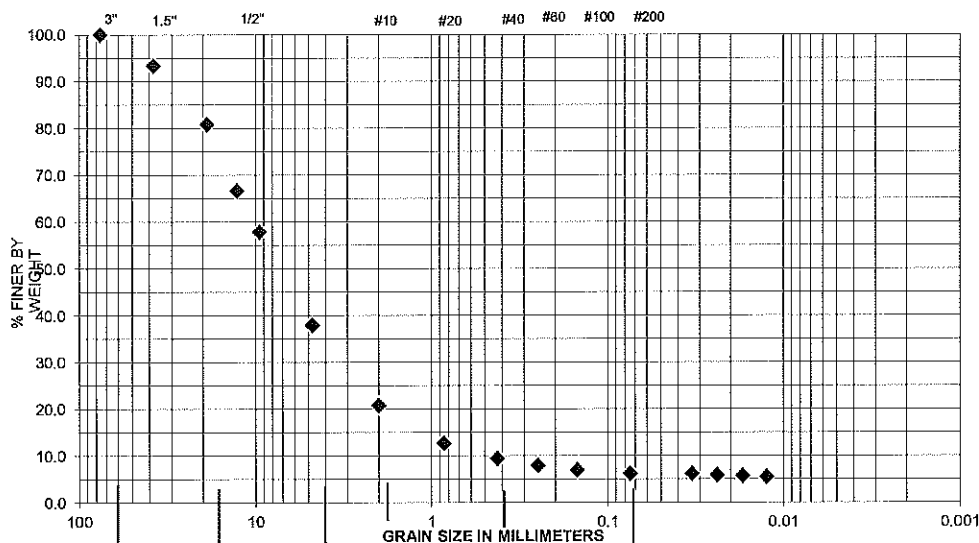
**Attachment 4**  
**Landfill Lab Result**

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PROJECT CLIENT:	CH2M Hill
PROJECT NAME:	Landfill
PROJECT NO.:	3995-15
SAMPLE LOCATION:	BH-1
SAMPLE NO/ DEPTH	15-S-1 (30' - 32')
DESCRIPTION:	Well grd. gravel w/ silt & sand
DATE TESTED:	2/19/2015
TESTED BY:	JA
REVIEWED BY:	Ron Caron C.E.T.

% GRAVEL:	62.0	USC:	GW-GM
% SAND:	31.8	FC:	S1
% SILT/CLAY:	6.2	.02 mm:	5.8
ASTM D1557(uncorrected)		pcf	
ASTM D4718 (corrected)		pcf	
OPTIMUM M.C.%(corrected)			
NATURAL M.C. %		2.2	

### PARTICLE SIZE ANALYSIS ASTM D422/ C136



### SIEVE ANALYSIS RESULT

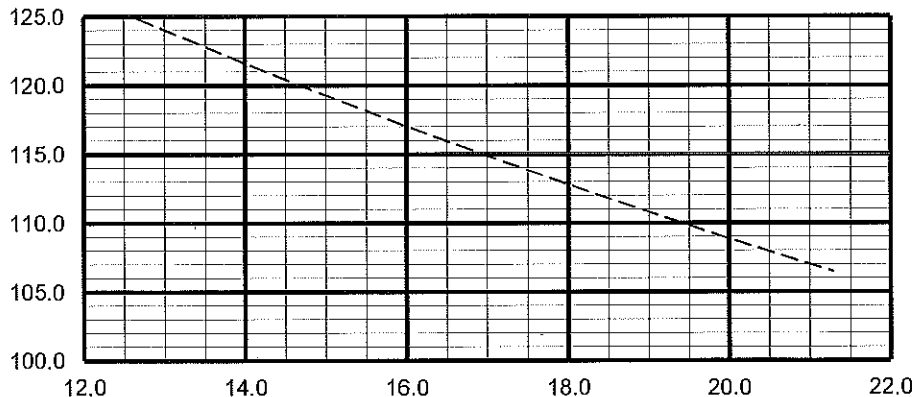
SIEVE SIZE (mm)	SIEVE SIZE (in.)	TOTAL % PASSING	SPEC
152.4	6"		
76.2	3"	100	
38.1	1.5"	93	
19.05	3/4"	81	
12.7	1/2"	67	
9.5	3/8"	58	
4.75	# 4	38	
2	#10	21	
0.85	#20	13	
0.425	#40	9	
0.25	# 60	8	
0.15	#100	7	
0.075	#200	6.2	

COBBLES	GRAVEL		SAND			SILT or CLAY
	Coarse	Fine	Coarse	Medium	Fine	

### HYDROMETER RESULT

ELAPSED TIME	DIAMETER (mm)	TOTAL % PASSING
0		
0.5		
1		
2	0.0332	6.2
4	0.0238	5.9
8	0.0171	5.7
15	0.0125	5.6
30		
60		
250		
1440		

### MOISTURE-DENSITY RELATIONSHIP ASTM D1557



Hyd. Conductivity (ASTM D2438)	
Degradation (ATM T-13)	
Atterberg Limit (ASTM 4318)	

The testing services reported herein have been performed to recognized industry standards, unless otherwise noted. No other warranty is made. Should engineering interpretation or opinion be required,

**Attachment 2**  
**Traffic Technical Memo**

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# Traffic Impact Analysis, MSB Septage and Leachate Facility Site Suitability and Engineering Analysis

PREPARED FOR: Mike Campfield/MSB  
PREPARED BY: Bryan Roberts/CH2M HILL  
Tony Woody/CH2M HILL  
DATE: February 20, 2015 (original submittal)  
March 9, 2015 (Revision 1)  
PROJECT NUMBER 656753

## Introduction

The purpose of this study is to assess the impacts associated with the proposed septage and leachate treatment and disposal facility within the populous south-central part of the Matanuska-Susitna Borough (MSB). Transportation impacts associated with the (2) proposed sites are presented in this analysis. The proposed sites are along Church Road just north of the Seldon Road intersection and south of the existing landfill along 49<sup>th</sup> State Street.

The proposed facility is expected to be constructed by the year 2020 and will provide the Matanuska-Susitna Borough with Septage & Leachate treatment capacity. Currently, the septage waste created by the MSB area is transported by truck to two facilities located in Anchorage (King Street & Turpin Street dump station). Transportation impacts will be analyzed for existing and two future year scenarios (2020 and 2040).

## Project Study Area

The study area for this analysis is south-central part of the Matanuska-Susitna Borough. For our analysis, this study area is split into two sub-areas for analysis. The 49<sup>th</sup> State Street landfill site is located along the 49<sup>th</sup> State Street corridor between Palmer-Wasilla Hwy to the north, and Chanlyut Circle to the south. This study area includes three study intersections and is located approximately 8 miles east of downtown Wasilla. The Church Road site is focused around the Church Road and Seldon Road intersection located approximately 3 miles northwest from downtown Wasilla.

Exhibit 1 and Table 1 provides a map and listing of the study area intersections. Exhibit 2 provides a map of the study area and the location of the proposed disposal sites (green). Traffic controls and channelization at each study intersection are shown in Figures A.1-A.5 of **Appendix A**.



EXHIBIT 1: Study Intersections  
 Source: Google maps

TABLE 1.  
 Study Area Intersections

Site Location	ID	Intersection	Existing Traffic Control
Landfill Site	1	N 49th State Street/E Palmer-Wasilla Hwy	Signalized
Landfill Site	2	N 49th State Street/Leeann Drive	Unsignalized
Landfill Site	3	N 49th State Street/Chanlyut Circle	Unsignalized
Church Road Site	4	W Seldon Road/Church Road	Unsignalized



**EXHIBIT 2: Study Areas**  
*Source: Google maps*

## Analysis Assumptions

### Analysis Scenarios

For the two proposed site locations, the following scenarios were analyzed for the PM peak hour (4:30-5:30 PM) as part of this traffic study:

- 2015 Existing year – PM Peak
- 2020 Opening Year: No Site – PM Peak
- 2020 Opening Year: With Septage Site – PM Peak
- 2040 Forecast Year: No Site – PM Peak
- 2040 Forecast Year: With Septage Site – PM Peak

Both the 2020 Opening Year analysis and the 2040 Forecast Year analysis were analyzed for two different volume scenarios. The first volume scenario (No Site) includes traffic volumes forecasted for the year 2020 without additional trucks generated by the new facility. The second volume scenario (w/Septage Site), includes 2020 volumes with additional truck trips generated by the proposed site.

Volumes for Existing, Opening Year, Forecast Year scenarios are provided in Figures A.1-A.5 of **Appendix A**.

### Planned Roadway Improvements

As part of this study, planned future projects have been included in the traffic analysis. The following improvements are included in the traffic:

- Include Seldon Road Extension (2020 and 2040)
- Seldon Road/Church Road signalized for 2040 scenario
- Include 49th State Street Road Extension to Trunk Road (Year 2040 only)

### Analysis Tools and Methodology

The Synchro traffic analysis software package was used for the traffic analysis reported as part of this study. The Highway Capacity Manual (HCM) 2000 methodology was to analyze stop-controlled intersections. HCM 2010 compatible software will be used to analyze signalized intersections. A mobility standard of level-of-service LOS D or better was used for all intersections within the study area.

**Table 2** provides a description of traffic operational characteristics associated with different levels of vehicle delay and levels-of-service.

TABLE 2  
**Intersection Traffic Operations: Level of Service**

LOS	Signalized Average Vehicle Delay (sec/veh)	Unsignalized Average Vehicle Delay <sup>1</sup> (sec/veh)	Traffic Flow Characteristics
A	<10 seconds	<10 seconds	Few or no traffic delays – individual users are virtually unaffected by the presence of other vehicles.
B	10-20 seconds	10-15 seconds	Short traffic delays – traffic flow is stable, but the presence of other users begins to be noticeable.
C	20-35 seconds	15-25 seconds	Average traffic delays – traffic flow is stable, but other traffic begins to significantly affect individual users.



TABLE 2

**Intersection Traffic Operations: Level of Service**

LOS	Signalized Average Vehicle Delay (sec/veh)	Unsignalized Average Vehicle Delay <sup>1</sup> (sec/veh)	Traffic Flow Characteristics
D	35-55 seconds	25-35 seconds	Long traffic delays – traffic flow is dense but stable. Other users restrict individual driver maneuverability.
E	55-80 seconds	35-50 seconds	Very long traffic delays –operations are at or near capacity levels and unstable. Freedom to maneuver is difficult.
F	>80 seconds	>50 seconds	Extreme traffic delays – Demand exceeds capacity. Delays and queuing may cause severe congestion. For unsignalized intersections, not enough gaps of suitable size are present along the major, uncontrolled street.

<sup>1</sup> Unsignalized LOS is reported for the worst intersection movement, normally the stop-controlled, left turn movement.

## Traffic Forecasts and Distribution

### Forecast Assumptions

For the landfill site, it was assumed that 2020 and 2040 traffic volumes were grown at 3% per year using the existing 2015 volumes as a baseline. The 3% growth rate was determined using volume projections based on regional forecasts. For the Church Road site, future channelization and volumes projections from the USKH *Seldon Road Extension* Study were used for our analysis.

Existing septic truck volumes provided by the Anchorage Water & Wastewater Utility (AWWU) show a seasonal peak in the month of October. Background traffic volumes were gathered during the month of January. Seasonal traffic volumes were compared along Palmer-Wasilla Highway to compare the volume data gathered from different months. Based on Permanent Traffic Recorder (PTR) data from the Palmer-Wasilla Highway, the peaking characteristics between January and October were effectively the same, so no seasonal volume adjustment was required.

The extension of 49<sup>th</sup> State Street to Trunk Road project was assumed for the 2040 No Site and 2040 With Septage Site scenarios. Routing assumptions were made to measure the impact of additional vehicle traffic using the 49<sup>th</sup> State Street corridor caused by the extension to Trunk Road. It was assumed that 15% of vehicle traffic that is currently heading westbound or eastbound on Palmer-Wasilla Hwy will now use the new extension to access Trunk Road. It was also assumed that 25% of vehicle traffic currently entering from the north side of the landfill site, will now use the new extension to access the facility from the south.

### Site Traffic (Septic Trucks)

Existing septic truck daily and hourly volumes were determined using Anchorage Water & Wastewater Utility (AWWU) transporting waste from the MSB area. The peak month for the septic truck volumes were during the month of October. Using the existing septic truck volumes, the data shows that at most 4 trucks would be using the proposed MSB waste facility during the existing PM peak hour period during the peak day of the peak month (October). The 4 PM peak hour septic trucks served as our baseline for all future forecasts.

For the future year analysis, a 4.2% annual growth rate was used. This growth rate was calculated using anticipated future septage rates from HDR's *Septage Handling and Disposal Plan* (2013)

TABLE 3  
**Future Septage Truck PM Peak Hour Volumes**

Analysis Year	# of Septage Trucks (per hour)	Total Septage Truck Trips (per hour)
Existing (2015)	4	8
2020	5	10
2040	11	22

Notes:

- Truck volumes represent the number expected to occur during the PM peak hour.
- The number of truck trips is double the number of trucks accessing the site because each truck has two movements in the peak hour; one entering the septage site and one exiting the site.

Table 3 shows our existing and future year septage truck PM peak hour volumes entering the proposed site locations. The “# of septage Trucks” column lists the total amount of trucks that would be using the facility during the PM peak hour. For routing purposes, the last column lists the total septage truck trips entering and exiting the proposed site. It was assumed that all trucks entering the site would leave the same direction they arrived.

For the landfill site, septage trucks were assumed to enter the facility from the north using the 49<sup>th</sup> State Street corridor for scenarios without the 49<sup>th</sup> State Street Extension to Trunk Road. For scenarios with the 49<sup>th</sup> State Street Extension to Trunk Road project, it was assumed that approximately 25% of septage truck traffic will enter the site from the south via the new connection to Trunk Road.

For the Church Rd site, all septage trucks were assumed to enter the facility from the west side of Church Rd approximately 700 feet north of the Seldon Rd/Church Rd intersection.

## Traffic Analysis Results

Traffic Operation results were analyzed for existing conditions (2015), 2020 Opening Day, and the 2040 Forecast Year. Detailed summaries of the analysis are provided in **Appendices A** and **B**. The intersection results reported are based on each specific type of traffic control. For signalized intersections, the overall intersection delay, level of service (LOS), and v/c ratio are reported. For stop-controlled intersections, the results for the worst operating movement are reported.

A queuing analysis was also performed during the PM Peak hour. A queuing summary table is provided in **Appendix C**.

### Existing Conditions (2015)

Existing traffic operations (2015) were analyzed at both study locations (Church Road & landfill) for the PM Peak hour. All intersections performed at LOS B or better during the analysis period, meeting LOS D or better mobility standards. Table 4 provides a summary of the analysis results for all four study intersections.

TABLE 4

**Existing Conditions - Traffic Analysis Results**

Study Intersection	Existing (2015) PM Peak Hour		
	Traffic Control	LOS	Delay (sec)
49th State Street/Palmer-Wasilla Hwy	Signal	B	18.8
49th State Street /Leeann Drive	Stop	A	8.7
49th State Street/Chanlyut Circle	Stop	A	7.5
Church Road/Seldon Road	Stop	B	10.3

## Notes:

1. HCM 2010 Methodology used for Signalized Intersections
2. HCM 2000 Methodology used for Unsignalized Intersections
3. Synchro 8 traffic analysis software was used for traffic analysis.

**Future Traffic Scenarios (2020 and 2040)**

Future traffic operations (2020 and 2040) were analyzed at both study locations (Church Road & landfill) for the PM Peak hour. Each future year analysis was analyzed for two scenarios, with the proposed septage site and without proposed septage site.

In the opening year analysis (2020), all intersections performed at LOS C or better for both scenarios meeting the LOS D or better mobility standards. The additional septage truck volume have very little impact on the overall traffic operations. Table 4 provides a brief summary of the analysis results for all four study intersections for the opening year analysis. A queuing analysis was also performed during the PM Peak hour. The queuing analysis indicates that only one intersection, 49th State Street/Palmer-Wasilla Highway, exceeded storage capacity in both the “No Site” and “With Septage Site” options. The queuing summary table is provided in **Appendix C**.

In the 2040 Forecast Year analysis all intersections with the exception of 49th State Street/Palmer-Wasilla Highway performed at LOS B or better for both scenarios. The 49th State Street/Palmer-Wasilla Highway intersection performed at LOS F for both scenarios (with/without proposed septage site). Both scenarios experienced 180+ seconds of delay and significant queuing which exceeds storage capacity.

Similar to the opening year analysis, the additional septage truck volume for the 2040 forecast year analysis (with septage site) scenario have very little impact on the overall traffic operations when compared with the (no septage site) scenario. Table 5 provides a summary of the analysis results for all four study intersections for the future year analysis.

TABLE 5  
**Future - Traffic Analysis Results**

Study Intersection	2020					2040				
	Traffic Control	No Septage Site		With Septage Site		Traffic Control	No Septage Site		With Septage Site	
		LOS	Delay (sec)	LOS	Delay (sec)		LOS	Delay (sec)	LOS	Delay (sec)
49th State Street / Palmer-Wasilla Hwy	Signal	C	22.1	C	22.6	Signal	<b>F</b>	<b>188.4</b>	<b>F</b>	<b>191.0</b>
49th State Street / Leeann Drive	Stop	A	8.7	A	8.7	Stop	B	10.1	B	10.2
49th State Street / Chanlyut Circle	Stop	A	7.5	A	8.8	Stop	B	10.3	B	10.3
Church Rd/ Seldon Rd	Stop	B	14.7	C	15.0	Signal	B	10.2	B	10.3

Notes:

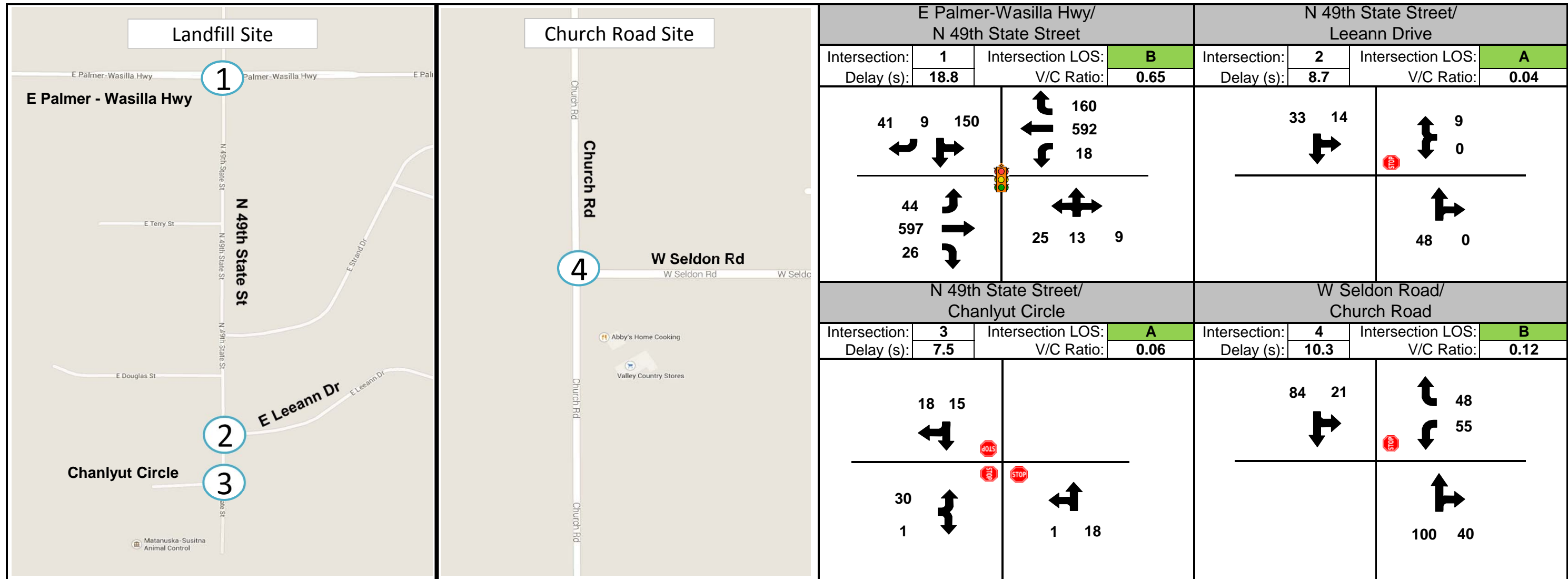
1. Trunk Road extension included in 2040 scenario for the N 49<sup>th</sup> State Street Corridor
2. Seldon Road extension included in 2020 & 2040 Church Road site analysis
3. HCM 2010 Methodology used for Signalized Intersections
4. HCM 2000 Methodology used for Unsignalized Intersections
5. Black shading represents intersections that are not meeting mobility standards.
6. Synchro 8 traffic analysis software was used for traffic analysis.

## Conclusions and Recommendations

The purpose of this Traffic Impact Analysis is to assess potential impacts associated with increased septage truck volumes from proposed septage and leachate treatment and disposal facilities. Based on the results of the traffic analysis, transportation impacts related to the proposed facilities are expected to have little to no impact within the study area at both proposed site locations.

**Appendix A**  
**Intersection Volumes, LOS,**  
**& Channelization Graphics**

---



**FIGURE A.1**  
**2015 Existing Conditions Analysis - PM Peak Hour**  
 Volumes, Channelization, Delay, Level-of-Service, & V/C Ratio  
 MSB Septage Site Traffic Analysis

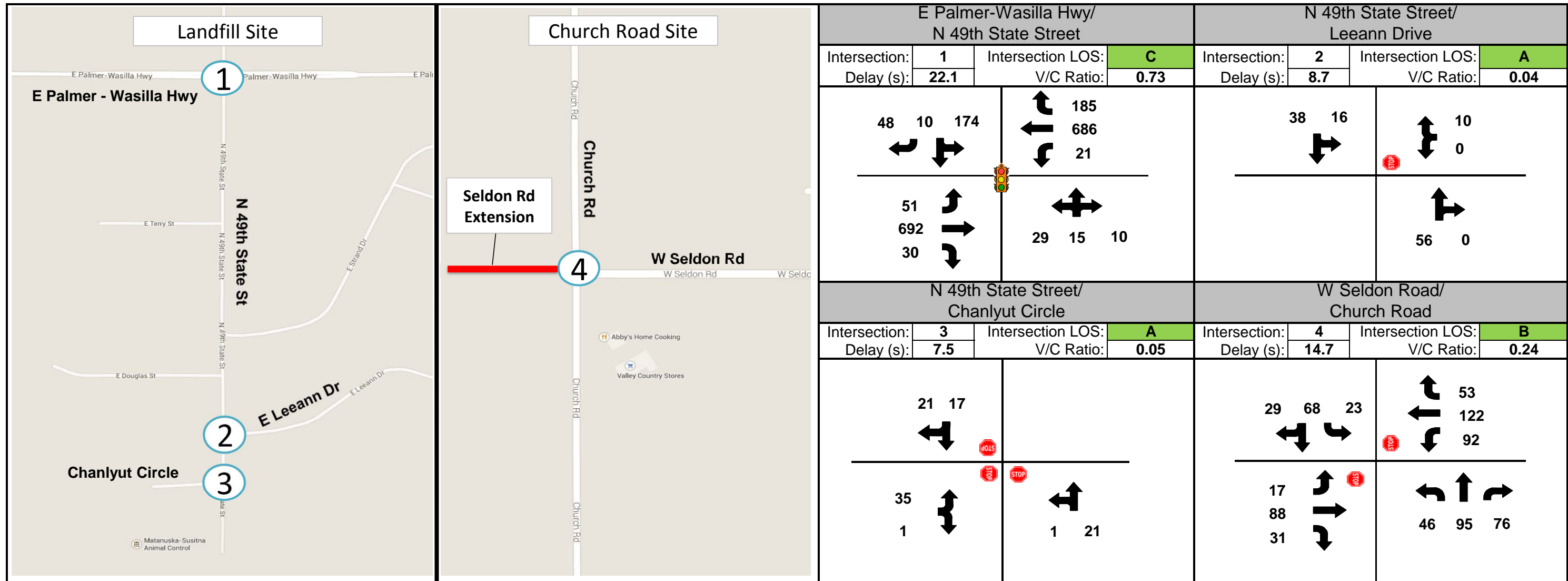


**Legend:**

- 555 Turning Movement Volume
- STOP Stop Sign
- Signalized Intersection
- Study Intersection
- LOS Level of Service
- V/C Volume Capacity Ratio

**Notes:**

- A green box on the map represents an acceptable mobility standard
- A red box on the map represents a failing mobility standard
- Improvements over existing conditions are shown in Red



**FIGURE A.2**  
**2020 Opening Year No Site - PM Peak Hour**  
 Volumes, Channelization, Delay, Level-of-Service, & V/C Ratio  
 MSB Septage Site Traffic Analysis

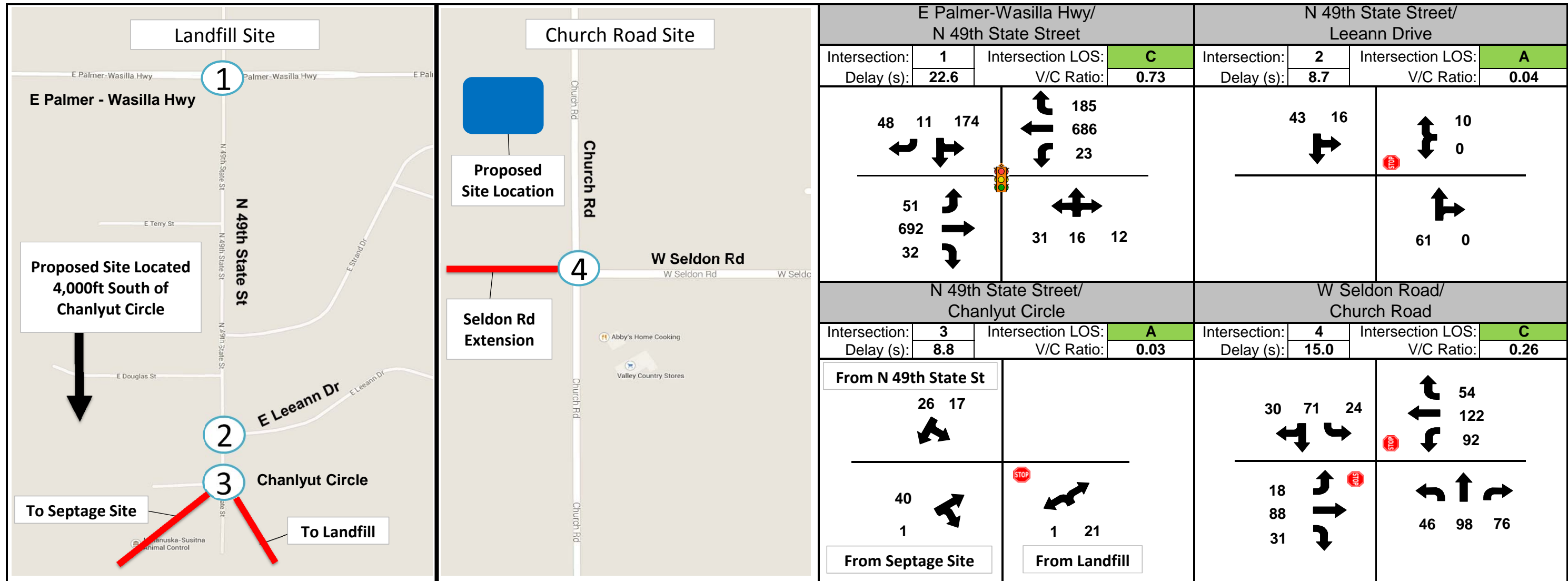


**Legend:**

- 555 Turning Movement Volume
- STOP Stop Sign
- Signalized Intersection
- Study Intersection
- LOS Level of Service
- V/C Volume Capacity Ratio

**Notes:**

- A green box on the map represents an acceptable mobility standard
- A red box on the map represents a failing mobility standard
- Improvements over existing conditions are shown in Red



**FIGURE A.3**  
**2020 Opening Year With Septage Site - PM Peak Hour**  
 Volumes, Channelization, Delay, Level-of-Service, & V/C Ratio  
 MSB Septage Site Traffic Analysis



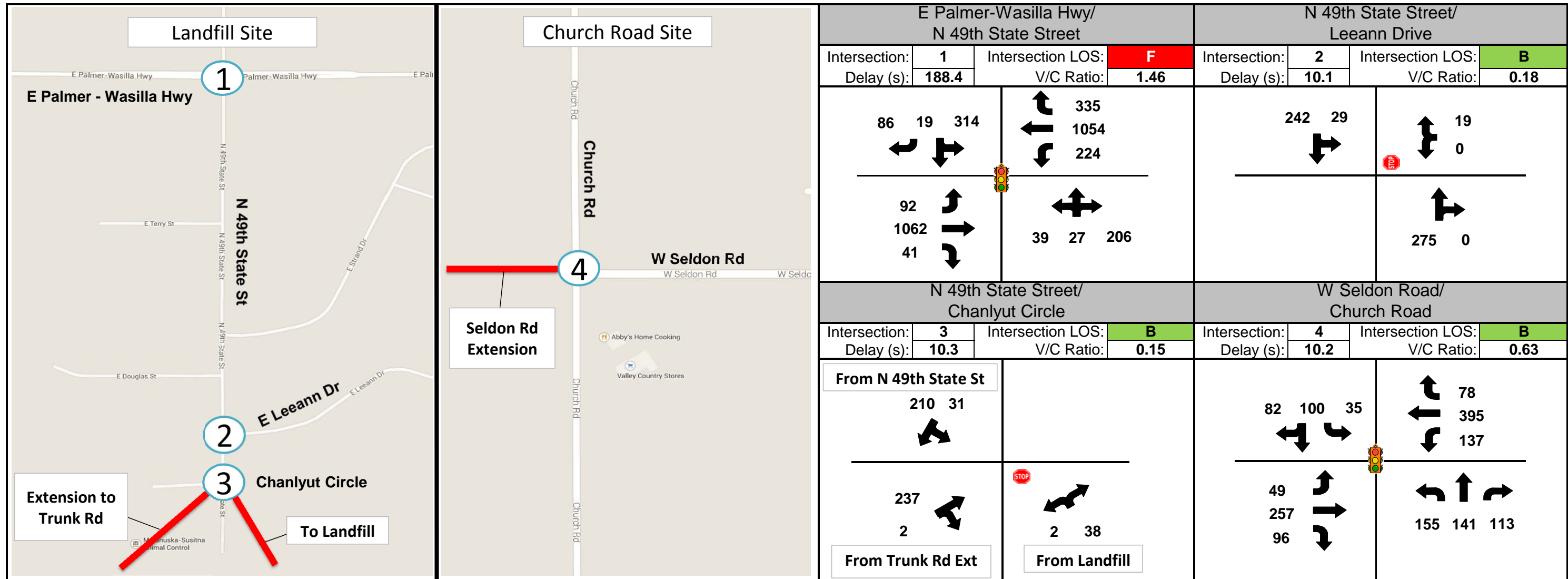
**Legend:**

- 555 Turning Movement Volume
- STOP Stop Sign
- Signalized Intersection
- Study Intersection
- LOS Level of Service
- V/C Volume Capacity Ratio

**Notes:**

- A green box on the map represents an acceptable mobility standard
- A red box on the map represents a failing mobility standard
- Improvements over existing conditions are shown in Red





**FIGURE A.4**  
**2040 Forecast Year No Site - PM Peak Hour**  
 Volumes, Channelization, Delay, Level-of-Service, & V/C Ratio  
 MSB Septage Site Traffic Analysis

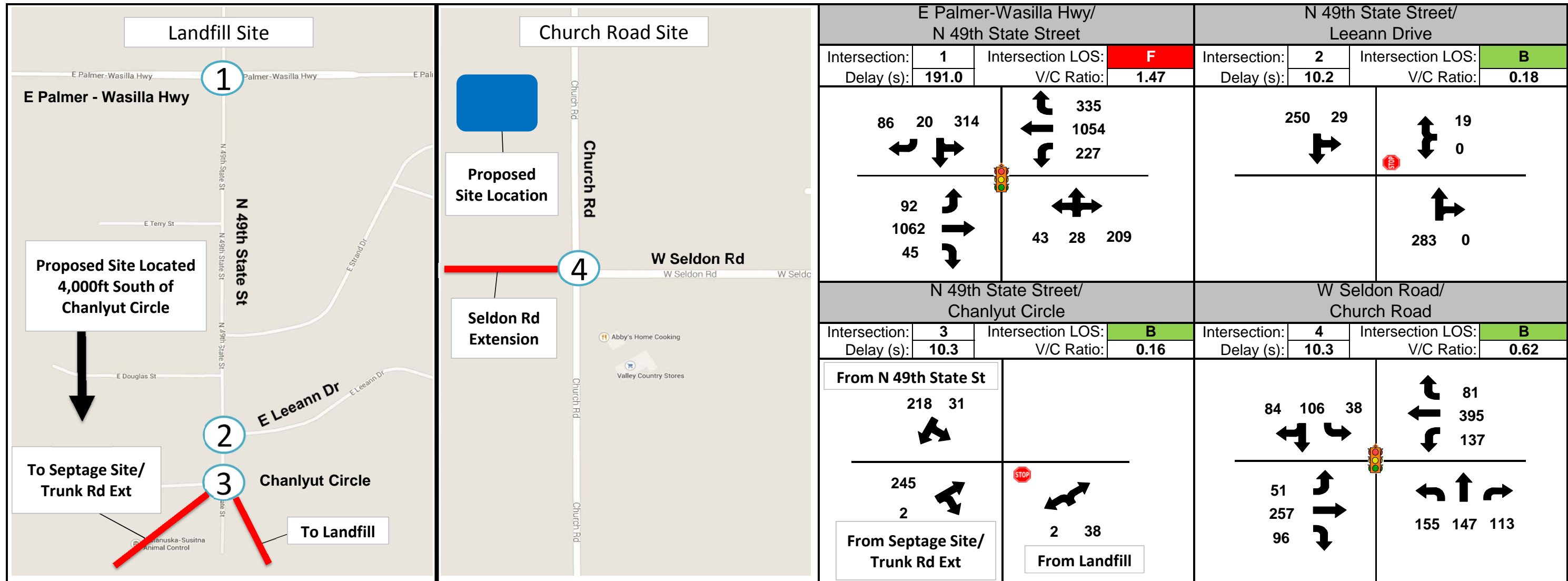


**Legend:**

- 555 Turning Movement Volume
- STOP Stop Sign
- Signalized Intersection
- Study Intersection
- LOS Level of Service
- V/C Volume Capacity Ratio

**Notes:**

- A green box on the map represents an acceptable mobility standard
- A red box on the map represents a failing mobility standard
- Improvements over existing conditions are shown in Red



**FIGURE A.5**  
**2040 Forecast Year With Septage Site - PM Peak Hour**  
 Volumes, Channelization, Delay, Level-of-Service, & V/C Ratio  
 MSB Septage Site Traffic Analysis



**Legend:**

- 555 Turning Movement Volume
- STOP Stop Sign
- Signalized Intersection
- Study Intersection
- LOS Level of Service
- V/C Volume Capacity Ratio

**Notes:**






















- A green box on the map represents an acceptable mobility standard
- A red box on the map represents a failing mobility standard
- Improvements over existing conditions are shown in Red

**Appendix B**  
**Synchro Analysis Summary Sheets**

---

HCM 2010 Signalized Intersection Summary  
 1: NORTH 49TH STATE St & PALMER - WASILLA HWY

2/19/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	597	26	18	592	160	25	13	9	150	9	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1644	1693	1710	1710	1710	1693	1676	1710
Adj Flow Rate, veh/h	53	719	31	20	643	174	32	17	12	160	10	44
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.78	0.78	0.78	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	4	1	0	0	0	1	11	11
Cap, veh/h	393	1136	966	380	1060	927	131	66	37	246	41	180
Arrive On Green	0.05	0.66	0.66	0.03	0.64	0.64	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1629	1710	1454	1629	1644	1439	569	435	246	1250	271	1194
Grp Volume(v), veh/h	53	719	31	20	643	174	61	0	0	160	0	54
Grp Sat Flow(s),veh/h/ln	1629	1710	1454	1629	1644	1439	1250	0	0	1250	0	1465
Q Serve(g_s), s	1.2	29.2	0.9	0.5	27.4	5.9	2.6	0.0	0.0	8.7	0.0	3.9
Cycle Q Clear(g_c), s	1.2	29.2	0.9	0.5	27.4	5.9	6.5	0.0	0.0	15.3	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	0.52		0.20	1.00		0.81
Lane Grp Cap(c), veh/h	393	1136	966	380	1060	927	234	0	0	246	0	221
V/C Ratio(X)	0.13	0.63	0.03	0.05	0.61	0.19	0.26	0.00	0.00	0.65	0.00	0.24
Avail Cap(c_a), veh/h	409	1136	966	429	1060	927	500	0	0	486	0	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	11.7	6.9	9.6	12.5	8.6	46.1	0.0	0.0	49.8	0.0	44.9
Incr Delay (d2), s/veh	0.1	2.7	0.1	0.0	2.6	0.4	0.2	0.0	0.0	2.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.6	14.4	0.4	0.2	13.1	2.4	1.8	0.0	0.0	5.3	0.0	1.6
LnGrp Delay(d),s/veh	9.3	14.4	7.0	9.6	15.0	9.1	46.3	0.0	0.0	52.0	0.0	45.4
LnGrp LOS	A	B	A	A	B	A	D			D		D
Approach Vol, veh/h		803			837			61			214	
Approach Delay, s/veh		13.7			13.7			46.3			50.3	
Approach LOS		B			B			D			D	
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	86.7		24.9	10.8	84.3		24.9				
Change Period (Y+Rc), s	5.0	7.0		6.8	5.0	7.0		6.8				
Max Green Setting (Gmax), s	7.0	53.0		41.2	7.0	53.0		41.2				
Max Q Clear Time (g_c+I1), s	2.5	31.2		17.3	3.2	29.4		8.5				
Green Ext Time (p_c), s	0.0	12.9		0.8	0.0	13.6		0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			18.8									
HCM 2010 LOS			B									

# HCM Unsignalized Intersection Capacity Analysis

## 2: NORTH 49TH STATE St & Leeann Drive

2/19/2015



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Volume (veh/h)	0	9	48	0	14	33
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.80	0.80	0.78	0.78
Hourly flow rate (vph)	0	12	60	0	18	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	138	60			60	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	138	60			60	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	99			99	
cM capacity (veh/h)	850	981			1512	










Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	12	60	60
Volume Left	0	0	18
Volume Right	12	0	0
cSH	981	1700	1512
Volume to Capacity	0.01	0.04	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	8.7	0.0	2.3
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	2.3
Approach LOS	A		

Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization		19.2%	ICU Level of Service A
Analysis Period (min)		15	

# HCM Unsignalized Intersection Capacity Analysis

## 3: NORTH 49TH STATE St & Chanlyut Circle











2/19/2015

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	30	1	1	18	15	18
Peak Hour Factor	0.86	0.86	0.68	0.68	0.63	0.63
Hourly flow rate (vph)	35	1	1	26	24	29
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total (vph)	36	28	52			
Volume Left (vph)	35	1	0			
Volume Right (vph)	1	0	29			
Hadj (s)	0.22	0.28	-0.23			
Departure Headway (s)	4.3	4.3	3.8			
Degree Utilization, x	0.04	0.03	0.06			
Capacity (veh/h)	819	814	936			
Control Delay (s)	7.5	7.5	7.0			
Approach Delay (s)	7.5	7.5	7.0			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.3			
Level of Service			A			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis






















## 4: Church Road & Seldon Road

2/17/2015

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	55	48	100	40	21	84
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.71	0.71	0.79	0.79	0.77	0.77
Hourly flow rate (vph)	77	68	127	51	27	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		7				
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	316	152			177	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316	152			177	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	88	92			98	
cM capacity (veh/h)	664	894			1352	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	145	177	136			
Volume Left	77	0	27			
Volume Right	68	51	0			
cSH	1243	1700	1352			
Volume to Capacity	0.12	0.10	0.02			
Queue Length 95th (ft)	10	0	2			
Control Delay (s)	10.3	0.0	1.7			
Lane LOS	B		A			
Approach Delay (s)	10.3	0.0	1.7			
Approach LOS	B					
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization		26.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM 2010 Signalized Intersection Summary  
 1: NORTH 49TH STATE St & PALMER - WASILLA HWY

2/19/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	692	30	21	686	185	29	15	10	174	10	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1644	1693	1710	1710	1710	1693	1678	1710
Adj Flow Rate, veh/h	55	752	33	23	746	201	32	16	11	189	11	52
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	4	1	0	0	0	1	11	11
Cap, veh/h	307	1094	930	336	1023	895	147	69	39	271	44	208
Arrive On Green	0.05	0.64	0.64	0.03	0.62	0.62	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1629	1710	1454	1629	1644	1439	583	401	225	1252	256	1209
Grp Volume(v), veh/h	55	752	33	23	746	201	59	0	0	189	0	63
Grp Sat Flow(s),veh/h/ln	1629	1710	1454	1629	1644	1439	1209	0	0	1252	0	1464
Q Serve(g_s), s	1.4	33.9	1.0	0.6	37.7	7.4	2.5	0.0	0.0	11.2	0.0	4.5
Cycle Q Clear(g_c), s	1.4	33.9	1.0	0.6	37.7	7.4	7.0	0.0	0.0	18.2	0.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	0.54		0.19	1.00		0.83
Lane Grp Cap(c), veh/h	307	1094	930	336	1023	895	255	0	0	271	0	252
V/C Ratio(X)	0.18	0.69	0.04	0.07	0.73	0.22	0.23	0.00	0.00	0.70	0.00	0.25
Avail Cap(c_a), veh/h	322	1094	930	380	1023	895	318	0	0	329	0	320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	13.9	8.0	11.7	15.7	10.0	44.1	0.0	0.0	48.8	0.0	43.0
Incr Delay (d2), s/veh	0.1	3.5	0.1	0.0	4.6	0.6	0.2	0.0	0.0	4.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.6	16.9	0.4	0.3	18.3	3.0	1.7	0.0	0.0	6.5	0.0	1.8
LnGrp Delay(d),s/veh	13.4	17.4	8.0	11.7	20.3	10.5	44.2	0.0	0.0	53.0	0.0	43.3
LnGrp LOS	B	B	A	B	C	B	D			D		D
Approach Vol, veh/h		840			970			59				252
Approach Delay, s/veh		16.8			18.0			44.2				50.6
Approach LOS		B			B			D				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	83.8		27.5	10.9	81.7		27.5				
Change Period (Y+Rc), s	5.0	7.0		6.8	5.0	7.0		6.8				
Max Green Setting (Gmax), s	7.0	68.0		26.2	7.0	68.0		26.2				
Max Q Clear Time (g_c+I1), s	2.6	35.9		20.2	3.4	39.7		9.0				
Green Ext Time (p_c), s	0.0	18.5		0.5	0.0	17.2		0.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			22.1									
HCM 2010 LOS			C									



# HCM Unsignalized Intersection Capacity Analysis

## 2: NORTH 49TH STATE St & Leann Drive

2/19/2015



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Volume (veh/h)	0	10	56	0	16	38
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	61	0	17	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	137	61			61	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	137	61			61	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	99			99	
cM capacity (veh/h)	851	980			1511	










Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	11	61	59
Volume Left	0	0	17
Volume Right	11	0	0
cSH	980	1700	1511
Volume to Capacity	0.01	0.04	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	8.7	0.0	2.3
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	2.3
Approach LOS	A		

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

# HCM Unsignalized Intersection Capacity Analysis

## 3: NORTH 49TH STATE St & Chanlyut Circle

























2/19/2015

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	35	1	1	21	17	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	1.00
Hourly flow rate (vph)	38	1	1	23	18	21
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total (vph)	39	24	39			
Volume Left (vph)	38	1	0			
Volume Right (vph)	1	0	21			
Hadj (s)	0.23	0.28	-0.22			
Departure Headway (s)	4.3	4.3	3.8			
Degree Utilization, x	0.05	0.03	0.04			
Capacity (veh/h)	827	815	933			
Control Delay (s)	7.5	7.4	7.0			
Approach Delay (s)	7.5	7.4	7.0			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.3			
Level of Service			A			
Intersection Capacity Utilization	13.3%		ICU Level of Service	A		
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 4: Church Road & Seldon Road

2/17/2015

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (veh/h)	17	88	31	92	122	53	46	95	76	23	68	29		
Sign Control	Free			Free			Stop			Stop				
Grade	0%			0%			0%			0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	18	96	34	100	133	58	50	103	83	25	74	32		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)										6				
Median type	None				None									
Median storage (veh)														
Upstream signal (ft)														
pX, platoon unblocked														
vC, conflicting volume	190				129			534	523	96	558	499	133	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	190				129			534	523	96	558	499	133	
iC, single (s)	4.1				4.1			7.1	6.5	6.2	7.2	6.6	6.2	
iC, 2 stage (s)														
tF (s)	2.2				2.2			3.5	4.0	3.3	3.6	4.1	3.3	
p0 queue free %	99				93			86	76	91	92	83	97	
cM capacity (veh/h)	1384				1456			360	422	958	299	430	917	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2				
Volume Total	18	96	34	100	133	58	50	186	25	105				
Volume Left	18	0	0	100	0	0	50	0	25	0				
Volume Right	0	0	34	0	0	58	0	83	0	32				
cSH	1384	1700	1700	1456	1700	1700	360	759	299	511				
Volume to Capacity	0.01	0.06	0.02	0.07	0.08	0.03	0.14	0.24	0.08	0.21				
Queue Length 95th (ft)	1	0	0	6	0	0	12	24	7	19				
Control Delay (s)	7.6	0.0	0.0	7.7	0.0	0.0	16.6	13.1	18.2	13.9				
Lane LOS	A				A			C	B	C	B			
Approach Delay (s)	1.0				2.6			13.8			14.7			
Approach LOS									B			B		
Intersection Summary														
Average Delay				7.6										
Intersection Capacity Utilization				29.0%			ICU Level of Service			A				
Analysis Period (min)				15										

HCM 2010 Signalized Intersection Summary  
 1: NORTH 49TH STATE St & PALMER - WASILLA HWY

2/19/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	692	32	23	686	185	31	16	12	174	11	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1613	1569	1644	1693	1710	1583	1710	1693	1651	1710
Adj Flow Rate, veh/h	55	752	35	25	746	201	34	17	13	189	12	52
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	6	9	4	1	6	6	6	1	19	19
Cap, veh/h	303	1085	870	310	1017	890	139	64	40	271	48	207
Arrive On Green	0.05	0.63	0.63	0.03	0.62	0.62	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1629	1710	1371	1494	1644	1439	528	366	228	1249	271	1173
Grp Volume(v), veh/h	55	752	35	25	746	201	64	0	0	189	0	64
Grp Sat Flow(s),veh/h/ln	1629	1710	1371	1494	1644	1439	1121	0	0	1249	0	1444
Q Serve(g_s), s	1.4	34.4	1.1	0.7	38.0	7.4	3.3	0.0	0.0	10.8	0.0	4.6
Cycle Q Clear(g_c), s	1.4	34.4	1.1	0.7	38.0	7.4	7.8	0.0	0.0	18.6	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	0.53		0.20	1.00		0.81
Lane Grp Cap(c), veh/h	303	1085	870	310	1017	890	243	0	0	271	0	254
V/C Ratio(X)	0.18	0.69	0.04	0.08	0.73	0.23	0.26	0.00	0.00	0.70	0.00	0.25
Avail Cap(c_a), veh/h	318	1085	870	348	1017	890	297	0	0	324	0	315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	14.3	8.2	12.0	16.0	10.2	44.1	0.0	0.0	48.7	0.0	42.6
Incr Delay (d2), s/veh	0.1	3.7	0.1	0.0	4.7	0.6	0.2	0.0	0.0	4.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.7	17.2	0.5	0.3	18.5	3.1	1.9	0.0	0.0	6.5	0.0	1.9
LnGrp Delay(d),s/veh	13.7	18.0	8.3	12.1	20.7	10.8	44.3	0.0	0.0	53.1	0.0	43.0
LnGrp LOS	B	B	A	B	C	B	D			D		D
Approach Vol, veh/h		842			972			64				253
Approach Delay, s/veh		17.3			18.4			44.3				50.6
Approach LOS		B			B			D				D
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	83.1		27.9	10.9	81.2		27.9				
Change Period (Y+Rc), s	5.0	7.0		6.8	5.0	7.0		6.8				
Max Green Setting (Gmax), s	7.0	68.0		26.2	7.0	68.0		26.2				
Max Q Clear Time (g_c+I1), s	2.7	36.4		20.6	3.4	40.0		9.8				
Green Ext Time (p_c), s	0.0	18.4		0.5	0.0	17.0		0.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			22.6									
HCM 2010 LOS			C									

# HCM Unsignalized Intersection Capacity Analysis

## 2: NORTH 49TH STATE St & Leann Drive

2/19/2015



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			Y
Volume (veh/h)	0	10	61	0	16	43
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	66	0	17	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	148	66			66	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148	66			66	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	99			99	
cM capacity (veh/h)	839	973			1504	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	11	66	64
Volume Left	0	0	17
Volume Right	11	0	0
cSH	973	1700	1504
Volume to Capacity	0.01	0.04	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	8.7	0.0	2.1
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	2.1
Approach LOS	A		

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

# HCM Unsignalized Intersection Capacity Analysis

## 3: Chanlyut Circle & NORTH 49TH STATE St

























2/19/2015

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖		↗
Volume (veh/h)	40	1	17	26	1	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	1	18	28	1	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			45		109	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			45		109	44
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			99		100	98
cM capacity (veh/h)			1577		882	985
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	45	47	24			
Volume Left	0	18	1			
Volume Right	1	0	23			
cSH	1700	1577	980			
Volume to Capacity	0.03	0.01	0.02			
Queue Length 95th (ft)	0	1	2			
Control Delay (s)	0.0	2.9	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 4: Church Road & Seldon Road

2/17/2015

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Volume (veh/h)	18	88	31	92	122	54	46	98	76	24	71	30			
Sign Control	Free			Free			Stop			Stop					
Grade	0%			0%			0%			0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	20	96	34	100	133	59	50	107	83	26	77	33			
Pedestrians															
Lane Width (ft)															
Walking Speed (ft/s)															
Percent Blockage															
Right turn flare (veh)										6					
Median type	None				None										
Median storage (veh)															
Upstream signal (ft)															
pX, platoon unblocked															
vC, conflicting volume	191			129			539			526			96		
vC1, stage 1 conf vol															
vC2, stage 2 conf vol															
vCu, unblocked vol	191			129			539			526			96		
iC, single (s)	4.2			4.1			7.1			6.5			6.2		
iC, 2 stage (s)															
tF (s)	2.3			2.2			3.5			4.0			3.3		
p0 queue free %	99			93			86			74			91		
cM capacity (veh/h)	1353			1456			353			415			958		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2					
Volume Total	20	96	34	100	133	59	50	189	26	110					
Volume Left	20	0	0	100	0	0	50	0	26	0					
Volume Right	0	0	34	0	0	59	0	83	0	33					
cSH	1353	1700	1700	1456	1700	1700	353	738	289	503					
Volume to Capacity	0.01	0.06	0.02	0.07	0.08	0.03	0.14	0.26	0.09	0.22					
Queue Length 95th (ft)	1	0	0	6	0	0	12	25	7	21					
Control Delay (s)	7.7	0.0	0.0	7.7	0.0	0.0	16.9	13.3	18.7	14.2					
Lane LOS	A			A			C			B					
Approach Delay (s)	1.0			2.6			14.1			15.0					
Approach LOS							B			C					
<b>Intersection Summary</b>															
Average Delay	7.8														
Intersection Capacity Utilization	29.0%			ICU Level of Service						A					
Analysis Period (min)	15														

HCM 2010 Signalized Intersection Summary  
 1: NORTH 49TH STATE St & PALMER - WASILLA HWY

2/19/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	92	1062	41	224	1054	335	39	27	206	314	19	86
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1644	1693	1710	1710	1710	1693	1676	1710
Adj Flow Rate, veh/h	100	1154	45	243	1146	364	42	29	224	341	21	93
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	4	1	0	0	0	1	11	11
Cap, veh/h	152	798	678	169	784	687	79	64	341	270	84	371
Arrive On Green	0.06	0.47	0.47	0.07	0.48	0.48	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1629	1710	1454	1629	1644	1439	144	205	1100	1020	270	1195
Grp Volume(v), veh/h	100	1154	45	243	1146	364	295	0	0	341	0	114
Grp Sat Flow(s),veh/h/ln	1629	1710	1454	1629	1644	1439	1449	0	0	1020	0	1465
Q Serve(g_s), s	3.7	56.0	2.0	8.0	57.2	21.2	10.0	0.0	0.0	16.4	0.0	7.0
Cycle Q Clear(g_c), s	3.7	56.0	2.0	8.0	57.2	21.2	20.8	0.0	0.0	37.2	0.0	7.0
Prop In Lane	1.00		1.00	1.00		1.00	0.14		0.76	1.00		0.82
Lane Grp Cap(c), veh/h	152	798	678	169	784	687	484	0	0	270	0	454
V/C Ratio(X)	0.66	1.45	0.07	1.44	1.46	0.53	0.61	0.00	0.00	1.26	0.00	0.25
Avail Cap(c_a), veh/h	155	798	678	169	784	687	484	0	0	270	0	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	32.0	17.6	34.6	31.4	22.0	35.6	0.0	0.0	48.7	0.0	31.0
Incr Delay (d2), s/veh	7.6	207.8	0.2	228.9	214.5	2.9	1.6	0.0	0.0	144.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.0	72.4	0.9	16.3	72.7	8.9	8.7	0.0	0.0	19.7	0.0	2.8
LnGrp Delay(d),s/veh	35.2	239.8	17.8	263.6	245.8	24.9	37.3	0.0	0.0	192.8	0.0	31.2
LnGrp LOS	D	F	B	F	F	C	D			F		C
Approach Vol, veh/h		1299			1753			295				455
Approach Delay, s/veh		216.4			202.4			37.3				152.3
Approach LOS		F			F			D				F
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	63.0		44.0	11.8	64.2		44.0				
Change Period (Y+Rc), s	5.0	7.0		6.8	5.0	7.0		6.8				
Max Green Setting (Gmax), s	8.0	56.0		37.2	7.0	57.0		37.2				
Max Q Clear Time (g_c+I1), s	10.0	58.0		39.2	5.7	59.2		22.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		2.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			188.4									
HCM 2010 LOS			F									



# HCM Unsignalized Intersection Capacity Analysis

## 2: NORTH 49TH STATE St & Leann Drive

2/19/2015



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Volume (veh/h)	0	19	275	0	29	242
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	21	299	0	32	263
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	625	299			299	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	625	299			299	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	97			97	
cM capacity (veh/h)	440	720			1234	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	299	295
Volume Left	0	0	32
Volume Right	21	0	0
cSH	720	1700	1234
Volume to Capacity	0.03	0.18	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	10.1	0.0	1.1
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	1.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

# HCM Unsignalized Intersection Capacity Analysis

























## 3: Chanlyut Circle & NORTH 49TH STATE St

2/19/2015

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Volume (veh/h)	237	2	31	210	2	38
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	258	2	34	228	2	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			260		554	259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			260		554	259
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			97		100	94
cM capacity (veh/h)			1316		484	745
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>NW 1</b>			
Volume Total	260	262	43			
Volume Left	0	34	2			
Volume Right	2	0	41			
cSH	1700	1316	725			
Volume to Capacity	0.15	0.03	0.06			
Queue Length 95th (ft)	0	2	5			
Control Delay (s)	0.0	1.2	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.3			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			1.3			
Intersection Capacity Utilization			38.7%	ICU Level of Service	A	
Analysis Period (min)			15			






















HCM 2010 Signalized Intersection Summary  
4: Church Road & Seldon Road

2/17/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	49	257	96	137	395	78	155	141	113	35	100	82
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1845	1727	1823	1900
Adj Flow Rate, veh/h	53	279	104	149	429	85	168	153	123	38	109	89
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	3	10	6	6
Cap, veh/h	332	684	582	430	684	582	604	816	687	570	407	333
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	883	1863	1583	996	1863	1583	1180	1863	1568	1019	930	759
Grp Volume(v), veh/h	53	279	104	149	429	85	168	153	123	38	0	198
Grp Sat Flow(s),veh/h/ln	883	1863	1583	996	1863	1583	1180	1863	1568	1019	0	1689
Q Serve(g_s), s	2.2	4.6	1.8	5.4	7.8	1.5	4.3	2.1	2.0	1.0	0.0	3.1
Cycle Q Clear(g_c), s	9.9	4.6	1.8	10.0	7.8	1.5	7.4	2.1	2.0	3.0	0.0	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	332	684	582	430	684	582	604	816	687	570	0	740
V/C Ratio(X)	0.16	0.41	0.18	0.35	0.63	0.15	0.28	0.19	0.18	0.07	0.00	0.27
Avail Cap(c_a), veh/h	416	861	732	525	861	732	604	816	687	570	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	9.7	8.8	13.4	10.7	8.7	9.7	7.1	7.0	8.0	0.0	7.4
Incr Delay (d2), s/veh	0.2	0.4	0.1	0.5	0.9	0.1	1.1	0.5	0.6	0.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.5	2.4	0.8	1.5	4.1	0.7	1.6	1.2	0.9	0.3	0.0	1.6
LnGrp Delay(d),s/veh	15.0	10.1	8.9	13.9	11.6	8.8	10.9	7.6	7.6	8.2	0.0	8.2
LnGrp LOS	B	B	A	B	B	A	B	A	A	A		A
Approach Vol, veh/h		436			663			444			236	
Approach Delay, s/veh		10.4			11.8			8.8			8.2	
Approach LOS		B			B			A			A	
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.0		19.1		22.0		19.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0		19.0		18.0		19.0				
Max Q Clear Time (g_c+I1), s		9.4		11.9		5.1		12.0				
Green Ext Time (p_c), s		2.1		3.1		2.6		3.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			10.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary  
 1: NORTH 49TH STATE St & PALMER - WASILLA HWY

2/19/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	92	1062	45	227	1054	335	43	28	209	314	20	86
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1569	1693	1644	1693	1710	1668	1710	1693	1656	1710
Adj Flow Rate, veh/h	100	1154	49	247	1146	364	47	30	227	341	22	86
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.00
Percent Heavy Veh, %	0	0	9	1	4	1	4	4	4	1	16	16
Cap, veh/h	152	798	622	167	784	687	83	62	326	260	92	358
Arrive On Green	0.06	0.47	0.47	0.07	0.48	0.48	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1629	1710	1333	1612	1644	1439	157	200	1053	1016	296	1156
Grp Volume(v), veh/h	100	1154	49	247	1146	364	304	0	0	341	0	108
Grp Sat Flow(s),veh/h/ln	1629	1710	1333	1612	1644	1439	1410	0	0	1016	0	1452
Q Serve(g_s), s	3.7	56.0	2.4	8.0	57.2	21.2	12.6	0.0	0.0	14.8	0.0	6.7
Cycle Q Clear(g_c), s	3.7	56.0	2.4	8.0	57.2	21.2	22.4	0.0	0.0	37.2	0.0	6.7
Prop In Lane	1.00		1.00	1.00		1.00	0.15		0.75	1.00		0.80
Lane Grp Cap(c), veh/h	152	798	622	167	784	687	472	0	0	260	0	450
V/C Ratio(X)	0.66	1.45	0.08	1.47	1.46	0.53	0.64	0.00	0.00	1.31	0.00	0.24
Avail Cap(c_a), veh/h	155	798	622	167	784	687	472	0	0	260	0	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	32.0	17.7	34.5	31.4	22.0	36.2	0.0	0.0	48.9	0.0	30.9
Incr Delay (d2), s/veh	7.6	207.8	0.2	242.9	214.5	2.9	2.4	0.0	0.0	164.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	2.0	72.4	0.9	16.8	72.7	8.9	9.1	0.0	0.0	20.5	0.0	2.7
LnGrp Delay(d),s/veh	35.2	239.8	18.0	277.5	245.8	24.9	38.5	0.0	0.0	213.1	0.0	31.1
LnGrp LOS	D	F	B	F	F	C	D			F		C
Approach Vol, veh/h		1303			1757			304				449
Approach Delay, s/veh		215.8			204.5			38.5				169.3
Approach LOS		F			F			D				F
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	63.0		44.0	11.8	64.2		44.0				
Change Period (Y+Rc), s	5.0	7.0		6.8	5.0	7.0		6.8				
Max Green Setting (Gmax), s	8.0	56.0		37.2	7.0	57.0		37.2				
Max Q Clear Time (g_c+I1), s	10.0	58.0		39.2	5.7	59.2		24.4				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		2.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			191.0									
HCM 2010 LOS			F									

# HCM Unsignalized Intersection Capacity Analysis

## 2: NORTH 49TH STATE St & Leann Drive

2/19/2015



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Volume (veh/h)	0	19	283	0	29	250
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	21	308	0	32	272
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	642	308			308	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	642	308			308	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	97			97	
cM capacity (veh/h)	430	712			1225	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	308	303
Volume Left	0	0	32
Volume Right	21	0	0
cSH	712	1700	1225
Volume to Capacity	0.03	0.18	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	10.2	0.0	1.1
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	1.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		43.0%	ICU Level of Service A
Analysis Period (min)		15	

# HCM Unsignalized Intersection Capacity Analysis

























## 3: Chanlyut Circle & NORTH 49TH STATE St

2/19/2015

	↑	↗	↘	↓	↙	↖
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖		↖
Volume (veh/h)	245	2	31	218	2	38
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	266	2	34	237	2	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			268		572	267
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			268		572	267
tC, single (s)			4.1		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			97		100	94
cM capacity (veh/h)			1307		473	736
<b>Direction, Lane #</b>	<b>NB 1</b>	<b>SB 1</b>	<b>NW 1</b>			
Volume Total	268	271	43			
Volume Left	0	34	2			
Volume Right	2	0	41			
cSH	1700	1307	716			
Volume to Capacity	0.16	0.03	0.06			
Queue Length 95th (ft)	0	2	5			
Control Delay (s)	0.0	1.2	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.3			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			1.3			
Intersection Capacity Utilization			Err%	ICU Level of Service	H	
Analysis Period (min)			15			

HCM 2010 Signalized Intersection Summary  
4: Church Road & Seldon Road

2/17/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	257	96	137	395	81	155	147	113	38	106	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1863	1863	1863	1792	1863	1792	1845	1624	1761	1900
Adj Flow Rate, veh/h	55	279	104	149	429	88	168	160	123	41	115	91
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	2	2	2	2	6	2	6	3	17	11	11
Cap, veh/h	328	688	585	432	688	563	591	783	685	538	398	315
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	847	1863	1583	996	1863	1524	1171	1792	1568	952	912	722
Grp Volume(v), veh/h	55	279	104	149	429	88	168	160	123	41	0	206
Grp Sat Flow(s),veh/h/ln	847	1863	1583	996	1863	1524	1171	1792	1568	952	0	1633
Q Serve(g_s), s	2.3	4.6	1.8	5.4	7.8	1.6	4.5	2.3	2.0	1.1	0.0	3.4
Cycle Q Clear(g_c), s	10.1	4.6	1.8	10.0	7.8	1.6	7.8	2.3	2.0	3.4	0.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	328	688	585	432	688	563	591	783	685	538	0	713
V/C Ratio(X)	0.17	0.41	0.18	0.34	0.62	0.16	0.28	0.20	0.18	0.08	0.00	0.29
Avail Cap(c_a), veh/h	405	858	730	523	858	702	591	783	685	538	0	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	9.6	8.8	13.3	10.7	8.7	10.0	7.2	7.1	8.2	0.0	7.5
Incr Delay (d2), s/veh	0.2	0.4	0.1	0.5	0.9	0.1	1.2	0.6	0.6	0.3	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.6	2.4	0.8	1.5	4.1	0.7	1.6	1.2	1.0	0.3	0.0	1.7
LnGrp Delay(d),s/veh	15.0	10.0	8.9	13.8	11.6	8.8	11.2	7.8	7.7	8.5	0.0	8.5
LnGrp LOS	B	B	A	B	B	A	B	A	A	A		A
Approach Vol, veh/h		438			666			451			247	
Approach Delay, s/veh		10.4			11.7			9.0			8.5	
Approach LOS		B			B			A			A	
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.0		19.2		22.0		19.2				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.0		19.0		18.0		19.0				
Max Q Clear Time (g_c+I1), s		9.8		12.1		5.4		12.0				
Green Ext Time (p_c), s		2.1		3.1		2.7		3.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			10.3									
HCM 2010 LOS			B									

**Appendix C**  
**95th Percentile Queuing Reports**

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Table C-1: 95% Queue Length Results (ft)

Study Intersection	Turning Movement	Existing	2020		2040	
			No Septage Site	With Septage Site	No Septage Site	With Septage Site
N 49TH State St/Palmer-Wasilla Hwy	EBL	30	30	30	<b>110</b>	<b>110</b>
	EBT	520	610	610	<b>1480</b>	<b>1480</b>
	EBR	0	0	0	10	10
	WBL	20	20	20	<b>380</b>	<b>390</b>
	WBT	530	630	630	<b>1480</b>	<b>1480</b>
	WBR	40	40	40	80	80
	NBL	-	-	-	-	-
	NBT	60	70	80	200	210
	NBR	-	-	-	-	-
	SBL	180	<b>240</b>	220	<b>540</b>	<b>550</b>
	SBT	40	50	20	60	60
SBR	-	-	-	-	-	
N 49TH State St/Leeann Drive	WBL	-	-	-	-	-
	WBR	10	10	10	10	10
	NBT	0	0	0	0	0
	NBR	-	-	-	-	-
	SBL	10	10	10	10	10
	SBR	10	10	10	10	10
N 49TH State St/Chanlyut Circle	EBL	-	-	0	0	0
	EBR	-	-	0	0	0
	NBL	-	-	10	10	10
	NBT	-	-	-	-	-
	NBR	-	-	10	10	10
	SBL	-	-	10	10	10
	SBT	-	-	10	10	10
	SBR	-	-	-	-	-
Church Rd/Seldon Rd	EBL	0	10	10	30	30
	EBT	0	0	0	90	90
	EBR	0	0	0	20	20
	WBL	10	10	10	60	60
	WBT	-	0	0	150	150
	WBR	10	0	0	20	20
	NBL	-	20	20	70	70
	NBT	0	30	30	60	60
	NBR	0	30	30	30	30
	SBL	10	10	10	20	20
	SBT	10	20	30	50	50
SBR	-	20	30	-	-	

Notes: 1 Bold text indicates queue length exceeded storage capacity.

**Attachment 3**  
**Environmental Technical Memo**

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# Environmental Analysis, MSB Septage and Leachate Facility Site Suitability and Engineering Analysis

PREPARED FOR: Mike Campfield/MSB  
PREPARED BY: Denny Mengel  
DATE: February 25, 2015  
PROJECT NUMBER: 656753

The two potential sites were evaluated to determine which site would be the best suited for the proposed facility based on environmental concerns. Resources evaluated included wetlands, wildlife habitat, sensitive species, cultural resources, water resources, hazardous materials, and effects on neighboring properties.

## Agency Coordination

Several natural resources agencies were contacted during the course of this analysis. Results of those discussions follow:

**U.S. Fish and Wildlife Service, Anchorage (USFWS).** The USFWS was contacted 3 times, but none were successful in talking to a biologist. Messages were left each time.

**U.S. Army Corps of Engineers (USACOE), Anchorage.** The USACOE was briefed on the proposed project and the locations being considered. They were told that although wetlands are found on one of the sites, there would most likely be no fill placed into those wetlands. They indicated that at this time, they had no involvement with the project unless wetlands were to be impacted (Appendix A). When the Borough is ready to move on designing a site, they would be able to provide the Borough a Jurisdictional Determination regarding the presence/absence of wetlands at the site upon the Borough's request.

**Alaska Department of Fish and Game (ADFG), Anchorage.** The ADFG was briefed on the proposed project and the locations being considered. Both the Habitat and Wildlife Divisions were contacted. The Habitat Division main concern is dealing with native fish issues below the high water mark. The proposed project will have no effect on surface water and therefore the Habitat Division will not be involved. They indicated that they will provide a formal reply when the Borough officially announces the project and seeks agency input.

The Wildlife section was contacted to identify any wildlife concerns at the 2 sites, particularly bald eagle nests. Todd Rinaldi at Palmer did not know of any eagle nests or of any other wildlife concerns at the 2 sites. A copy of the project location maps were forwarded to him for further consideration.

## Wetlands

The wetland boundaries were not delineated in the field, but rather were identified from the wetland mapping database maintained by the Matanuska-Susitna Borough, which were delineated by the U.S. Army Corps of Engineers in 2011. The National Wetland Inventory (NWI) maps were also checked to locate potential wetlands. Identified wetlands were compared to aerial photographs to determine if the photos showed patterns that would indicate wetland conditions either shown or not shown on the existing data maps. Topographic maps were consulted to verify that identified wetlands were located in appropriate landscape positions such as depressions. A field review was used to verify that wetland conditions were present where expected. Wetlands at the Church site are shown in Figure 1. There are no wetlands to show for the landfill site.

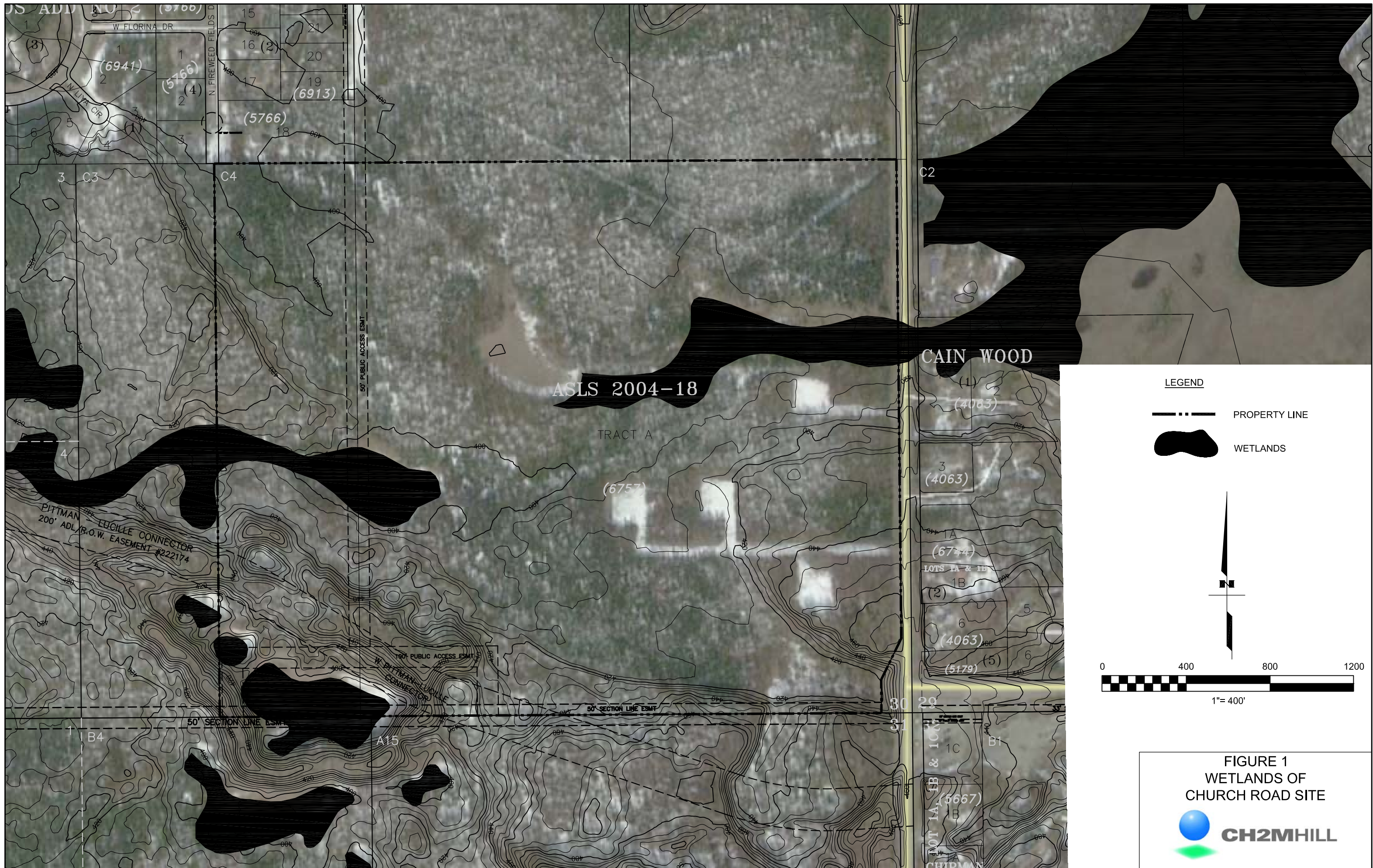
**Church Road Site.** Wetlands at this site were mapped in the Borough's wetland mapping system. As shown in Figure 1, there are wetlands found in the northeast and southwest sections of the Church Road site.

**Landfill Site.** There was no mapping for wetlands at this site in the Borough's mapping system. Therefore NWI maps were relied upon for this site. There are no known wetlands within the boundaries of this site shown on the NWI maps. Wetlands were not located during field visits. There are wetlands identified outside the boundaries of the site.

### **Impacts**

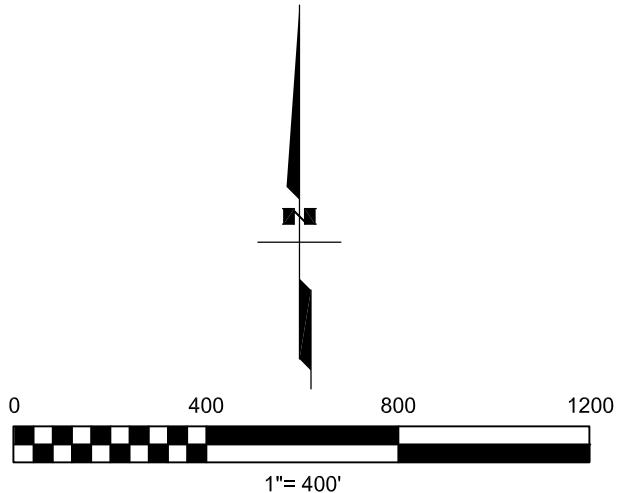
The wetlands at the Church Road site are not located within the area identified as suitable for locating the facility. There are no wetlands at the Landfill Site. Therefore there would be no wetland impacts at either location.

Either site would be feasible from a wetlands perspective.




**LEGEND**

-  PROPERTY LINE
-  WETLANDS



**FIGURE 1**  
**WETLANDS OF**  
**CHURCH ROAD SITE**



## Wildlife Habitat

Habitat is dominated by forested conditions. The dominant species in the forests at both locations are white spruce (*Picea glauca*), black spruce (*Picea mariana*), and birch (*Betula papyrifera*). The higher elevations at both sites are a mixture of birch and white spruce, with birch dominating the ridge tops. Spruce is more common on the lower slopes and bottoms, with black spruce increasing in the wetter locations.

Indicators of fox, ermine, and rabbit were observed during site visits. Moose, deer, bear, and a variety of birds would also be expected to use the sites. The sites are similar in habitats and no differences in wildlife use would be anticipated.

## Impacts

Forested habitats would be lost where the facility and access roads are constructed. Comparable acreages would be lost to the facility's construction at both locations. The access road would be longer at the landfill site, resulting in more habitat losses there.

The Church Road site would be slightly preferable to the Landfill site, as a bit more habitat would be lost under the Landfill sites' access road.

## Sensitive Species

A Threatened and Endangered Species List was requested from the U.S. Fish and Wildlife Service (USFWS) for each site. The letters from the USFWS are in Appendix B for Landfill Site and Appendix C for the Church Road Site. As discussed in the letters, there are no Threatened or Endangered species at either sites and no Critical Habitat is present.

Bald eagles are known to use the landfill site as a foraging area. It is common to observe them perching in the trees around the landfill. Conversation with the ADFG did not reveal if nest sites are located near the project area, although they felt that it is likely that nests would be found near the River north of the Church Road site and possibly near the Landfill. Repeated attempts were made to contact the USFWS, but none were successful.

The presence of bald eagles is an important consideration because of their protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, that prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

If eagles nests are located near where new construction or operational activities are planned. Consultation with the USFWS would be required. If a "take" is determined to be a possibility, the MSB would need to apply for a permit to cover incidental "take" of the eagle. Eagle breeding season is typically from mid-February through mid-July.

Migratory birds are likely to inhabit the project area during the breeding season. Both sites have potential for breeding migrants. Nesting surveys would be done as part of the permitting and design phase of the project to ensure no migratory birds were affected during construction.

### Impacts

There would be no significant impacts to sensitive species at either site. Impacts to birds protected by the Migratory Bird Act would be avoided by removing potential nesting habitat in the construction zones prior to the nesting season; essentially in fall and winter. Potential bald eagle nest impacts are unknown at this time, therefore nesting surveys would be conducted prior to construction. If nests were located, construction activities would be seasonally limited, based on the proximity to the nest.

Although no known differences exist between the two sites, there is potential for bald eagles nests to be located at the landfill site. That would make the Church Road site preferable if nests were located. No site is preferentially identified at this time.

### Cultural Resources

The Alaska Heritage Resources Survey (AHRs) database was queried to determine if potential cultural resources may be located in or within 1 mile of the 2 project locations. No resources were identified in either location, but 6 historical sites identified within 1 mile of the Landfill site and 2 historical sites were located within 1 mile of the Church Road site. However, there have been no previous surveys of the project locations and therefore sites, particularly subsurface, may exist. Appendix D contains the detailed cultural resources report.

There is no differentiation between the sites based on cultural resources.

### Water Resources

There are no surface water resources at either project location. Meeting minutes from an initial consultation meeting with the Alaska Department of Environmental Conservation (ADEC) Engineering and Support and Plan Review (ES&PR) group is shown in Appendix E.

**Church Road Site.** Groundwater at the Church Road site is lower than 55 feet on the eastern side of the site and lower than 30 feet in the center of the site (Depth of drill explorations), Groundwater flow is assumed to be to the southwest. Soils are fine-grained and infiltration is slow. Water applied to the surface is likely to encounter a shallow, nearly impermeable layer and flow downslope where it would discharge as a seep on the hillside. Any water applied to the ground surface at the site would be treated to a quality protective of human health prior to discharge. Water quality would be further improved as the water moves through the soil by soil chemical reactions, absorption of elements onto soil particle surfaces, and soil organism activity. There would be no impact to groundwater quality at this site. As mentioned above however, the site is not suited for surface discharge.

**Landfill Site.** Groundwater at the Landfill site was not encountered within the 73 feet drilling depth. Well records to the east indicate that groundwater depth would be approximately 130 feet. Soils are coarser grained and infiltration would therefore be more rapid at this site compared to the Church Rd. site. No impermeable layers were found during exploratory drilling to impede infiltration. However, any water applied to the ground surface at the site would be treated to a quality protective of human health prior to discharge. Water quality would be further improved as the water moves through the soil by soil chemical reactions, absorption of elements onto soil particle surfaces, and soil organism activity.

### Impacts

Water discharged at the sites would be safe to humans and wildlife. Additional polishing during the treatment process or during infiltration would further improve water quality. There would be no impact to groundwater quality at either site.

There are no surface waters at either site, so there would be no impacts or preferred site based on water resources.

## Surrounding Property Effects

Construction and operation of the site will result in temporary impacts during the construction period. This would be mainly due to operation of construction equipment and movements to and from the site by material suppliers and construction workers. Operational impacts could result from night lighting, vehicle use, transport and off-loading of wastewater, facility equipment operation, or through the offsite visual appearance of the site itself.

### Noise

Noise from construction would be apparent during the construction period. Construction hours would be limited to avoid un-necessary impacts to neighboring properties to between 8:00 am to 8:00 pm.

**Church Road Site.** Construction traffic would most likely travel to and from the site using Church Road. Residences along this route would hear elevated noise levels compared to the pre-construction period. The construction noise would end after the facility is built. Limiting construction to between 8:00 am and 8:00 pm and ensuring that the noise abatement equipment on all construction vehicles and trucks is maintained and kept in proper working order, would minimize this affect to the extent practicable.

Following completion of the facility, noise would be limited to trucks bringing wastewater to the plant, which would result in a long-term impact depending on the volume of traffic. Transportation issues are addressed in the Transportation Section. Noise from equipment operation would not result in an impact to neighboring properties because noise shielding would be used on any building producing noise.

**Landfill Site.** Similar temporary construction noise as described above would be associated with constructing this site. There would be temporary noise impacts to neighboring properties. The site would entered via a new access road starting near the intersection of N. 49<sup>th</sup> State St. and Douglas St. This would move the road nearer to a residence which would increase that home's noise level. Since the landfill already has numerous trucks entering each day, the increase in noise during construction should be minimal over most of the project area. Likewise, noise from trucks entering the facility would be indistinguishable from existing landfill truck activity and would not result in a long-term impact.

### Odor

Waste water odors would be present during the times when trucks are unloading. There would be no odor generated from the treatment plant or leach fields. A composting facility may be built to turn wastewater solids into a material suitable for public use as mulch or soil enhancer. Composting will generate odors when the piles are turned for aeration.

**Church Road Site.** Prevailing winds at this site, as measured at the Wasilla weather station, are from the east-northeast with a swing to winds from the east during April to June. The nearest downwind residence appears to be over a mile from the proposed site location.

**Landfill Site.** Prevailing winds at this site, as measured at the Palmer weather station, are from the north with a swing to winds from the SE during April to July. The nearest downwind residence to the west appears to be approximately a mile from the proposed site location. The closest residence to the south is over two miles. Odor is already present from the landfill and the proposed facility would not appreciably increase the odor levels.

### Light

Construction during the winter months would require lighting which may be visible from nearby roads and trails. This would be a temporary effect.

Outdoor security and safety lighting at the new facility has the potential to cause light pollution to the night time sky. All outdoor lighting at the facility will utilize light pollution reduction fixtures. This may include "full



cutoff,” or “fully focused” designs that reduce glare and improve visibility. These fixtures tend to restrict light leaving the area and focus the beams directly to the ground below them.

### **Visual**

The proposed sites would not be visible from residential locations at either site. There is a possibility that users on the University Farm Trail System would be able to see the facility at the Landfill Site where the system passes the site.

### **Impacts**

**Noise.** Existing trucks driving to the landfill already create a noisy environment and the truck traffic to the proposed facility at the Landfill Site would not increase noise to an appreciable level during construction or operation. However, there will be long-term impacts at the Church Road Site due to an increase in the truck traffic on Church road relative to existing conditions. There would be temporary and long-term noise impacts to the house at N. 49<sup>th</sup> and Douglas St. from the Landfill Site. The Landfill site would be preferred over the Church Road site.

**Odor.** There is potential for offsite odors at both locations related to turning over compost piles during curing and trucks offloading wastewater at the site. Mitigation measures such as ozone generators at the pumping stations and only turning compost when the winds are not blowing towards residences would minimize the odor problems. There will be no long-term odor impacts at either site. Either site is acceptable.

**Visual.** There would be long-term visual impacts to neighboring properties at either site. The Landfill Site facility may be visible from the University Farm Trail System. Landscaping would be used to minimize visual effects. Either site is acceptable.

**Light.** There may be a temporary lighting disturbance during construction. Use of light pollution fixtures during operation will mitigate light impacts to surrounding properties. Either site is acceptable.

## **Environmental Review Checklist**

To summarize and document important environmental concerns related to site development, the State of Alaska Department of Transportation Project Startup Environmental Checklist was filled out. The checklist is included in Appendix F.

## **Preliminary Environmental Site Assessment (ESA)**

### **Church Road Site**

CH2M HILL conducted a preliminary assessment of environmental findings on property located along the west side of North Church Road, north of West Parks Highway in Wasilla, Alaska. The preliminary assessment is intended to provide information on known environmental conditions to support decisions for follow on activities. Work performed for this assessment included review of results of a standard radius search of federal, state, and local regulatory databases, review of available aerial photographs, review of available topographic maps, review of available Sanborn maps, and review of available city directories. EDR, Inc. was subcontracted to provide the records above that were reviewed. Additionally, the Alaska Department of Environmental Conservation website was searched for known contaminated sites on February 25, 2015.

Review of available data did not identify any known environmental issues on the subject property or adjacent property within 1-mile of the property. Three potential environmental issues were noted that require further consideration. Three what appear to be former drilling pads are located on the property. If drilling did occur there is potential issues from releases or former mud pits. One adjacent property to the east, Valley Country Store and Fuel did not appear in any data bases, but if underground tanks are present additional inquiry into their condition and if releases have occurred should be evaluated. The third issue is Church Road Mental Health Trust LA was identified in the SPILLS database. Visual reconnaissance should be performed to verify the spill did not occur within 1- mile of the property.

## Landfill Site

CH2M HILL conducted a preliminary assessment of environmental findings on property located south of the MSB Central Landfill at the south end of North Golden Hills Drive in Palmer, Alaska. The preliminary assessment is intended to provide information on known environmental conditions to support decisions for follow on activities. Work performed for this assessment included review of results of a standard radius search of federal, state, and local regulatory databases, review of available aerial photographs, review of available topographic maps, review of available Sanborn maps, and review of available city directors. EDR, Inc. was subcontracted to provide the records above that were reviewed. Additionally, the Alaska Department of Environmental Conservation website was searched for known contaminated sites on February 25, 2015.

Review of available data did not identify any known environmental issues on the subject property or adjacent property within 1-mile of the property. The two contaminated sites located within ½-mile to the north have been closed with regulatory concurrence of no further action. The two potential environmental issues identified were the landfill and potential heating fuel releases from the neighborhood located north of the property. Both are located in the presumed upgradient groundwater direction and the landfill reportedly has unlined sections. These two issues should be further investigated. The community college is presumably downgradient and any releases of heating fuel would be assumed to migrate away from the property. No other commercial or industrial properties suspected of environmentally impacting the property were identified in the area with the exception of the landfill.

Technical memorandums with backup for these preliminary environmental assessment findings are included in Appendix G.

## Summary and Recommendations

There would be no permanent environmental long-term impacts that would elevate selection of one site over the other. Impacts to resources are similar at both locations. In addition, mitigation would be developed during design to reduce to a level of non-significance, any unexpected construction or operational impacts that arise.

Noise is one area of concern where there are distinct difference between the two sites. The Church Road site is closer to residences than the Landfill site and does not have an appreciable existing truck traffic impact. This raises the possibility of long-term offsite impacts being greater at the Church Road site. There will be a direct noise impact to a residence at the corner of N. 49<sup>th</sup> and Douglas Streets at the Landfill site where the new access road would be constructed. However, a number of trucks currently pass this location on the way to the landfill, so the additional noise may not be noticed.

In summary, environmental factors will not be a consideration in choosing one site over the other. Design and operating requirements are more likely to guide the selection of the preferred site.

**Appendix A**  
**Call Log with the US Army Corps of Engineers**

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**Call To:** Todd Rinaldi, ADFG, Palmer

**Phone No.:** 907-746-6325

**Date:** 2/24/2015

**Call From:** Denny Mengel

**Time:** 11:30

**Subject:** MSB Septage Facility site

**Project No.:**

I talked with Ron to inform the Department about the project and potential locations being investigated. I asked if they know of any wildlife concerns at either site. We also discussed the bald eagle issue at the Landfill. Todd know of no issues to be concerned about at this time. He suggested I contact the USFWS about eagle nest locations. I asked if needed any formal documentation, but he indicated the Borough would contact them when the project became active. He requested I send him location maps to look at and he would get back to me if anything came to him about the sites. I sent the maps to him after the call. I have not had any further return calls.

**Call To:** Ron Benker, ADFG Habitat Section

**Phone No.:** 907-861-3204

**Date:** 2/19/2015

**Call From:** Denny Mengel

**Time:** 12:30

**Message Taken By:**

**Subject:** MatSu Septage and Leachate Facility Study

**Project No.:**

Discussed the project with Ron to let the Department know about it. He said they would not have any issues at the Landfill site as the Habitat group mostly deals with things below the ordinary high water mark. The Church Rd site may have more issue due to the Little Susitna River. He gave me the name of the Regional Director of the Wildlife Section to talk to about eagle issues at the landfill.

Asked if I should send him a letter about the project and he said we could if we wanted to, but the Borough usually sends them a notice once the project is going forward. We don't really need to.

**CH2MHILL®** TELEPHONE CONVERSATION RECORD

**Call To:** Berte Budneck, USCOE Project Manager for MatSu area

**Phone No.:** 907-753-2785

**Date:** 2/19/2015

**Call From:** Denny Mengel

**Time:** 1200

**Message Taken By:**

**Subject:** MatSu Septage and Leachate Facility Project

**Project No.:**

We traded voice mails to exchange information. Left a message explaining the project and asked if the Corps had any issues at those sites they know of. I mentioned that although there were wetlands at the Church Rd site, the project would be avoiding them. She called and left me a message indicating that if there are no wetland impacts, the Corps would not need to be involved. If we would like, we can request that the Corps make a Jurisdictional Determination for the chosen site. No further effort needed at this time.

**Appendix B**  
**USFWS Threatened and**  
**Endangered Species List: Landfill Site**

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## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Anchorage Fish and Wildlife Field Office  
605 WEST 4TH AVENUE, ROOM G-61  
ANCHORAGE, AK 99501  
PHONE: (907)271-2888 FAX: (907)271-2786

Consultation Code: 07CAAN00-2015-SLI-0044

January 30, 2015

Event Code: 07CAAN00-2015-E-00160

Project Name: MSB Septage-Landfill Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and some candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Please note that candidate species are not included on this list. We encourage you to visit the following website to learn more about candidate species in your area:

[http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate\\_conservation.htm](http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate_conservation.htm)

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required



to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Landfill Site

## Official Species List

**Provided by:**

Anchorage Fish and Wildlife Field Office  
605 WEST 4TH AVENUE, ROOM G-61  
ANCHORAGE, AK 99501  
(907) 271-2888

**Consultation Code:** 07CAAN00-2015-SLI-0044

**Event Code:** 07CAAN00-2015-E-00160

**Project Type:** Wastewater Facility

**Project Name:** MSB Septage-Landfill Site

**Project Description:** Site Assessment Study for feasibility of siting a wastewater septage and leachate treatment facility

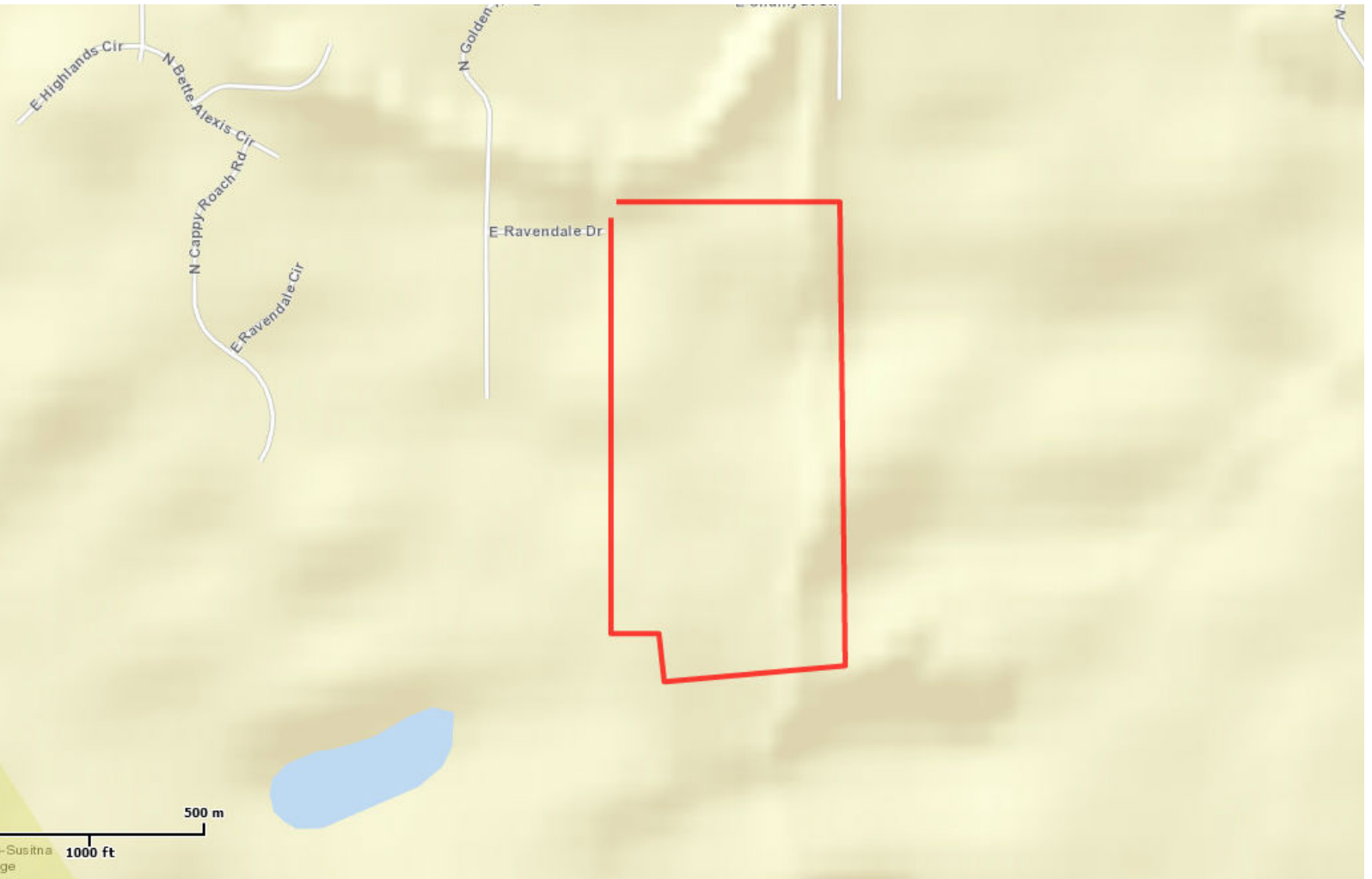
**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Landfill Site

**Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-149.2087117 61.5889984, -149.2087042 61.5889969, -149.2086977 61.5889927, -149.2086934 61.5889864, -149.2086917 61.5889789, -149.20852 61.5818724, -149.2085213 61.5818648, -149.2085254 61.5818582, -149.2085317 61.5818537, -149.2085392 61.5818519, -149.2143757 61.5816068, -149.2143825 61.5816077, -149.2143886 61.5816109, -149.2143933 61.5816159, -149.214396 61.5816223, -149.2145641 61.582342, -149.2160931 61.582342, -149.2161008 61.5823435, -149.2161072 61.5823479, -149.2161116 61.5823543, -149.2161131 61.582362, -149.2161131 61.5887334, -149.2161116 61.5887411, -149.2161072 61.5887475, -149.2161008 61.5887519, -149.2160931 61.5887534, -149.2160854 61.5887519, -149.216079 61.5887475, -149.2160746 61.5887411, -149.2160731



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Landfill Site

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149.2087117 61.5889984)))

**Project Counties:** Matanuska - Susitna, AK



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Landfill Site

## Endangered Species Act Species List

There are a total of 0 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Landfill Site

## **Critical habitats that lie within your project area**

There are no critical habitats within your project area.

**Appendix C**  
**USFWS Threatened and**  
**Endangered Species List: Church Road Site**

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## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Anchorage Fish and Wildlife Field Office  
605 WEST 4TH AVENUE, ROOM G-61  
ANCHORAGE, AK 99501  
PHONE: (907)271-2888 FAX: (907)271-2786

Consultation Code: 07CAAN00-2015-SLI-0045

January 30, 2015

Event Code: 07CAAN00-2015-E-00161

Project Name: MSB Septage-Church Rd Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and some candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Please note that candidate species are not included on this list. We encourage you to visit the following website to learn more about candidate species in your area:

[http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate\\_conservation.htm](http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate_conservation.htm)

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required



to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Church Rd Site

## Official Species List

**Provided by:**

Anchorage Fish and Wildlife Field Office  
605 WEST 4TH AVENUE, ROOM G-61  
ANCHORAGE, AK 99501  
(907) 271-2888

**Consultation Code:** 07CAAN00-2015-SLI-0045

**Event Code:** 07CAAN00-2015-E-00161

**Project Type:** Wastewater Facility

**Project Name:** MSB Septage-Church Rd Site

**Project Description:** Site Assessment Study for feasibility of siting a wastewater septage and leachate treatment facility

**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Church Rd Site

**Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-149.511814 61.6218974, -149.5118064 61.6218959, -149.5117999 61.6218917, -149.5117955 61.6218852, -149.5117939 61.6218776, -149.5117134 61.6143434, -149.5117125 61.6143427, -149.5117085 61.6143347, -149.5116227 61.6139689, -149.5116225 61.6139607, -149.5116256 61.6139531, -149.5117114 61.6138266, -149.5117175 61.6138208, -149.5117254 61.613818, -149.5117338 61.6138187, -149.5117411 61.6138227, -149.5117462 61.6138294, -149.511748 61.6138376, -149.511753 61.6143098, -149.5257354 61.6141469, -149.5257426 61.6141482, -149.5257489 61.614152, -149.5257534 61.6141578, -149.5257555 61.6141649, -149.5265108 61.6217536, -149.52651 61.6217614, -149.5265064 61.6217683, -149.5265003 61.6217732, -149.5264929 61.6217755, -149.5264851 61.6217747, -



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Church Rd Site

149.5264782 61.6217711, -149.5264733 61.621765, -149.526471 61.6217576, -149.5257175  
61.6141871, -149.5117535 61.6143498, -149.5118337 61.6218573, -149.5268342 61.6217738, -  
149.5268419 61.6217753, -149.5268484 61.6217796, -149.5268527 61.621786, -149.5268543  
61.6217937, -149.5268528 61.6218014, -149.5268485 61.6218079, -149.5268421 61.6218122, -  
149.5268344 61.6218138, -149.511814 61.6218974), (-149.5117116 61.6141725, -149.5117087  
61.6139019, -149.5116637 61.6139683, -149.5117116 61.6141725)))

**Project Counties:** Matanuska - Susitna, AK



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Church Rd Site

## Endangered Species Act Species List

There are a total of 0 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.



United States Department of Interior  
Fish and Wildlife Service

Project name: MSB Septage-Church Rd Site

## **Critical habitats that lie within your project area**

There are no critical habitats within your project area.

**Appendix D**  
**Cultural Resources Technical Memorandum**

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# Preliminary Cultural Resources Records Search for the Matsu Septage Project

PREPARED BY: Doug McFarland

DATE: February 22, 2015

This memo summarizes the results of a preliminary cultural resources records search for the Matsu Septage Project.

## Research Design

The research conducted includes a review of the Alaska Heritage Resources Survey (AHRS) database. The purpose of this review was to develop general understanding of potential cultural resource concerns within the proposed project and nearby vicinity. The results are based on the identification of previously recorded archaeological and historic sites.

## Research Area

The researched area includes a one mile wide search radius around the proposed septage and leachate treatment facility locations for both the Church Road site and the Landfill site (Figure 1).

## Preliminary Information

A review of AHRS identified that no previously recorded cultural resources exist within the Project Areas (Table 1 and Figures 2 and 3), and only 4 cultural resource surveys have been completed for projects within a mile of the Project Areas (Table 2). The AHRS database shows that the nearby sites are historic, and most have not been evaluated for National Register eligibility.

## Summary

The cultural resources records search indicates that the proposed septage and leachate treatment facility locations had very little previous investigation for cultural resources, although some of the surrounding areas have. The nearby resources are historic and not generally associated with archaeological investigations.

## Recommendations

Based on the results of this preliminary review it is recommended that a Section 106 Cultural Resource Review is conducted for this project. Because the project is an area that has not had much survey completed, according to the statewide database, a cultural resources survey including subsurface investigation is strongly recommended as part of the review. The survey should include identification and inventory of previously unrecorded cultural resources and an evaluation of the potential for resources to be impacted. Once these steps are completed recommendations can be made regarding avoidance or treatment of any significant resources that may be impacted by the project.



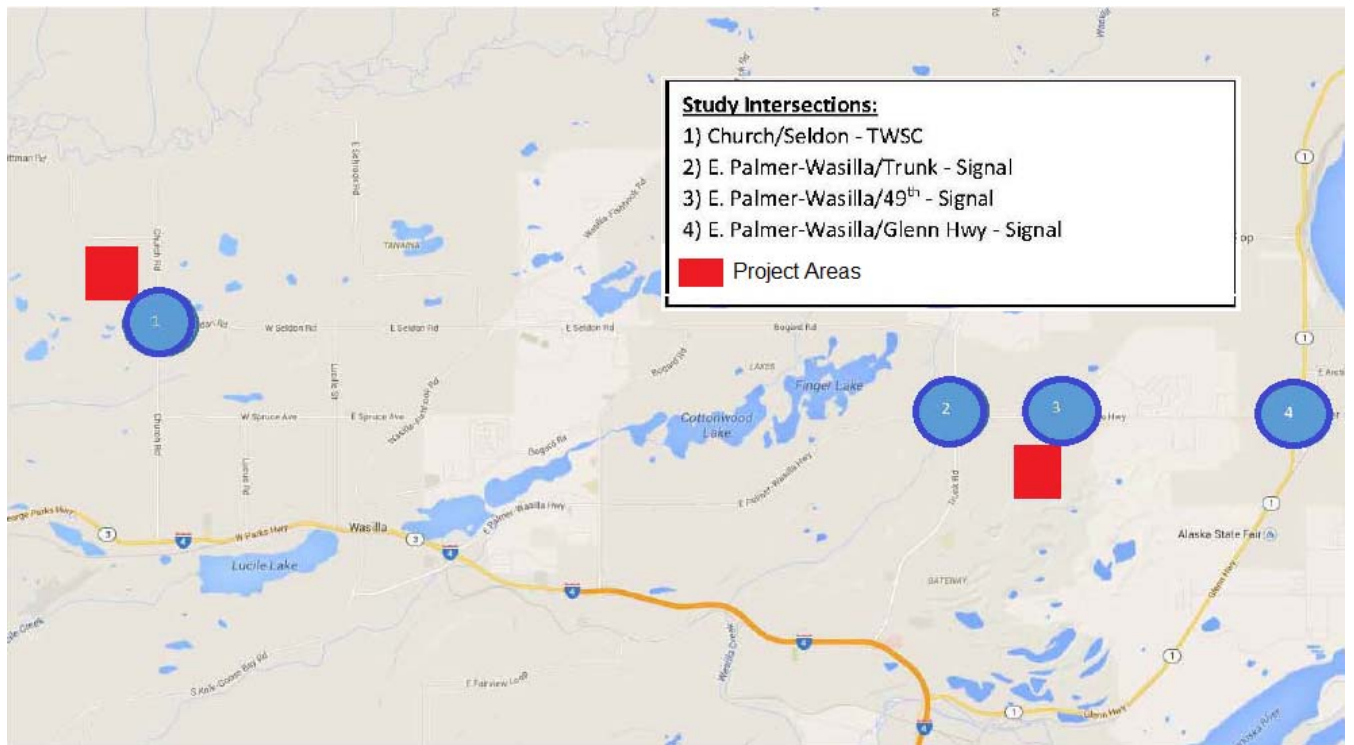


Figure 1 Project areas

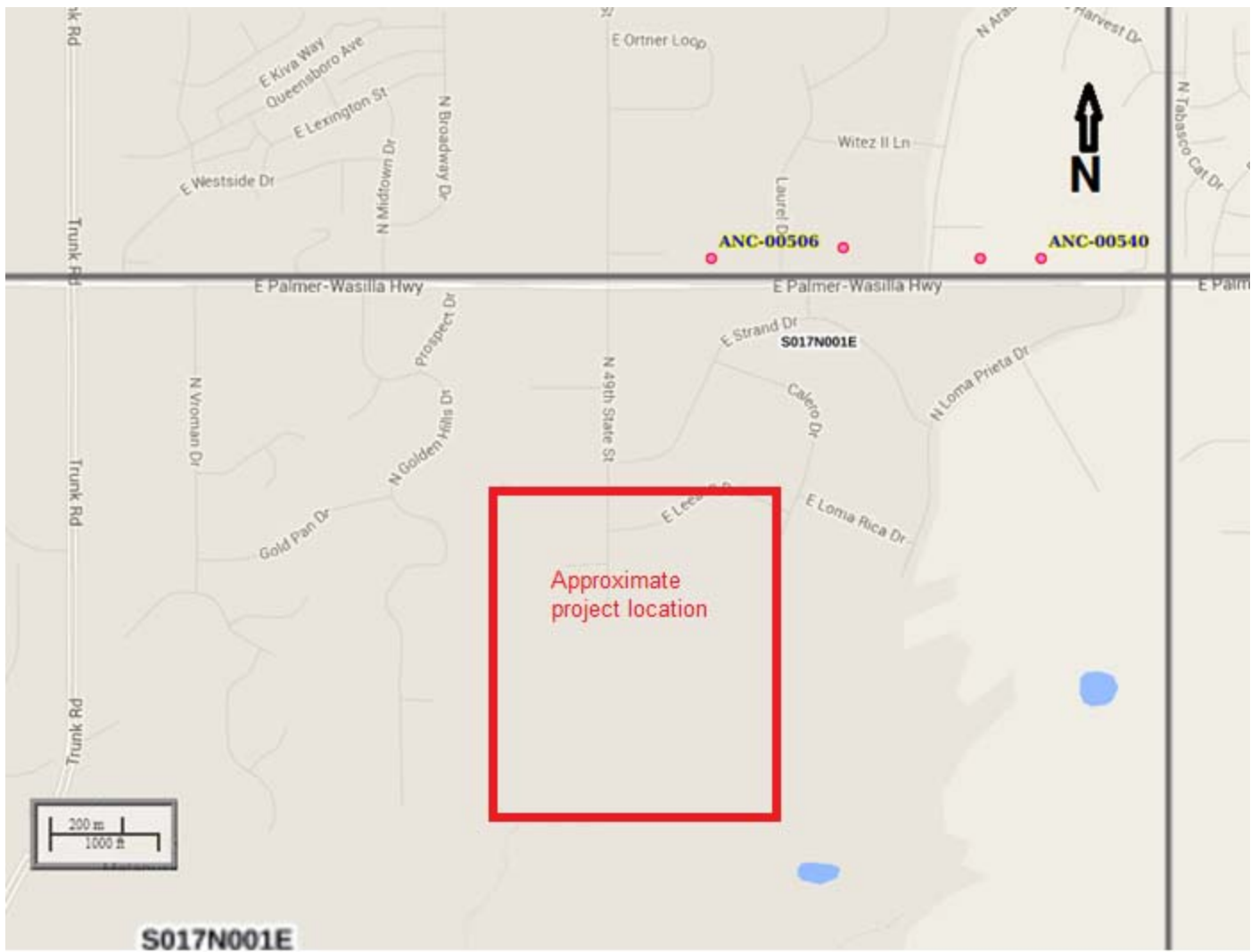


Figure 2. Landfill location cultural resources



Figure 3. Church Road project location cultural resources

TABLE 1

**Cultural resources recorded within 1 mile (Area of Interest) of the Project Location**

Site ID #	Resource type	Approximate Distance from the Project	Site age		National Register Eligibility			Description
			Pre-contact	Historic	Eligible	Not Eligible	Un-eval	
ANC00463	Site and Architectural	~ 3/4 mile to the northeast of landfill project area		X			X	Farm with distinctive well house and barn architectural features. Associated with colonization, and agriculture.
ANC00540	Site and Architectural	~ 1 mile to the northeast of landfill project area		X			X	House, a well house, and a log cabin all associated with the remains of an Alaska Rural Rehabilitation Corporation (ARRC) farm.
ANC00510	Site and Architectural	~ 1/2 mile to the northeast of landfill project area		X			X	Remains of an Alaska Rural Rehabilitation Corporation (ARRC) farm.
ANC00506	Site and Architectural	~ 1/4 mile to the northeast of landfill project area		X		X		Remains of an Alaska Rural Rehabilitation Corporation (ARRC) farm. Cabin attached to the barn is colony era.
ANC00447	Site and Architectural	~ 3/4 mile to the west of landfill project area		X			X	Remains of an Alaska Rural Rehabilitation Corporation (ARRC) farm. Two barns and an outhouse.
ANC03005 Trunk Road ruins	Site, Linear Structure (running n/s)	~ 3/4 mile to the west of landfill project area		X			X	Remains of a historic road.
49ANC03986	Architectural	~ 1+ mile to the southwest of Church street project area		X			X	Cabin associated with homesteading from the 1940s to 1960s
49ANC03985	Architectural	~ 1+ mile to the southwest of Church street project area		X			X	House dating to 1960

TABLE 2

**Cultural survey reports within 1 mile (Area of Interest) of the Project Location.**

<b>Citation</b>	<b>Project</b>	<b>Approximate distance from the Project</b>	<b>Cultural Resources Identified</b>	<b>National Register of Historic Places Eligibility</b>
Finn Yarborough et al. 2013	Cultural Resources Report for Phase I of the Seldon Road Extension	Within the APE	Yes-2 historic	Both Determined Not Eligible
USFWS 2003	Matanuska-Susitna Borough Culvert Replacement on Little meadow Creek at Meadow Lakes Road	~1/4 mile	None	N/A
Stone et al. 2011	KniK Arm Crossing Cultural resources Survey 2011	Within the APE	None within AOI (1 Mile)	N/A
Stone et al. 2013	KniK Arm Crossing Cultural resources Survey 2012	Within the APE	None within AOI (1 Mile)	N/A

**Appendix E**  
**MSB and ADEC ES&PR Meeting Notes**

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## MSB Central Landfill Planning Discharge Limits for Treated Leachate and Septage

**ATTENDEES:** Clint Adler/ADEC ES&PR  
Gene McCabe/ADEC ES&PR  
Mike Campfield/MSB Cap.Proj. A. Kantardjieff/CH2MHILL  
Katie Winter/CH2M HILL  
Cory Hinds/CH2M HILL

**COPY TO:** Oran Woolley/ADEC ES&PR  
Melinda Smodey/ADEC WW  
Project file

**PREPARED BY:** Cory Hinds/CH2M HILL

**DATE:** July 17, 2014

**PROJECT NUMBER:** 496410

The following is a summary of discussion:

1. Introductions
  - a. Clint is the chief technical engineer for ADEC Engineering Support & Plan Review (ES&PR) and supports Oran and others with technical reviews
  - b. Gene is the manager of the ES&PR department which issues wastewater discharge authorizations
  - c. Mike is the MSB project manager and a member of the MSB Wastewater & Septage Advisory Board
  - d. Cory is the CH2M HILL project manager
  - e. Katie is working for Cory determine numerical discharge limits
  - f. Alexandra is a CH2M HILL wastewater treatment expert
2. Background (see also Attachment A, sent prior to the meeting)
  - a. This is a planning study to evaluate long-term development of landfill cells and leachate treatment at the Central Landfill in Palmer.
  - b. Both leachate and septage are currently hauled to Anchorage. There is pressure to keep and manage both of these waste streams in Mat-Su. MSB is considering treatment of leachate on site at the Central Landfill. MSB is also considering co-treatment of leachate and pre-treated septage at the Central Landfill. The decision on leachate treatment and co-treatment of leachate and septage has not yet been made. Depending on the outcome of this study, other possible studies, and funding, MSB may pursue design and construction of a leachate or leachate and septage treatment plant starting in the next couple years.
  - c. CH2M HILL needs a reasonable understanding of expected discharge limits in order to price various treatment options.
3. Proposed Solution
  - a. CH2M HILL is evaluating two possible treatments for leachate only:
    - i. Biological treatment (MBR or SBR package treatment) with subsurface discharge
    - ii. Leachate evaporation and recirculation of concentrate back to landfill
  - b. CH2M HILL is also evaluating biological co-treatment of pre-treated septage and leachate by activated sludge, aeration and clarifier and subsurface discharge
  - c. CH2M HILL presented proposed design discharge limits and point of compliance as described in Attachment A.

4. ADEC response and suggestions

- a. The CH2M HILL-proposed design discharge limits appear to be similar to the domestic wastewater limits in Article 2 of the Wastewater Disposal regulations (18 AAC 72). These are not appropriate because leachate is an industrial source. Similarly, because septage will be from all over the MSB, the septage will be considered coming from non-domestic sources.
- b. The appropriate regulations are Articles 5 and 6 for Nondomestic Wastewater (18 AAC 72) which include a more engineering-centric approach.
- c. CH2M HILL's proposed approach for point of compliance in downgradient monitoring wells on MSB property appears reasonable and has been approved by ADEC before. Upgradient monitoring wells can be used for comparison.
- d. For planning purposes, CH2M HILL/MSB can use the more stringent of the drinking water standards (18 AAC 80) and water quality standards (18 AAC 70) for both septage and leachate.



## MSB Leachate and Septage Treatment: Background and Proposed Solution

### Background:

CH2M HILL is under contract to the Mat-Su Borough (MSB) for long-term development planning at the Central LF in Palmer. The MSB will use the planning documents to make development decisions and obtain funding.

The MSB is currently trucking leachate to Anchorage where co-treatment of leachate, septage, and domestic sewage occurs at the Anchorage WWTP. Recently Anchorage has given MSB notice that the delivery of leachate to Anchorage will need to stop in the near future. Therefore, MSB is evaluating onsite leachate treatment options at the Central Landfill.

MSB also currently hauls septage to Anchorage and is receiving pressure from AWWU and local septage haulers to provide local treatment options. HDR Alaska has conducted several septage handling and disposal studies with economic analysis (2007, 2013) and recommends construction of a regional septage treatment facility with septage pretreatment followed by primary, secondary, and tertiary wastewater treatment to applicable discharge standards. MSB has added to CH2M HILL's scope the evaluation of co-location and treatment of septage and leachate treatment at the Central Landfill. Depending on the outcome of the CH2M HILL study and other considerations, MSB may or may not decide to pursue co-treatment of septage and leachate at the Central Landfill or another location.

CH2M HILL is contacting ADEC, on behalf of MSB, to discuss the proposed treatment processes, discharge limits, and compliance points summarized below to estimate order of magnitude treatment costs for comparative purposes.

### Proposed Solution:

1. Treatment options for landfill leachate only
  - a. Biological treatment using MBR or SBR Packaged Plant (primary, secondary, and tertiary) and subsurface discharge at the Central Landfill
  - b. Evaporation (natural gas, landfill gas) and recirculation of concentrate back onto landfill
2. Treatment options for co-treatment of landfill leachate and septage
  - a. Pre-treatment of septage to include screening/grit removal, equalization, and solids removal
  - b. Co-treatment of pretreated septage and raw leachate with activated sludge (primary and secondary) with aeration and clarifier (tertiary) and subsurface discharge. Proposed treatment might be SBR, depending on costs.
3. Proposed design discharge limits protective of human health and environment (subsurface)
  - BOD<sub>5</sub> – 30 mg/L (monthly average)
  - TSS – 30 mg/L (monthly average)
  - NO<sub>3</sub>-N – 10 mg/L (monthly average)
  - Metals < Maximum Contaminant Limits
4. Compliance
  - a. Limits: as above
  - b. Point of compliance: groundwater monitoring wells down gradient from subsurface discharge and within property boundary

**Appendix F**  
**Alaska Department of Transportation & Public**  
**Facilities State Projects Environmental Form**

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## STATE PROJECTS ENVIRONMENTAL FORM

Project Name: MSB Septage/Leachate Facility Feasibility  
 Project Number:  
 Date: 3/9/2015  
 List of Attachments:

### I. Project Description and Purpose

Developing a septage treatment and disposal facility in the "core area" of the Mat-Su Valley is currently one of the MSB's most pressing infrastructure needs. This is because there is no septage treatment and disposal facility anywhere in the Borough, and the associated high cost of labor and fuel to haul all MSB septage to Anchorage for disposal. This project is to evaluate the feasibility of 2 sites for the facility; Church Road and the Land Fill sites.

### II. Preferred Alternative

The Landfill Site is the proposed location due to its ability to treat leachate through infiltration. The Landfill site also eliminates truck traffic and uses a pipeline to transfer septage to the facility.

### III. Other Alternatives Considered

The Church Road site evaluated as a potential location. Soils at the Church Road site are not conducive to infiltration of leachate and would result in a surface discharge downstream of the facility.

### IV. Environmental Consequences N/A      YES      NO

#### A. Corps of Engineers Jurisdiction

- |  |                                     |                          |                                     |
|--|-------------------------------------|--------------------------|-------------------------------------|
| 1. Project affects Waters of the U.S., as defined by the USACE.  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Project affects navigable Waters of the U.S., as defined by the USACE.  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Project involves wetlands as defined by the USACE.  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Wetlands delineation is attached.   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 5. Estimated acreage of fill in waters of the U.S. and/or wetlands: <u>0</u>   |                                     |                          |                                     |
| 6. Estimated fill quantities: <u>00</u> cubic yards  |                                     |                          |                                     |
| 7. Estimated dredge quantities: _____ cubic yards  |                                     |                          |                                     |
| 8. Corps authorization anticipated: <input checked="" type="checkbox"/> None <input type="checkbox"/> NWP <input type="checkbox"/> Individual <input type="checkbox"/> GP <input type="checkbox"/> Other |                                     |                          |                                     |
| 9. Describe wetlands impact in terms of functions and value.   |                                     |                          |                                     |

N/A

#### B. Fish & Wildlife N/A      YES      NO

- |   |                          |                          |                                     |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Anadromous or Resident Fish Present: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| a. Project affects spawning habitat.    | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Project affects rearing habitat.     | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Project affects migration corridors. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- |   | <u>N/A</u>               | <u>YES</u>               | <u>NO</u>                           |
|---|--------------------------|--------------------------|-------------------------------------|
| <b>B. <u>Fish &amp; Wildlife</u></b>                                  |                          |                          |                                     |
| d. Project affects subsistence species.                               | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Wildlife Resources (game/subsistence species):                     |                          |                          |                                     |
| a. Project is in area of high wildlife/vehicle accidents.             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Project would adversely affect migration corridors.                | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Bald Eagle and Golden Eagle Protection Act:                        |                          |                          |                                     |
| a. Project slope limits are within 330 feet of an eagle nesting tree. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Project would adversely affect eagles or their nests.              | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Describe adverse fish and wildlife effects.                        |                          |                          |                                     |

Bald eagles use the Central Landfill for foraging. However, the continual disturbance though landfill operations has not deterred the eagles from utilizing the site. After construction, there would be minimal additional disturbance and no adverse effects are anticipated.

- |   | <u>N/A</u>               | <u>YES</u>               | <u>NO</u>                           |
|---|--------------------------|--------------------------|-------------------------------------|
| <b>C. <u>Right-of-Way:</u></b>  |                          |                          |                                     |
| 1. Additional right-of-way is required.                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Business or residential relocations are required.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Number of relocations: <u>0</u>  |                          |                          |                                     |
| 4. Type and numbers of relocations: Residential <u>0</u> Business <u>0</u>  |                          |                          |                                     |
| 5. Minorities or disadvantaged groups would be disproportionately affected. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Summarize the impact.  |                          |                          |                                     |

There would be no Right of Way impacts. The project is located on MSB owned land.

- |  | <u>N/A</u>               | <u>YES</u>               | <u>NO</u>                           |
|--|--------------------------|--------------------------|-------------------------------------|
| <b>D. <u>Social:</u></b>   |                          |                          |                                     |
| 1. The project will disproportionately affect the elderly, handicapped, non-drivers, transit-dependent, minority and ethnic groups, or the economically disadvantaged. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. The social impacts resulting from the project could be significant (i.e. affects on neighborhoods, community cohesion, or disadvantaged social groups).             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Describe the impacts, if any.   |                          |                          |                                     |

The high level of activity at the current landfill would preclude additional impacts from the proposed facility. The Church Road site has higher potential for social disruptions from increased truck traffic, noise, and potential odors.

- |  | <u>N/A</u>               | <u>YES</u>                          | <u>NO</u>                           |
|--|--------------------------|-------------------------------------|-------------------------------------|
| <b>E. <u>Economic</u></b>  |                          |                                     |                                     |
| 1. The project will have economic impacts on the regional and/or local economy, such as effects on development, tax revenues and public expenditures, employment opportunities, accessibility, and retail sales. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. The project will affect established businesses or business districts.   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Describe impacts, if any.   |                          |                                     |                                     |

The proposed project will have positive impacts on the local economy. There will be temporary construction jobs and then permanent employees hired to staff the facility. Having septage treatment capability in the MSB will enhance conditions for increased growth and commerce.

- | <b>F. <u>Local Land Use and Transportation Plans:</u></b>   | <u>N/A</u>               | <u>YES</u>                          | <u>NO</u>                           |
|---|--------------------------|-------------------------------------|-------------------------------------|
| 1. The project is consistent with the local land use plan.  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. The project is consistent with the local transportation plan.  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3. The project would induce adverse indirect or cumulative effects.   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4. Describe any adverse effect to the local transportation and land use plans, including indirect and cumulative effects. |                          |                                     |                                     |

None

- | <b>G. <u>Threatened and Endangered Species (T&amp;E):</u></b>                  | <u>N/A</u>                          | <u>YES</u>               | <u>NO</u>                           |
|--|-------------------------------------|--------------------------|-------------------------------------|
| 1. Listed threatened or endangered species present in project area.            | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Threatened or endangered species migrate through the project area.          | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Proposed species present in the project area.                               | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Candidate species present in the project area.                              | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            |
| 5. Project is likely to adversely affect a listed species or critical habitat. | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            |
| 6. Biological Assessment attached.   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 7. Describe adverse effects on a T&E species.                                  |                                     |                          |                                     |

- | <b>H. <u>Alaska Coastal Management Program (ACMP):</u></b>   | <u>N/A</u>                          | <u>YES</u>               | <u>NO</u>                           |
|--|-------------------------------------|--------------------------|-------------------------------------|
| 1. Project is within the Alaska Coastal Management Program boundary.                                       | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Project is within a local coastal management district.  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Project has been coordinated with local coastal district (if applicable) and state permitting agencies. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 4. Discuss coordination.   |                                     |                          |                                     |

- | <b>I. <u>Floodplains:</u></b>   | <u>N/A</u>                          | <u>YES</u>               | <u>NO</u>                           |
|---|-------------------------------------|--------------------------|-------------------------------------|
| 1. Project involves a regulatory floodway.  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Project encroaches onto the 100-year floodplain.   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Project would increase the backwater elevation of the 100-year floodplain by one foot or greater.      | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Project is located within an area protected by local flood hazard ordinance(s).                        | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. A flood hazard permit is required from local government.   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. The proposed project conforms to applicable federal, state, and local floodplain protection standards. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 7. Project would be consistent with E.O. 11988 (i.e. Floodplain Protection).                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 8. Describe impacts.  |                                     |                          |                                     |

- | <b>J. <u>Water Quality:</u></b>   | <u>N/A</u>               | <u>YES</u>               | <u>NO</u>                           |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Project would involve a public or private drinking source. If "yes," explain in no. 6. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- |   | <u>N/A</u>               | <u>YES</u>               | <u>NO</u>                           |
|---|--------------------------|--------------------------|-------------------------------------|
| <b>J. <u>Water Quality:</u></b>   |                          |                          |                                     |
| 2. Project would result in a discharge of storm water into Waters of the U.S.   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Project would affect an ADEC designated impaired water body.   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| List name(s) and location(s) of the impaired water body:  |                          |                          |                                     |
| 4. How many acres of ground-disturbing activities will result from the project?<br><u>15</u> acres  |                          |                          |                                     |
| 5. Is there a municipal separate storm sewer system (MS4) NPDES permit or will runoff be mixed with discharges from an NPDES permitted industrial facility?<br>If yes, NPDES permit # _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Discuss any yes marked in 1-5.   |                          |                          |                                     |

- |   | <u>N/A</u>               | <u>YES</u>                          | <u>NO</u>                           |
|---|--------------------------|-------------------------------------|-------------------------------------|
| <b>K. <u>Cultural Resources:</u></b>  |                          |                                     |                                     |
| 1. The project would have no potential to affect historic properties.                                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. There is a National Register-listed or eligible cultural resource within or adjacent to the project. | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. The State Historic Preservation Officer (SHPO) requires a cultural resource survey of the project.   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4. SHPO consultation has been completed.  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 5. Project could have an adverse effect on a cultural resource.   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6. Describe cultural resource impacts.  |                          |                                     |                                     |

There are 2 historic structures ¼ mile and 1 mile from the Landfill Site. The historic building closest to the Landfill site is eligible for listing on the NRHP. There are 2 historic structures 1 mile from the Church Road Site.

- |   | <u>N/A</u> | <u>YES</u> | <u>NO</u> |
|---|------------|------------|-----------|
| <b>L. <u>Air Quality:</u></b>   |            |            |           |
| <i>If the project is located in Juneau (Mendenhall Valley), Anchorage, Eagle River, Fairbanks, or North Pole, complete this air quality section. For all other projects, go to M.</i> |            |            |           |

- |   |                                     |                          |                                     |
|---|-------------------------------------|--------------------------|-------------------------------------|
| 1. The project is located in an air quality nonattainment area (i.e. CO or PM-10).<br>If yes, indicate CO <input type="checkbox"/> or PM-10 <input type="checkbox"/> and continue. If no, go to M.                      | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. The project is regionally significant and requires a project level conformity analysis (if yes, go to 3).  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. A CO analysis was completed and found the CO concentrations were below the one-hour National Ambient Air Quality Standard (NAAQS) of 35 ppm and 8-hour NAAQS of 9.0 ppm that are necessary to protect public health. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| 4. The project will not cause or contribute to any new localized PM-10 violations or increase the frequency or severity of any PM-10 violations.  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- |   | <u>N/A</u>               | <u>YES</u>                          | <u>NO</u>                           |
|---|--------------------------|-------------------------------------|-------------------------------------|
| <b>M. <u>Construction Impacts:</u></b>                        |                          |                                     |                                     |
| 1. There will be temporary degradation of water quality.      | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 2. There will be temporary stream diversion.                  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. There will be temporary degradation of air quality.        | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 4. There will be temporary delays and detours of traffic.     | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. There will be temporary effects on businesses.             | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6. There will be other construction impacts, including noise. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 7. Describe construction impacts.                             |                          |                                     |                                     |

Noise will be associated with construction at either location. Existing noise at the landfill site will mask some of the construction noise. The Church Road site will be more susceptible as the existing noise levels are lower there.

<b>N. <u>Permits and Authorizations:</u></b>	<u>N/A</u>	<u>YES</u>	<u>NO</u>
1. USACE, Section 404/10	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Alaska Department of Fish & Game (F&G), Title 16 (AS 16.05.841, 871)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. F&G, Special Use Permit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Coast Guard, Section 9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Alaska Department of Environmental Conservation (ADEC) 401	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. ADEC Non-Domestic Storm Water Disposal Plan Approval	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Alaska Coastal Management Program (ACMP) consistency review	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>N. <u>Permits and Authorizations:</u></b>	<u>N/A</u>	<u>YES</u>	<u>NO</u>
8. Other. If yes, list.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>V. <u>Section 6(f):</u></b>	<u>N/A</u>	<u>YES</u>	<u>NO</u>
1. The proposed action affects Section 6(f) properties.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Funds from the Land and Water Conservation Fund Act (LWCFA) were used for improvement to the 6(f) property.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Use of 6(f) property is a conversion of use for Section 6(f) of the LWCFA.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Describe the conversion of use.			
<b>VI. <u>Comments and Coordination:</u></b>	<u>N/A</u>	<u>YES</u>	<u>NO</u>
1. There is public/agency involvement.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a. Public Meeting(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Newspaper ad(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Newspaper name(s): _____			
c. Agency Scoping letters sent	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Agency Scoping meeting held	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Local planning authority approval required	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Discuss pertinent issues raised during scoping or public meetings, and comments received from the public and government agencies. Attach applicable correspondence.			
<b>VII. <u>Environmental Commitments / Mitigation Measures:</u></b>	<u>N/A</u>	<u>YES</u>	<u>NO</u>
1. Environmental commitments or mitigative measures have been included in the project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. List environmental commitments or mitigative measures.			

Potential migratory bird nesting habitat in the construction zone will be removed prior to the nesting season (removal in winter). Areas of construction will be determined to be free of nesting migratory birds prior to construction..

**VIII. Signatures**

Prepared by: Denis L. Mayel  
Environmental Impact Analyst

Date: 3/11/15

Reviewed by: \_\_\_\_\_  
Engineering Manager

Date: \_\_\_\_\_

Approved by: \_\_\_\_\_  
Regional Environmental Manager

Date: \_\_\_\_\_



**Appendix G**  
**Preliminary ESA Technical Memos**

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# Preliminary Assessment of Environmental Findings for MSB Property along North Church Road, Wasilla, AK

PREPARED FOR: Mike Campfield/MSB  
 COPY TO: Project file  
 PREPARED BY: David Stieb  
 DATE: February 25, 2015  
 PROJECT NUMBER: 656753  
 REVISION NO.: 1

CH2M HILL conducted a preliminary assessment of environmental findings on property located along the west side of North Church Road, north of West Parks Highway in Wasilla, Alaska. This preliminary assessment is intended to provide information on known environmental conditions to support decisions for follow on activities. Work performed for this assessment included review of results of a standard radius search of federal, state, and local regulatory databases, review of available aerial photographs, review of available topographic maps, review of available Sanborn maps, and review of available city directors. EDR, Inc. was subcontracted to provide the records above that were reviewed. Additionally, the Alaska Department of Environmental Conservation website was searched for known contaminated sites on February 25, 2015. The website is located at:

<http://www.arcgis.com/home/webmap/viewer.html?webmap=315240bfbaf84aa0b8272ad1cef3cad3>

## Property Location

The property evaluated is defined by the coordinates in Table 1. The property is located along the west side of North Church Road near the intersection of North Church Road and West Seldon Road, approximately 2.3 miles north of West Parks Highway.

TABLE 1  
**Property Boundary Coordinates**  
*North Church Road Property*

Property Corner	Northing	Easting
NW	61° 37' 12.02" N	149° 32' 03.11" W
NE	61° 37' 12.31" N	149° 30' 43.12" W
SE	61° 36' 44.20" N	149° 30' 42.19" W
SW	61° 36' 43.53" N	149° 31' 54.22" W

## Database Search Results

A standard radius search of environmental databases as defined in ASTM 1527-13 was performed by EDR, Inc. on February 18, 2015. The target property was not identified in any of the databases included in the radius search report. None of the adjacent properties within the radius search were identified in any of the databases. However, two orphan properties were identified. Wasilla Church Road Extension was identified in the NPDES database and Church Road Mental Health Trust LA was identified in the SPILLS database.

## Alaska DEC Contaminated Sites Search Results

The Alaska Department of Environmental Conservation website was queried on February 25, 2015 for known contaminated properties. There were no contaminated sites visible on the map on the property or within 1.5 miles of the property.

## Aerial Photography and Topographic Search Results

Topographic maps from 1952, 1979, 1992, and 1994 were reviewed for information on land use and evidence of environmental issues. The 1952 topographic map shows no development has occurred north of West Parks Highway in the vicinity of North Church Road. The area is shown as forest covered. Bruce Lake is shown approximately 1.2 miles north of the property and an unnamed creek is approximately 0.5 miles south of the property. The 1979 topographic map shows North Church Road has been constructed. Two small structures south of the property are visible, and one structure east of North Church Road is visible in the same area. A larger structure appears south of the two structures visible on the 1979 topographic map on the 1992 topographic map. Development of the City of Wasilla is visible south and east of the property, otherwise there are no changes from the 1952 and 1979 topographic maps. The 1994 topographic map shows significant development starting approximately 1 mile north of the property. Shrock Road has been constructed. Additional development has occurred south and east of the property. No visible changes were observed on or near the property from the previous topographic maps.

Aerials from 1949, 1953, 1957, 1972 and 1988 were obtained from EDR. In addition, aerial photographs from 2002, 2010, 2011, and 2012 available online from Google Earth© were reviewed. The 1949, 1953, 1957, and 1972 aerials show no development on or in the vicinity of the property. The only change from previous aerials that is visible in the 1988 aerial is the construction of north Church Road. The 2002 aerial shows the town of Wasilla is present. The development is similar to what is shown on the 1994 topographic map. The only visible development along North Church Road between Pittman Road approximately 0.5 miles north of the property and West Church Ridge Road, approximately ¼-mile south of the property is four residences along the east side of North Church Road. The majority of development within one mile of the property appears to be residential. The 2010 aerial shows Seldon Road has been constructed. Four cleared area that appear to be drilling pads appear in the southeast corner of the property. No activity is visible on the pads and no evidence of drilling pits is visible. Adjacent to the property, on the east side of North Church Road at the intersection of North Church Road and West Seldon Road is a commercial property identified as Valley Country Store. Additional residential development has occurred north of the property, south of Pitman Road and east of North Church Road, south of West Seldon Road. The 2011 and 2012 aerials show no visible changes from the 2010 aerial on or in the vicinity of the property.

## Sanborn Map and City Directory Search Results

There is no Sanborn map coverage of the area. City directory results from 1992, 1995, 1999, 2003, 2008, and 2013 were reviewed. The City Directory indicates only residential property owners along North Church Road within 1 mile of the property, with the exception of Valley Country Store and Fuel and North Lakes Liquor 2. Both commercial properties appear in the 2013 directory, but do not in the 2008 and older directories.

## Geographical Information

The EDR search report and topographic maps indicate the property is relatively flat and at approximately 450 feet in elevation. The property slopes slightly to the north/northwest. Soil types are primarily silt loam on the surface and gravely loamy coarse sand to 5 feet and are well drained. A mucky gravely silt loam occurs along the north, central, and small area on the eastern portion of the property. The soil is poorly drained with slow infiltration rates and high water table. The soils are highly corrosive to unprotected steel pipe.

Three USGS wells appear within ½ to 1-mile of the property. The wells were constructed in 1981, 2001, and 2005 to depths of 65 feet, 177 feet, and 78 feet below ground surface respectively. No other information was provided.

Federal Area Radon Information for MATANUSKA SUSITNA COUNTY, AK indicates the Borough is zone 2, indoor average level  $\geq 2$  pCi/L and  $\leq 4$  pCi/L.

### **Summary of Findings.**

Review of available data did not identify any known environmental issues on the subject property or adjacent property within 1-mile of the property. Three potential environmental issues were noted that require further consideration. Three what appear to be former drilling pads are located on the property. If drilling did occur there is potential issues from releases or former mud pits. One adjacent property to the east, Valley Country Store and Fuel did not appear in any data bases, but if underground tanks are present additional inquiry into their condition and if releases have occurred should be evaluated. The third issue is Church Road Mental Health Trust LA was identified in the SPILLS database. Visual reconnaissance should be performed to verify the spill did not occur within 1- mile of the property.

## Disclaimer

Due to winter conditions and the site ground surface covered with snow, site inspections were not conducted. Current and past property owners and tenants were not interviewed for information related to past property uses.

In preparing this Preliminary Assessment of Environmental Findings (Report), CH2M HILL relied, in whole or in part, on data and information provided by the MSB and third parties, which information has not been independently verified by CH2M HILL and which CH2M HILL has assumed to be accurate, complete, reliable, and current. Therefore, while CH2M HILL has utilized its best efforts in preparing this Report, CH2M HILL does not warrant or guarantee the conclusions set forth in this Report which are dependent or based upon data, information or statements supplied by third parties or the MSB.

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Fax To: CH2M Hill, Inc.  
Contact: Denny Mengel  
Fax : 000-000-0000  
Date: 02/18/2015

Fax From: Adrian Blackman  
EDR  
Phone: 1-800-352-0050

---

## EDR PUR-IQ<sup>®</sup> Report

*"the intelligent way to conduct historical research"*

for  
Church Road Site  
Church Road  
Wasilla, AK 99654  
Lat./Long. 61.615 / 149.5192  
EDR Inquiry # 4211539.2s

The EDR PUR-IQ report facilitates historical research planning required to complete the Phase I ESA process. The report identifies the *likelihood* of prior use coverage by searching proprietary EDR-Prior Use Reports<sup>®</sup> comprising nationwide information on: city directories, fire insurance maps, aerial photographs, historical topographic maps, flood maps and National Wetland Inventory maps.

**Potential for EDR Historical (Prior Use) Coverage** - Coverage in the following historical information sources may be used as a guide to develop your historical research strategy:

- 1. City Directory:** Coverage may exist for portions of Matanuska-Susitna Borough, AK.
- 2. Fire Insurance Map:** When you order online any EDR Package or the EDR Radius Map with EDR Sanborn Map Search/Print, you receive site specific Sanborn Map coverage information at no charge.
- 3. Aerial Photograph:** Aerial photography coverage may exist for portions of Matanuska-Susitna Borough. Please contact your EDR Account Executive for information about USGS photos available through EDR.
- 4. Topographic Map:** The USGS 7.5 min. quad topo sheet(s) associated with this site:  
Historical: Coverage exists for MATANUSKA SUSITNA County  
Current: Target Property: N/A

EDR's network of professional researchers, located throughout the United States, accesses the most extensive national collections of city directory, fire insurance maps, aerial photographs and historical topographic map resources available for Wasilla, AK. These collections may be located in multiple libraries throughout the country. To ensure maximum coverage, EDR will often assign researchers at these multiple locations on your behalf. Please call or fax your EDR representative to authorize a search.



**EDR™** Environmental  
Data Resources Inc

## EDR - HISTORICAL SOURCE(S) ORDER FORM

**CH2M Hill, Inc.  
Denny Mengel  
Account # 1162163**

**Church Road Site  
Church Road  
Wasilla, AK 99654  
MATANUSKA SUSITNA County  
Lat./Long. 61.615 / 149.5192  
EDR Inquiry # 4211539.2s**

Should you wish to change or add to your order, fax this form to your EDR account executive:

**Adrian Blackman  
Ph: 1-800-352-0050 Fax: 1-800-231-6802**

### Reports

- EDR Sanborn Map® Search/Print
- EDR Fire Insurance Map Abstract
- EDR Multi-Tenant Retail Facility® Report
- EDR City Directory Abstract
- EDR Aerial Photo Decade Package
- USGS Aerial 5 Package
- USGS Aerial 3 Package
- EDR Historical Topographic Maps
- Paper Current USGS Topo (7.5 min.)
- Environmental Lien Search
- Chain of Title Search
- NJ MacRaes Industrial Directory Report
- EDR Telephone Interview

### **Shipping:**

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- Express, Next Day Delivery
- Express, Second Day Delivery
- Express, Next day Delivery
- Express, Second Day Delivery
- U.S. Mail

Customer Account  
Customer Account

**RUSH SERVICE IS AVAILABLE**

Acct # \_\_\_\_\_  
Acct # \_\_\_\_\_

***Thank you***



**Church Road Site**

Church Road

Wasilla, AK 99654

Inquiry Number: 4211539.3

February 18, 2015

# Certified Sanborn® Map Report



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# Certified Sanborn® Map Report

2/18/15

**Site Name:**

Church Road Site  
Church Road  
Wasilla, AK 99654

**Client Name:**

CH2M Hill, Inc.  
322 East Front Street  
Boise, ID 83702



EDR Inquiry # 4211539.3

Contact: Denny Mengel

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by CH2M Hill, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

## Certified Sanborn Results:

**Site Name:** Church Road Site  
**Address:** Church Road  
**City, State, Zip:** Wasilla, AK 99654  
**Cross Street:**  
**P.O. #** NA  
**Project:** MSB Septage Feasibility Study  
**Certification #** 2894-4B97-BB71



Sanborn® Library search results  
Certification # 2894-4B97-BB71

## UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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**Church Road Site**

Church Road

Wasilla, AK 99654

Inquiry Number: 4211539.4

February 19, 2015

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***Thank you for your business.***  
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with any questions or comments.

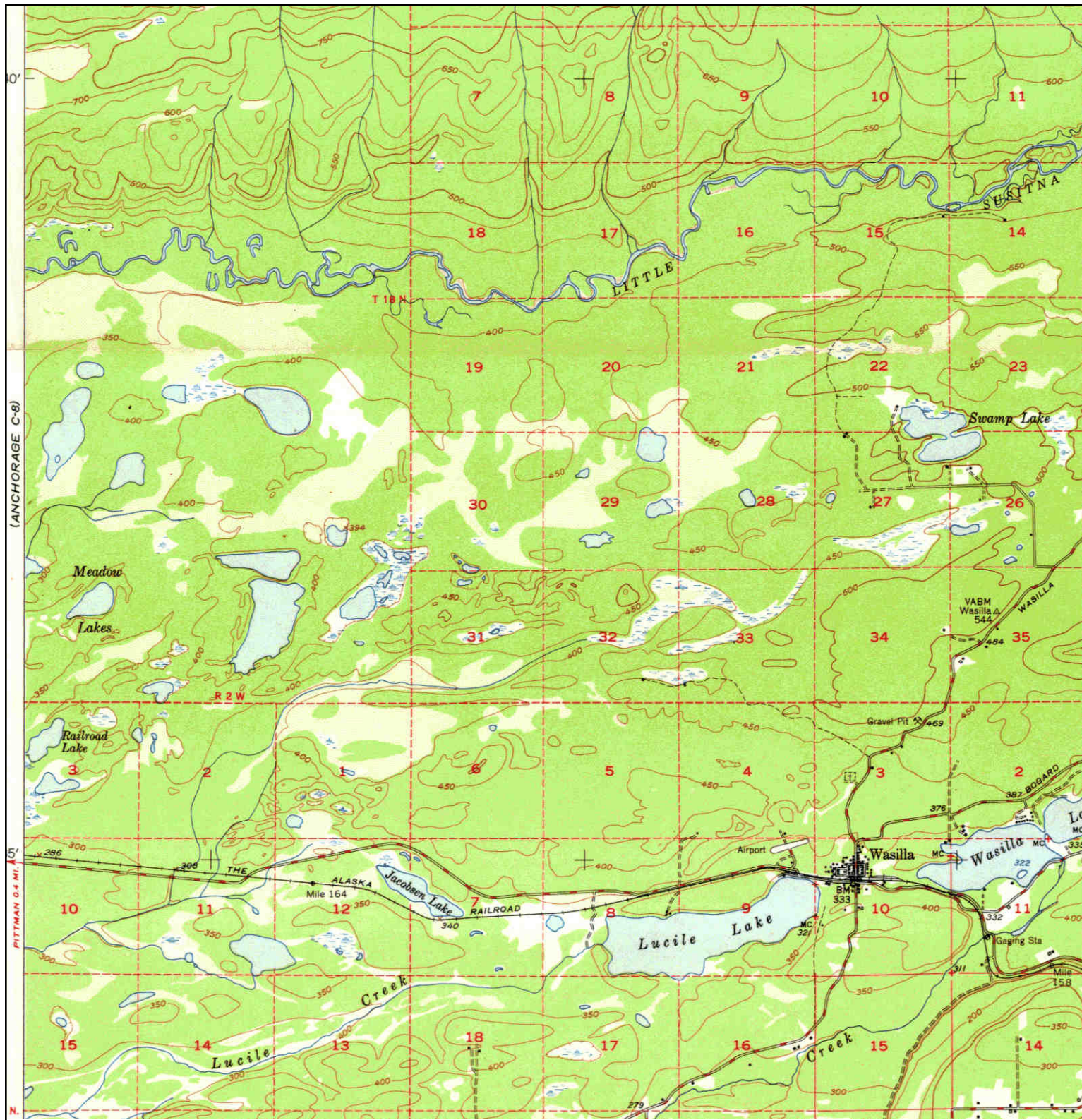
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# Historical Topographic Map



	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Church Road Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 7	ADDRESS: Church Road	CONTACT: Denny Mengel
	MAP YEAR: 1952	Wasilla, AK 99654	INQUIRY#: 4211539.4
	SERIES: 15	LAT/LONG: 61.615 / -149.5192	RESEARCH DATE: 02/19/2015
	SCALE: 1:63360		


# Historical Topographic Map



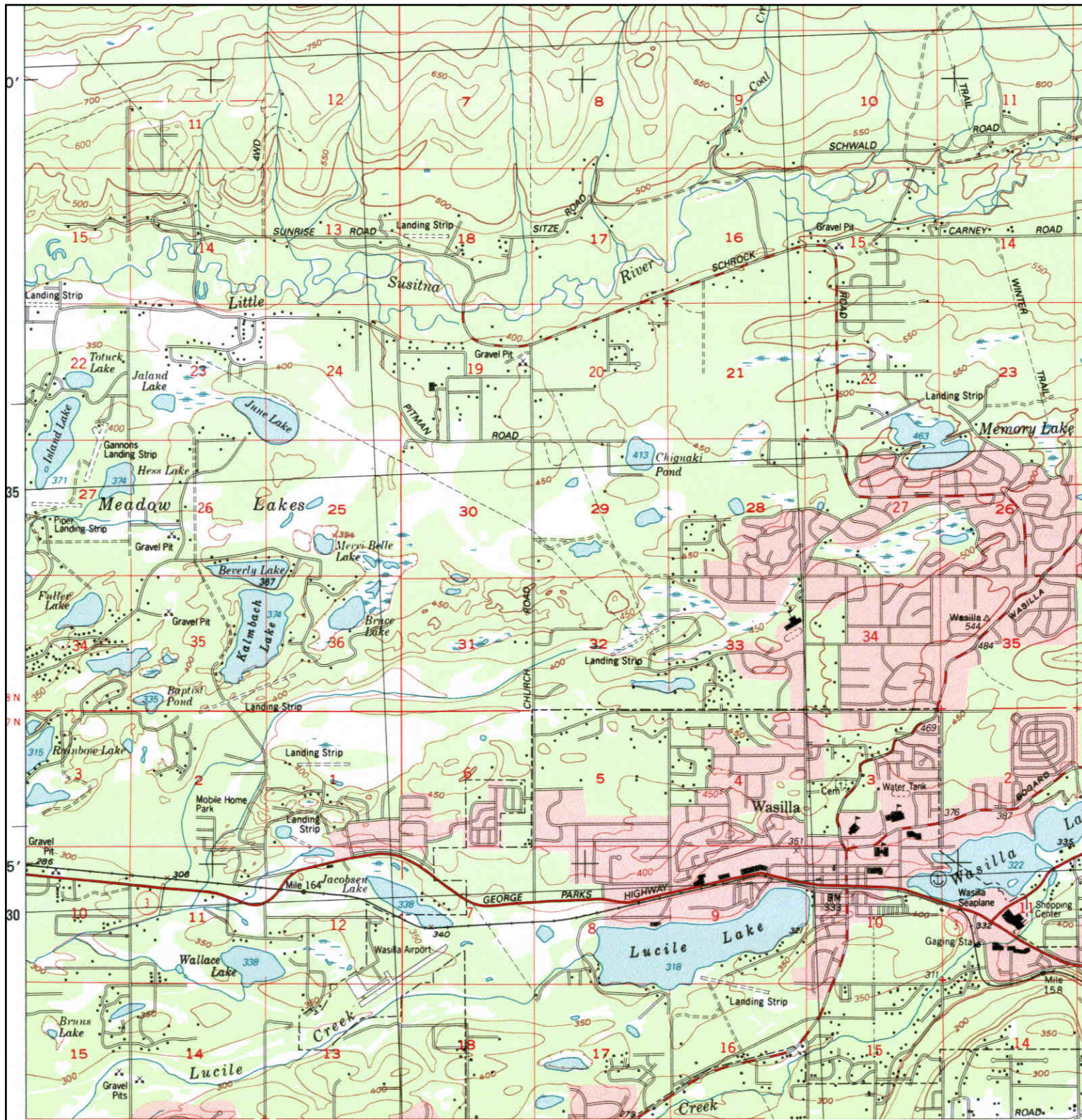
	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Church Road Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 7 SW	<b>ADDRESS:</b> Church Road	<b>CONTACT:</b> Denny Mengel
	MAP YEAR: 1979	Wasilla, AK 99654	<b>INQUIRY#:</b> 4211539.4
	SERIES: 7.5	<b>LAT/LONG:</b> 61.615 / -149.5192	<b>RESEARCH DATE:</b> 02/19/2015
	SCALE: 1:25000		

# Historical Topographic Map



	<b>TARGET QUAD</b> NAME: ANCHORAGE C 7 SW MAP YEAR: 1992	SITE NAME: Church Road Site ADDRESS: Church Road Wasilla, AK 99654 LAT/LONG: 61.615 / -149.5192	CLIENT: CH2M Hill, Inc. CONTACT: Denny Mengel INQUIRY#: 4211539.4 RESEARCH DATE: 02/19/2015
	SERIES: 7.5 SCALE: 1:25000		

# Historical Topographic Map



	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Church Road Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 7	ADDRESS: Church Road	CONTACT: Denny Mengel
	MAP YEAR: 1994	Wasilla, AK 99654	INQUIRY#: 4211539.4
	SERIES: 15	LAT/LONG: 61.615 / -149.5192	RESEARCH DATE: 02/19/2015
	SCALE: 1:63360		



**Church Road Site**

Church Road

Wasilla, AK 99654

Inquiry Number: 4211539.9

February 19, 2015

# The EDR Aerial Photo Decade Package



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**Date EDR Searched Historical Sources:**

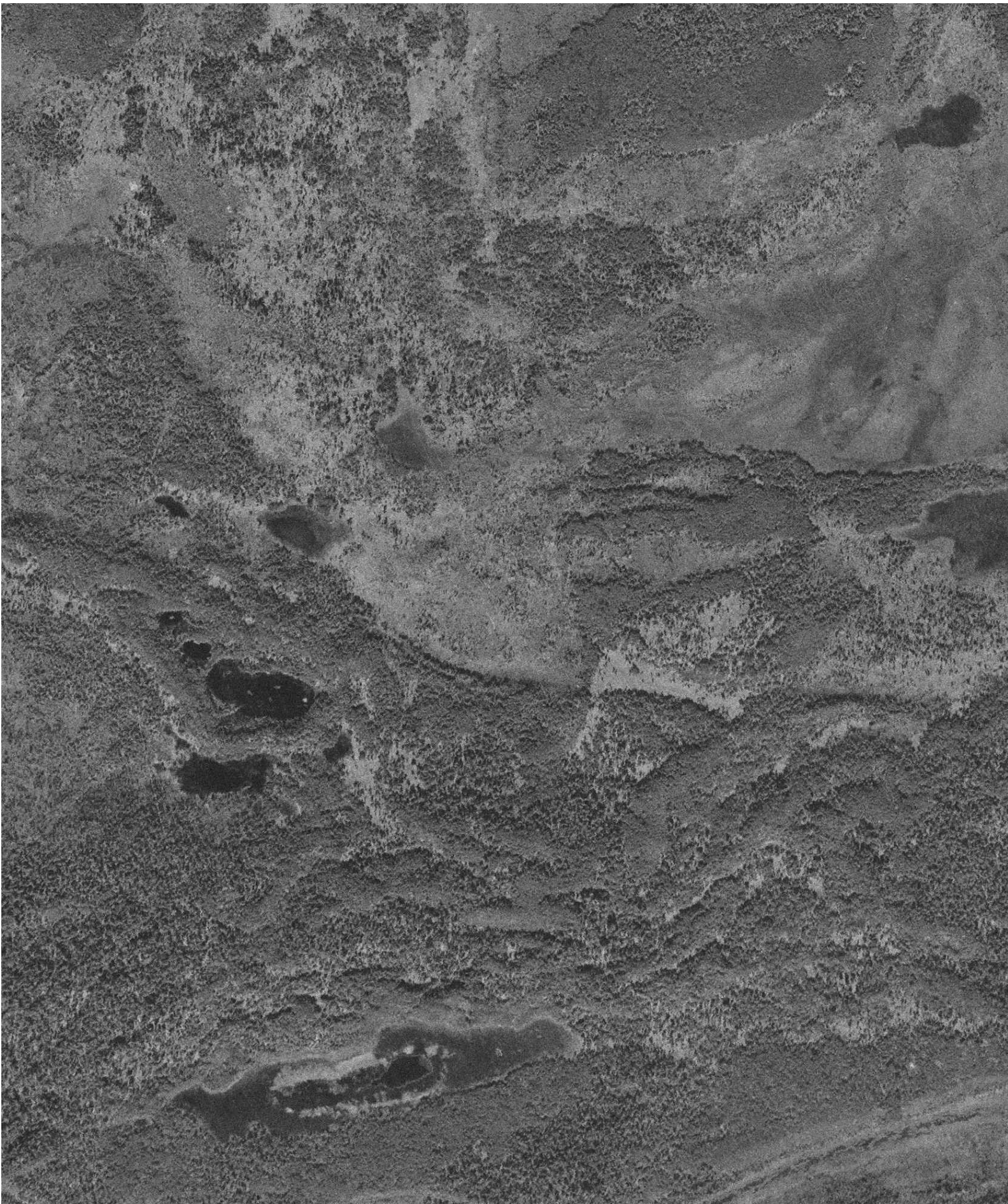
Aerial Photography February 19, 2015

**Target Property:**

Church Road

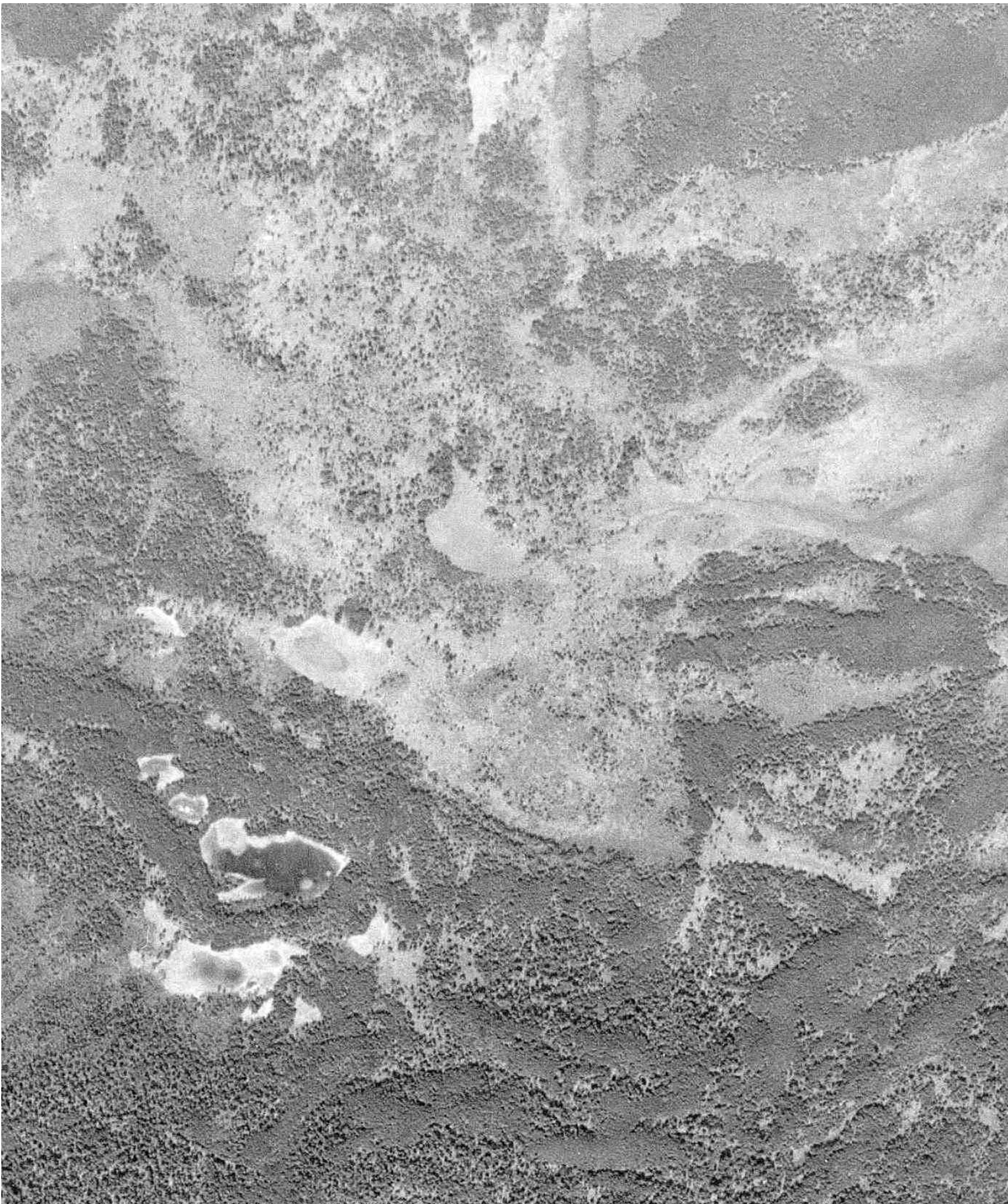
Wasilla, AK 99654

<u><i>Year</i></u>	<u><i>Scale</i></u>	<u><i>Details</i></u>	<u><i>Source</i></u>
1949	Aerial Photograph. Scale: 1"=750'	Flight Date: August 14, 1949	EDR
1953	Aerial Photograph. Scale: 1"=500'	Flight Date: June 21, 1953	EDR
1957	Aerial Photograph. Scale: 1"=750'	Flight Date: July 12, 1957	EDR
1972	Aerial Photograph. Scale: 1"=500'	Flight Date: September 17, 1972	EDR
1988	Aerial Photograph. Scale: 1"=500'	Flight Date: August 15, 1988	EDR



**INQUIRY #:** 4211539.9  
**YEAR:** 1949  
| = 750'





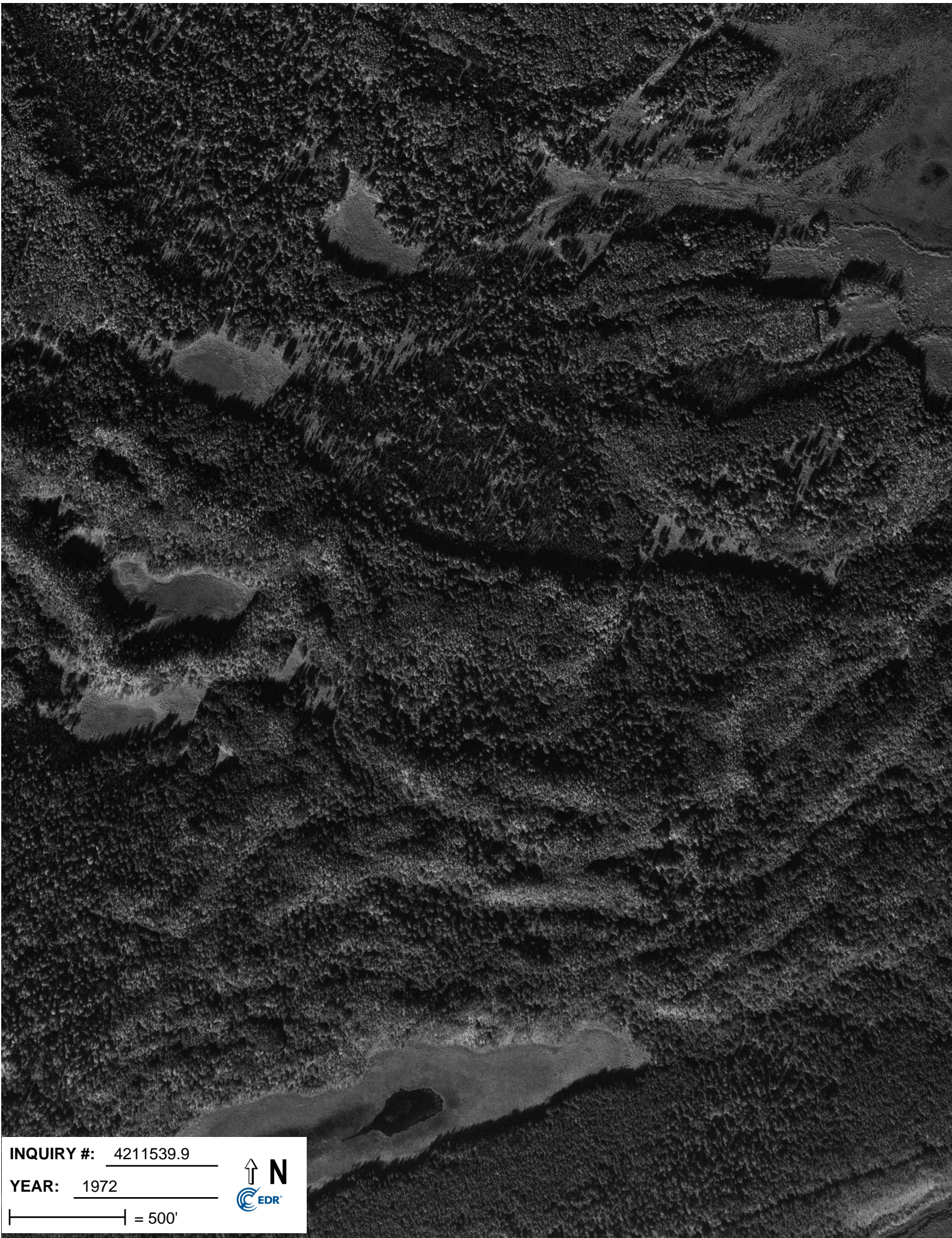
**INQUIRY #:** 4211539.9  
**YEAR:** 1953  
| = 500'





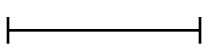
**INQUIRY #:** 4211539.9  
**YEAR:** 1957  
| = 750'







**INQUIRY #:** 4211539.9

**YEAR:** 1972

 = 500'

 **N**

 **EDR**



INQUIRY #: 4211539.9

YEAR: 1988

| = 500'



**Church Road Site**

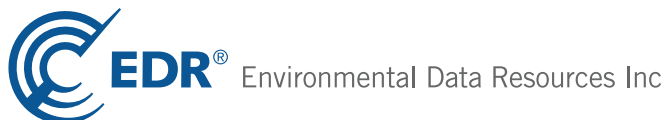
Church Road

Wasilla, AK 99654

Inquiry Number: 4211539.2s

February 18, 2015

**The EDR Radius Map™ Report with GeoCheck®**



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)



# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	7
Orphan Summary .....	8
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting SSURGO Soil Map .....	A-5
Physical Setting Source Map .....	A-11
Physical Setting Source Map Findings .....	A-13
Physical Setting Source Records Searched .....	PSGR-1

*Thank you for your business.*  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

CHURCH ROAD  
MATANUSKA SUSITNA County, AK 99654

#### COORDINATES

Latitude (North): 61.6150000 - 61° 36' 54.00"  
Longitude (West): 149.5192000 - 149° 31' 9.12"  
Universal Transverse Mercator: Zone 6  
UTM X (Meters): 366407.4  
UTM Y (Meters): 6833673.5  
Elevation: 413 ft. above sea level

#### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: N/A  
Source: USGS 7.5 min quad index

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

#### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

## EXECUTIVE SUMMARY

### ***Federal CERCLIS list***

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
FEDERAL FACILITY..... Federal Facility Site Information listing

### ***Federal CERCLIS NFRAP site List***

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

### ***Federal institutional controls / engineering controls registries***

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls  
LUCIS..... Land Use Control Information System

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

### ***State- and tribal - equivalent CERCLIS***

SHWS..... Contaminated Sites Database

### ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF..... Solid Waste Facilities

### ***State and tribal leaking storage tank lists***

LUST..... Leaking Underground Storage Tank Database  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

UST..... Underground Storage Tank Database  
AST..... Regulated Aboveground Storage Tanks  
INDIAN UST..... Underground Storage Tanks on Indian Land  
FEMA UST..... Underground Storage Tank Listing

### ***State and tribal institutional control / engineering control registries***

ENG CONTROLS..... Engineering Controls Site Listing

## EXECUTIVE SUMMARY

INST CONTROL..... Contaminated Sites with Institutional Controls

### ***State and tribal voluntary cleanup sites***

VCP..... Voluntary Cleanup Program sites  
INDIAN VCP..... Voluntary Cleanup Priority Listing

### ***State and tribal Brownfields sites***

BROWNFIELDS..... Identified and/or Proposed Brownfields Sites

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
ODI..... Open Dump Inventory  
SWRCY..... Recycling Facilities  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

#### ***Local Lists of Hazardous waste / Contaminated Sites***

US CDL..... Clandestine Drug Labs  
CDL..... Illegal Drug Manufacturing Sites  
US HIST CDL..... National Clandestine Laboratory Register

#### ***Local Land Records***

LIENS 2..... CERCLA Lien Information

#### ***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System  
SPILLS..... Spills Database  
SPILLS 90..... SPILLS 90 data from FirstSearch

#### ***Other Ascertainable Records***

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
DOT OPS..... Incident and Accident Data  
DOD..... Department of Defense Sites  
FUDS..... Formerly Used Defense Sites  
CONSENT..... Superfund (CERCLA) Consent Decrees  
ROD..... Records Of Decision  
UMTRA..... Uranium Mill Tailings Sites  
US MINES..... Mines Master Index File  
TRIS..... Toxic Chemical Release Inventory System  
TSCA..... Toxic Substances Control Act  
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

## EXECUTIVE SUMMARY

HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS.....	Section 7 Tracking Systems
ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
UIC.....	UIC Information
DRYCLEANERS.....	Drycleaner Facility Listing
NPDES.....	Wastewater Discharge Permit Listing
AIRS.....	AIRS Facility Listing
INDIAN RESERV.....	Indian Reservations
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
COAL ASH DOE.....	Steam-Electric Plant Operation Data
PRP.....	Potentially Responsible Parties
2020 COR ACTION.....	2020 Corrective Action Program List
PCB TRANSFORMER.....	PCB Transformer Registration Database
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
Financial Assurance.....	Financial Assurance Information Listing
LEAD SMELTERS.....	Lead Smelter Sites
COAL ASH.....	Coal Ash Disposal Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US FIN ASSUR.....	Financial Assurance Information
EPA WATCH LIST.....	EPA WATCH LIST

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat.....	EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners.....	EDR Exclusive Historic Dry Cleaners

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

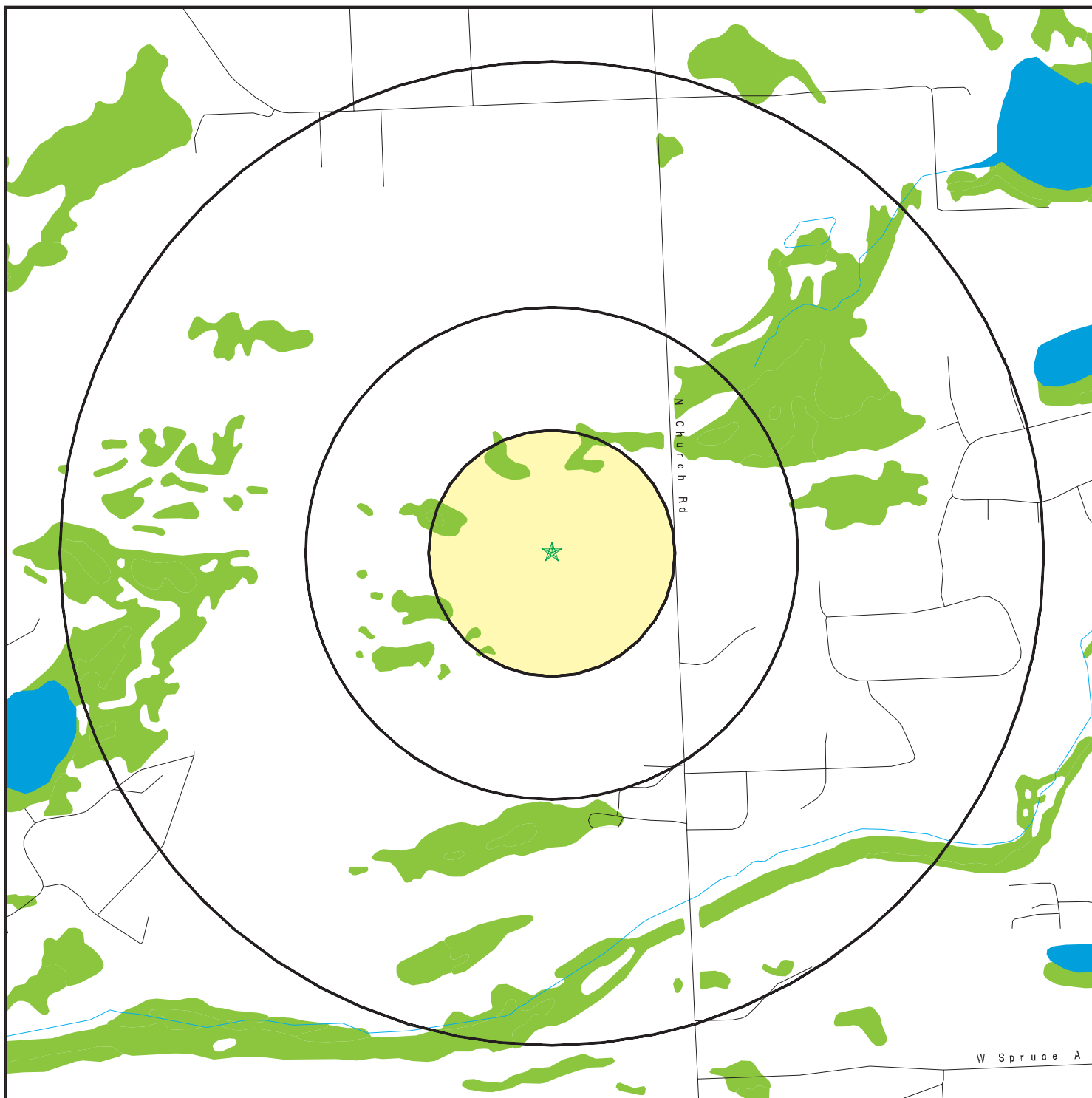
Unmappable (orphan) sites are not considered in the foregoing analysis.

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

<u>Site Name</u>	<u>Database(s)</u>
CHURCH ROAD MENTAL HEALTH TRUST LA	SPILLS
WASILLA CHURCH ROAD EXTENSION	NPDES

# OVERVIEW MAP - 4211539.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

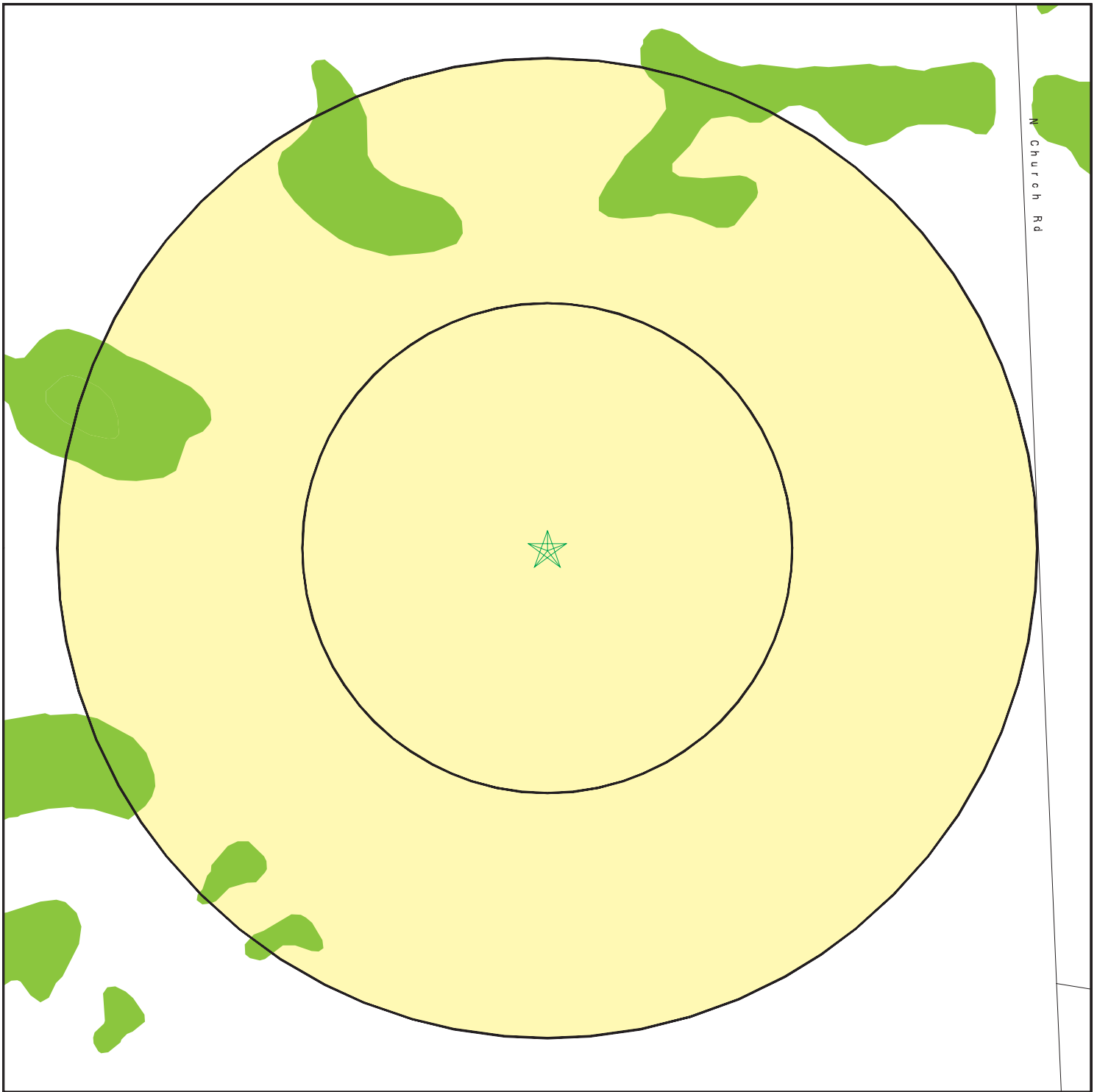
- Indian Reservations BIA
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Church Road Site  
 ADDRESS: Church Road  
 Wasilla AK 99654  
 LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211539.2s  
 DATE: February 18, 2015 5:07 pm

# DETAIL MAP - 4211539.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- ▨ National Priority List Sites
- ▨ Dept. Defense Sites

0      1/16      1/8      1/4 Miles

- ▨ Indian Reservations BIA
- National Wetland Inventory
- State Wetlands

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Church Road Site  
 ADDRESS: Church Road  
 Wasilla AK 99654  
 LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211539.2s  
 DATE: February 18, 2015 5:07 pm



## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	1.000		0	0	0	0	NR	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
<b><i>State and tribal institutional control / engineering control registries</i></b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b><i>State and tribal voluntary cleanup sites</i></b>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b><i>State and tribal Brownfields sites</i></b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b><u>ADDITIONAL ENVIRONMENTAL RECORDS</u></b>								
<b><i>Local Brownfield lists</i></b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b><i>Local Lists of Landfill / Solid Waste Disposal Sites</i></b>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<b><i>Local Lists of Hazardous waste / Contaminated Sites</i></b>								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
<b><i>Local Land Records</i></b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b><i>Records of Emergency Release Reports</i></b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b><i>Other Ascertainable Records</i></b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### *EDR Exclusive Records*

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

NO SITES FOUND

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WASILLA	S108033862	WASILLA CHURCH ROAD EXTENSION	CHURCH ROAD	99654	NPDES
WASILLA	S113927798	CHURCH ROAD MENTAL HEALTH TRUST LA	CHURCH ROAD	99654	SPILLS

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

#### **NPL Site Boundaries**

##### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

#### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 03/09/2015
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/07/2014	Telephone: 703-603-8704
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Varies

## ***Federal CERCLIS NFRAP site List***

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 03/09/2015
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

## ***Federal RCRA non-CORRACTS TSD facilities list***

### **RCRA-TSDF: RCRA - Treatment, Storage and Disposal**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

## ***Federal RCRA generators list***

### **RCRA-LQG: RCRA - Large Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### **RCRA-SQG: RCRA - Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### **RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal institutional controls / engineering controls registries***

### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/03/2014
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/16/2015
	Data Release Frequency: Varies

### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/03/2014
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/16/2015
	Data Release Frequency: Varies

### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/03/2014	Source: Department of the Navy
Date Data Arrived at EDR: 12/12/2014	Telephone: 843-820-7326
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 48	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Varies

## ***Federal ERNS list***

### ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/29/2014	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 09/30/2014	Telephone: 202-267-2180
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 12/29/2014
Number of Days to Update: 37	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Annually

## ***State- and tribal - equivalent CERCLIS***

### SHWS: Contaminated Sites Database

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 09/19/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 09/23/2014	Telephone: 907-451-2143
Date Made Active in Reports: 10/06/2014	Last EDR Contact: 02/16/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***State and tribal landfill and/or solid waste disposal site lists***

### SWF/LF: Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/29/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 12/30/2014	Telephone: 907-269-7632
Date Made Active in Reports: 02/02/2015	Last EDR Contact: 12/29/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Semi-Annually

## ***State and tribal leaking storage tank lists***

### LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/17/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/19/2014	Telephone: 907-465-5301
Date Made Active in Reports: 12/23/2014	Last EDR Contact: 11/19/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 03/02/2015
	Data Release Frequency: Semi-Annually

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/10/2014	Source: EPA Region 10
Date Data Arrived at EDR: 11/14/2014	Telephone: 206-553-2857
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 87	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

### INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/08/2015	Telephone: 415-972-3372
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

### INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013	Source: EPA Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 01/30/2015
Number of Days to Update: 184	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

### INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/06/2014	Source: EPA Region 6
Date Data Arrived at EDR: 10/29/2014	Telephone: 214-665-6597
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 19	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 07/30/2014	Source: EPA Region 4
Date Data Arrived at EDR: 08/12/2014	Telephone: 404-562-8677
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/03/2014	Source: EPA, Region 5
Date Data Arrived at EDR: 11/05/2014	Telephone: 312-886-7439
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/04/2014	Source: EPA Region 8
Date Data Arrived at EDR: 11/07/2014	Telephone: 303-312-6271
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

## **State and tribal registered storage tank lists**

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 11/17/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/19/2014	Telephone: 907-269-7504
Date Made Active in Reports: 12/24/2014	Last EDR Contact: 11/19/2014
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/02/2015
	Data Release Frequency: Semi-Annually

AST: Regulated Aboveground Storage Tanks

The list covers "regulated" facilities with storage capacities above 10,000 barrels (or 5,000 barrels of crude).

Date of Government Version: 01/05/2005	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 01/06/2005	Telephone: 907-465-5231
Date Made Active in Reports: 02/02/2005	Last EDR Contact: 12/11/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 03/16/2015
	Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/03/2014	Source: EPA Region 5
Date Data Arrived at EDR: 11/05/2014	Telephone: 312-886-6136
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/06/2014	Source: EPA Region 6
Date Data Arrived at EDR: 10/29/2014	Telephone: 214-665-7591
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Semi-Annually

## INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/04/2014	Source: EPA Region 8
Date Data Arrived at EDR: 11/07/2014	Telephone: 303-312-6137
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013	Source: EPA, Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 01/27/2014	Last EDR Contact: 01/30/2015
Number of Days to Update: 271	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/10/2014	Source: EPA Region 10
Date Data Arrived at EDR: 11/14/2014	Telephone: 206-553-2857
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 87	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

## INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/30/2014  
Date Data Arrived at EDR: 08/12/2014  
Date Made Active in Reports: 08/22/2014  
Number of Days to Update: 10

Source: EPA Region 4  
Telephone: 404-562-9424  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Semi-Annually

## INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/13/2014  
Date Data Arrived at EDR: 11/18/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 83

Source: EPA Region 9  
Telephone: 415-972-3368  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Quarterly

## FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010  
Date Data Arrived at EDR: 02/16/2010  
Date Made Active in Reports: 04/12/2010  
Number of Days to Update: 55

Source: FEMA  
Telephone: 202-646-5797  
Last EDR Contact: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Varies

## ***State and tribal institutional control / engineering control registries***

### ENG CONTROLS: Engineering Controls Site Listing

A listing of sites with engineering controls in place included in the Contaminated Sites.

Date of Government Version: 09/19/2014  
Date Data Arrived at EDR: 09/23/2014  
Date Made Active in Reports: 10/06/2014  
Number of Days to Update: 13

Source: Department of Environmental Conservation  
Telephone: 907-451-2143  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Quarterly

### Inst Control: Contaminated Sites with Institutional Controls

Contaminated sites that have institutional controls.

Date of Government Version: 09/19/2014  
Date Data Arrived at EDR: 09/23/2014  
Date Made Active in Reports: 10/06/2014  
Number of Days to Update: 13

Source: Department of Environmental Conservation  
Telephone: 907-451-2143  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Semi-Annually

## ***State and tribal voluntary cleanup sites***

### VCP: Voluntary Cleanup Program sites

Sites involved in the Voluntary Cleanup Program.

Date of Government Version: 11/26/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 12/23/2014  
Number of Days to Update: 22

Source: Department of Environmental Conservation  
Telephone: 907-451-2143  
Last EDR Contact: 11/26/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: Varies

### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/29/2014  
Date Data Arrived at EDR: 10/01/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 36

Source: EPA, Region 1  
Telephone: 617-918-1102  
Last EDR Contact: 12/31/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008  
Date Data Arrived at EDR: 04/22/2008  
Date Made Active in Reports: 05/19/2008  
Number of Days to Update: 27

Source: EPA, Region 7  
Telephone: 913-551-7365  
Last EDR Contact: 04/20/2009  
Next Scheduled EDR Contact: 07/20/2009  
Data Release Frequency: Varies

## **State and tribal Brownfields sites**

### BROWNFIELDS: Identified and/or Proposed Brownfields Sites

Brownfield properties are defined by U.S Environmental Protection Agency (EPA) as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contamination." DEC is developing resources to assist eligible entities in Alaska in applying for EPA brownfields grants. The program also will provide technical assistance and perform some site assessments. The purpose of these assessments is to assist local redevelopment efforts on previously contaminated properties that are vacant or underused.

Date of Government Version: 09/19/2014  
Date Data Arrived at EDR: 09/23/2014  
Date Made Active in Reports: 10/06/2014  
Number of Days to Update: 13

Source: Department of Environmental Conservation  
Telephone: 907-451-2166  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Varies

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2014  
Date Data Arrived at EDR: 12/22/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 38

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## SWRCY: Recycling Facilities

A listing of Recycling centers in the state of Alaska.

Date of Government Version: 12/29/2014  
Date Data Arrived at EDR: 12/30/2014  
Date Made Active in Reports: 02/02/2015  
Number of Days to Update: 34

Source: Department of Environmental Conservation  
Telephone: 907-269-7802  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 02/02/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Varies

## **Local Lists of Hazardous waste / Contaminated Sites**

### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 11/10/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 70

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 11/25/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: Quarterly

### CDL: Illegal Drug Manufacturing Sites

A list of properties that have been determined to be illegal drug manufacturing sites.

Date of Government Version: 04/24/2014  
Date Data Arrived at EDR: 05/20/2014  
Date Made Active in Reports: 05/29/2014  
Number of Days to Update: 9

Source: Department of Environmental Conservation  
Telephone: 907-269-7543  
Last EDR Contact: 11/21/2014  
Next Scheduled EDR Contact: 03/02/2015  
Data Release Frequency: Varies

### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/10/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 70

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 11/25/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: No Update Planned

## **Local Land Records**

### **LIENS 2: CERCLA Lien Information**

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014  
Date Data Arrived at EDR: 03/18/2014  
Date Made Active in Reports: 04/24/2014  
Number of Days to Update: 37

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 01/30/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies

## **Records of Emergency Release Reports**

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/30/2014  
Date Data Arrived at EDR: 10/01/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 36

Source: U.S. Department of Transportation  
Telephone: 202-366-4555  
Last EDR Contact: 12/30/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Annually

### **SPILLS: Spills Database**

Oil and hazardous substance releases to be reported to the Department of Environmental Conservation.

Date of Government Version: 01/20/2015  
Date Data Arrived at EDR: 01/21/2015  
Date Made Active in Reports: 02/02/2015  
Number of Days to Update: 12

Source: Department of Environmental Conservation  
Telephone: 907-465-5242  
Last EDR Contact: 01/19/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Semi-Annually

### **SPILLS 90: SPILLS90 data from FirstSearch**

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 07/21/2010  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/08/2013  
Number of Days to Update: 36

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## **Other Ascertainable Records**

### **RCRA NonGen / NLR: RCRA - Non Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012  
Date Data Arrived at EDR: 08/07/2012  
Date Made Active in Reports: 09/18/2012  
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 02/03/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Varies

## DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 11/10/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 62

Source: USGS  
Telephone: 888-275-8747  
Last EDR Contact: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Semi-Annually

## FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 09/18/2014  
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 12/12/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Varies

## CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2013  
Date Data Arrived at EDR: 01/24/2014  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 12/24/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013  
Date Data Arrived at EDR: 12/12/2013  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 74

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 12/12/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Annually

## UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/14/2010  
Date Data Arrived at EDR: 10/07/2011  
Date Made Active in Reports: 03/01/2012  
Number of Days to Update: 146

Source: Department of Energy  
Telephone: 505-845-0011  
Last EDR Contact: 11/26/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Varies

## US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014  
Date Data Arrived at EDR: 12/31/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 12/30/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: Semi-Annually

## TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 07/31/2013  
Date Made Active in Reports: 09/13/2013  
Number of Days to Update: 44

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 01/29/2015  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Annually

## TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 01/15/2015  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 14

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Every 4 Years

## FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 11/19/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Quarterly

## FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 11/19/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Quarterly

## HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Annually

## ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/31/2014  
Date Data Arrived at EDR: 10/29/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 8

Source: Environmental Protection Agency  
Telephone: 202-564-5088  
Last EDR Contact: 01/09/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Quarterly

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 10/15/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 33

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 01/16/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Annually

## MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/29/2014  
Date Data Arrived at EDR: 01/08/2015  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 21

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 12/04/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/07/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/08/2014	Telephone: 202-343-9775
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 01/08/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/16/2014	Source: EPA
Date Data Arrived at EDR: 09/10/2014	Telephone: (206) 553-1200
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/09/2014
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/23/2015
	Data Release Frequency: Quarterly

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/12/2014	Telephone: 202-564-8600
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 86	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 02/26/2013  
Date Made Active in Reports: 04/19/2013  
Number of Days to Update: 52

Source: EPA/NTIS  
Telephone: 800-424-9346  
Last EDR Contact: 11/26/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Biennially

## UIC: UIC Information

A listing of underground injection control wells.

Date of Government Version: 12/08/2014  
Date Data Arrived at EDR: 12/09/2014  
Date Made Active in Reports: 12/23/2014  
Number of Days to Update: 14

Source: Oil & Gas Conservation Commission  
Telephone: 907-793-1224  
Last EDR Contact: 12/09/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Quarterly

## DRYCLEANERS: Drycleaner Facility Listing

A listing of drycleaning facilities in Alaska.

Date of Government Version: 02/15/2006  
Date Data Arrived at EDR: 02/16/2006  
Date Made Active in Reports: 03/15/2006  
Number of Days to Update: 27

Source: Department of Environmental Conservation  
Telephone: 907-269-7577  
Last EDR Contact: 12/24/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: No Update Planned

## NPDES: Wastewater Discharge Permit Listing

A listing of permitted wastewater facilities.

Date of Government Version: 12/22/2014  
Date Data Arrived at EDR: 12/22/2014  
Date Made Active in Reports: 12/24/2014  
Number of Days to Update: 2

Source: Department of Environmental Conservation  
Telephone: 907-465-5480  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Varies

## AIRS: AIRS Facility Listing

A listing of permitted air facilities.

Date of Government Version: 01/13/2015  
Date Data Arrived at EDR: 01/16/2015  
Date Made Active in Reports: 02/02/2015  
Number of Days to Update: 17

Source: Department of Environmental Conservation  
Telephone: 907-451-2103  
Last EDR Contact: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Varies

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 12/08/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 34

Source: USGS  
Telephone: 202-208-3710  
Last EDR Contact: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Semi-Annually

## SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011  
Date Data Arrived at EDR: 03/09/2011  
Date Made Active in Reports: 05/02/2011  
Number of Days to Update: 54

Source: Environmental Protection Agency  
Telephone: 615-532-8599  
Last EDR Contact: 11/18/2014  
Next Scheduled EDR Contact: 02/02/2015  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 11/19/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/21/2014	Telephone: 202-566-1917
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 69	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Quarterly

## Financial Assurance 2: Financial Assurance Information Listing

Financial Assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 04/24/2007	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 04/26/2007	Telephone: 907-269-7802
Date Made Active in Reports: 05/14/2007	Last EDR Contact: 12/24/2014
Number of Days to Update: 18	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Varies

## US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 02/06/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Annually

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 02/06/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Annually

## COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 01/15/2015
Number of Days to Update: 76	Next Scheduled EDR Contact: 04/27/2015
	Data Release Frequency: Varies

## COAL ASH: Coal Ash Disposal Sites

A listing of coal ash disposal site locations.

Date of Government Version: 09/29/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 10/02/2014	Telephone: 907-451-2135
Date Made Active in Reports: 11/14/2014	Last EDR Contact: 12/24/2014
Number of Days to Update: 43	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/15/2015
Number of Days to Update: 339	Next Scheduled EDR Contact: 04/27/2015
	Data Release Frequency: N/A

## COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/12/2014
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/23/2015
	Data Release Frequency: Varies

## PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 01/30/2015
Number of Days to Update: 83	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 02/09/2015
Number of Days to Update: 88	Next Scheduled EDR Contact: 05/25/2015
	Data Release Frequency: Quarterly

## Financial Assurance 1: Financial Assurance Information Listing

Financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/17/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/18/2014	Telephone: 907-269-8149
Date Made Active in Reports: 12/24/2014	Last EDR Contact: 11/18/2014
Number of Days to Update: 36	Next Scheduled EDR Contact: 03/02/2015
	Data Release Frequency: Quarterly

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/25/2013  
Date Data Arrived at EDR: 10/17/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 3

Source: EPA  
Telephone: 202-564-6023  
Last EDR Contact: 02/13/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Quarterly

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014  
Date Data Arrived at EDR: 11/26/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 64

Source: Environmental Protection Agency  
Telephone: 703-603-8787  
Last EDR Contact: 01/05/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Varies

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011  
Date Data Arrived at EDR: 05/18/2012  
Date Made Active in Reports: 05/25/2012  
Number of Days to Update: 7

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 02/13/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Varies

## EDR HIGH RISK HISTORICAL RECORDS

### *EDR Exclusive Records*

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Conservation in Alaska.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/17/2014  
Number of Days to Update: 200

Source: Department of Environmental Conservation  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Conservation in Alaska.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/04/2014  
Number of Days to Update: 187

Source: Department of Environmental Conservation  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

#### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/01/2014  
Date Data Arrived at EDR: 11/05/2014  
Date Made Active in Reports: 11/24/2014  
Number of Days to Update: 19

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 02/04/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Annually

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

#### AHA Hospitals:

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

#### Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services  
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

#### Nursing Homes

Source: National Institutes of Health  
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

#### Public Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

#### Private Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

#### Daycare Centers: Child Care Facilities Database

Source: Department of Education & Early Development  
Telephone: 907-465-2800

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

#### State Wetlands Data: Wetlands Inventory Data

Source: Department of Fish & Game  
Telephone: 907-465-4100

#### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## STREET AND ADDRESS INFORMATION

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## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

CHURCH ROAD SITE  
CHURCH ROAD  
WASILLA, AK 99654

### TARGET PROPERTY COORDINATES

Latitude (North):	61.615 - 61° 36' 54.00"
Longitude (West):	149.5192 - 149° 31' 9.12"
Universal Tranverse Mercator:	Zone 6
UTM X (Meters):	366407.4
UTM Y (Meters):	6833673.5
Elevation:	413 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property:	N/A
Source:	USGS 7.5 min quad index

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

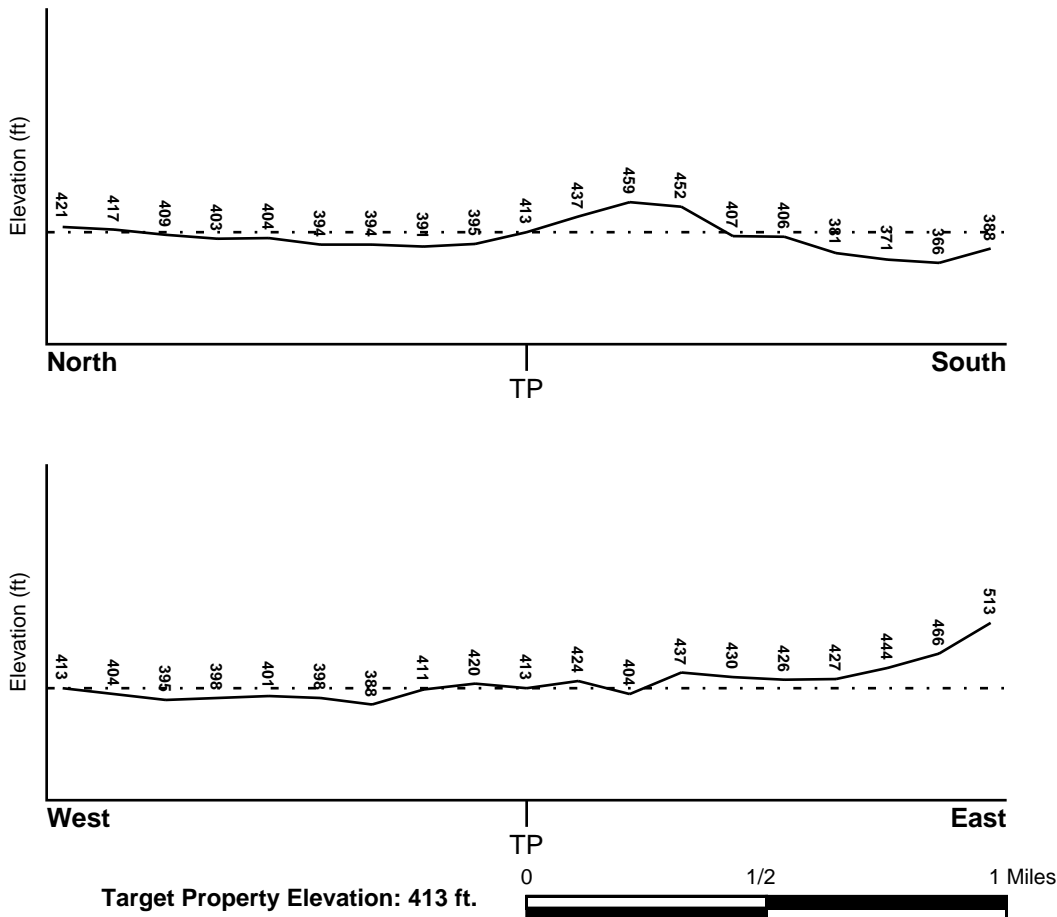
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood Electronic Data</u>
MATANUSKA_SUSITNA, AK	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

## NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
Not Reported	N

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

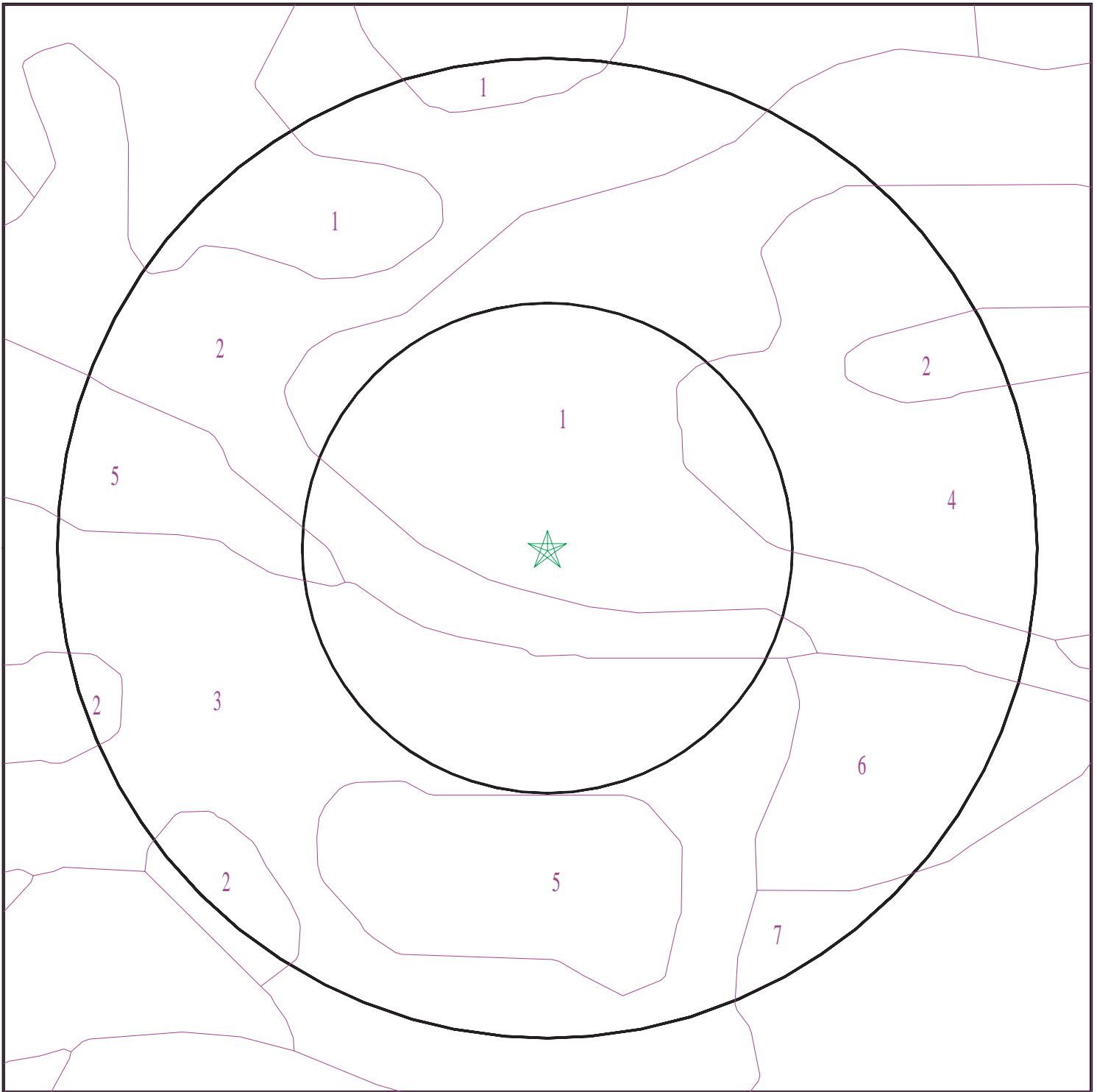
Era: -  
System: -  
Series: -  
Code: N/A (*decoded above as Era, System & Series*)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 4211539.2s



- ★ Target Property
- SSURGO Soil
- Water



SITE NAME: Church Road Site  
ADDRESS: Church Road  
Wasilla AK 99654  
LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
CONTACT: Denny Mengel  
INQUIRY #: 4211539.2s  
DATE: February 18, 2015 5:07 pm



## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

#### Soil Map ID: 1

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

#### Soil Map ID: 2

Soil Component Name: Cryaquepts

Soil Surface Texture: mucky gravelly silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 23 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	mucky gravelly silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	59 inches	variable	Not reported	Not reported	Max: 141.14 Min: 1.41	Max: 6.5 Min: 5.1

### Soil Map ID: 3

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### Soil Map ID: 4

Soil Component Name: Yohn

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 5.1
2	7 inches	31 inches	stratified fine sand to silt	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	31 inches	59 inches	very gravelly loam	Not reported	Not reported	Max: 14.11 Min: 1.41	Max: 7.3 Min: 5.6

### Soil Map ID: 5

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

### Soil Map ID: 6

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 7**

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

**LOCAL / REGIONAL WATER AGENCY RECORDS**

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

**WELL SEARCH DISTANCE INFORMATION**

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

**FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000025432	1/2 - 1 Mile SSW

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### FEDERAL USGS WELL INFORMATION

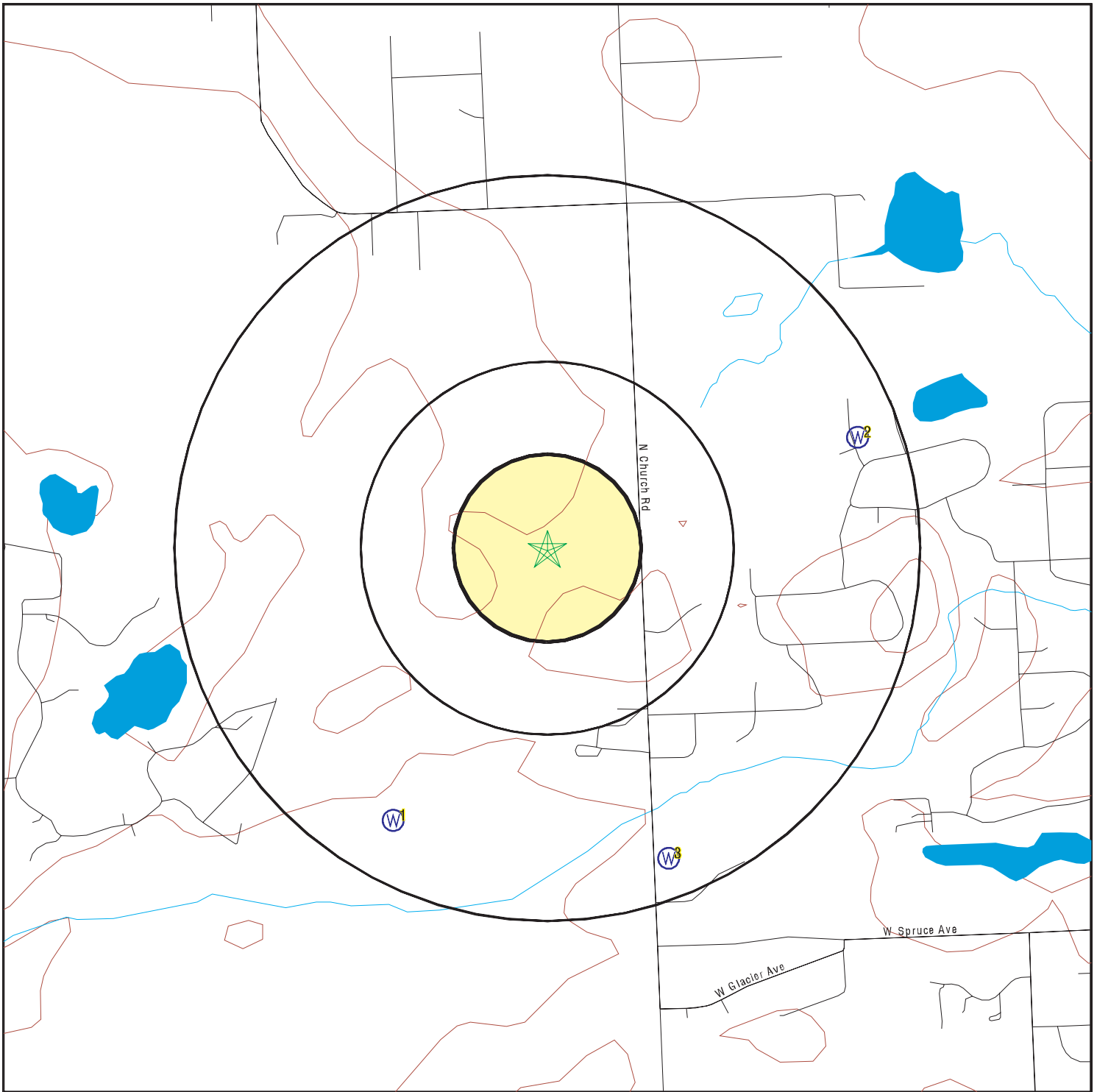
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	USGS40000026096	1/2 - 1 Mile ENE
3	USGS40000025379	1/2 - 1 Mile SSE

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

# PHYSICAL SETTING SOURCE MAP - 4211539.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location



SITE NAME: Church Road Site  
 ADDRESS: Church Road  
 Wasilla AK 99654  
 LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211539.2s  
 DATE: February 18, 2015 5:07 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

**1**  
**SSW**      **FED USGS**      **USGS40000025432**  
**1/2 - 1 Mile**  
**Lower**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613617149315701		
Monloc name:	SB01800131CABC1		
Monloc type:	Well		
Monloc desc:	WELL ID 046		
Huc code:	19020505	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.6046778
Longitude:	-149.5326083	Sourcemap scale:	63360
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	413.79
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NAVD88	Countrycode:	US
Aquifername:	Alaska unconsolidated-deposit aquifers		
Formation type:	Quaternary System		
Aquifer type:	Not Reported		
Construction date:	20010319	Welldepth:	177
Welldepth units:	ft	Wellholedepth:	177
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**2**  
**ENE**      **FED USGS**      **USGS40000026096**  
**1/2 - 1 Mile**  
**Higher**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613708149293701		
Monloc name:	SB01800129DBCA1		
Monloc type:	Well		
Monloc desc:	WELL ID 145		
Huc code:	19020505	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.6188278
Longitude:	-149.4935389	Sourcemap scale:	63360
Horiz Acc measure:	.01	Horiz Acc measure units:	seconds
Horiz Collection method:	Differentially corrected Global Positioning System (DGPS)		
Horiz coord refsys:	NAD83	Vert measure val:	421.49
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Differential Global Positioning System (GPS)r		
Vert coord refsys:	NAVD88	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	78
Construction date:	20050503	Wellholeddepth:	78
Welldepth units:	ft		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

**3**  
**SSE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000025379**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613612149302901		
Monloc name:	SB01800132CCBB1 003		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020505	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.6027957
Longitude:	-149.5102788	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	377.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19811207	Welldepth:	65
Welldepth units:	ft	Wellholeddepth:	65
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

Federal EPA Radon Zone for MATANUSKA SUSITNA County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level  $\geq$  2 pCi/L and  $\leq$  4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for MATANUSKA SUSITNA COUNTY, AK

Number of sites tested: 35

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.843 pCi/L	86%	14%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	4.243 pCi/L	65%	35%	0%

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetlands Inventory Data

Source: Department of Fish & Game

Telephone: 907-465-4100

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## OTHER STATE DATABASE INFORMATION

### RADON

#### State Database: AK Radon

Source: University of Alaska Fairbanks

Telephone: 907-474-7201

Radon Information

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## STREET AND ADDRESS INFORMATION

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**Church Road Site**

Church Road  
Wasilla, AK 99654

Inquiry Number: 4211539.5  
February 19, 2015

# The EDR-City Directory Image Report

## TABLE OF CONTENTS

### SECTION

Executive Summary

Findings

City Directory Images

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

### DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

### RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services
2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services
2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1999	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1995	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services
1992	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services

### RECORD SOURCES

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# FINDINGS

## TARGET PROPERTY STREET

Church Road  
Wasilla, AK 99654

<u>Year</u>	<u>CD Image</u>	<u>Source</u>
-------------	-----------------	---------------

## CHURCH RD

2013	pg A1	Cole Information Services
2008	pg A3	Cole Information Services
2003	pg A5	Cole Information Services
1999	pg A6	Cole Information Services
1995	pg A7	Cole Information Services
1992	pg A9	Cole Information Services

# FINDINGS

## CROSS STREETS

Year            CD Image            Source

## N CHURCH RD

2013	pg. A2	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	pg. A8	Cole Information Services	
1992	pg. A10	Cole Information Services	

## **City Directory Images**

**CHURCH RD 2013**

1 LITTLE CACHE AUTO RECYCLING

**N CHURCH RD 2013**

600	OCCUPANT UNKNOWN
701	LARISA CHIFEAC SERGEY VODLENSCHUK
901	KATZ TOWING & RECOVERY
925	JERRY STORY
951	OCCUPANT UNKNOWN
1221	LAMB OF GOD LUTHERAN CHURCH
1250	FREDERIC WAGNER
1320	OCCUPANT UNKNOWN
1321	JOSEPH MAHONEY
2929	ROBERT FRIESEN
2935	OCCUPANT UNKNOWN
3065	NORTH LAKES LIQUOR 2 VALLEY COUNTRY STORE & FUEL
3075	ABBYS HOME COOKING
3209	MARVIN KUENTZEL
3287	OCCUPANT UNKNOWN
3305	JOHN ALBERT
3381	OCCUPANT UNKNOWN
3463	OCCUPANT UNKNOWN
3601	TIM WARK

Target Street  
✓

Cross Street  
-

Source  
Cole Information Services

**CHURCH RD 2008**

2929 ROBERT FRIESEN

**N CHURCH RD 2008**

701	SERGEY VODLENSCHUK
801	OCCUPANT UNKNOWN
925	JERRY STORY
951	TIM HUNTER
1051	TRACY BAYLE
1221	LAMB OF GOD LUTHERAN CHURCH OPEN ARMS LUTHERAN CHILD DEV CENTER
1320	MICHAEL HARGETT
3209	MARVIN KUENTZEL
3287	JEAN HON

Target Street

Cross Street

Source

✓

-

Cole Information Services

**CHURCH RD 2003**

1250 FREDERIC WAGNER



Target Street  
✓

Cross Street  
-

Source  
Cole Information Services

**CHURCH RD 1999**

925 JERRY STORY



-

**CHURCH RD 1995**

0	HOLSTEIN, HERBERT
	HOLSTEIN, HERBERT
901	WASILLA TOWING

Target Street

Cross Street

Source

-

✓

Cole Information Services

**N CHURCH RD 1995**

801 BLATCHFORD, DALE  
901 GATHERCOLE, S  
925 STORY, JERRY

**CHURCH RD 1992**

0 HOLSTEIN, HERBERT  
HOLSTEIN, HERBERT

**N CHURCH RD 1992**

801 BLATCHFORD, DALE  
SANDERSON, MARK  
925 BUTTS, JOHN

**Church Road Site**

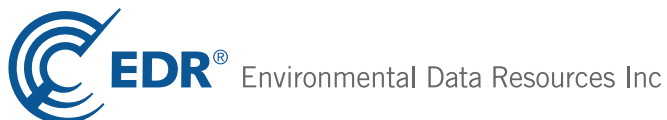
Church Road

Wasilla, AK 99654

Inquiry Number: 4211539.2s

February 18, 2015

## EDR Summary Radius Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	7
Orphan Summary .....	8
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting SSURGO Soil Map .....	A-5
Physical Setting Source Map .....	A-11
Physical Setting Source Map Findings .....	A-13
Physical Setting Source Records Searched .....	PSGR-1

*Thank you for your business.*  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

CHURCH ROAD  
MATANUSKA SUSITNA County, AK 99654

#### COORDINATES

Latitude (North): 61.6150000 - 61° 36' 54.00"  
Longitude (West): 149.5192000 - 149° 31' 9.12"  
Universal Transverse Mercator: Zone 6  
UTM X (Meters): 366407.4  
UTM Y (Meters): 6833673.5  
Elevation: 413 ft. above sea level

#### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: N/A  
Source: USGS 7.5 min quad index

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

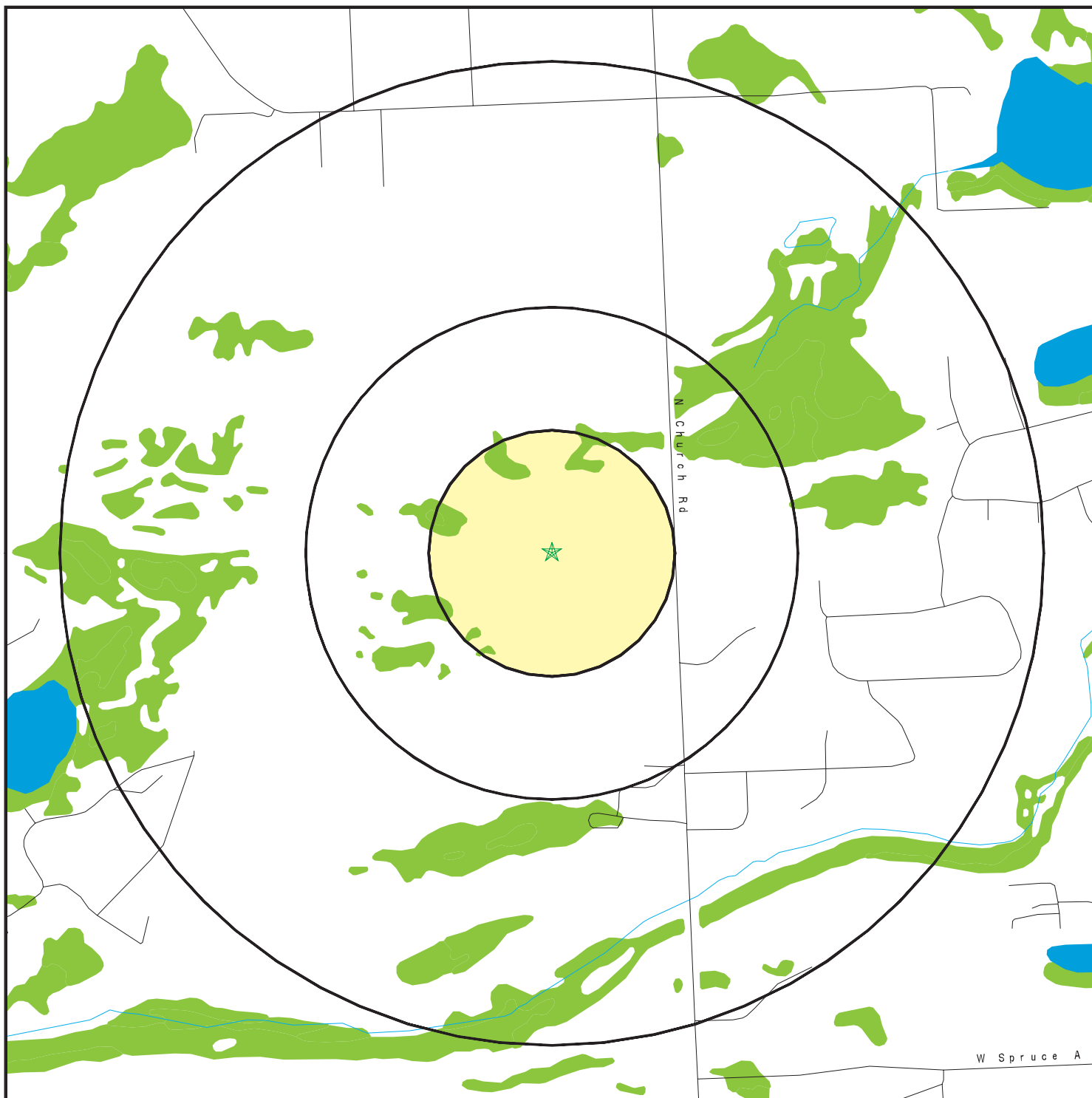


Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WASILLA	S108033862	WASILLA CHURCH ROAD EXTENSION	CHURCH ROAD	99654	NPDES
WASILLA	S113927798	CHURCH ROAD MENTAL HEALTH TRUST LA	CHURCH ROAD	99654	SPILLS

# OVERVIEW MAP - 4211539.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

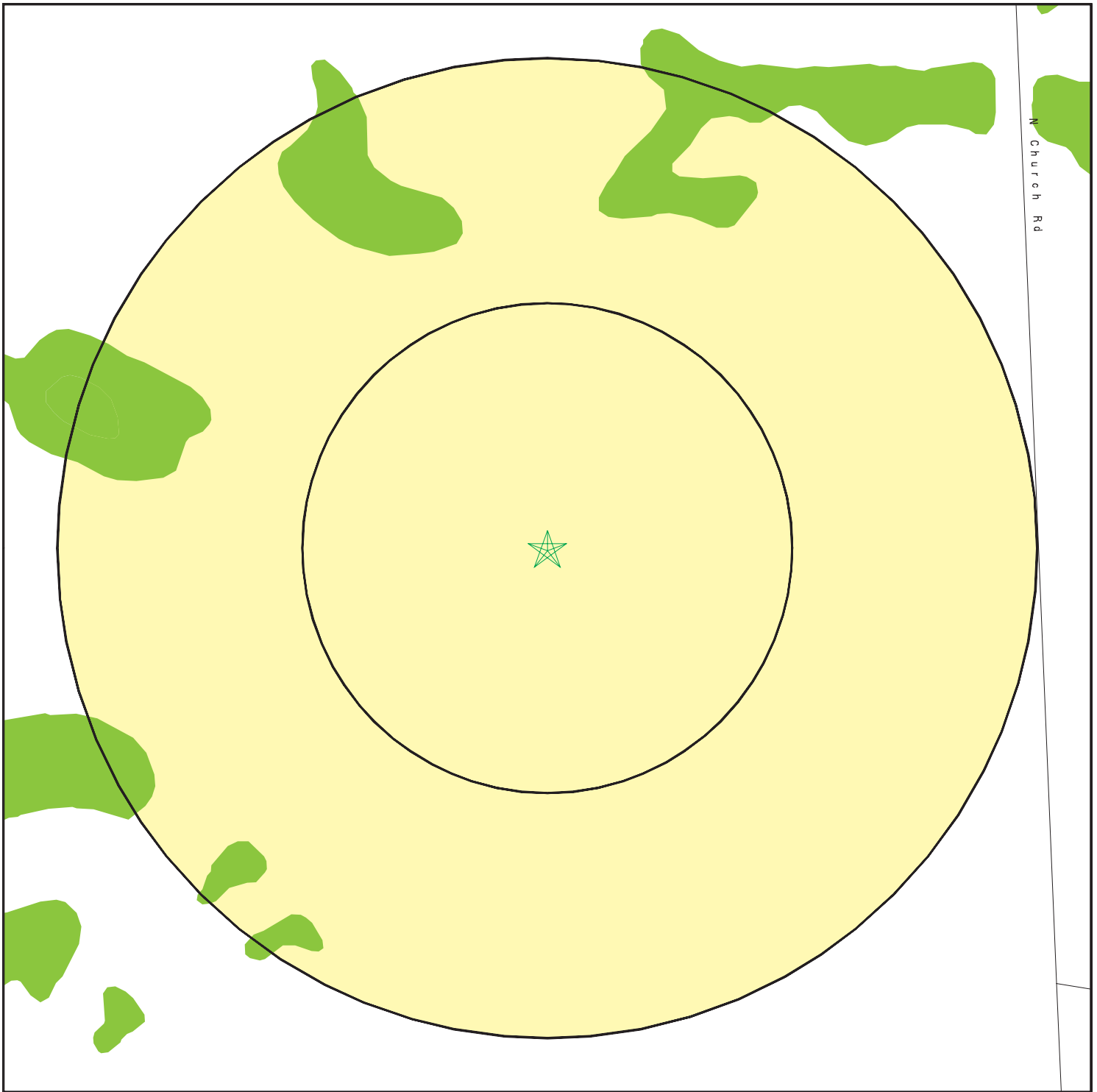
- Indian Reservations BIA
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Church Road Site  
 ADDRESS: Church Road  
 Wasilla AK 99654  
 LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211539.2s  
 DATE: February 18, 2015 5:07 pm

# DETAIL MAP - 4211539.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- ▨ National Priority List Sites
- ▨ Dept. Defense Sites

0      1/16      1/8      1/4 Miles

- ▨ Indian Reservations BIA
- National Wetland Inventory
- State Wetlands

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Church Road Site  
 ADDRESS: Church Road  
 Wasilla AK 99654  
 LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211539.2s  
 DATE: February 18, 2015 5:07 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	1.000		0	0	0	0	NR	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### *EDR Exclusive Records*

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

NO SITES FOUND

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
AK	AIRS	AIRS Facility Listing	Department of Environmental Conservation	01/13/2015	01/16/2015	02/02/2015
AK	AST	Regulated Aboveground Storage Tanks	Department of Environmental Conservation	01/05/2005	01/06/2005	02/02/2005
AK	BROWNFIELDS	Identified and/or Proposed Brownfields Sites	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	CDL	Illegal Drug Manufacturing Sites	Department of Environmental Conservation	04/24/2014	05/20/2014	05/29/2014
AK	COAL ASH	Coal Ash Disposal Sites	Department of Environmental Conservation	09/29/2014	10/02/2014	11/14/2014
AK	DRYCLEANERS	Drycleaner Facility Listing	Department of Environmental Conservation	02/15/2006	02/16/2006	03/15/2006
AK	ENG CONTROLS	Engineering Controls Site Listing	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	Financial Assurance 1	Financial Assurance Information Listing	Department of Environmental Conservation	11/17/2014	11/18/2014	12/24/2014
AK	Financial Assurance 2	Financial Assurance Information Listing	Department of Environmental Conservation	04/24/2007	04/26/2007	05/14/2007
AK	Inst Control	Contaminated Sites with Institutional Controls	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	LUST	Leaking Underground Storage Tank Database	Department of Environmental Conservation	11/17/2014	11/19/2014	12/23/2014
AK	NPDES	Wastewater Discharge Permit Listing	Department of Environmental Conservation	12/22/2014	12/22/2014	12/24/2014
AK	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Environmental Conservation		07/01/2013	01/17/2014
AK	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	Department of Environmental Conservation		07/01/2013	01/04/2014
AK	SHWS	Contaminated Sites Database	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	SPILLS	Spills Database	Department of Environmental Conservation	01/20/2015	01/21/2015	02/02/2015
AK	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	07/21/2010	01/03/2013	02/08/2013
AK	SWF/LF	Solid Waste Facilities	Department of Environmental Conservation	12/29/2014	12/30/2014	02/02/2015
AK	SWRCY	Recycling Facilities	Department of Environmental Conservation	12/29/2014	12/30/2014	02/02/2015
AK	UIC	UIC Information	Oil & Gas Conservation Commission	12/08/2014	12/09/2014	12/23/2014
AK	UST	Underground Storage Tank Database	Department of Environmental Conservation	11/17/2014	11/19/2014	12/24/2014
AK	VCP	Voluntary Cleanup Program sites	Department of Environmental Conservation	11/26/2014	12/01/2014	12/23/2014
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	11/11/2011	05/18/2012	05/25/2012
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2011	02/26/2013	04/19/2013
US	CERCLIS	Comprehensive Environmental Response, Compensation, and Liab	EPA	10/25/2013	11/11/2013	02/13/2014
US	CERCLIS-NFRAP	CERCLIS No Further Remedial Action Planned	EPA	10/25/2013	11/11/2013	02/13/2014
US	COAL ASH DOE	Sleam-Electric Plan Operation Data	Department of Energy	12/31/2005	08/07/2009	10/22/2009
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	07/01/2014	09/10/2014	10/20/2014
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	12/31/2013	01/24/2014	02/24/2014
US	CORRACTS	Corrective Action Report	EPA	12/09/2014	12/29/2014	01/29/2015
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DELISTED NPL	National Priority List Deletions	EPA	12/16/2014	01/08/2015	02/09/2015
US	DOD	Department of Defense Sites	USGS	12/31/2005	11/10/2006	01/11/2007
US	DOT OPS	Incident and Accident Data	Department of Transportation, Office of Pipeli	07/31/2012	08/07/2012	09/18/2012
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations	EDR, Inc.			
US	EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners	EDR, Inc.			
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	09/29/2014	09/30/2014	11/06/2014
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	07/21/2014	10/07/2014	10/20/2014
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	12/31/2005	02/06/2006	01/11/2007
US	FEMA UST	Underground Storage Tank Listing	FEMA	01/01/2010	02/16/2010	04/12/2010
US	FINDS	Facility Index System/Facility Registry System	EPA	08/16/2014	09/10/2014	10/20/2014
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	06/06/2014	09/10/2014	09/18/2014
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	09/30/2014	10/01/2014	11/06/2014
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	07/31/2014	10/29/2014	11/06/2014
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	02/01/2013	05/01/2013	11/01/2013
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	11/10/2014	11/14/2014	02/09/2015
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	07/30/2014	08/12/2014	08/22/2014
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	11/03/2014	11/05/2014	11/17/2014
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	10/06/2014	10/29/2014	11/17/2014
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	09/23/2014	11/25/2014	01/29/2015
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	11/04/2014	11/07/2014	11/17/2014
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	01/08/2015	01/08/2015	02/09/2015
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2005	12/08/2006	01/11/2007
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	02/01/2013	05/01/2013	01/27/2014
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	11/10/2014	11/14/2014	02/09/2015
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	07/30/2014	08/12/2014	08/22/2014
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	11/03/2014	11/05/2014	11/17/2014
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	10/06/2014	10/29/2014	11/06/2014
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	09/23/2014	11/25/2014	01/29/2015
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	11/04/2014	11/07/2014	11/17/2014
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	11/13/2014	11/18/2014	02/09/2015
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	09/29/2014	10/01/2014	11/06/2014
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	11/25/2014	11/26/2014	01/29/2015
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	02/18/2014	03/18/2014	04/24/2014
US	LUCIS	Land Use Control Information System	Department of the Navy	12/03/2014	12/12/2014	01/29/2015
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	12/29/2014	01/08/2015	01/29/2015
US	NPL	National Priority List	EPA	12/16/2014	01/08/2015	02/09/2015
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	07/01/2014	10/15/2014	11/17/2014
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	02/01/2011	10/19/2011	01/10/2012
US	PRP	Potentially Responsible Parties	EPA	10/25/2013	10/17/2014	10/20/2014
US	Proposed NPL	Proposed National Priority List Sites	EPA	12/16/2014	01/08/2015	02/09/2015
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	10/07/2014	10/08/2014	10/20/2014
US	RCRA NonGen / NLR	RCRA - Non Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RMP	Risk Management Plans	Environmental Protection Agency	08/01/2014	08/12/2014	11/06/2014
US	ROD	Records Of Decision	EPA	11/25/2013	12/12/2013	02/24/2014
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	03/07/2011	03/09/2011	05/02/2011
US	SSTS	Section 7 Tracking Systems	EPA	12/31/2009	12/10/2010	02/25/2011
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2011	07/31/2013	09/13/2013

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	TSCA	Toxic Substances Control Act	EPA	12/31/2012	01/15/2015	01/29/2015
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	09/14/2010	10/07/2011	03/01/2012
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/16/2014	10/31/2014	11/17/2014
US	US AIRS MINOR	Air Facility System Data	EPA	10/16/2014	10/31/2014	11/17/2014
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	12/22/2014	12/22/2014	01/29/2015
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	11/10/2014	12/01/2014	02/09/2015
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	09/18/2014	09/19/2014	10/20/2014
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	11/19/2014	11/21/2014	01/29/2015
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	11/10/2014	12/01/2014	02/09/2015
US	US INST CONTROL	Sites with Institutional Controls	Environmental Protection Agency	09/18/2014	09/19/2014	10/20/2014
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	12/30/2014	12/31/2014	01/29/2015
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	11/01/2014	11/05/2014	11/24/2014
US	Oil/Gas Pipelines	GeoData Digital Line Graphs from 1:100,000-Scale Maps	USGS			
US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.			
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services			
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health			
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics			
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics			
AK	Daycare Centers	Sensitive Receptor: Child Care Facilities Database	Department of Education & Early Development			
US	Flood Zones	100-year and 500-year flood zones	Emergency Management Agency (FEMA)			
US	NWI	National Wetlands Inventory	U.S. Fish and Wildlife Service			
AK	State Wetlands	Wetlands Inventory Data	Department of Fish & Game			
US	USGS 7.5' Topographic Map	Scanned Digital USGS 7.5' Topographic Map (DRG)	USGS			

### STREET AND ADDRESS INFORMATION

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## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

CHURCH ROAD SITE  
CHURCH ROAD  
WASILLA, AK 99654

### TARGET PROPERTY COORDINATES

Latitude (North):	61.615 - 61° 36' 54.00"
Longitude (West):	149.5192 - 149° 31' 9.12"
Universal Tranverse Mercator:	Zone 6
UTM X (Meters):	366407.4
UTM Y (Meters):	6833673.5
Elevation:	413 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property:	N/A
Source:	USGS 7.5 min quad index

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

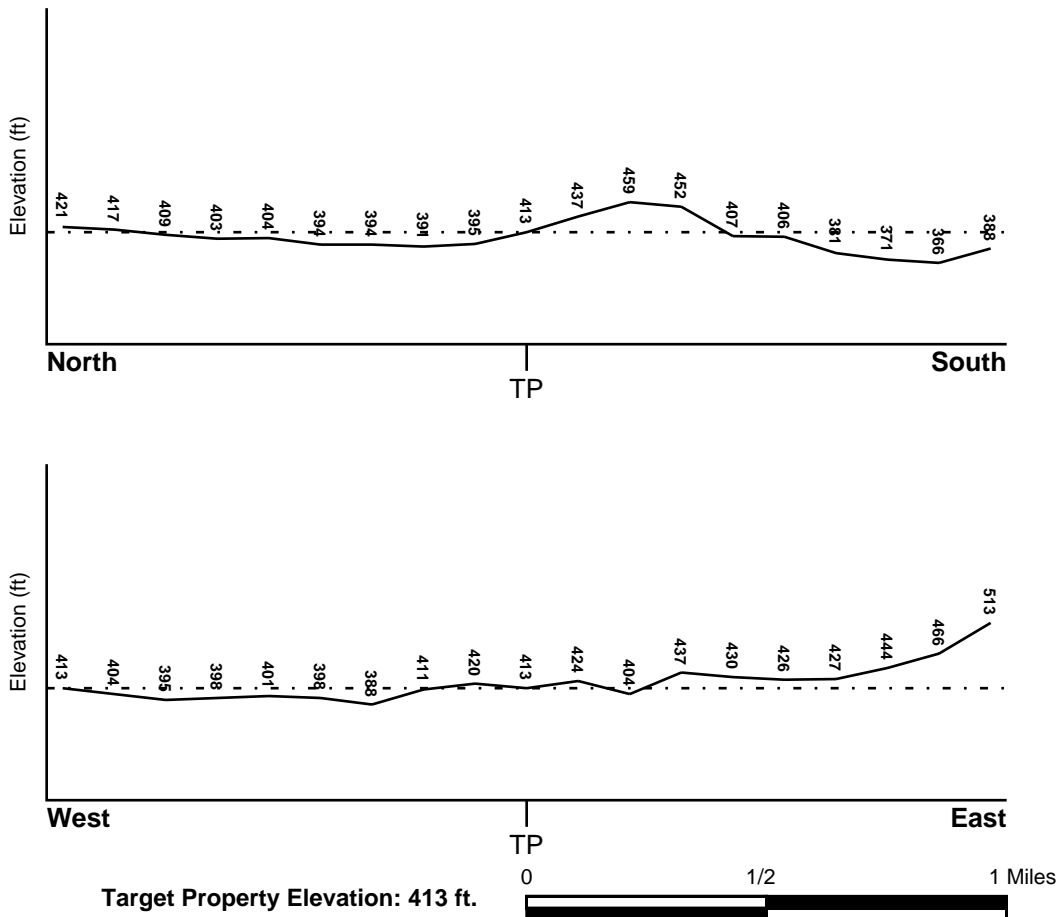
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNW

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood Electronic Data</u>
MATANUSKA_SUSITNA, AK	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

## NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
Not Reported	N

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

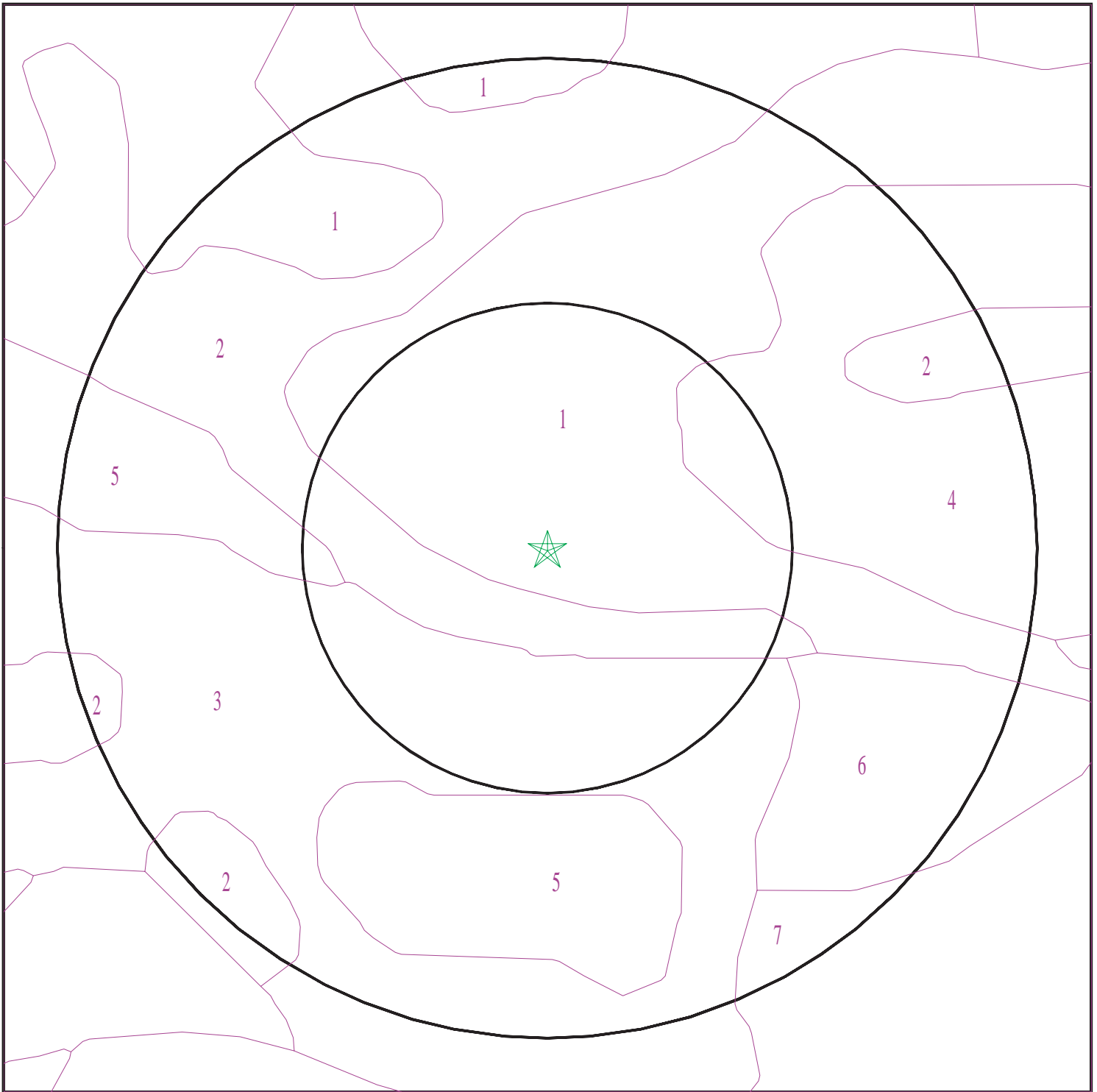
Era: -  
System: -  
Series: -  
Code: N/A (*decoded above as Era, System & Series*)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 4211539.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Church Road Site  
ADDRESS: Church Road  
Wasilla AK 99654  
LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
CONTACT: Denny Mengel  
INQUIRY #: 4211539.2s  
DATE: February 18, 2015 5:07 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

### Soil Map ID: 1

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

### Soil Map ID: 2

Soil Component Name: Cryaquepts

Soil Surface Texture: mucky gravelly silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained



## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 23 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	mucky gravelly silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	59 inches	variable	Not reported	Not reported	Max: 141.14 Min: 1.41	Max: 6.5 Min: 5.1

### Soil Map ID: 3

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### Soil Map ID: 4

Soil Component Name: Yohn

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 5.1
2	7 inches	31 inches	stratified fine sand to silt	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	31 inches	59 inches	very gravelly loam	Not reported	Not reported	Max: 14.11 Min: 1.41	Max: 7.3 Min: 5.6

### Soil Map ID: 5

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

### Soil Map ID: 6

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 7**

Soil Component Name: Kichatna

Soil Surface Texture: silt loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	1 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	1 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.6
3	9 inches	59 inches	very gravelly loamy coarse sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

**LOCAL / REGIONAL WATER AGENCY RECORDS**

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

**WELL SEARCH DISTANCE INFORMATION**

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

**FEDERAL USGS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000025432	1/2 - 1 Mile SSW

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### FEDERAL USGS WELL INFORMATION

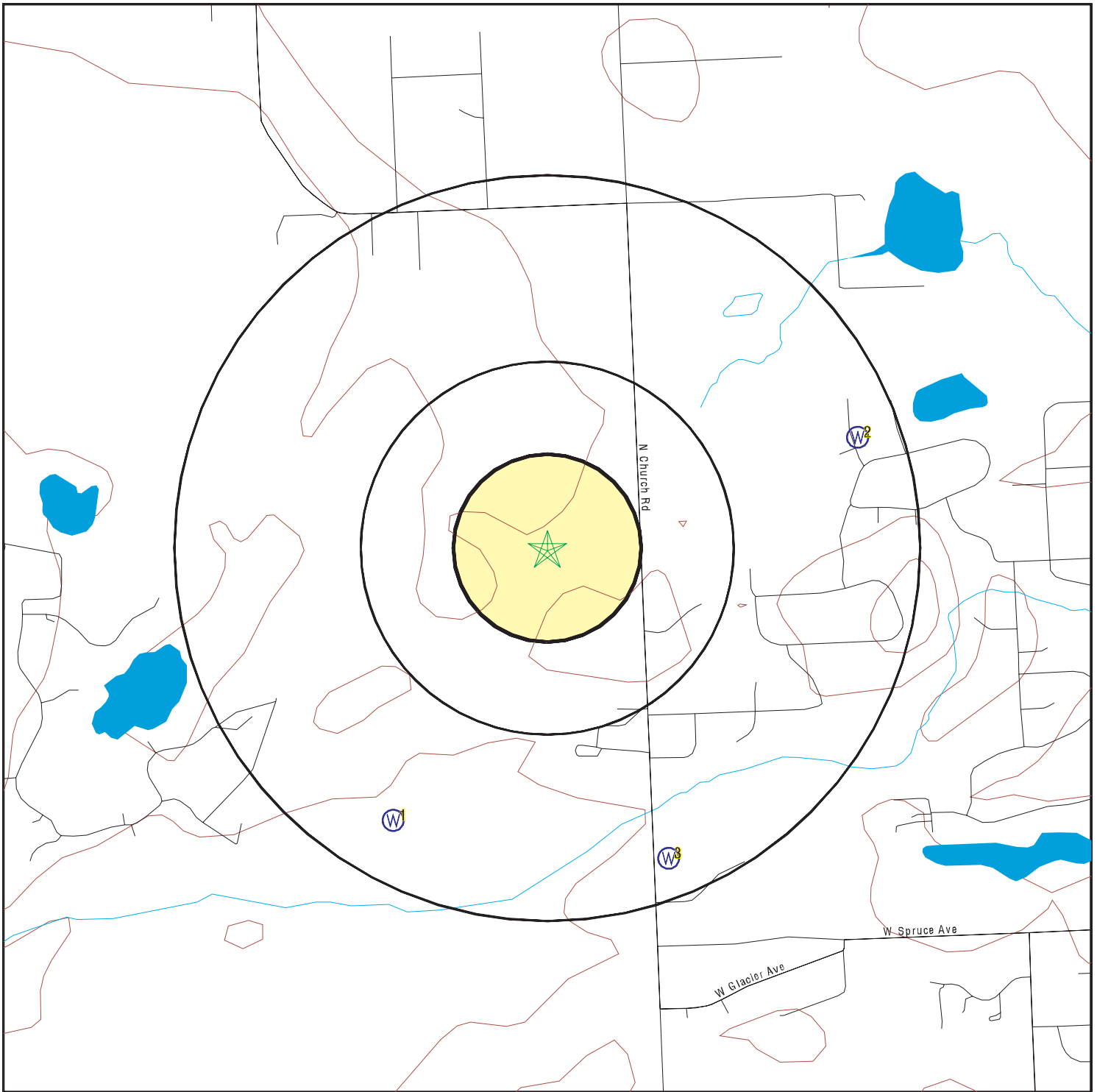
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	USGS40000026096	1/2 - 1 Mile ENE
3	USGS40000025379	1/2 - 1 Mile SSE








### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		




Note: PWS System location is not always the same as well location.

# PHYSICAL SETTING SOURCE MAP - 4211539.2s



-  County Boundary
-  Major Roads
-  Contour Lines
-  Earthquake epicenter, Richter 5 or greater
-  Water Wells
-  Public Water Supply Wells
-  Cluster of Multiple Icons



-  Groundwater Flow Direction
-  Indeterminate Groundwater Flow at Location
-  Groundwater Flow Varies at Location



SITE NAME: Church Road Site  
 ADDRESS: Church Road  
 Wasilla AK 99654  
 LAT/LONG: 61.615 / 149.5192

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211539.2s  
 DATE: February 18, 2015 5:07 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database

EDR ID Number

---

1  
SSW  
1/2 - 1 Mile  
Lower

[Click here for full text details](#)

FED USGS

USGS40000025432

---

2  
ENE  
1/2 - 1 Mile  
Higher

[Click here for full text details](#)

FED USGS

USGS40000026096

---

3  
SSE  
1/2 - 1 Mile  
Higher

[Click here for full text details](#)

FED USGS

USGS40000025379

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

Federal EPA Radon Zone for MATANUSKA SUSITNA County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for MATANUSKA SUSITNA COUNTY, AK

Number of sites tested: 35

<u>Area</u>	<u>Average Activity</u>	<u>% &lt;4 pCi/L</u>	<u>% 4-20 pCi/L</u>	<u>% &gt;20 pCi/L</u>
Living Area - 1st Floor	1.843 pCi/L	86%	14%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	4.243 pCi/L	65%	35%	0%



# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetlands Inventory Data

Source: Department of Fish & Game

Telephone: 907-465-4100

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## OTHER STATE DATABASE INFORMATION

### RADON

#### State Database: AK Radon

Source: University of Alaska Fairbanks

Telephone: 907-474-7201

Radon Information

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## STREET AND ADDRESS INFORMATION

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# Preliminary Assessment of Environmental Findings for MSB Property at the Central Landfill Site, Palmer, AK

PREPARED FOR: Mike Campfield/MSB  
 COPY TO: Project file  
 PREPARED BY: David Stieb  
 DATE: February 25, 2015  
 PROJECT NUMBER: 656753  
 REVISION NO.: 1

CH2M HILL conducted a preliminary assessment of environmental findings on property located south of the MSB Central Landfill and south of North Golden Hills Drive in Palmer, Alaska. This preliminary assessment is intended to provide information on known environmental conditions to support decisions for follow on activities. Work performed for this assessment included review of results of a standard radius search of federal, state, and local regulatory databases, review of available aerial photographs, review of available topographic maps, review of available Sanborn maps, and review of available city directors. EDR, Inc. was subcontracted to provide the records above that were reviewed. Additionally, the Alaska Department of Environmental Conservation website was searched for known contaminated sites on February 25, 2015. The website is located at:

<http://www.arcgis.com/home/webmap/viewer.html?webmap=315240bfbaf84aa0b8272ad1cef3cad3>

## Property Location

The property evaluated is defined by the coordinates in table 1. The specific site for the proposed septage and leachate treatment facility is located south of the southern end of North Golden Hills Drive and south and west of the MSB Central Landfill. A figure showing the specific site of the proposed facility on this property is included in Figure 2 of the Engineering Analysis Technical Memorandum. The extent of property evaluated in this preliminary assessment is larger than the proposed facility footprint and is defined by the coordinates in Table 1. Historical photographs are discussed below and are included as attachments to this memorandum. The property is approximately 3.5 miles west/southwest of downtown Palmer, AK.

TABLE 1

**Property Boundary Coordinates**  
*Central Landfill Property*

Property Corner	Northing	Easting
NNW	61° 35' 18.88" N	149° 13' 07.79" W
NNE	61° 35' 18.92" N	149° 12' 46.39" W
SNE	61° 35' 10.58" N	149° 12' 46.39" W
NE	61° 35' 10.58" N	149° 12' 25.02" W
SE	61° 34' 42.15" N	149° 12' 22.74" W
SW	61° 34' 41.72" N	149° 13' 09.97" W
NW	61° 35' 07.65" N	149° 13' 12.14" W
SNW	61° 35' 10.58" N	149° 13' 07.79" W

## Database Search Results

A standard radius search of environmental databases as defined in ASTM 1527-13 was performed by EDR, Inc. on February 18, 2015. The target property was not identified in any of the databases included in the radius search report. None of the adjacent properties within the radius search were identified in any of the databases. Additionally, no orphan sites were identified in the databases.

## Alaska DEC Contaminated Sites Search Results

The Alaska Department of Environmental Conservation website was queried on February 25, 2015 for known contaminated properties. There were two contaminated sites visible on the map on the adjacent landfill property to the north. The interactive map listed both sites as closed with regulatory concurrence. The first is the MatSu Animal Control Facility, Hazard ID Number 23238. The site was a former LUST site and status is cleanup complete. The second is the Mat-Su Borough Central Landfill, Hazard ID Number 3929. The Class 1 landfill permit number is 9922-BA003. Releases from the former vehicle maintenance facility resulted in a required remedial action. A removal occurred in 2003 and the excavated soil was thermally remediated off site. The treated soil was placed back into the excavation because of elevated arsenic levels which while at background levels, exceeded the Method 2 migration to groundwater pathway. This site's conditions meet the 2009 closure policy, therefore; institutional controls can be removed. At the time of conditional closure in 2003 the arsenic levels were within background concentrations. Any proposal to remove and/or transport soil or offsite requires prior ADEC approval. The site status is cleanup complete.

## Aerial Photography and Topographic Search Results

Topographic maps from 1979, 1987, 1992, and 1994 were reviewed for information on land use and evidence of environmental issues. The 1979 topographic map shows no development has occurred except for Palmer Highway and Trunk road and the community college located approximately 0.6 miles west/southwest of the property. The subject property and vicinity is shown as forested land. High Ridge Lake and Baird Lake are shown southeast of the property and Johnson Lake and Long Lake are shown south of the property. The 1987 topographic map is larger scale and shows the City of Palmer. There are no changes in the vicinity of the property from the 1979 topographic map except Baird Lake is now named Bear Lake. Significant development along both the north and south sides of Palmer Highway north of the property is visible on the 1992 topographic map. North Golden Hills Drive has been constructed and extends onto the property. A white area, unforested, appears approximately where the landfill on the northeast corner of the property is. The community college is labeled as Matanuska-Susitna Community College. Additional structures are located south and north of the college. Drivable trails appear to extend from the community college across the property to an area east of the property. A small un-named lake appears at the southwest corner of the property. A gravel pit is located approximately 0.6 miles northwest of the property. The 1994 topographic map shows minimal development in the vicinity of the property. Eight structures have been constructed on North Golden Hills Drive.

Aerials from 1950, 1957, 1973, and 1990 were obtained from EDR. In addition, aerial photographs from 2010, 2011, and 2012 available online from Google Earth© were reviewed. The 1950 aerial showed no development on the aerial. The only change on the 1957 aerial is Palmer Highway and Trunk Road have been constructed along with some area on the southeast intersection of the roads has been cleared. The scale of the 1973 aerial is such that only the property and immediately surrounding area are visible. No development is visible on the aerial. The 1990 aerial shows North Golden Hill Drive has been constructed. Other features visible align with what was observed on the 1992 topographical map. The 2010 aerial shows the landfill north and east of the property. A residential neighborhood starting along Golden Hills Drive and extending west to Trunk Road and north to Palmer Highway is visible. The residential development is west and north of the property and extends along the northern end of the landfill. Additional residential development is visible west of Trunk Road and south of the community college. The Matanuska-Susitna Animal Control Facility has been constructed in the northwest corner of the Landfill property. The 2011 and 2012 aerials show no visible changes from the 2010 aerial on or in the vicinity of the property.

## Sanborn Map and City Directory Search Results

There is no Sanborn map coverage of the area. City directory results from 1992, 1995, 1999, 2003, 2008, and 2013 were reviewed. The City Directory indicates only residential property owners along North Golden Hills Drive and North 49<sup>th</sup> State Street, with the exception of Alaskan Events Market which appeared only on the 1992 listing, Palmer Publishing which appeared only on the 2008 listing, and Jack's Drywall, Inc. which appeared on both the 2008 and 2013 listing.

## Geographical Information

The EDR search report and topographic maps indicate the property is rolling hills and varies in elevation from approximately 100 to 300 feet above mean sea level. The general slope of the area is to the southwest. Soil type is silt loam down to 18-inches and gravely coarse sand to 5 feet and is well drained. The soils have a moderate corrosive potential to unprotected steel pipe.

Two wells appear within ¼ to ½ mile of the property and sixty-four wells appear within ½ to 1-mile of the property. The wells range in depth from approximately 50 feet to approximately 330 feet with the majority between 80 to 200 feet below ground surface. Water levels ranged from approximately 50 to 100 feet below ground surface in most wells. Six of the wells were installed in 1977-1979. The remaining 60 wells were installed between 1982 and 1988 with the majority being installed by 1986. No other information was provided.

Federal Area Radon Information for MATANUSKA SUSITNA COUNTY, AK indicates the county is zone 2, indoor average level  $\geq 2$  pCi/L and  $\leq 4$  pCi/L.

## Summary of Findings.

Review of available data did not identify any known environmental issues on the subject property or adjacent property within 1-mile of the property. The two contaminated sites located within ½-mile to the north have been closed with regulatory concurrence of no further action. The two potential environmental issues identified were the landfill and potential heating fuel releases from the neighborhood located north of the property. Both are located in the presumed upgradient groundwater direction and the landfill reportedly has unlined sections. These two issues should be further investigated. The community college is presumably downgradient and any releases of heating fuel would be assumed to migrate away from the property. No other commercial or industrial properties suspected of environmentally impacting the property were identified in the area with the exception of the landfill.

## Disclaimer

Due to winter conditions and the site ground surface covered with snow, site inspections were not conducted. Current and past property owners and tenants were not interviewed for information related to past property uses.

In preparing this Preliminary Assessment of Environmental Findings (Report), CH2M HILL relied, in whole or in part, on data and information provided by the MSB and third parties, which information has not been independently verified by CH2M HILL and which CH2M HILL has assumed to be accurate, complete, reliable, and current. Therefore, while CH2M HILL has utilized its best efforts in preparing this Report, CH2M HILL does not warrant or guarantee the conclusions set forth in this Report which are dependent or based upon data, information or statements supplied by third parties or the MSB.

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Fax To: CH2M Hill, Inc.  
Contact: Denny Mengel  
Fax : 000-000-0000  
Date: 02/18/2015

Fax From: Adrian Blackman  
EDR  
Phone: 1-800-352-0050

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## EDR PUR-IQ<sup>®</sup> Report

*"the intelligent way to conduct historical research"*

for  
Landfill Site  
N. Golden Hills Dr  
Palmer, AK 99645  
Lat./Long. 61.5823 / 149.2133  
EDR Inquiry # 4211551.2s

The EDR PUR-IQ report facilitates historical research planning required to complete the Phase I ESA process. The report identifies the *likelihood* of prior use coverage by searching proprietary EDR-Prior Use Reports<sup>®</sup> comprising nationwide information on: city directories, fire insurance maps, aerial photographs, historical topographic maps, flood maps and National Wetland Inventory maps.

**Potential for EDR Historical (Prior Use) Coverage** - Coverage in the following historical information sources may be used as a guide to develop your historical research strategy:

- 1. City Directory:** Coverage may exist for portions of Matanuska-Susitna Borough, AK.
- 2. Fire Insurance Map:** When you order online any EDR Package or the EDR Radius Map with EDR Sanborn Map Search/Print, you receive site specific Sanborn Map coverage information at no charge.
- 3. Aerial Photograph:** Aerial photography coverage may exist for portions of Matanuska-Susitna Borough. Please contact your EDR Account Executive for information about USGS photos available through EDR.
- 4. Topographic Map:** The USGS 7.5 min. quad topo sheet(s) associated with this site:  

Historical:	Coverage exists for MATANUSKA SUSITNA County	
Current:	Target Property:	N/A

EDR's network of professional researchers, located throughout the United States, accesses the most extensive national collections of city directory, fire insurance maps, aerial photographs and historical topographic map resources available for Palmer, AK. These collections may be located in multiple libraries throughout the country. To ensure maximum coverage, EDR will often assign researchers at these multiple locations on your behalf. Please call or fax your EDR representative to authorize a search.





**EDR™** Environmental  
Data Resources Inc

## EDR - HISTORICAL SOURCE(S) ORDER FORM

**CH2M Hill, Inc.  
Denny Mengel  
Account # 1162163**

**Landfill Site  
N. Golden Hills Dr  
Palmer, AK 99645  
MATANUSKA SUSITNA County  
Lat./Long. 61.5823 / 149.2133  
EDR Inquiry # 4211551.2s**

Should you wish to change or add to your order, fax this form to your EDR account executive:

**Adrian Blackman  
Ph: 1-800-352-0050 Fax: 1-800-231-6802**

### Reports

- EDR Sanborn Map® Search/Print
- EDR Fire Insurance Map Abstract
- EDR Multi-Tenant Retail Facility® Report
- EDR City Directory Abstract
- EDR Aerial Photo Decade Package
- USGS Aerial 5 Package
- USGS Aerial 3 Package
- EDR Historical Topographic Maps
- Paper Current USGS Topo (7.5 min.)
- Environmental Lien Search
- Chain of Title Search
- NJ MacRaes Industrial Directory Report
- EDR Telephone Interview

### **Shipping:**

- Email
- Express, Next Day Delivery
- Express, Second Day Delivery
- Express, Next day Delivery
- Express, Second Day Delivery
- U.S. Mail

Customer Account  
Customer Account

**RUSH SERVICE IS AVAILABLE**

Acct # \_\_\_\_\_  
Acct # \_\_\_\_\_

***Thank you***



**Landfill Site**

N. Golden Hills Dr  
Palmer, AK 99645

Inquiry Number: 4211551.3

February 18, 2015

# Certified Sanborn® Map Report



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# Certified Sanborn® Map Report

2/18/15

**Site Name:**

Landfill Site  
N. Golden Hills Dr  
Palmer, AK 99645

**Client Name:**

CH2M Hill, Inc.  
322 East Front Street  
Boise, ID 83702



EDR Inquiry # 4211551.3

Contact: Denny Mengel

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by CH2M Hill, Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

### Certified Sanborn Results:

**Site Name:** Landfill Site  
**Address:** N. Golden Hills Dr  
**City, State, Zip:** Palmer, AK 99645  
**Cross Street:**  
**P.O. #** NA  
**Project:** MSB Septage Feasibility Study  
**Certification #** B5E4-4F7C-9C6D



Sanborn® Library search results  
Certification # B5E4-4F7C-9C6D

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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**Landfill Site**

N. Golden Hills Dr  
Palmer, AK 99645

Inquiry Number: 4211551.4

February 19, 2015

# EDR Historical Topographic Map Report



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
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# Historical Topographic Map



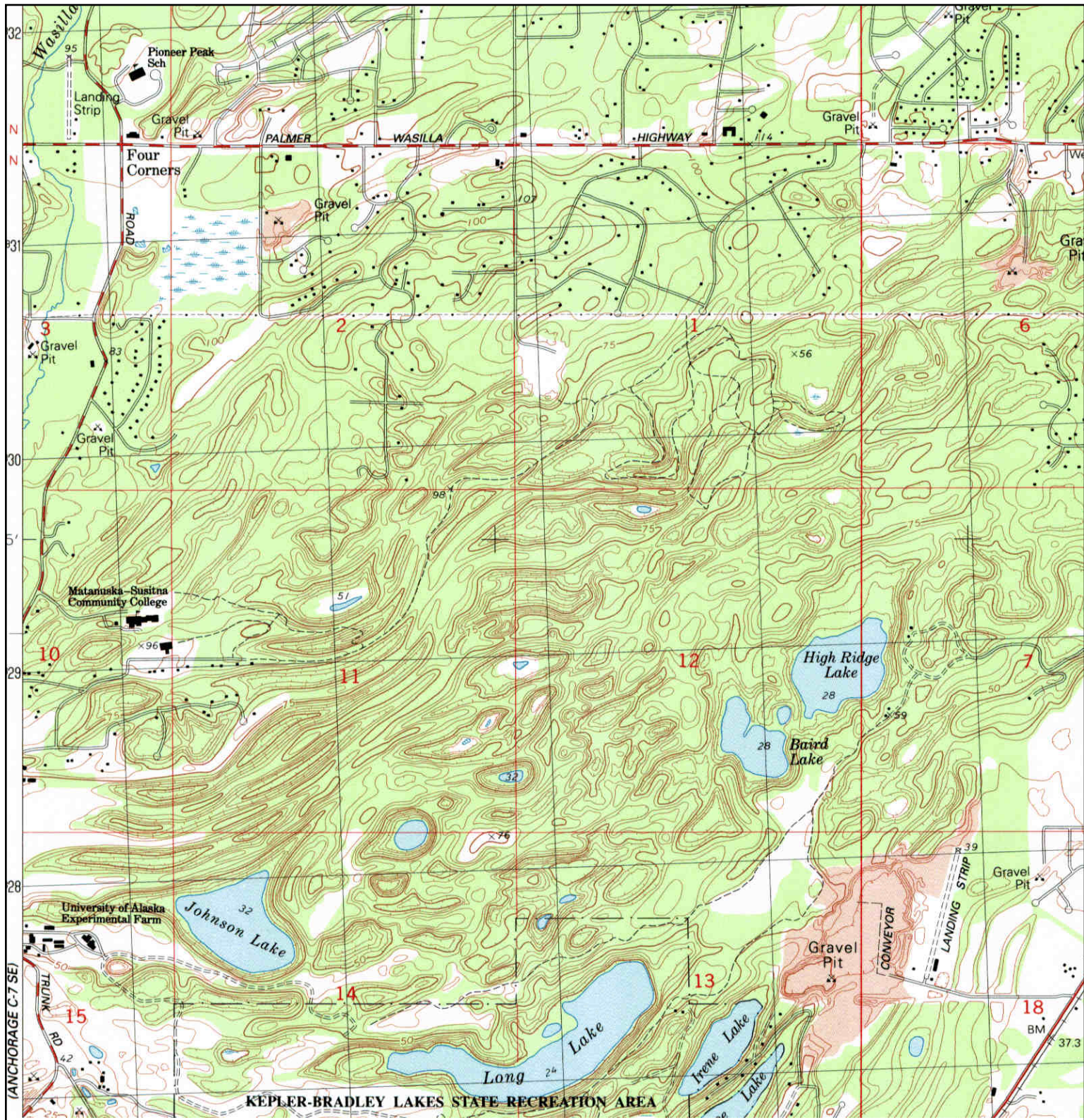
 <b>N</b>	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Landfill Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 6 SW	<b>ADDRESS:</b> N. Golden Hills Dr	<b>CONTACT:</b> Denny Mengel
	MAP YEAR: 1979	Palmer, AK 99645	<b>INQUIRY#:</b> 4211551.4
	SERIES: 7.5	<b>LAT/LONG:</b> 61.5823 / -149.2133	<b>RESEARCH DATE:</b> 02/19/2015
	SCALE: 1:25000		

# Historical Topographic Map



<p>N ↑</p>	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Landfill Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 6	<b>ADDRESS:</b> N. Golden Hills Dr	<b>CONTACT:</b> Denny Mengel
	MAP YEAR: 1987	Palmer, AK 99645	<b>INQUIRY#:</b> 4211551.4
	REVISED FROM :1951	<b>LAT/LONG:</b> 61.5823 / -149.2133	<b>RESEARCH DATE:</b> 02/19/2015
	SERIES: 15		
	SCALE: 1:63360		

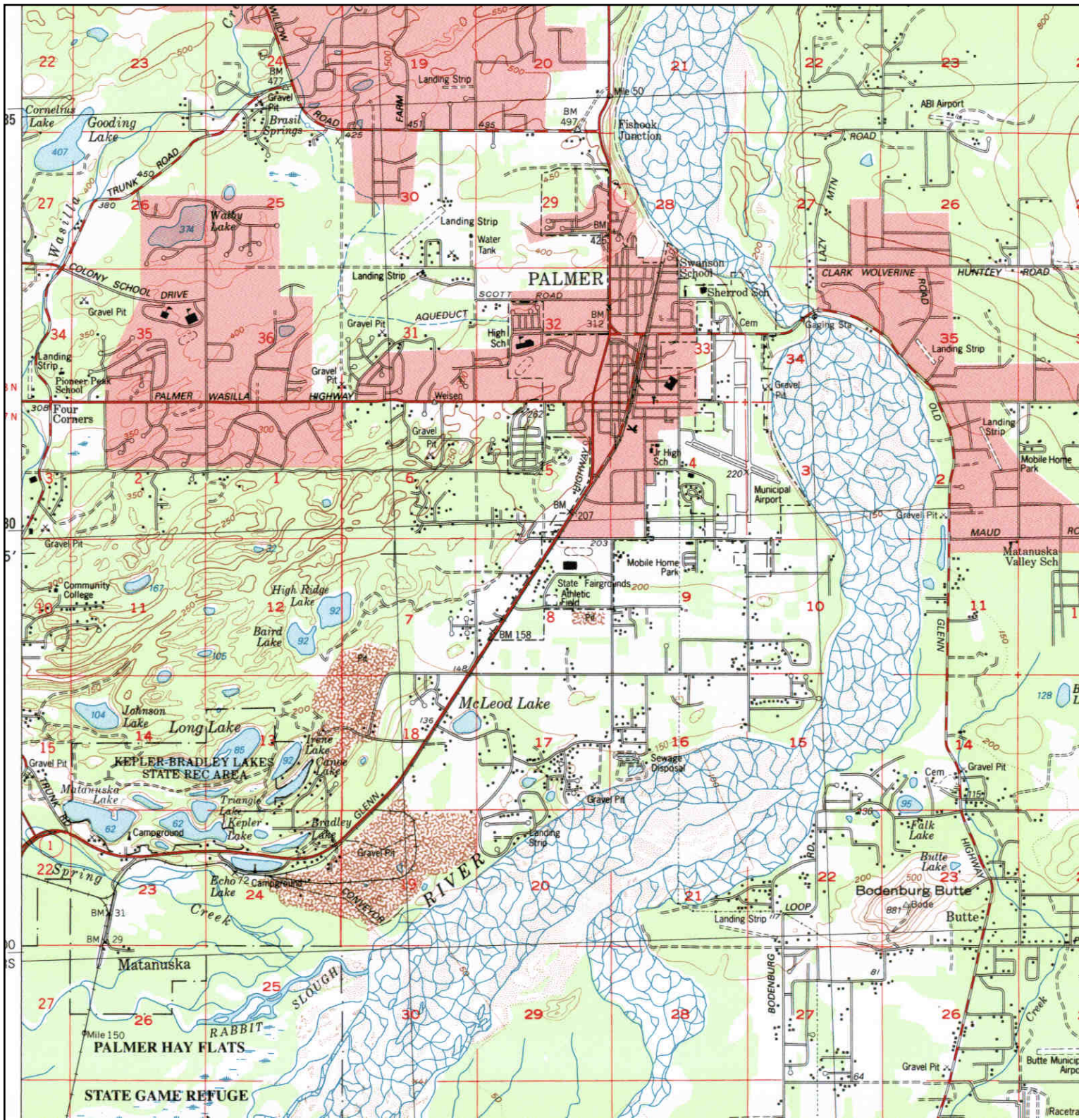
# Historical Topographic Map



	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Landfill Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 6 SW	<b>ADDRESS:</b> N. Golden Hills Dr	<b>CONTACT:</b> Denny Mengel
	MAP YEAR: 1992	Palmer, AK 99645	<b>INQUIRY#:</b> 4211551.4
	SERIES: 7.5	<b>LAT/LONG:</b> 61.5823 / -149.2133	<b>RESEARCH DATE:</b> 02/19/2015
	SCALE: 1:25000		



# Historical Topographic Map



	<b>TARGET QUAD</b>	<b>SITE NAME:</b> Landfill Site	<b>CLIENT:</b> CH2M Hill, Inc.
	NAME: ANCHORAGE C 6	ADDRESS: N. Golden Hills Dr	CONTACT: Denny Mengel
	MAP YEAR: 1994	Palmer, AK 99645	INQUIRY#: 4211551.4
	SERIES: 15	LAT/LONG: 61.5823 / -149.2133	RESEARCH DATE: 02/19/2015
	SCALE: 1:63360		



**Landfill Site**

N. Golden Hills Dr  
Palmer, AK 99645

Inquiry Number: 4211551.9  
February 19, 2015

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th Floor  
Shelton, Connecticut 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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**Date EDR Searched Historical Sources:**

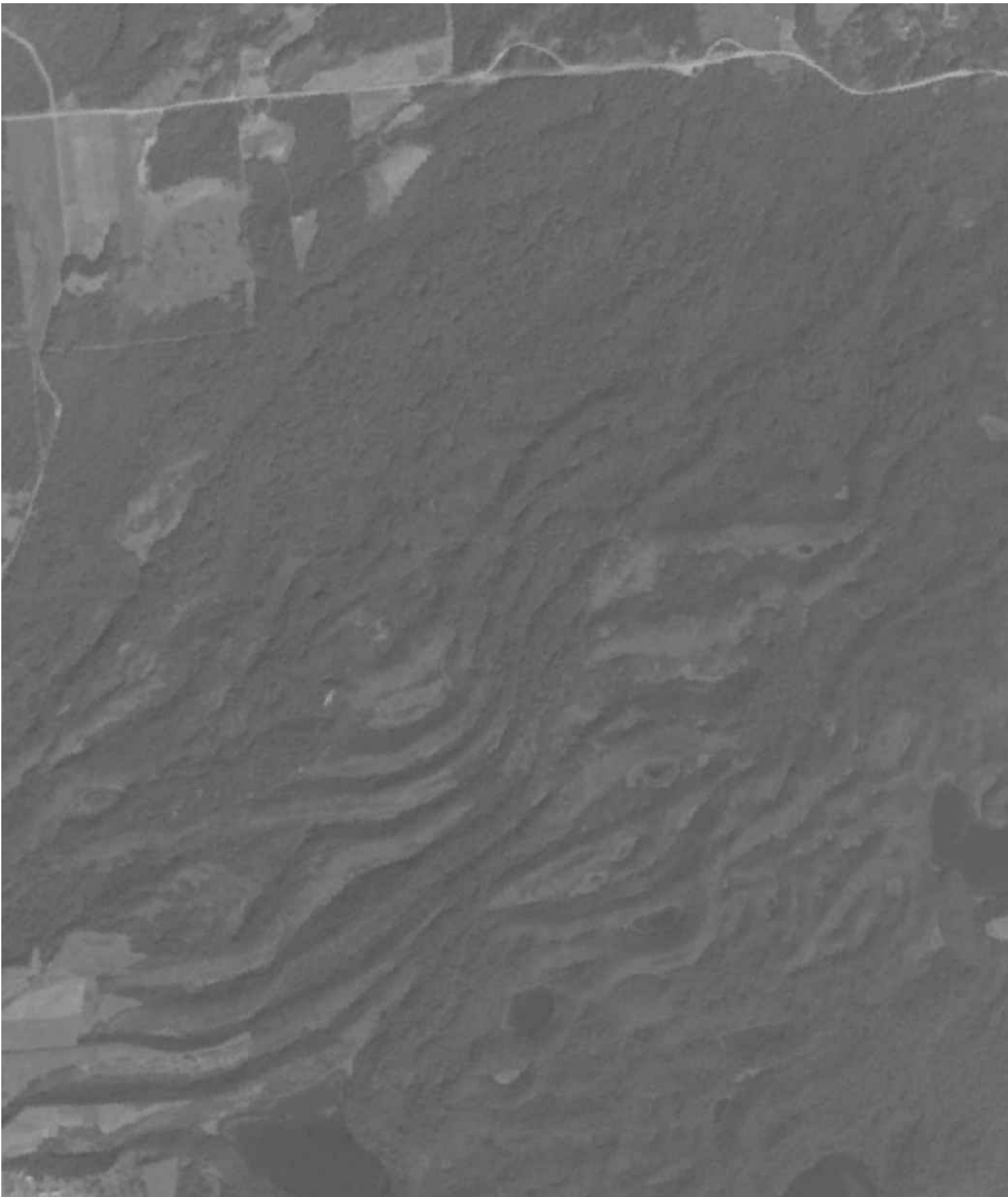
Aerial Photography February 19, 2015

**Target Property:**

N. Golden Hills Dr

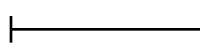
Palmer, AK 99645

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
1950	Aerial Photograph. Scale: 1"=750'	Flight Date: August 07, 1950	EDR
1957	Aerial Photograph. Scale: 1"=1000'	Flight Date: July 29, 1957	EDR
1973	Aerial Photograph. Scale: 1"=1000'	Flight Date: July 10, 1973	EDR
1990	Aerial Photograph. Scale: 1"=750'	Flight Date: July 19, 1990	EDR



**INQUIRY #:** 4211551.9

**YEAR:** 1950

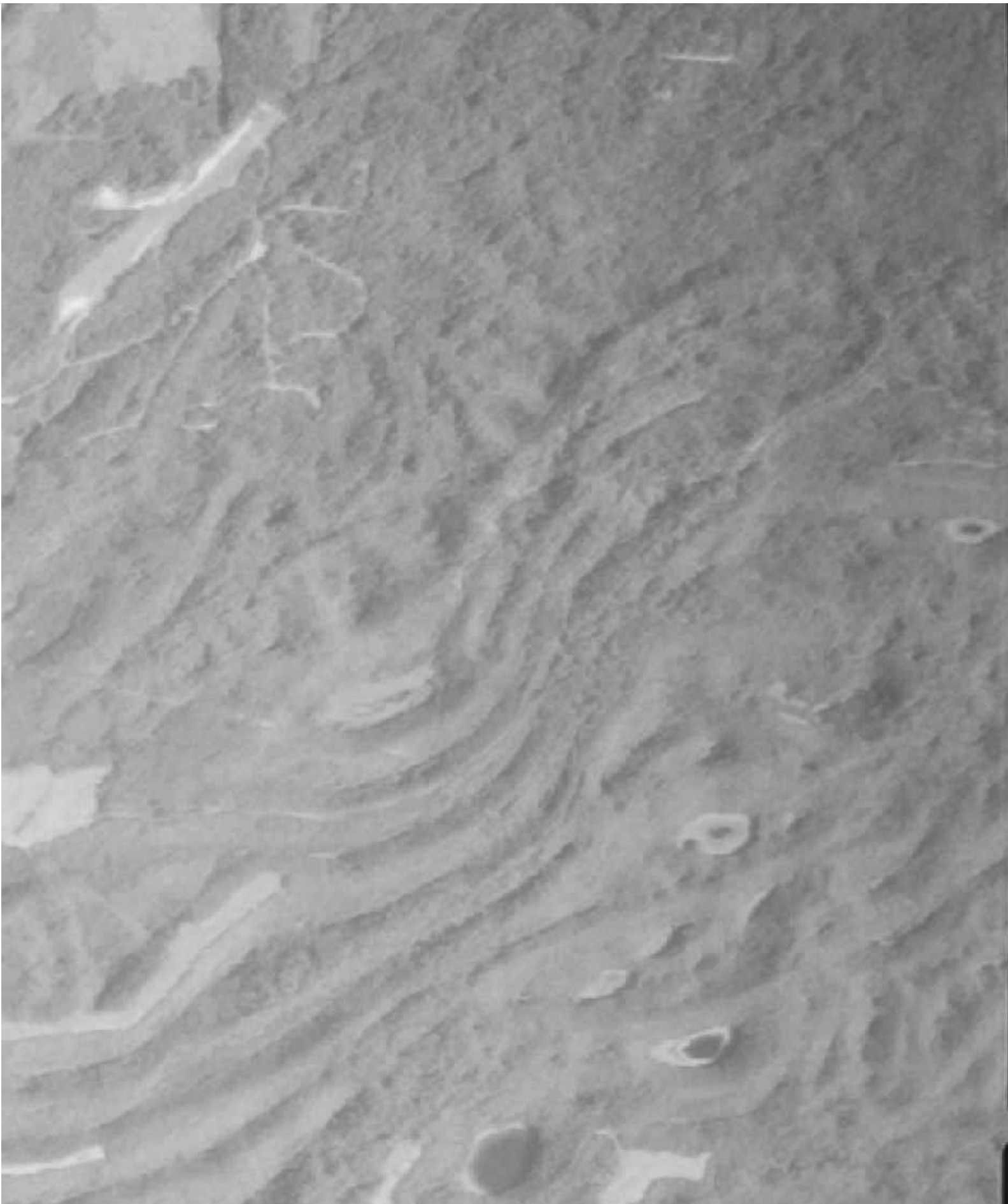
 = 750'





**INQUIRY #:** 4211551.9  
**YEAR:** 1957  
|-----| = 1000'





**INQUIRY #:** 4211551.9  
**YEAR:** 1973  
|-----| = 1000'





**INQUIRY #:** 4211551.9

**YEAR:** 1990

| = 750'



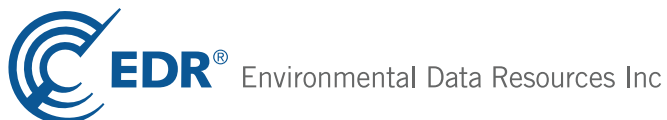


**Landfill Site**

N. Golden Hills Dr  
Palmer, AK 99645

Inquiry Number: 4211551.2s  
February 18, 2015

**The EDR Radius Map™ Report with GeoCheck®**



6 Armstrong Road, 4th floor  
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# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	7
Orphan Summary .....	8
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting SSURGO Soil Map .....	A-5
Physical Setting Source Map .....	A-8
Physical Setting Source Map Findings .....	A-10
Physical Setting Source Records Searched .....	PSGR-1

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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

N. GOLDEN HILLS DR  
MATANUSKA SUSITNA County, AK 99645

### COORDINATES

Latitude (North): 61.5823000 - 61° 34' 56.28"  
Longitude (West): 149.2133000 - 149° 12' 47.88"  
Universal Transverse Mercator: Zone 6  
UTM X (Meters): 382500.7  
UTM Y (Meters): 6829443.0  
Elevation: 283 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: N/A  
Source: USGS 7.5 min quad index

## TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

## EXECUTIVE SUMMARY

### ***Federal CERCLIS list***

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
FEDERAL FACILITY..... Federal Facility Site Information listing

### ***Federal CERCLIS NFRAP site List***

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

### ***Federal institutional controls / engineering controls registries***

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls  
LUCIS..... Land Use Control Information System

### ***Federal ERNS list***

ERNS..... Emergency Response Notification System

### ***State- and tribal - equivalent CERCLIS***

SHWS..... Contaminated Sites Database

### ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF..... Solid Waste Facilities

### ***State and tribal leaking storage tank lists***

LUST..... Leaking Underground Storage Tank Database  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### ***State and tribal registered storage tank lists***

UST..... Underground Storage Tank Database  
AST..... Regulated Aboveground Storage Tanks  
INDIAN UST..... Underground Storage Tanks on Indian Land  
FEMA UST..... Underground Storage Tank Listing

### ***State and tribal institutional control / engineering control registries***

ENG CONTROLS..... Engineering Controls Site Listing

## EXECUTIVE SUMMARY

INST CONTROL..... Contaminated Sites with Institutional Controls

### **State and tribal voluntary cleanup sites**

VCP..... Voluntary Cleanup Program sites  
INDIAN VCP..... Voluntary Cleanup Priority Listing

### **State and tribal Brownfields sites**

BROWNFIELDS..... Identified and/or Proposed Brownfields Sites

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### **Local Brownfield lists**

US BROWNFIELDS..... A Listing of Brownfields Sites

#### **Local Lists of Landfill / Solid Waste Disposal Sites**

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations  
ODI..... Open Dump Inventory  
SWRCY..... Recycling Facilities  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

#### **Local Lists of Hazardous waste / Contaminated Sites**

US CDL..... Clandestine Drug Labs  
CDL..... Illegal Drug Manufacturing Sites  
US HIST CDL..... National Clandestine Laboratory Register

#### **Local Land Records**

LIENS 2..... CERCLA Lien Information

#### **Records of Emergency Release Reports**

HMIRS..... Hazardous Materials Information Reporting System  
SPILLS..... Spills Database  
SPILLS 90..... SPILLS 90 data from FirstSearch

#### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
DOT OPS..... Incident and Accident Data  
DOD..... Department of Defense Sites  
FUDS..... Formerly Used Defense Sites  
CONSENT..... Superfund (CERCLA) Consent Decrees  
ROD..... Records Of Decision  
UMTRA..... Uranium Mill Tailings Sites  
US MINES..... Mines Master Index File  
TRIS..... Toxic Chemical Release Inventory System  
TSCA..... Toxic Substances Control Act  
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

## EXECUTIVE SUMMARY

HIST FTTS.....	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS.....	Section 7 Tracking Systems
ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
UIC.....	UIC Information
DRYCLEANERS.....	Drycleaner Facility Listing
NPDES.....	Wastewater Discharge Permit Listing
AIRS.....	AIRS Facility Listing
INDIAN RESERV.....	Indian Reservations
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
COAL ASH DOE.....	Steam-Electric Plant Operation Data
PRP.....	Potentially Responsible Parties
2020 COR ACTION.....	2020 Corrective Action Program List
PCB TRANSFORMER.....	PCB Transformer Registration Database
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
Financial Assurance.....	Financial Assurance Information Listing
LEAD SMELTERS.....	Lead Smelter Sites
COAL ASH.....	Coal Ash Disposal Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
US FIN ASSUR.....	Financial Assurance Information
EPA WATCH LIST.....	EPA WATCH LIST

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat.....	EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners.....	EDR Exclusive Historic Dry Cleaners

### **EDR RECOVERED GOVERNMENT ARCHIVES**

#### ***Exclusive Recovered Govt. Archives***

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

### **SURROUNDING SITES: SEARCH RESULTS**

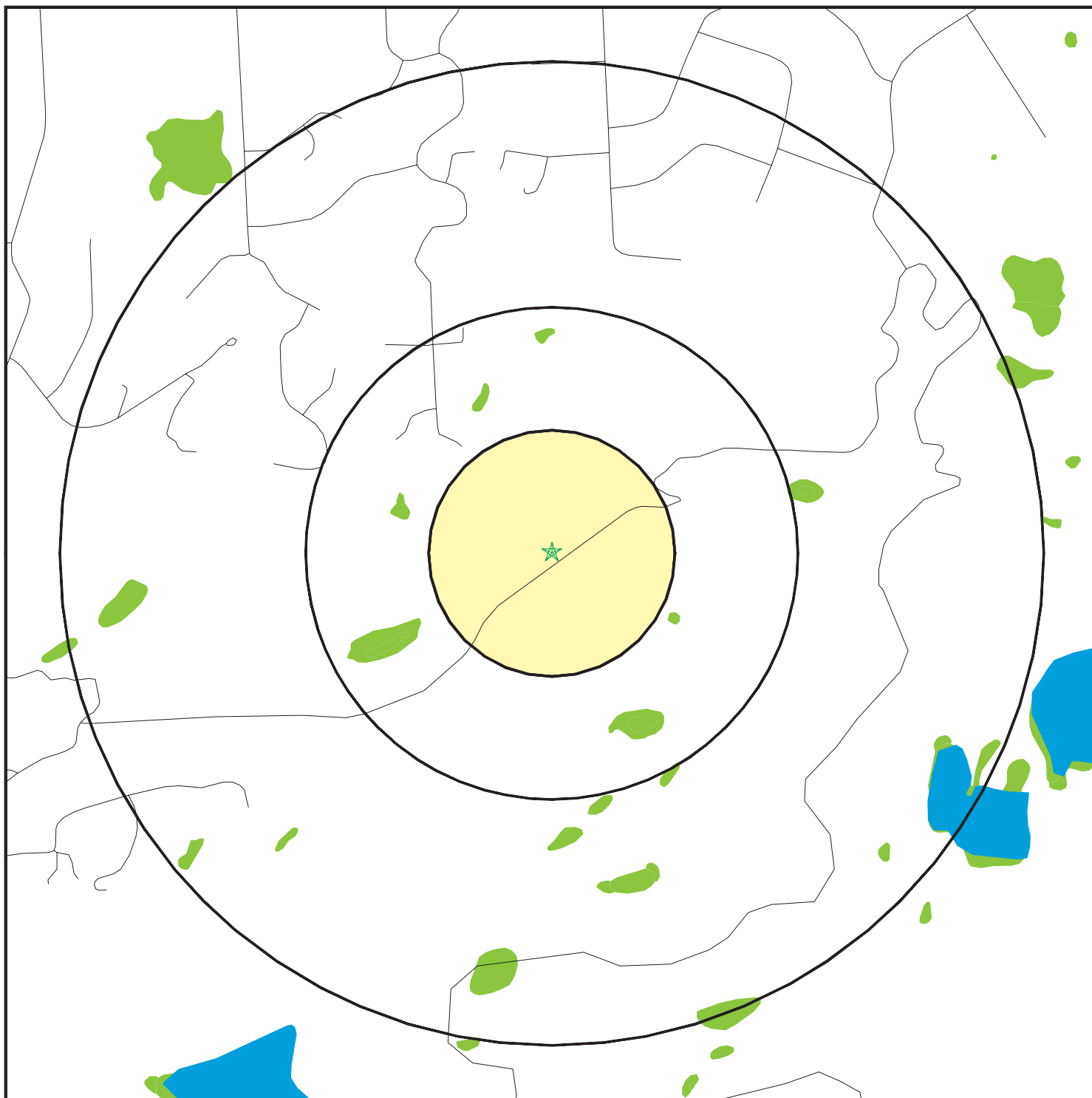
Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

## EXECUTIVE SUMMARY

There were no unmapped sites in this report.

# OVERVIEW MAP - 4211551.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- ☒ Indian Reservations BIA
  - National Wetland Inventory
  - State Wetlands
- N

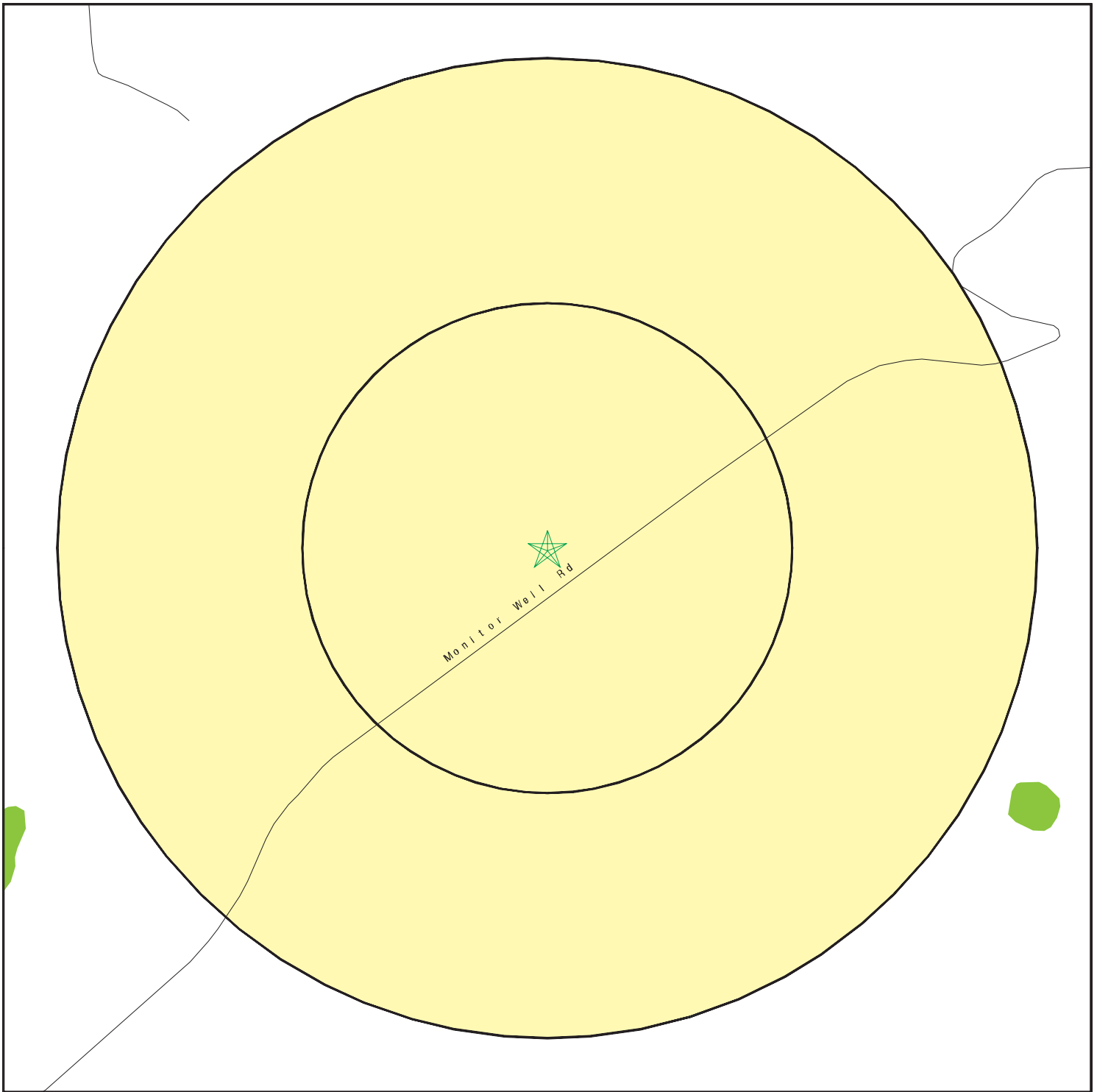
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Landfill Site  
 ADDRESS: N. Golden Hills Dr  
 Palmer AK 99645  
 LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211551.2s  
 DATE: February 18, 2015 5:09 pm



# DETAIL MAP - 4211551.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- ▨ National Priority List Sites
- ▨ Dept. Defense Sites



- ▨ Indian Reservations BIA
- National Wetland Inventory
- State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Landfill Site  
 ADDRESS: N. Golden Hills Dr  
 Palmer AK 99645  
 LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211551.2s  
 DATE: February 18, 2015 5:09 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	1.000		0	0	0	0	NR	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
<b><i>State and tribal institutional control / engineering control registries</i></b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b><i>State and tribal voluntary cleanup sites</i></b>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b><i>State and tribal Brownfields sites</i></b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b><u>ADDITIONAL ENVIRONMENTAL RECORDS</u></b>								
<b><i>Local Brownfield lists</i></b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b><i>Local Lists of Landfill / Solid Waste Disposal Sites</i></b>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<b><i>Local Lists of Hazardous waste / Contaminated Sites</i></b>								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
<b><i>Local Land Records</i></b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b><i>Records of Emergency Release Reports</i></b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b><i>Other Ascertainable Records</i></b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### *EDR Exclusive Records*

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

NO SITES FOUND

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

#### NPL Site Boundaries

##### Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

#### NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

### DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014	Source: EPA
Date Data Arrived at EDR: 01/08/2015	Telephone: N/A
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

### CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 03/09/2015
	Data Release Frequency: Quarterly

### FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/07/2014	Telephone: 703-603-8704
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Varies

## ***Federal CERCLIS NFRAP site List***

### CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 01/09/2015
Number of Days to Update: 94	Next Scheduled EDR Contact: 03/09/2015
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

### CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: EPA  
Telephone: 800-424-9346  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

## ***Federal RCRA non-CORRACTS TSD facilities list***

### **RCRA-TSDF: RCRA - Treatment, Storage and Disposal**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

## ***Federal RCRA generators list***

### **RCRA-LQG: RCRA - Large Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### **RCRA-SQG: RCRA - Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Quarterly

### **RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal institutional controls / engineering controls registries***

### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/03/2014
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/16/2015
	Data Release Frequency: Varies

### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/19/2014	Telephone: 703-603-0695
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/03/2014
Number of Days to Update: 31	Next Scheduled EDR Contact: 03/16/2015
	Data Release Frequency: Varies

### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/03/2014	Source: Department of the Navy
Date Data Arrived at EDR: 12/12/2014	Telephone: 843-820-7326
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 48	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Varies

## ***Federal ERNS list***

### ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/29/2014	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 09/30/2014	Telephone: 202-267-2180
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 12/29/2014
Number of Days to Update: 37	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Annually

## ***State- and tribal - equivalent CERCLIS***

### SHWS: Contaminated Sites Database

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 09/19/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 09/23/2014	Telephone: 907-451-2143
Date Made Active in Reports: 10/06/2014	Last EDR Contact: 02/16/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **State and tribal landfill and/or solid waste disposal site lists**

### SWF/LF: Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/29/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 12/30/2014	Telephone: 907-269-7632
Date Made Active in Reports: 02/02/2015	Last EDR Contact: 12/29/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Semi-Annually

## **State and tribal leaking storage tank lists**

### LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/17/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/19/2014	Telephone: 907-465-5301
Date Made Active in Reports: 12/23/2014	Last EDR Contact: 11/19/2014
Number of Days to Update: 34	Next Scheduled EDR Contact: 03/02/2015
	Data Release Frequency: Semi-Annually

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/10/2014	Source: EPA Region 10
Date Data Arrived at EDR: 11/14/2014	Telephone: 206-553-2857
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 87	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

### INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/08/2015	Telephone: 415-972-3372
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/08/2015
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

### INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013	Source: EPA Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 01/30/2015
Number of Days to Update: 184	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

### INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/06/2014	Source: EPA Region 6
Date Data Arrived at EDR: 10/29/2014	Telephone: 214-665-6597
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 19	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 07/30/2014	Source: EPA Region 4
Date Data Arrived at EDR: 08/12/2014	Telephone: 404-562-8677
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Semi-Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/03/2014	Source: EPA, Region 5
Date Data Arrived at EDR: 11/05/2014	Telephone: 312-886-7439
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/04/2014	Source: EPA Region 8
Date Data Arrived at EDR: 11/07/2014	Telephone: 303-312-6271
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

## **State and tribal registered storage tank lists**

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 11/17/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/19/2014	Telephone: 907-269-7504
Date Made Active in Reports: 12/24/2014	Last EDR Contact: 11/19/2014
Number of Days to Update: 35	Next Scheduled EDR Contact: 03/02/2015
	Data Release Frequency: Semi-Annually

AST: Regulated Aboveground Storage Tanks

The list covers "regulated" facilities with storage capacities above 10,000 barrels (or 5,000 barrels of crude).

Date of Government Version: 01/05/2005	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 01/06/2005	Telephone: 907-465-5231
Date Made Active in Reports: 02/02/2005	Last EDR Contact: 12/11/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 03/16/2015
	Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/03/2014	Source: EPA Region 5
Date Data Arrived at EDR: 11/05/2014	Telephone: 312-886-6136
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/06/2014	Source: EPA Region 6
Date Data Arrived at EDR: 10/29/2014	Telephone: 214-665-7591
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 8	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Semi-Annually

## INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/04/2014	Source: EPA Region 8
Date Data Arrived at EDR: 11/07/2014	Telephone: 303-312-6137
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 10	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013	Source: EPA, Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 01/27/2014	Last EDR Contact: 01/30/2015
Number of Days to Update: 271	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/10/2014	Source: EPA Region 10
Date Data Arrived at EDR: 11/14/2014	Telephone: 206-553-2857
Date Made Active in Reports: 02/09/2015	Last EDR Contact: 01/26/2015
Number of Days to Update: 87	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Quarterly

## INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/30/2014  
Date Data Arrived at EDR: 08/12/2014  
Date Made Active in Reports: 08/22/2014  
Number of Days to Update: 10

Source: EPA Region 4  
Telephone: 404-562-9424  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Semi-Annually

## INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/13/2014  
Date Data Arrived at EDR: 11/18/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 83

Source: EPA Region 9  
Telephone: 415-972-3368  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Quarterly

## FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010  
Date Data Arrived at EDR: 02/16/2010  
Date Made Active in Reports: 04/12/2010  
Number of Days to Update: 55

Source: FEMA  
Telephone: 202-646-5797  
Last EDR Contact: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Varies

## ***State and tribal institutional control / engineering control registries***

### ENG CONTROLS: Engineering Controls Site Listing

A listing of sites with engineering controls in place included in the Contaminated Sites.

Date of Government Version: 09/19/2014  
Date Data Arrived at EDR: 09/23/2014  
Date Made Active in Reports: 10/06/2014  
Number of Days to Update: 13

Source: Department of Environmental Conservation  
Telephone: 907-451-2143  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Quarterly

### Inst Control: Contaminated Sites with Institutional Controls

Contaminated sites that have institutional controls.

Date of Government Version: 09/19/2014  
Date Data Arrived at EDR: 09/23/2014  
Date Made Active in Reports: 10/06/2014  
Number of Days to Update: 13

Source: Department of Environmental Conservation  
Telephone: 907-451-2143  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Semi-Annually

## ***State and tribal voluntary cleanup sites***

### VCP: Voluntary Cleanup Program sites

Sites involved in the Voluntary Cleanup Program.

Date of Government Version: 11/26/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 12/23/2014  
Number of Days to Update: 22

Source: Department of Environmental Conservation  
Telephone: 907-451-2143  
Last EDR Contact: 11/26/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: Varies

### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/29/2014  
Date Data Arrived at EDR: 10/01/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 36

Source: EPA, Region 1  
Telephone: 617-918-1102  
Last EDR Contact: 12/31/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008  
Date Data Arrived at EDR: 04/22/2008  
Date Made Active in Reports: 05/19/2008  
Number of Days to Update: 27

Source: EPA, Region 7  
Telephone: 913-551-7365  
Last EDR Contact: 04/20/2009  
Next Scheduled EDR Contact: 07/20/2009  
Data Release Frequency: Varies

## **State and tribal Brownfields sites**

### BROWNFIELDS: Identified and/or Proposed Brownfields Sites

Brownfield properties are defined by U.S Environmental Protection Agency (EPA) as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contamination." DEC is developing resources to assist eligible entities in Alaska in applying for EPA brownfields grants. The program also will provide technical assistance and perform some site assessments. The purpose of these assessments is to assist local redevelopment efforts on previously contaminated properties that are vacant or underused.

Date of Government Version: 09/19/2014  
Date Data Arrived at EDR: 09/23/2014  
Date Made Active in Reports: 10/06/2014  
Number of Days to Update: 13

Source: Department of Environmental Conservation  
Telephone: 907-451-2166  
Last EDR Contact: 02/16/2015  
Next Scheduled EDR Contact: 06/01/2015  
Data Release Frequency: Varies

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2014  
Date Data Arrived at EDR: 12/22/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 38

Source: Environmental Protection Agency  
Telephone: 202-566-2777  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## SWRCY: Recycling Facilities

A listing of Recycling centers in the state of Alaska.

Date of Government Version: 12/29/2014  
Date Data Arrived at EDR: 12/30/2014  
Date Made Active in Reports: 02/02/2015  
Number of Days to Update: 34

Source: Department of Environmental Conservation  
Telephone: 907-269-7802  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 02/02/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Varies

## **Local Lists of Hazardous waste / Contaminated Sites**

### US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 11/10/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 70

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 11/25/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: Quarterly

### CDL: Illegal Drug Manufacturing Sites

A list of properties that have been determined to be illegal drug manufacturing sites.

Date of Government Version: 04/24/2014  
Date Data Arrived at EDR: 05/20/2014  
Date Made Active in Reports: 05/29/2014  
Number of Days to Update: 9

Source: Department of Environmental Conservation  
Telephone: 907-269-7543  
Last EDR Contact: 11/21/2014  
Next Scheduled EDR Contact: 03/02/2015  
Data Release Frequency: Varies

### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/10/2014  
Date Data Arrived at EDR: 12/01/2014  
Date Made Active in Reports: 02/09/2015  
Number of Days to Update: 70

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 11/25/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: No Update Planned

## **Local Land Records**

### **LIENS 2: CERCLA Lien Information**

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014  
Date Data Arrived at EDR: 03/18/2014  
Date Made Active in Reports: 04/24/2014  
Number of Days to Update: 37

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 01/30/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Varies

## **Records of Emergency Release Reports**

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/30/2014  
Date Data Arrived at EDR: 10/01/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 36

Source: U.S. Department of Transportation  
Telephone: 202-366-4555  
Last EDR Contact: 12/30/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Annually

### **SPILLS: Spills Database**

Oil and hazardous substance releases to be reported to the Department of Environmental Conservation.

Date of Government Version: 01/20/2015  
Date Data Arrived at EDR: 01/21/2015  
Date Made Active in Reports: 02/02/2015  
Number of Days to Update: 12

Source: Department of Environmental Conservation  
Telephone: 907-465-5242  
Last EDR Contact: 01/19/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Semi-Annually

### **SPILLS 90: SPILLS90 data from FirstSearch**

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 07/21/2010  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/08/2013  
Number of Days to Update: 36

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## **Other Ascertainable Records**

### **RCRA NonGen / NLR: RCRA - Non Generators**

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/09/2014  
Date Data Arrived at EDR: 12/29/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 31

Source: Environmental Protection Agency  
Telephone: (206) 553-1200  
Last EDR Contact: 12/29/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012  
Date Data Arrived at EDR: 08/07/2012  
Date Made Active in Reports: 09/18/2012  
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 02/03/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Varies

## DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 11/10/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 62

Source: USGS  
Telephone: 888-275-8747  
Last EDR Contact: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Semi-Annually

## FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 09/18/2014  
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 12/12/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Varies

## CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2013  
Date Data Arrived at EDR: 01/24/2014  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 12/24/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: Varies

## ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013  
Date Data Arrived at EDR: 12/12/2013  
Date Made Active in Reports: 02/24/2014  
Number of Days to Update: 74

Source: EPA  
Telephone: 703-416-0223  
Last EDR Contact: 12/12/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Annually

## UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/14/2010  
Date Data Arrived at EDR: 10/07/2011  
Date Made Active in Reports: 03/01/2012  
Number of Days to Update: 146

Source: Department of Energy  
Telephone: 505-845-0011  
Last EDR Contact: 11/26/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Varies

## US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014  
Date Data Arrived at EDR: 12/31/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 12/30/2014  
Next Scheduled EDR Contact: 03/16/2015  
Data Release Frequency: Semi-Annually

## TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 07/31/2013  
Date Made Active in Reports: 09/13/2013  
Number of Days to Update: 44

Source: EPA  
Telephone: 202-566-0250  
Last EDR Contact: 01/29/2015  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Annually

## TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012  
Date Data Arrived at EDR: 01/15/2015  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 14

Source: EPA  
Telephone: 202-260-5521  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Every 4 Years

## FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 11/19/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Quarterly

## FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 11/19/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Quarterly

## HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009  
Date Data Arrived at EDR: 12/10/2010  
Date Made Active in Reports: 02/25/2011  
Number of Days to Update: 77

Source: EPA  
Telephone: 202-564-4203  
Last EDR Contact: 01/26/2015  
Next Scheduled EDR Contact: 05/11/2015  
Data Release Frequency: Annually

## ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/31/2014  
Date Data Arrived at EDR: 10/29/2014  
Date Made Active in Reports: 11/06/2014  
Number of Days to Update: 8

Source: Environmental Protection Agency  
Telephone: 202-564-5088  
Last EDR Contact: 01/09/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Quarterly

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 10/15/2014  
Date Made Active in Reports: 11/17/2014  
Number of Days to Update: 33

Source: EPA  
Telephone: 202-566-0500  
Last EDR Contact: 01/16/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Annually

## MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/29/2014  
Date Data Arrived at EDR: 01/08/2015  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 21

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 12/04/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/07/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/08/2014	Telephone: 202-343-9775
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 01/08/2015
Number of Days to Update: 12	Next Scheduled EDR Contact: 04/20/2015
	Data Release Frequency: Quarterly

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/16/2014	Source: EPA
Date Data Arrived at EDR: 09/10/2014	Telephone: (206) 553-1200
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/09/2014
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/23/2015
	Data Release Frequency: Quarterly

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/12/2014	Telephone: 202-564-8600
Date Made Active in Reports: 11/06/2014	Last EDR Contact: 01/26/2015
Number of Days to Update: 86	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2011  
Date Data Arrived at EDR: 02/26/2013  
Date Made Active in Reports: 04/19/2013  
Number of Days to Update: 52

Source: EPA/NTIS  
Telephone: 800-424-9346  
Last EDR Contact: 11/26/2014  
Next Scheduled EDR Contact: 03/09/2015  
Data Release Frequency: Biennially

## UIC: UIC Information

A listing of underground injection control wells.

Date of Government Version: 12/08/2014  
Date Data Arrived at EDR: 12/09/2014  
Date Made Active in Reports: 12/23/2014  
Number of Days to Update: 14

Source: Oil & Gas Conservation Commission  
Telephone: 907-793-1224  
Last EDR Contact: 12/09/2014  
Next Scheduled EDR Contact: 03/23/2015  
Data Release Frequency: Quarterly

## DRYCLEANERS: Drycleaner Facility Listing

A listing of drycleaning facilities in Alaska.

Date of Government Version: 02/15/2006  
Date Data Arrived at EDR: 02/16/2006  
Date Made Active in Reports: 03/15/2006  
Number of Days to Update: 27

Source: Department of Environmental Conservation  
Telephone: 907-269-7577  
Last EDR Contact: 12/24/2014  
Next Scheduled EDR Contact: 04/13/2015  
Data Release Frequency: No Update Planned

## NPDES: Wastewater Discharge Permit Listing

A listing of permitted wastewater facilities.

Date of Government Version: 12/22/2014  
Date Data Arrived at EDR: 12/22/2014  
Date Made Active in Reports: 12/24/2014  
Number of Days to Update: 2

Source: Department of Environmental Conservation  
Telephone: 907-465-5480  
Last EDR Contact: 12/22/2014  
Next Scheduled EDR Contact: 04/06/2015  
Data Release Frequency: Varies

## AIRS: AIRS Facility Listing

A listing of permitted airs facilities.

Date of Government Version: 01/13/2015  
Date Data Arrived at EDR: 01/16/2015  
Date Made Active in Reports: 02/02/2015  
Number of Days to Update: 17

Source: Department of Environmental Conservation  
Telephone: 907-451-2103  
Last EDR Contact: 01/12/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Varies

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 12/08/2006  
Date Made Active in Reports: 01/11/2007  
Number of Days to Update: 34

Source: USGS  
Telephone: 202-208-3710  
Last EDR Contact: 01/15/2015  
Next Scheduled EDR Contact: 04/27/2015  
Data Release Frequency: Semi-Annually

## SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011  
Date Data Arrived at EDR: 03/09/2011  
Date Made Active in Reports: 05/02/2011  
Number of Days to Update: 54

Source: Environmental Protection Agency  
Telephone: 615-532-8599  
Last EDR Contact: 11/18/2014  
Next Scheduled EDR Contact: 02/02/2015  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 11/19/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/21/2014	Telephone: 202-566-1917
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 02/16/2015
Number of Days to Update: 69	Next Scheduled EDR Contact: 06/01/2015
	Data Release Frequency: Quarterly

## Financial Assurance 2: Financial Assurance Information Listing

Financial Assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 04/24/2007	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 04/26/2007	Telephone: 907-269-7802
Date Made Active in Reports: 05/14/2007	Last EDR Contact: 12/24/2014
Number of Days to Update: 18	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Varies

## US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 02/06/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Annually

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014	Source: EPA
Date Data Arrived at EDR: 10/31/2014	Telephone: 202-564-2496
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 02/06/2015
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Annually

## COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 01/15/2015
Number of Days to Update: 76	Next Scheduled EDR Contact: 04/27/2015
	Data Release Frequency: Varies

## COAL ASH: Coal Ash Disposal Sites

A listing of coal ash disposal site locations.

Date of Government Version: 09/29/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 10/02/2014	Telephone: 907-451-2135
Date Made Active in Reports: 11/14/2014	Last EDR Contact: 12/24/2014
Number of Days to Update: 43	Next Scheduled EDR Contact: 04/13/2015
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 01/15/2015
Number of Days to Update: 339	Next Scheduled EDR Contact: 04/27/2015
	Data Release Frequency: N/A

## COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 12/12/2014
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/23/2015
	Data Release Frequency: Varies

## PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 01/30/2015
Number of Days to Update: 83	Next Scheduled EDR Contact: 05/11/2015
	Data Release Frequency: Varies

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 02/09/2015
Number of Days to Update: 88	Next Scheduled EDR Contact: 05/25/2015
	Data Release Frequency: Quarterly

## Financial Assurance 1: Financial Assurance Information Listing

Financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/17/2014	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 11/18/2014	Telephone: 907-269-8149
Date Made Active in Reports: 12/24/2014	Last EDR Contact: 11/18/2014
Number of Days to Update: 36	Next Scheduled EDR Contact: 03/02/2015
	Data Release Frequency: Quarterly

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/25/2013  
Date Data Arrived at EDR: 10/17/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 3

Source: EPA  
Telephone: 202-564-6023  
Last EDR Contact: 02/13/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Quarterly

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001  
Date Data Arrived at EDR: 10/27/2010  
Date Made Active in Reports: 12/02/2010  
Number of Days to Update: 36

Source: American Journal of Public Health  
Telephone: 703-305-6451  
Last EDR Contact: 12/02/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014  
Date Data Arrived at EDR: 11/26/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 64

Source: Environmental Protection Agency  
Telephone: 703-603-8787  
Last EDR Contact: 01/05/2015  
Next Scheduled EDR Contact: 04/20/2015  
Data Release Frequency: Varies

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011  
Date Data Arrived at EDR: 05/18/2012  
Date Made Active in Reports: 05/25/2012  
Number of Days to Update: 7

Source: Environmental Protection Agency  
Telephone: 703-308-4044  
Last EDR Contact: 02/13/2015  
Next Scheduled EDR Contact: 05/25/2015  
Data Release Frequency: Varies

## EDR HIGH RISK HISTORICAL RECORDS

### *EDR Exclusive Records*

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Conservation in Alaska.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/17/2014  
Number of Days to Update: 200

Source: Department of Environmental Conservation  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Conservation in Alaska.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/04/2014  
Number of Days to Update: 187

Source: Department of Environmental Conservation  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

#### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/01/2014  
Date Data Arrived at EDR: 11/05/2014  
Date Made Active in Reports: 11/24/2014  
Number of Days to Update: 19

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 02/04/2015  
Next Scheduled EDR Contact: 05/18/2015  
Data Release Frequency: Annually

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

#### AHA Hospitals:

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

#### Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services  
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

#### Nursing Homes

Source: National Institutes of Health  
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

#### Public Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

#### Private Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

#### Daycare Centers: Child Care Facilities Database

Source: Department of Education & Early Development  
Telephone: 907-465-2800

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

#### State Wetlands Data: Wetlands Inventory Data

Source: Department of Fish & Game  
Telephone: 907-465-4100

#### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## STREET AND ADDRESS INFORMATION

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## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

LANDFILL SITE  
N. GOLDEN HILLS DR  
PALMER, AK 99645

### TARGET PROPERTY COORDINATES

Latitude (North):	61.5823 - 61° 34' 56.28"
Longitude (West):	149.2133 - 149° 12' 47.88"
Universal Tranverse Mercator:	Zone 6
UTM X (Meters):	382500.7
UTM Y (Meters):	6829443.0
Elevation:	283 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property:	N/A
Source:	USGS 7.5 min quad index

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

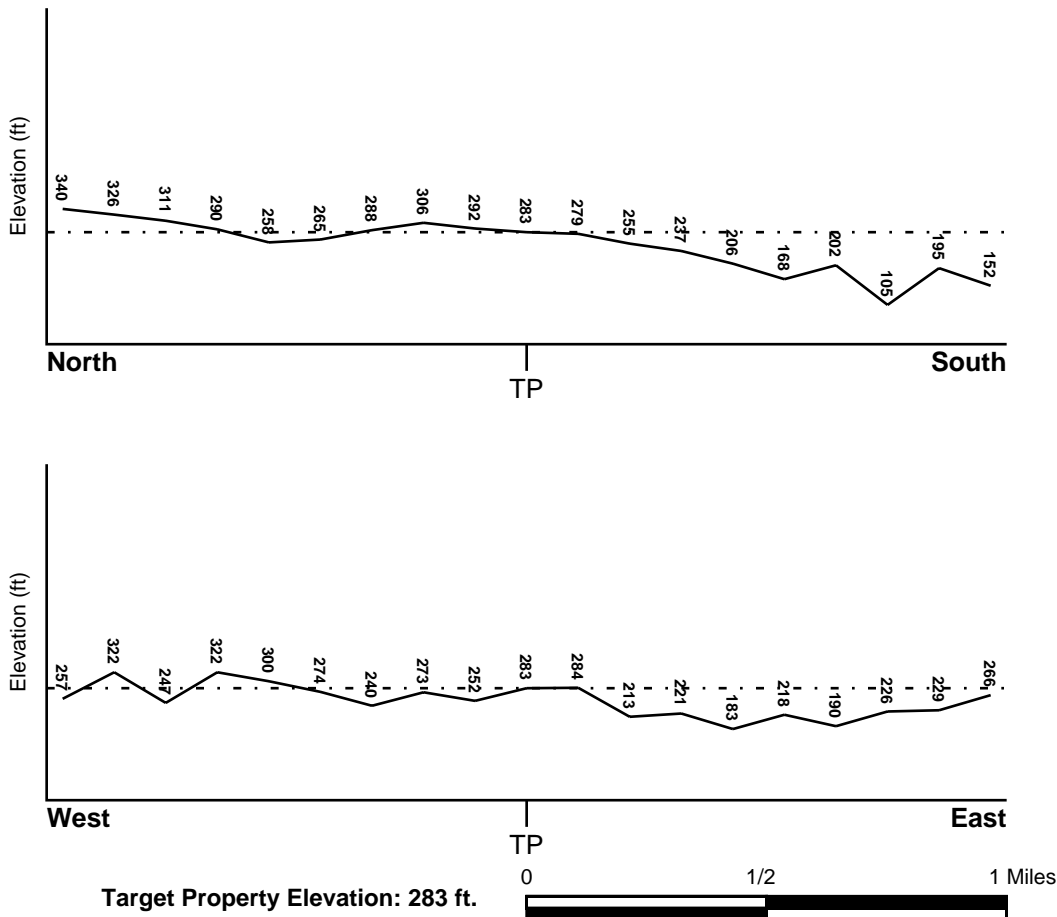
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ESE

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood Electronic Data</u>
MATANUSKA_SUSITNA, AK	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

## NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
Not Reported	N

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### ROCK STRATIGRAPHIC UNIT

Era: -  
System: -  
Series: -  
Code: N/A (*decoded above as Era, System & Series*)

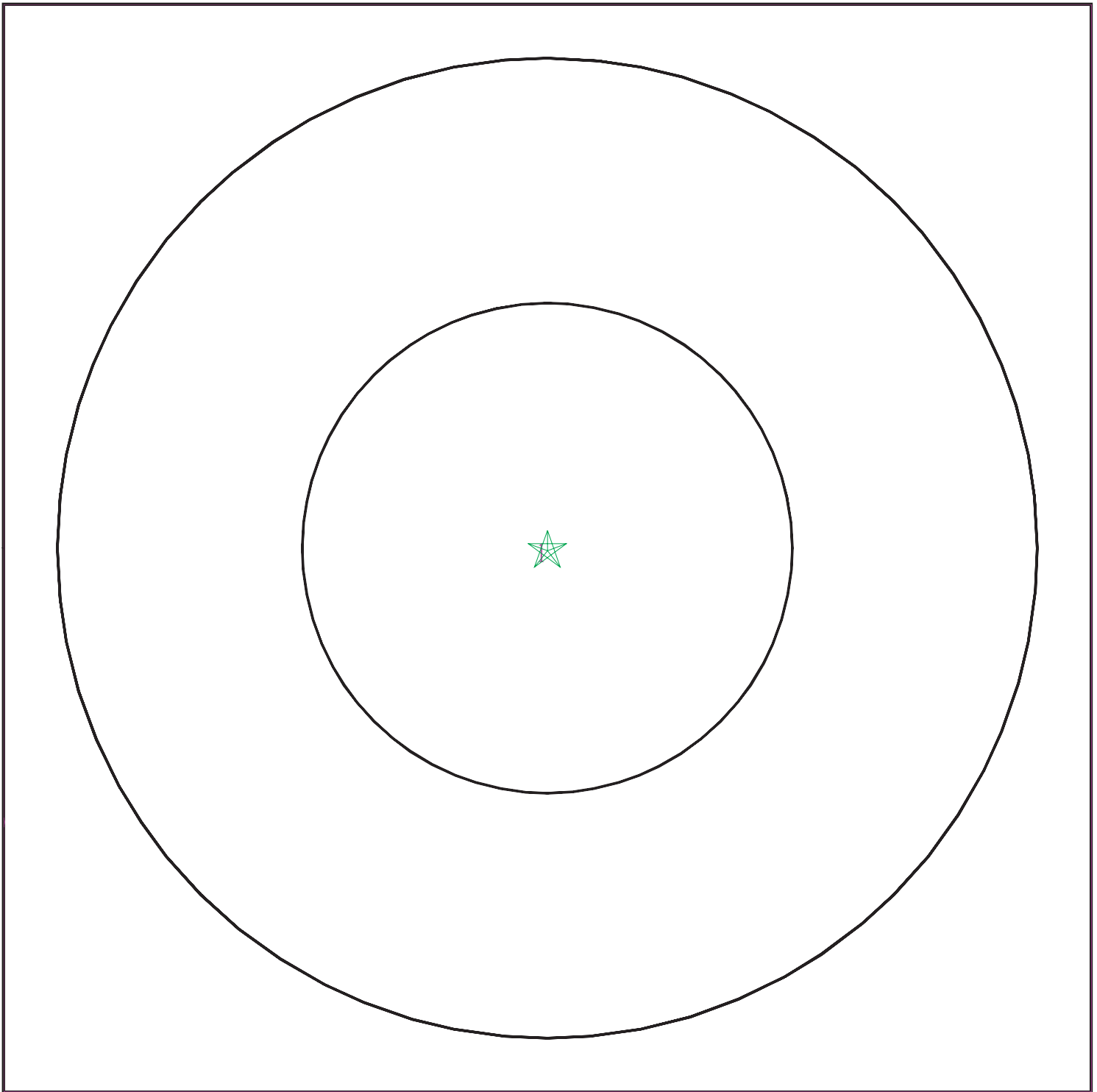
#### GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).



# SSURGO SOIL MAP - 4211551.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Landfill Site  
ADDRESS: N. Golden Hills Dr  
Palmer AK 99645  
LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
CONTACT: Denny Mengel  
INQUIRY #: 4211551.2s  
DATE: February 18, 2015 5:10 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

### Soil Map ID: 1

Soil Component Name: Knik

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
2	11 inches	18 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	18 inches	59 inches	very gravelly sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

## FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000024600	1/4 - 1/2 Mile NW
2	USGS40000024663	1/4 - 1/2 Mile NNW
3	USGS40000024785	1/2 - 1 Mile NNE
4	USGS40000024731	1/2 - 1 Mile NW
A5	USGS40000024730	1/2 - 1 Mile NE
A6	USGS40000024762	1/2 - 1 Mile NNE
A7	USGS40000024761	1/2 - 1 Mile NNE
8	USGS40000024786	1/2 - 1 Mile NNW
9	USGS40000024784	1/2 - 1 Mile NNE
10	USGS40000024836	1/2 - 1 Mile NNE
11	USGS40000024837	1/2 - 1 Mile North
B12	USGS40000024280	1/2 - 1 Mile WSW
C13	USGS40000024869	1/2 - 1 Mile North
14	USGS40000024827	1/2 - 1 Mile NNE
B15	USGS40000024271	1/2 - 1 Mile WSW
C16	USGS40000024896	1/2 - 1 Mile North
D17	USGS40000024237	1/2 - 1 Mile SW
18	USGS40000024195	1/2 - 1 Mile SW
E19	USGS40000024878	1/2 - 1 Mile NNE
20	USGS40000024924	1/2 - 1 Mile North
21	USGS40000024923	1/2 - 1 Mile North
F22	USGS40000024925	1/2 - 1 Mile NNW
D23	USGS40000024238	1/2 - 1 Mile WSW
G24	USGS40000024912	1/2 - 1 Mile NNW
E25	USGS40000024911	1/2 - 1 Mile NNE
H26	USGS40000024281	1/2 - 1 Mile WSW
I27	USGS40000024868	1/2 - 1 Mile NNE
D28	USGS40000024230	1/2 - 1 Mile WSW
F29	USGS40000024949	1/2 - 1 Mile NNW
J30	USGS40000024938	1/2 - 1 Mile NNE
K31	USGS40000024879	1/2 - 1 Mile NNW
L32	USGS40000024926	1/2 - 1 Mile NNW
G33	USGS40000024950	1/2 - 1 Mile NNW
I34	USGS40000024895	1/2 - 1 Mile NNE
I35	USGS40000024910	1/2 - 1 Mile NNE
J36	USGS40000024961	1/2 - 1 Mile NNE
H37	USGS40000024282	1/2 - 1 Mile WSW
K38	USGS40000024880	1/2 - 1 Mile NW
K39	USGS40000024897	1/2 - 1 Mile NW
G40	USGS40000024951	1/2 - 1 Mile NNW
K41	USGS40000024927	1/2 - 1 Mile NNW
H42	USGS40000024307	1/2 - 1 Mile WSW

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL USGS WELL INFORMATION

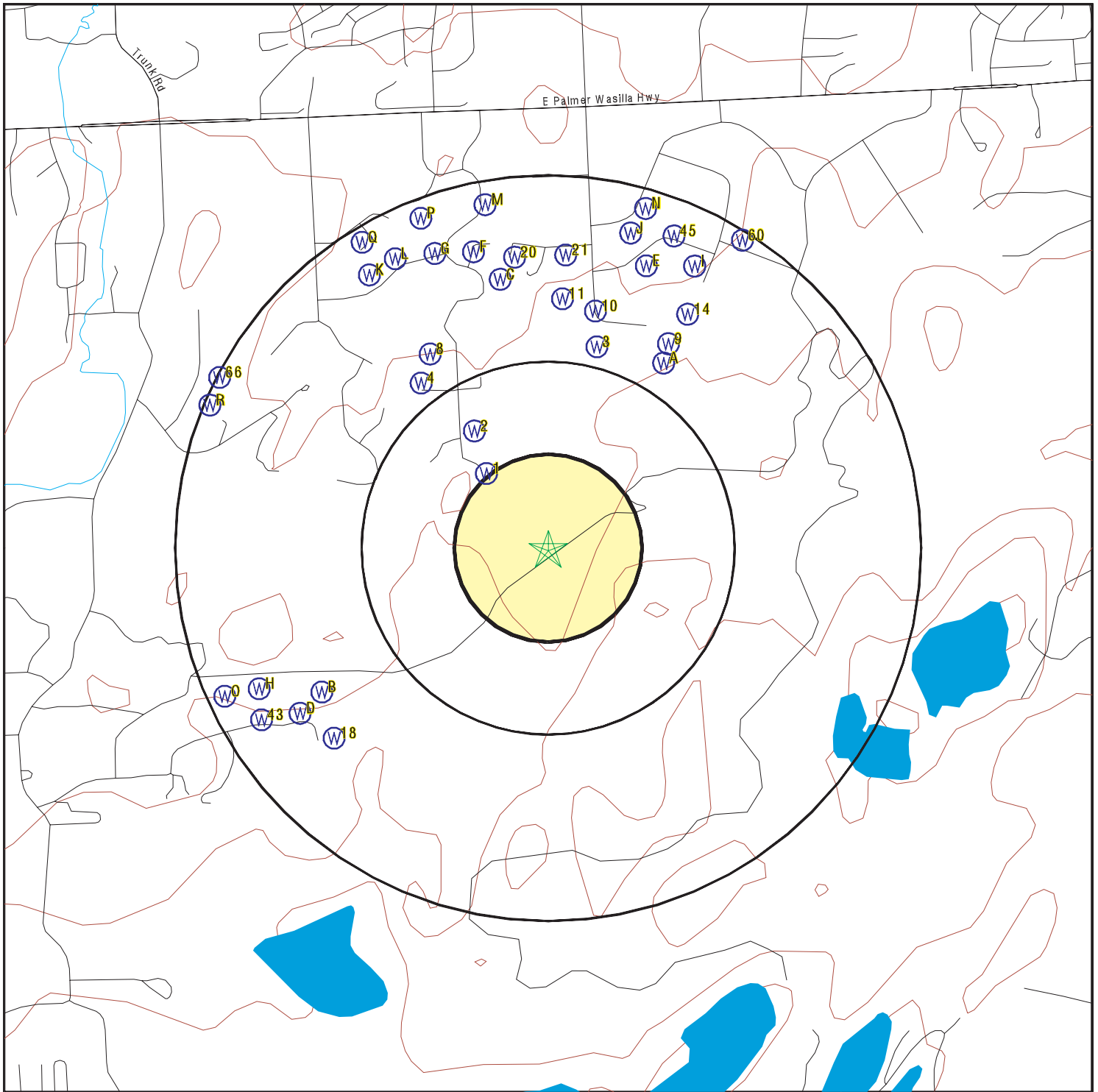
MAP ID	WELL ID	LOCATION FROM TP
43	USGS40000024231	1/2 - 1 Mile WSW
L44	USGS40000024939	1/2 - 1 Mile NNW
45	USGS40000024948	1/2 - 1 Mile NNE
J46	USGS40000024979	1/2 - 1 Mile NNE
K47	USGS40000024928	1/2 - 1 Mile NNW
M48	USGS40000025030	1/2 - 1 Mile North
N49	USGS40000024991	1/2 - 1 Mile NNE
O50	USGS40000024283	1/2 - 1 Mile WSW
P51	USGS40000025011	1/2 - 1 Mile NNW
P52	USGS40000024992	1/2 - 1 Mile NNW
M53	USGS40000025047	1/2 - 1 Mile NNW
Q54	USGS40000024962	1/2 - 1 Mile NNW
N55	USGS40000025029	1/2 - 1 Mile NNE
P56	USGS40000025031	1/2 - 1 Mile NNW
N57	USGS40000025010	1/2 - 1 Mile NNE
Q58	USGS40000024963	1/2 - 1 Mile NNW
O59	USGS40000024272	1/2 - 1 Mile WSW
60	USGS40000024937	1/2 - 1 Mile NNE
R61	USGS40000024716	1/2 - 1 Mile WNW
R62	USGS40000024705	1/2 - 1 Mile WNW
R63	USGS40000024744	1/2 - 1 Mile WNW
R64	USGS40000024725	1/2 - 1 Mile WNW
R65	USGS40000024695	1/2 - 1 Mile WNW
66	USGS40000024763	1/2 - 1 Mile WNW

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

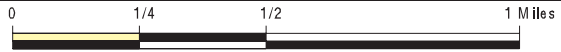
Note: PWS System location is not always the same as well location.

# PHYSICAL SETTING SOURCE MAP - 4211551.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location



SITE NAME: Landfill Site  
 ADDRESS: N. Golden Hills Dr  
 Palmer AK 99645  
 LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211551.2s  
 DATE: February 18, 2015 5:10 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**1**  
**NW**  
**1/4 - 1/2 Mile**  
**Lower**

**FED USGS      USGS40000024600**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613509149125701		
Monloc name:	SA01700102DCDC1 030		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5852942
Longitude:	-149.2180537	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	287.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Quaternary System		
Aquifer type:	Not Reported		
Construction date:	19850612	Welldepth:	202
Welldepth units:	ft	Wellholedepth:	202
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

	Feet below	Feet to
Date	Surface	Sealevel
-----		
1985-06-12	165	

**2**  
**NNW**  
**1/4 - 1/2 Mile**  
**Higher**

**FED USGS      USGS40000024663**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613515149130001		
Monloc name:	SA01700102DCAC1 027		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5869609
Longitude:	-149.2188873	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	295.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Quaternary System		

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type: Not Reported  
 Construction date: 19840920      Welldepth: 225  
 Welldepth units: ft      Wellholedepth: 225  
 Wellholedepth units: ft

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
----- 1984-09-20	131	

**3**  
**NNE**  
**1/2 - 1 Mile**  
**Lower**

FED USGS      USGS40000024785

Org. Identifier: USGS-AK  
 Formal name: USGS Alaska Water Science Center  
 Monloc Identifier: USGS-613526149122301  
 Monloc name: SA01700101CBCB1 011 CENTRAL LANDFILL 2  
 Monloc type: Well  
 Monloc desc: Not Reported  
 Huc code: 19020402      Drainagearea value: Not Reported  
 Drainagearea Units: Not Reported      Contrib drainagearea: Not Reported  
 Contrib drainagearea units: Not Reported      Latitude: 61.5900163  
 Longitude: -149.2086086      Sourcemap scale: 25000  
 Horiz Acc measure: 5      Horiz Acc measure units: seconds  
 Horiz Collection method: Interpolated from map  
 Horiz coord refsys: NAD83      Vert measure val: 180.  
 Vert measure units: feet      Vertacc measure val: 10  
 Vert accmeasure units: feet  
 Vertcollection method: Interpolated from topographic map  
 Vert coord refsys: NGVD29      Countrycode: US  
 Aquifername: Not Reported  
 Formation type: Not Reported  
 Aquifer type: Not Reported  
 Construction date: 19860302      Welldepth: 97  
 Welldepth units: ft      Wellholedepth: 97  
 Wellholedepth units: ft

Ground-water levels, Number of Measurements: 7

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
-----			-----		
1989-08-01	56.39		1988-06-24	57.80	
1987-10-13	57.52		1987-07-02	58.03	
1987-03-11	58.70		1986-10-09	58.71	
1986-04-24	64.18				

**4**  
**NW**  
**1/2 - 1 Mile**  
**Lower**

FED USGS      USGS40000024731

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613522149131501		
Monloc name:	SA01700102DBDC1 004		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5889053
Longitude:	-149.2230546	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	280.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830526	Welldepth:	180
Welldepth units:	ft	Wellholedepth:	181
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-05-26	132.00	

**A5  
NE  
1/2 - 1 Mile  
Lower**

**FED USGS      USGS40000024730**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613522149120201		
Monloc name:	SA01700101CBDD2 013		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5889052
Longitude:	-149.2027745	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	271.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	97
Construction date:	19881118	Wellholeddepth:	100
Welldepth units:	ft		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		

1988-11-18

Note: The site was dry (no water level recorded).

**A6**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024762**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613524149120701		
Monloc name:	SA01700101CBDC1 012    CENTRAL LANDFILL 4		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5894608
Longitude:	-149.2041636	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	245.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1986	Welldepth:	109
Welldepth units:	ft	Wellholeddepth:	109
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		

1986-04-24    58

**A7**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024761**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613524149120201		
Monloc name:	SA01700101CBDD1 013    CENTRAL LANDFILL 3		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5894607
Longitude:	-149.2027746	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	255.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19860304	Welldepth:	158
Welldepth units:	ft	Wellholedepth:	158
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 3

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
-----			-----		
1987-03-04					
	Note: The site was dry (no water level recorded).				
1986-10-09					
	Note: The site was dry (no water level recorded).				
1986-04-24					
	Note: The site was dry (no water level recorded).				

**8**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS**

**USGS40000024786**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613526149131201		
Monloc name:	SA01700102DBCB1 021		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5900164
Longitude:	-149.2222213	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	303.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840603	Welldepth:	155
Welldepth units:	ft	Wellholedepth:	155
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-06-03	85	

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**9**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024784**

Org. Identifier:	USGS-AK			
Formal name:	USGS Alaska Water Science Center			
Monloc Identifier:	USGS-613526149120201			
Monloc name:	SA01700101CBDA1 050			
Monloc type:	Well			
Monloc desc:	Not Reported			
Huc code:	19020402	Drainagearea value:	Not Reported	
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported	
Contrib drainagearea units:	Not Reported	Latitude:	61.5900163	
Longitude:	-149.2027746	Sourcemap scale:	25000	
Horiz Acc measure:	5	Horiz Acc measure units:	seconds	
Horiz Collection method:	Interpolated from map			
Horiz coord refsys:	NAD83	Vert measure val:	254.	
Vert measure units:	feet	Vertacc measure val:	10	
Vert accmeasure units:	feet			
Vertcollection method:	Interpolated from topographic map			
Vert coord refsys:	NGVD29	Countrycode:	US	
Aquifername:	Not Reported			
Formation type:	Not Reported			
Aquifer type:	Not Reported			
Construction date:	19881116	Welldepth:	97	
Welldepth units:	ft	Wellholedepth:	100	
Wellholedepth units:	ft			

Ground-water levels, Number of Measurements: 1

	Feet below	Feet to	
Date	Surface	Sealevel	
-----			
1988-11-15			

Note: The site was dry (no water level recorded).

**10**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024836**

Org. Identifier:	USGS-AK			
Formal name:	USGS Alaska Water Science Center			
Monloc Identifier:	USGS-613531149122301			
Monloc name:	SA01700101CBBB1 010 CENTRAL LANDFILL 1			
Monloc type:	Well			
Monloc desc:	Not Reported			
Huc code:	19020402	Drainagearea value:	Not Reported	
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported	
Contrib drainagearea units:	Not Reported	Latitude:	61.5914052	
Longitude:	-149.2086087	Sourcemap scale:	25000	
Horiz Acc measure:	5	Horiz Acc measure units:	seconds	
Horiz Collection method:	Interpolated from map			
Horiz coord refsys:	NAD83	Vert measure val:	230.	
Vert measure units:	feet	Vertacc measure val:	10	
Vert accmeasure units:	feet			
Vertcollection method:	Interpolated from topographic map			
Vert coord refsys:	NGVD29	Countrycode:	US	
Aquifername:	Not Reported			
Formation type:	Not Reported			

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type: Not Reported  
 Construction date: 19860226      Welldepth: 93  
 Welldepth units: ft      Wellholedepth: 94  
 Wellholedepth units: ft

Ground-water levels, Number of Measurements: 11

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1989-07-20	62.48		1989-03-24	62.51	
1988-12-05	62.54		1988-06-24	62.30	
1988-03-08	62.46		1987-10-13	62.04	
1987-07-02	62.29		1987-03-11	62.02	
1986-10-09	62.54		1986-04-24	62.66	
1986-02-26	64.50				

**11  
North  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024837**

Org. Identifier: USGS-AK  
 Formal name: USGS Alaska Water Science Center  
 Monloc Identifier: USGS-613531149124001  
 Monloc name: SA01700102ADDB2 029  
 Monloc type: Well  
 Monloc desc: WELL ID 140  
 Huc code: 19020402      Drainagearea value: Not Reported  
 Drainagearea Units: Not Reported      Contrib drainagearea: Not Reported  
 Contrib drainagearea units: Not Reported      Latitude: 61.5919361  
 Longitude: -149.2112472      Sourcemap scale: 63360  
 Horiz Acc measure: .01      Horiz Acc measure units: seconds  
 Horiz Collection method: Differentially corrected Global Positioning System (DGPS)  
 Horiz coord refsys: NAD83      Vert measure val: 301.94  
 Vert measure units: feet      Vertacc measure val: .1  
 Vert accmeasure units: feet  
 Vertcollection method: Differential Global Positioning System (GPS)r  
 Vert coord refsys: NAVD88      Countrycode: US  
 Aquifername: Alaska unconsolidated-deposit aquifers  
 Formation type: Quaternary System  
 Aquifer type: Not Reported  
 Construction date: 19861101      Welldepth: 80  
 Welldepth units: ft      Wellholedepth: 80  
 Wellholedepth units: ft

Ground-water levels, Number of Measurements: 0

**B12  
WSW  
1/2 - 1 Mile  
Lower**

**FED USGS      USGS40000024280**

Org. Identifier: USGS-AK  
 Formal name: USGS Alaska Water Science Center  
 Monloc Identifier: USGS-613440149134501  
 Monloc name: SA01700111CBAA1 007  
 Monloc type: Well  
 Monloc desc: Not Reported  
 Huc code: 19020402      Drainagearea value: Not Reported  
 Drainagearea Units: Not Reported      Contrib drainagearea: Not Reported  
 Contrib drainagearea units: Not Reported      Latitude: 61.5772388  
 Longitude: -149.2313876      Sourcemap scale: 25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	250.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19790322	Welldepth:	226.5
Welldepth units:	ft	Wellholedepth:	226.5
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1979-03-22	126	

**C13**  
**North**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024869**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613535149125001		
Monloc name:	SA01700102ACDD2 020		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5925164
Longitude:	-149.2161097	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	318.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840919	Welldepth:	175
Welldepth units:	ft	Wellholedepth:	175
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-09-19	135	

**14**  
**NNE**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024827**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier: USGS-AK  
 Formal name: USGS Alaska Water Science Center  
 Monloc Identifier: USGS-613530149115601  
 Monloc name: SA01700101CBAD1 049 CENTRAL LANDFILL 5  
 Monloc type: Well  
 Monloc desc: Not Reported  
 Huc code: 19020402  
 Drainagearea Units: Not Reported  
 Contrib drainagearea units: Not Reported  
 Longitude: -149.2011079  
 Horiz Acc measure: 5  
 Horiz Collection method: Interpolated from map  
 Horiz coord refsys: NAD83  
 Vert measure units: feet  
 Vert accmeasure units: feet  
 Vertcollection method: Interpolated from topographic map  
 Vert coord refsys: NGVD29  
 Aquifername: Not Reported  
 Formation type: Not Reported  
 Aquifer type: Not Reported  
 Construction date: 19881115  
 Welldepth units: ft  
 Wellholedepth units: ft

Drainagearea value: Not Reported  
 Contrib drainagearea: Not Reported  
 Latitude: 61.5911274  
 Sourcemap scale: 25000  
 Horiz Acc measure units: seconds  
 Vert measure val: 254.  
 Vertacc measure val: 10  
 Countrycode: US  
 Welldepth: 39  
 Wellholedepth: 45

Ground-water levels, Number of Measurements: 4

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1989-08-01	21.05		1989-07-20	20.98	
1989-03-24	21.81		1988-11-16	20.16	

**B15  
WSW  
1/2 - 1 Mile  
Lower**

**FED USGS USGS40000024271**

Org. Identifier: USGS-AK  
 Formal name: USGS Alaska Water Science Center  
 Monloc Identifier: USGS-613439149135101  
 Monloc name: SA01700111CBAA2 007  
 Monloc type: Well  
 Monloc desc: Not Reported  
 Huc code: 19020402  
 Drainagearea Units: Not Reported  
 Contrib drainagearea units: Not Reported  
 Longitude: -149.2330544  
 Horiz Acc measure: 5  
 Horiz Collection method: Interpolated from map  
 Horiz coord refsys: NAD83  
 Vert measure units: feet  
 Vert accmeasure units: feet  
 Vertcollection method: Interpolated from topographic map  
 Vert coord refsys: NGVD29  
 Aquifername: Not Reported  
 Formation type: Not Reported

Drainagearea value: Not Reported  
 Contrib drainagearea: Not Reported  
 Latitude: 61.5769611  
 Sourcemap scale: 25000  
 Horiz Acc measure units: seconds  
 Vert measure val: 270.  
 Vertacc measure val: 10  
 Countrycode: US

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	230
Construction date:	19790419	Wellholedepth:	230
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1979-04-19	135	

**C16**  
North  
1/2 - 1 Mile  
Higher

FED USGS USGS40000024896

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613537149125101		
Monloc name:	SA01700102ACDD1 020		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5930719
Longitude:	-149.2163876	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	318.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840929	Welldepth:	180
Welldepth units:	ft	Wellholedepth:	180
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-09-29	90	

**D17**  
SW  
1/2 - 1 Mile  
Lower

FED USGS USGS40000024237

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613437149135101		
Monloc name:	SA01700111CBAC1 006		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5764055
Longitude:	-149.2330543	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	260.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840403	Welldepth:	222
Welldepth units:	ft	Wellholedepth:	222
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-04-03	80	

**18  
SW  
1/2 - 1 Mile  
Lower**

**FED USGS      USGS40000024195**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613433149134501		
Monloc name:	SA01700111CBDA1 002		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5752944
Longitude:	-149.2313874	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	250.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830614	Welldepth:	332
Welldepth units:	ft	Wellholedepth:	332
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-06-14	111	

**E19  
NNE  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024878**



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613536149120901		
Monloc name:	SA01700101BCCD1 030		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5927941
Longitude:	-149.2047195	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840605	Welldepth:	300
Welldepth units:	ft	Wellholedepth:	300
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-06-05	248	

**20  
North  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024924**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613539149124601		
Monloc name:	SA01700102ADCB1 023		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5936275
Longitude:	-149.2149986	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	320.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	205
Construction date:	19781101	Wellholeddepth:	205
Welldepth units:	ft		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

**21**  
**North**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024923**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613539149123101		
Monloc name:	SA01700102ADDB1 029		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5936274
Longitude:	-149.2108314	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	353.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19780912	Welldepth:	125
Welldepth units:	ft	Wellholeddepth:	125
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

**F22**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024925**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613539149125501		
Monloc name:	SA01700102ACDA1 022		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5936275
Longitude:	-149.2174989	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	180
Construction date:	19840927	Wellholedepth:	180
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-09-27	90	

**D23**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024238**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613437149135501		
Monloc name:	SA01700111CBAC2 006		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5764055
Longitude:	-149.2341656	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	260.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840328	Welldepth:	222
Welldepth units:	ft	Wellholedepth:	222
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-03-28	80	

**G24**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024912**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613538149130801		
Monloc name:	SA01700102ACCA1 010		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5933497
Longitude:	-149.2211104	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	311.6
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830601	Welldepth:	110
Welldepth units:	ft	Wellholedepth:	110
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-06-01	70	

**E25**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024911**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613538149120601		
Monloc name:	SA01700101BCDB1 031		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5933496
Longitude:	-149.203886	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	320.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19821102	Welldepth:	242
Welldepth units:	ft	Wellholedepth:	242
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1982-11-02	85	

**H26**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024281**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613440149140201		
Monloc name:	SA01700111CBBA1 001		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5772389
Longitude:	-149.2361103	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	295.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Quaternary System		
Aquifer type:	Not Reported		
Construction date:	19811119	Welldepth:	237
Welldepth units:	ft	Wellholedepth:	237
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-03-07	157	

**I27  
NNE  
1/2 - 1 Mile  
Higher**

**FED USGS USGS40000024868**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613535149115201		
Monloc name:	SA01700101BDCC1 002		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5925163
Longitude:	-149.1999967	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	300.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	250
Construction date:	19820416	Wellholeddepth:	252
Welldepth units:	ft		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

**D28**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024230**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613436149135801		
Monloc name:	SA01700111CBBD1 003		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5761278
Longitude:	-149.234999	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	260.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840329	Welldepth:	242
Welldepth units:	ft	Wellholeddepth:	242
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-03-29	80	

**F29**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024949**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613541149130101		
Monloc name:	SA01700102ACAC1 026		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.594183
Longitude:	-149.2191658	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	353.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19810115	Welldepth:	99
Welldepth units:	ft	Wellholedepth:	99
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1981-01-15	82	

**J30**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024938**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613540149121001		
Monloc name:	SA01700101BCCA1 029		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5939052
Longitude:	-149.2049974	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830810	Welldepth:	120
Welldepth units:	ft	Wellholedepth:	120
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-08-10	73	

**K31**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024879**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613536149132801		
Monloc name:	SA01700102BDDC1 005		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5927942
Longitude:	-149.2266665	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	330.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830326	Welldepth:	161
Welldepth units:	ft	Wellholedepth:	161
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-03-26	80.00	

**L32  
NNW  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024926**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613539149131801		
Monloc name:	SA01700102BDDA2 011		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5936275
Longitude:	-149.2238885	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	161
Construction date:	19830912	Wellholedepth:	161
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-09-12	96	

**G33**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024950**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613541149130701		
Monloc name:	SA01700102ACBD1 019		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.594183
Longitude:	-149.2208327	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	295.2
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840919	Welldepth:	53
Welldepth units:	ft	Wellholedepth:	53
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-09-19	35	

**I34**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024895**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613537149115301		
Monloc name:	SA01700101BDCB2 032		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5930718
Longitude:	-149.2002746	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	312.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19821104	Welldepth:	234
Welldepth units:	ft	Wellholedepth:	249
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**I35**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024910**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613538149115501		
Monloc name:	SA01700101BDCB1 032		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5933496
Longitude:	-149.2008302	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	312.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1983	Welldepth:	246
Welldepth units:	ft	Wellholedepth:	246
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**J36**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024961**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613542149121601		
Monloc name:	SA01700101BCBC1 051		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5944607
Longitude:	-149.2066643	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Quaternary System		
Aquifer type:	Not Reported		
Construction date:	19841004	Welldepth:	121
Welldepth units:	ft	Wellholedepth:	121
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-10-04	60	

**H37**  
**WSW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024282**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613440149140701		
Monloc name:	SA01700111CBBB1 005		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5772389
Longitude:	-149.2374993	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	300.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	198107	Welldepth:	157
Welldepth units:	ft	Wellholedepth:	157
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**K38**  
**NW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024880**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613536149133301		
Monloc name:	SA01700102BDCD1 009		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5927942
Longitude:	-149.2280556	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	167.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19831115	Welldepth:	167
Welldepth units:	ft	Wellholedepth:	167
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-11-15	100	

**K39  
NW  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024897**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613537149133001		
Monloc name:	SA01700102BDCD2 009		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.593072
Longitude:	-149.2272222	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	344.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	101
Construction date:	19840511	Wellholedepth:	101
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-05-11	68	

**G40**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024951**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613541149131301		
Monloc name:	SA01700102ACBC1 018		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.594183
Longitude:	-149.2224995	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19821021	Welldepth:	171
Welldepth units:	ft	Wellholedepth:	171
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1982-10-21	90	

**K41**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024927**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613539149132301		
Monloc name:	SA01700102BDDA1 011		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5936275
Longitude:	-149.2252776	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830525	Welldepth:	280
Welldepth units:	ft	Wellholedepth:	280
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-05-25	81	

**H42**  
**WSW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024307**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613441149141001		
Monloc name:	SA01700111CBBB2 005		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5775167
Longitude:	-149.2383328	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	303.4
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19810710	Welldepth:	160
Welldepth units:	ft	Wellholedepth:	160
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1981-07-10	90	

**43**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024231**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613436149140601		
Monloc name:	SA01700111CBBC1 004		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5761278
Longitude:	-149.2372214	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	270.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19841001	Welldepth:	130
Welldepth units:	ft	Wellholedepth:	130
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-10-01	89	

**L44  
NNW  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024939**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613540149132401		
Monloc name:	SA01700102BDAC2 007		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5939053
Longitude:	-149.2255554	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	328.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	112
Construction date:	19850506	Wellholeddepth:	112
Welldepth units:	ft		
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1985-05-06	75	

**45**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024948**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613541149115901		
Monloc name:	SA01700101BCAD1 003		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5941829
Longitude:	-149.2019415	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	310.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19820627	Welldepth:	61
Welldepth units:	ft	Wellholeddepth:	66
Wellholeddepth units:	ft		

Ground-water levels, Number of Measurements: 0

**J46**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024979**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613543149120901		
Monloc name:	SA01700101BCBD1 048		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5947385
Longitude:	-149.2047197	Sourcemap scale:	25000



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	344.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Quaternary System		
Aquifer type:	Not Reported		
Construction date:	19821020	Welldepth:	150
Welldepth units:	ft	Wellholedepth:	150
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1982-10-21	98	

**K47  
NNW  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024928**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613539149133001		
Monloc name:	SA01700102BDCA1 008		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5936275
Longitude:	-149.2272222	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	312.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19841019	Welldepth:	185
Welldepth units:	ft	Wellholedepth:	189
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-10-19	76	

**M48  
North  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000025030**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613546149125101		
Monloc name:	SA01700102ACAA1 015		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5955719
Longitude:	-149.2163878	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	295.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840328	Welldepth:	40
Welldepth units:	ft	Wellholedepth:	48
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**N49  
NNE  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024991**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613544149120601		
Monloc name:	SA01700101BCAB1 027		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5950163
Longitude:	-149.2038863	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	369.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830426	Welldepth:	145
Welldepth units:	ft	Wellholedepth:	145
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**O50**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024283**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613440149141501		
Monloc name:	SA01700110DAAA2 012		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5772389
Longitude:	-149.2397218	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	310.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1977	Welldepth:	150
Welldepth units:	ft	Wellholedepth:	150
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**P51**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000025011**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613545149131201		
Monloc name:	SA01700102ACBB1 017		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5952942
Longitude:	-149.2222218	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	344.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	180
Construction date:	19821222	Wellholedepth:	181
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1982-12-22	85	

**P52**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024992**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613544149131801		
Monloc name:	SA01700102BDAA1 006		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5950164
Longitude:	-149.2238887	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	351.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19841204	Welldepth:	156
Welldepth units:	ft	Wellholedepth:	156
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-12-04	75	

**M53**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000025047**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613547149125701		
Monloc name:	SA01700102ABDC1 028		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5958497
Longitude:	-149.2180547	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	295.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Quaternary System		
Aquifer type:	Not Reported		
Construction date:	19850902	Welldepth:	123
Welldepth units:	ft	Wellholedepth:	123
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1985-09-02	75	

**Q54**  
**NNW**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024962**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613542149132901		
Monloc name:	SA01700102BDAC1 007		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5944609
Longitude:	-149.2269445	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	344.
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19841022	Welldepth:	136
Welldepth units:	ft	Wellholedepth:	136
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-10-22	76	

**N55**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000025029**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613546149121101		
Monloc name:	SA01700101BCBA1 028		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5955718
Longitude:	-149.2052754	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	353.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19820830	Welldepth:	148
Welldepth units:	ft	Wellholedepth:	148
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**P56  
NNW  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000025031**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613546149130901		
Monloc name:	SA01700102ACBA1 016		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5955719
Longitude:	-149.2213884	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	295.2
Vert measure units:	feet	Vertacc measure val:	8
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19821008	Welldepth:	166
Welldepth units:	ft	Wellholedepth:	166
Wellholedepth units:	ft		

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1982-10-08	90	

**N57  
NNE  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000025010**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613545149120401		
Monloc name:	SA01700101BCAB2 027		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.595294
Longitude:	-149.2033307	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	369.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830618	Welldepth:	125
Welldepth units:	ft	Wellholedepth:	125
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**Q58  
NNW  
1/2 - 1 Mile  
Higher**

**FED USGS      USGS40000024963**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613542149133201		
Monloc name:	SA01700102BDBD1 025		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5944609
Longitude:	-149.2277779	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	353.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	270
Construction date:	19840618	Wellholedepth:	270.01
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-06-18	78	

**O59**  
**WSW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024272**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613439149141801		
Monloc name:	SA01700110DAAA1 012		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5769611
Longitude:	-149.2405552	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	290.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19770404	Welldepth:	289
Welldepth units:	ft	Wellholedepth:	289
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

**60**  
**NNE**  
**1/2 - 1 Mile**  
**Higher**

**FED USGS      USGS40000024937**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613540149113901		
Monloc name:	SA01700101BDCA1 023		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5939051
Longitude:	-149.1963853	Sourcemap scale:	25000



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	279.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19840330	Welldepth:	181
Welldepth units:	ft	Wellholedepth:	181
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1984-03-30	90	

**R61**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024716**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613520149141701		
Monloc name:	SA01700103DADC3 017		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5883499
Longitude:	-149.2402787	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	271.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830308	Welldepth:	101
Welldepth units:	ft	Wellholedepth:	101
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-03-08	30	

**R62**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024705**

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613519149141801		
Monloc name:	SA01700103DDAB1 023		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5880721
Longitude:	-149.2405565	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	287.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830523	Welldepth:	80
Welldepth units:	ft	Wellholedepth:	80
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-05-23	35	

**R63**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024744**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613523149141401		
Monloc name:	SA01700103DADD1 022		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5891832
Longitude:	-149.2394454	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	303.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Aquifer type:	Not Reported	Welldepth:	60
Construction date:	19821115	Wellholedepth:	60
Welldepth units:	ft		
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1982-11-15	30	

**R64**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024725**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613521149141701		
Monloc name:	SA01700103DADC2 017		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5886277
Longitude:	-149.2402787	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	271.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830311	Welldepth:	80
Welldepth units:	ft	Wellholedepth:	80
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-03-11	35	

**R65**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024695**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613518149142001		
Monloc name:	SA01700103DDAB2 023		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.5877943
Longitude:	-149.241112	Sourcemap scale:	25000

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	287.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19830523	Welldepth:	78
Welldepth units:	ft	Wellholedepth:	78
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1983-05-23	50	

**66**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000024763**

Org. Identifier:	USGS-AK		
Formal name:	USGS Alaska Water Science Center		
Monloc Identifier:	USGS-613524149141401		
Monloc name:	SA01700103DADA3 021		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	19020402	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	61.589461
Longitude:	-149.2394454	Sourcemap scale:	25000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	287.
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19821019	Welldepth:	60
Welldepth units:	ft	Wellholedepth:	60
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
-----		
1982-10-19	30	

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: AK Radon

### Radon Test Results

Num Tests	< 0.5 pCi/L	0.5 - 2.0	2.1 - 4.0	4.1 - 10	10-20	> 20 pCi/L
33	4	11	10	5	3	0

Federal EPA Radon Zone for MATANUSKA SUSITNA County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

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Federal Area Radon Information for Zip Code: 99645

Number of sites tested: 16

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.546 pCi/L	92%	8%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	5.325 pCi/L	56%	44%	0%

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetlands Inventory Data

Source: Department of Fish & Game

Telephone: 907-465-4100

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## OTHER STATE DATABASE INFORMATION

### RADON

#### State Database: AK Radon

Source: University of Alaska Fairbanks

Telephone: 907-474-7201

Radon Information

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## STREET AND ADDRESS INFORMATION

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**Landfill Site**

N. Golden Hills Dr  
Palmer, AK 99645

Inquiry Number: 4211551.5  
February 19, 2015

# The EDR-City Directory Image Report

## TABLE OF CONTENTS

### SECTION

Executive Summary

Findings

City Directory Images

*Thank you for your business.*  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

### DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

### RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2013	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services
2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services
2003	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Cole Information Services
1999	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1995	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services
1992	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cole Information Services

### RECORD SOURCES

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# FINDINGS

## TARGET PROPERTY STREET

N. Golden Hills Dr  
Palmer, AK 99645

<u>Year</u>	<u>CD Image</u>	<u>Source</u>
-------------	-----------------	---------------

### GOLDEN HILL

1995	pg A9	Cole Information Services
1992	pg A11	Cole Information Services

### GOLDEN HILLS

1999	pg A8	Cole Information Services	
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	pg A12	Cole Information Services	

### GOLDEN HL DR

1995	pg A10	Cole Information Services
1992	pg A13	Cole Information Services

### N GOLDEN HILLS DR

2013	pg A3	Cole Information Services	
2008	pg A5	Cole Information Services	
2003	pg A7	Cole Information Services	
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source

# FINDINGS

## CROSS STREETS

<u>Year</u>	<u>CD Image</u>	<u>Source</u>	
<b><u>E CHANLYUT CIR</u></b>			
2013	pg. A1	Cole Information Services	
2008	-	Cole Information Services	Target and Adjoining not listed in Source
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source

## **N 49TH ST**

2003	pg. A6	Cole Information Services	
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source

## **N 49TH STATE ST**

2013	pg. A2	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	-	Cole Information Services	Target and Adjoining not listed in Source
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	-	Cole Information Services	Target and Adjoining not listed in Source
1992	-	Cole Information Services	Target and Adjoining not listed in Source

## **City Directory Images**

**E CHANLYUT CIR 2013**

9465 VALLEY COMMUNITY FOR RECYCLING SOLUT

**N 49TH STATE ST**

**2013**

1400	OCCUPANT UNKNOWN
1600	TERRY SADLER
2763	PIERRE BURKETT
3001	SUZETTE BLACK
3031	OCCUPANT UNKNOWN
3061	OCCUPANT UNKNOWN
3101	JACOB SMITH
3150	WESLEY THURMOND
3151	OCCUPANT UNKNOWN



**N GOLDEN HILLS DR 2013**

600	DIANA DODDS
755	TRISTAN LAUGHLIN
950	JAMES STANLEY
955	ROB FITCH
1000	LEE KOSS
1100	WILLIAM LEIDER
1105	BRENT DAVIES
1150	DOUGLAS OLSON
1155	RYAN LANDIS
1200	C KOSTEK
1205	KIM MICHELSEN
1225	GARRY DISHNEAU
1260	TREVOR OLSON
1275	OCCUPANT UNKNOWN
1300	DONALD BREWER
1400	OCCUPANT UNKNOWN
1405	OCCUPANT UNKNOWN
1435	RICHARD YANUSZ
1500	WILLIAM GRISSETT
1535	TERRY WEBSTER
1595	OCCUPANT UNKNOWN
1600	OCCUPANT UNKNOWN
1625	KERRY KEHLER
1630	MICHAEL JUNGWIRTH
1655	ROGER MATTHEWS
1660	EDWARD TIMMONS
1675	ANDREW KEHLER
1680	SHAUN SAUM
1690	CHARLES SAUM
1730	ROBERT BUTLER
1755	JAKES DRYWALL INC

**N 49TH STATE ST**

**2008**

1600	OCCUPANT UNKNOWN
2763	JEREMY STRAND
3001	LESTER BLACK
3020	ROGER HUGHES
3031	OCCUPANT UNKNOWN
3061	OCCUPANT UNKNOWN
3101	ROBERT RITALA
3150	JOHN MAKETA
3151	OCCUPANT UNKNOWN

**N GOLDEN HILLS DR 2008**

600	LOREN DODDS
755	BRIAN LAUGHLIN
950	MARLIN EDWARDS
955	ROB FITCH
1000	LEE KOSS
1100	WILLIAM LEIDER
1105	DAVID BOYD
	ROBERT SLOVER
	SUZAN BEATY
	SUZAN BEATYSLOVER
1150	DOUGLAS OLSON
1155	JAMES HELGESON
1200	OCCUPANT UNKNOWN
1205	KIM DELACY
1225	GARRY DISHNEAU
1230	COLLEEN DARRELL
1275	TONY WALSH
1300	DONALD BREWER
1405	DONNIE YOUNGBLOOD
1435	RICHARD YANUSZ
1505	PALMER PUBLISHING CO
1535	TERRY WEBSTER
	WEBSTER LEASING & WOOD SERVICE
1575	OCCUPANT UNKNOWN
1595	MICHAEL WRIGHT
1625	KERRY KEHLER
1630	MICHAEL JUNGWIRTH
1655	ROGER MATTHEWS
1660	EDWARD TIMMONS
1675	ANDREW KEHLER
1680	SHAUN SAUM
1690	CHARLES SAUM
1730	OCCUPANT UNKNOWN
1755	JAKES & ASSOCIATES INC

Target Street

Cross Street

Source

-

✓

Cole Information Services

**N 49TH ST**

**2003**

3001 LESTER BLACK

Target Street

Cross Street

Source

✓

-

Cole Information Services

**N GOLDEN HILLS DR**

**2003**

1200 WILLIAM HAMILTON

Target Street

Cross Street

Source

✓

-

Cole Information Services

**GOLDEN HILLS 1999**

1000 LEE KOSS

Target Street

Cross Street

Source

✓

-

Cole Information Services

**GOLDEN HILL**

**1995**

1000 KOSS, LEE  
1205 DREW, DENNIS



-

**GOLDEN HL DR 1995**

0 BUIRGE, DAVID C  
KRACKE, STEVE W



Target Street

Cross Street

Source

✓

-

Cole Information Services

**GOLDEN HILL 1992**

0        STEPHENS, RON B  
          WARNER, DOUGLAS  
1205     DREW, DENNIS D

**GOLDEN HILLS 1992**

0 ALASKAN EVENTS MRKT

**GOLDEN HL DR 1992**

0	BUIRGE, DAVID C
	KRACKE, STEVE W
	SAUM, CHARLES E
	SHAFER, RON
1225	VLASOFF, KEN

**Landfill Site**

N. Golden Hills Dr  
Palmer, AK 99645

Inquiry Number: 4211551.2s  
February 18, 2015

## EDR Summary Radius Map Report

# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	7
Orphan Summary .....	8
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting SSURGO Soil Map .....	A-5
Physical Setting Source Map .....	A-8
Physical Setting Source Map Findings .....	A-10
Physical Setting Source Records Searched .....	PSGR-1

***Thank you for your business.***  
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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

N. GOLDEN HILLS DR  
MATANUSKA SUSITNA County, AK 99645

#### COORDINATES

Latitude (North):	61.5823000 - 61° 34' 56.28"
Longitude (West):	149.2133000 - 149° 12' 47.88"
Universal Transverse Mercator:	Zone 6
UTM X (Meters):	382500.7
UTM Y (Meters):	6829443.0
Elevation:	283 ft. above sea level

#### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	N/A
Source:	USGS 7.5 min quad index

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

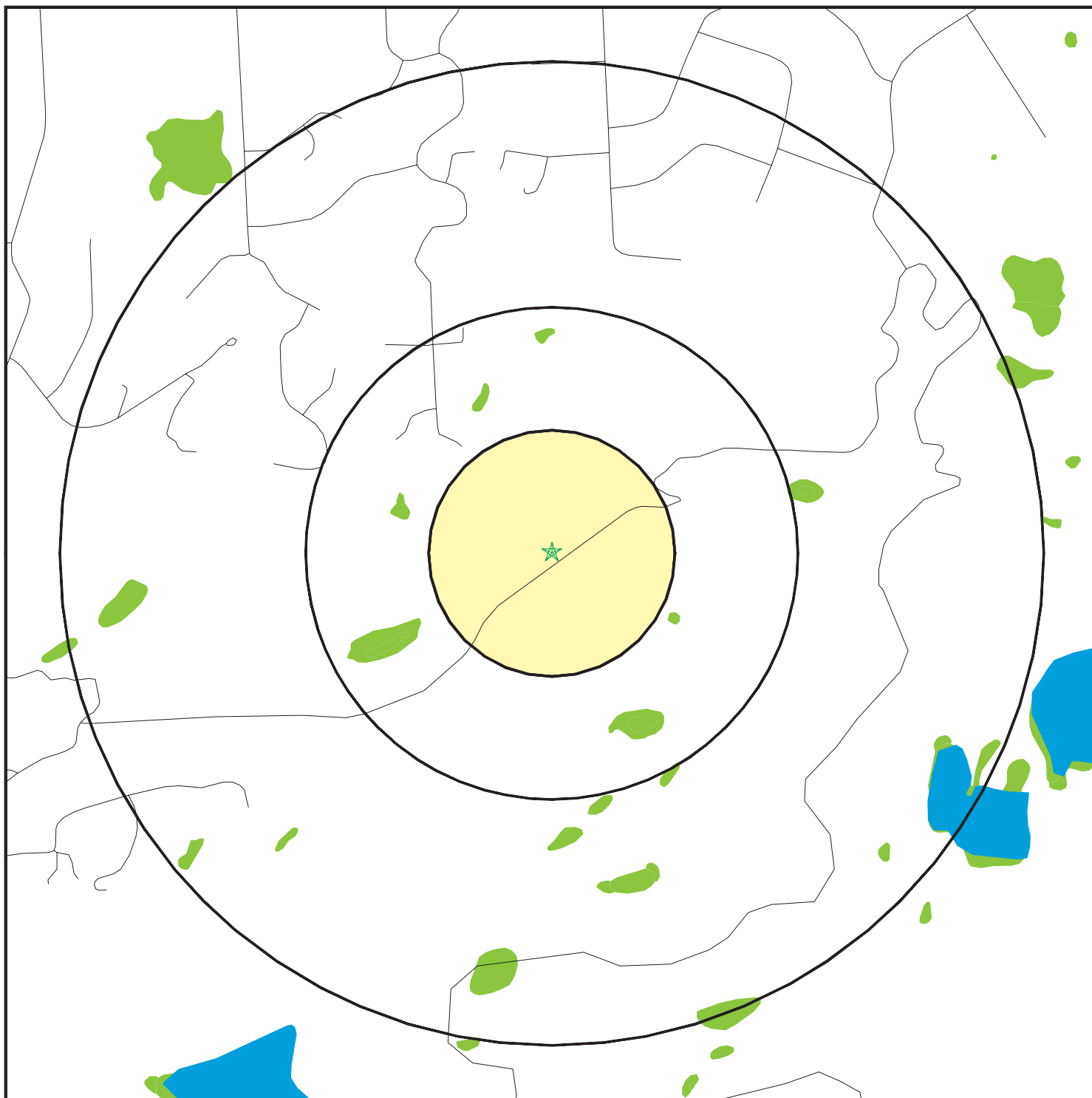
Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
------	--------	-----------	--------------	-----	-------------

NO SITES FOUND

# OVERVIEW MAP - 4211551.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- ☒ Indian Reservations BIA
- National Wetland Inventory
- State Wetlands

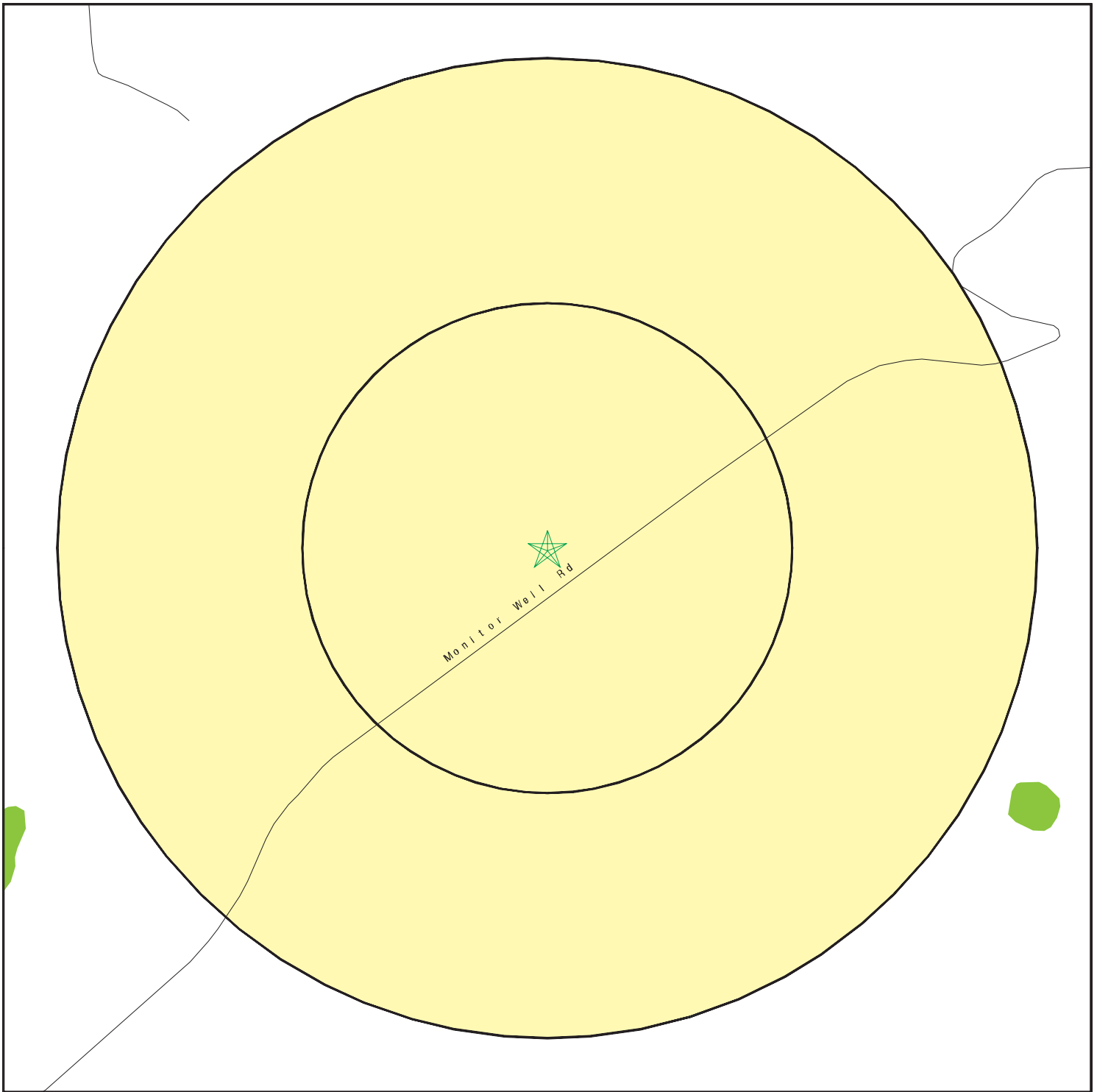
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Landfill Site  
 ADDRESS: N. Golden Hills Dr  
 Palmer AK 99645  
 LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211551.2s  
 DATE: February 18, 2015 5:09 pm



# DETAIL MAP - 4211551.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- ▨ National Priority List Sites
- ▨ Dept. Defense Sites



- ▨ Indian Reservations BIA
- National Wetland Inventory
- State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Landfill Site  
 ADDRESS: N. Golden Hills Dr  
 Palmer AK 99645  
 LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211551.2s  
 DATE: February 18, 2015 5:09 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	1.000		0	0	0	0	NR	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
UST	0.250		0	0	NR	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

#### *EDR Exclusive Records*

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### *Exclusive Recovered Govt. Archives*

RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0

#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

NO SITES FOUND

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
AK	AIRS	AIRS Facility Listing	Department of Environmental Conservation	01/13/2015	01/16/2015	02/02/2015
AK	AST	Regulated Aboveground Storage Tanks	Department of Environmental Conservation	01/05/2005	01/06/2005	02/02/2005
AK	BROWNFIELDS	Identified and/or Proposed Brownfields Sites	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	CDL	Illegal Drug Manufacturing Sites	Department of Environmental Conservation	04/24/2014	05/20/2014	05/29/2014
AK	COAL ASH	Coal Ash Disposal Sites	Department of Environmental Conservation	09/29/2014	10/02/2014	11/14/2014
AK	DRYCLEANERS	Drycleaner Facility Listing	Department of Environmental Conservation	02/15/2006	02/16/2006	03/15/2006
AK	ENG CONTROLS	Engineering Controls Site Listing	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	Financial Assurance 1	Financial Assurance Information Listing	Department of Environmental Conservation	11/17/2014	11/18/2014	12/24/2014
AK	Financial Assurance 2	Financial Assurance Information Listing	Department of Environmental Conservation	04/24/2007	04/26/2007	05/14/2007
AK	Inst Control	Contaminated Sites with Institutional Controls	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	LUST	Leaking Underground Storage Tank Database	Department of Environmental Conservation	11/17/2014	11/19/2014	12/23/2014
AK	NPDES	Wastewater Discharge Permit Listing	Department of Environmental Conservation	12/22/2014	12/22/2014	12/24/2014
AK	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Environmental Conservation		07/01/2013	01/17/2014
AK	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	Department of Environmental Conservation		07/01/2013	01/04/2014
AK	SHWS	Contaminated Sites Database	Department of Environmental Conservation	09/19/2014	09/23/2014	10/06/2014
AK	SPILLS	Spills Database	Department of Environmental Conservation	01/20/2015	01/21/2015	02/02/2015
AK	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	07/21/2010	01/03/2013	02/08/2013
AK	SWF/LF	Solid Waste Facilities	Department of Environmental Conservation	12/29/2014	12/30/2014	02/02/2015
AK	SWRCY	Recycling Facilities	Department of Environmental Conservation	12/29/2014	12/30/2014	02/02/2015
AK	UIC	UIC Information	Oil & Gas Conservation Commission	12/08/2014	12/09/2014	12/23/2014
AK	UST	Underground Storage Tank Database	Department of Environmental Conservation	11/17/2014	11/19/2014	12/24/2014
AK	VCP	Voluntary Cleanup Program sites	Department of Environmental Conservation	11/26/2014	12/01/2014	12/23/2014
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	11/11/2011	05/18/2012	05/25/2012
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2011	02/26/2013	04/19/2013
US	CERCLIS	Comprehensive Environmental Response, Compensation, and Liab	EPA	10/25/2013	11/11/2013	02/13/2014
US	CERCLIS-NFRAP	CERCLIS No Further Remedial Action Planned	EPA	10/25/2013	11/11/2013	02/13/2014
US	COAL ASH DOE	Sleam-Electric Plan Operation Data	Department of Energy	12/31/2005	08/07/2009	10/22/2009
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	07/01/2014	09/10/2014	10/20/2014
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	12/31/2013	01/24/2014	02/24/2014
US	CORRACTS	Corrective Action Report	EPA	12/09/2014	12/29/2014	01/29/2015
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DELISTED NPL	National Priority List Deletions	EPA	12/16/2014	01/08/2015	02/09/2015
US	DOD	Department of Defense Sites	USGS	12/31/2005	11/10/2006	01/11/2007
US	DOT OPS	Incident and Accident Data	Department of Transportation, Office of Pipeli	07/31/2012	08/07/2012	09/18/2012
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations	EDR, Inc.			
US	EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners	EDR, Inc.			
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	09/29/2014	09/30/2014	11/06/2014
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	07/21/2014	10/07/2014	10/20/2014
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	12/31/2005	02/06/2006	01/11/2007
US	FEMA UST	Underground Storage Tank Listing	FEMA	01/01/2010	02/16/2010	04/12/2010
US	FINDS	Facility Index System/Facility Registry System	EPA	08/16/2014	09/10/2014	10/20/2014
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	06/06/2014	09/10/2014	09/18/2014
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	09/30/2014	10/01/2014	11/06/2014
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	07/31/2014	10/29/2014	11/06/2014
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	02/01/2013	05/01/2013	11/01/2013
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	11/10/2014	11/14/2014	02/09/2015
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	07/30/2014	08/12/2014	08/22/2014
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	11/03/2014	11/05/2014	11/17/2014
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	10/06/2014	10/29/2014	11/17/2014
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	09/23/2014	11/25/2014	01/29/2015
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	11/04/2014	11/07/2014	11/17/2014
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	01/08/2015	01/08/2015	02/09/2015
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2005	12/08/2006	01/11/2007
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	02/01/2013	05/01/2013	01/27/2014
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	11/10/2014	11/14/2014	02/09/2015
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	07/30/2014	08/12/2014	08/22/2014
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	11/03/2014	11/05/2014	11/17/2014
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	10/06/2014	10/29/2014	11/06/2014
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	09/23/2014	11/25/2014	01/29/2015
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	11/04/2014	11/07/2014	11/17/2014
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	11/13/2014	11/18/2014	02/09/2015
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	09/29/2014	10/01/2014	11/06/2014
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	11/25/2014	11/26/2014	01/29/2015
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	02/18/2014	03/18/2014	04/24/2014
US	LUCIS	Land Use Control Information System	Department of the Navy	12/03/2014	12/12/2014	01/29/2015
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	12/29/2014	01/08/2015	01/29/2015
US	NPL	National Priority List	EPA	12/16/2014	01/08/2015	02/09/2015
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	07/01/2014	10/15/2014	11/17/2014
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	02/01/2011	10/19/2011	01/10/2012
US	PRP	Potentially Responsible Parties	EPA	10/25/2013	10/17/2014	10/20/2014
US	Proposed NPL	Proposed National Priority List Sites	EPA	12/16/2014	01/08/2015	02/09/2015
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	10/07/2014	10/08/2014	10/20/2014
US	RCRA NonGen / NLR	RCRA - Non Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	12/09/2014	12/29/2014	01/29/2015
US	RMP	Risk Management Plans	Environmental Protection Agency	08/01/2014	08/12/2014	11/06/2014
US	ROD	Records Of Decision	EPA	11/25/2013	12/12/2013	02/24/2014
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	03/07/2011	03/09/2011	05/02/2011
US	SSTS	Section 7 Tracking Systems	EPA	12/31/2009	12/10/2010	02/25/2011
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2011	07/31/2013	09/13/2013

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	TSCA	Toxic Substances Control Act	EPA	12/31/2012	01/15/2015	01/29/2015
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	09/14/2010	10/07/2011	03/01/2012
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/16/2014	10/31/2014	11/17/2014
US	US AIRS MINOR	Air Facility System Data	EPA	10/16/2014	10/31/2014	11/17/2014
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	12/22/2014	12/22/2014	01/29/2015
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	11/10/2014	12/01/2014	02/09/2015
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	09/18/2014	09/19/2014	10/20/2014
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	11/19/2014	11/21/2014	01/29/2015
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	11/10/2014	12/01/2014	02/09/2015
US	US INST CONTROL	Sites with Institutional Controls	Environmental Protection Agency	09/18/2014	09/19/2014	10/20/2014
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	12/30/2014	12/31/2014	01/29/2015
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	11/01/2014	11/05/2014	11/24/2014
US	Oil/Gas Pipelines	GeoData Digital Line Graphs from 1:100,000-Scale Maps	USGS			
US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.			
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services			
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health			
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics			
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics			
AK	Daycare Centers	Sensitive Receptor: Child Care Facilities Database	Department of Education & Early Development			
US	Flood Zones	100-year and 500-year flood zones	Emergency Management Agency (FEMA)			
US	NWI	National Wetlands Inventory	U.S. Fish and Wildlife Service			
AK	State Wetlands	Wetlands Inventory Data	Department of Fish & Game			
US	USGS 7.5' Topographic Map	Scanned Digital USGS 7.5' Topographic Map (DRG)	USGS			

### STREET AND ADDRESS INFORMATION

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## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

LANDFILL SITE  
N. GOLDEN HILLS DR  
PALMER, AK 99645

### TARGET PROPERTY COORDINATES

Latitude (North):	61.5823 - 61° 34' 56.28"
Longitude (West):	149.2133 - 149° 12' 47.88"
Universal Tranverse Mercator:	Zone 6
UTM X (Meters):	382500.7
UTM Y (Meters):	6829443.0
Elevation:	283 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property:	N/A
Source:	USGS 7.5 min quad index

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

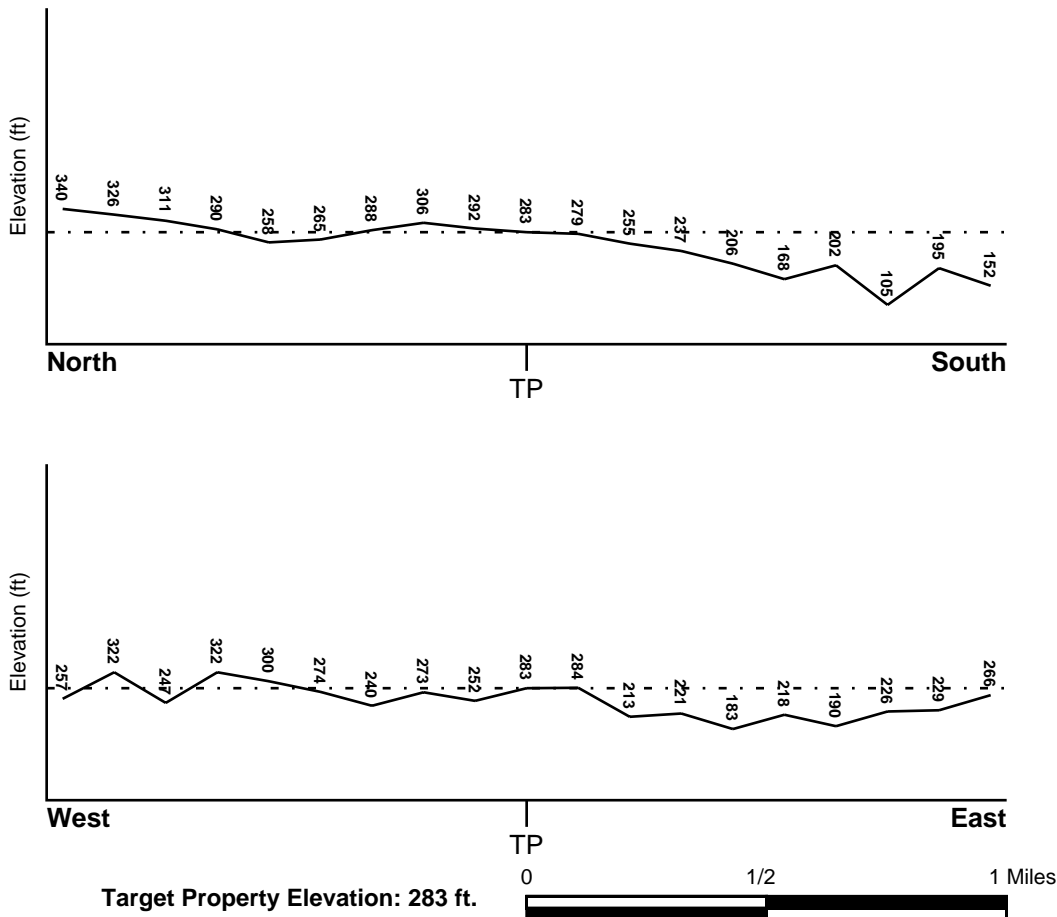
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ESE

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood Electronic Data</u>
MATANUSKA_SUSITNA, AK	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

## NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
Not Reported	N

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### ROCK STRATIGRAPHIC UNIT

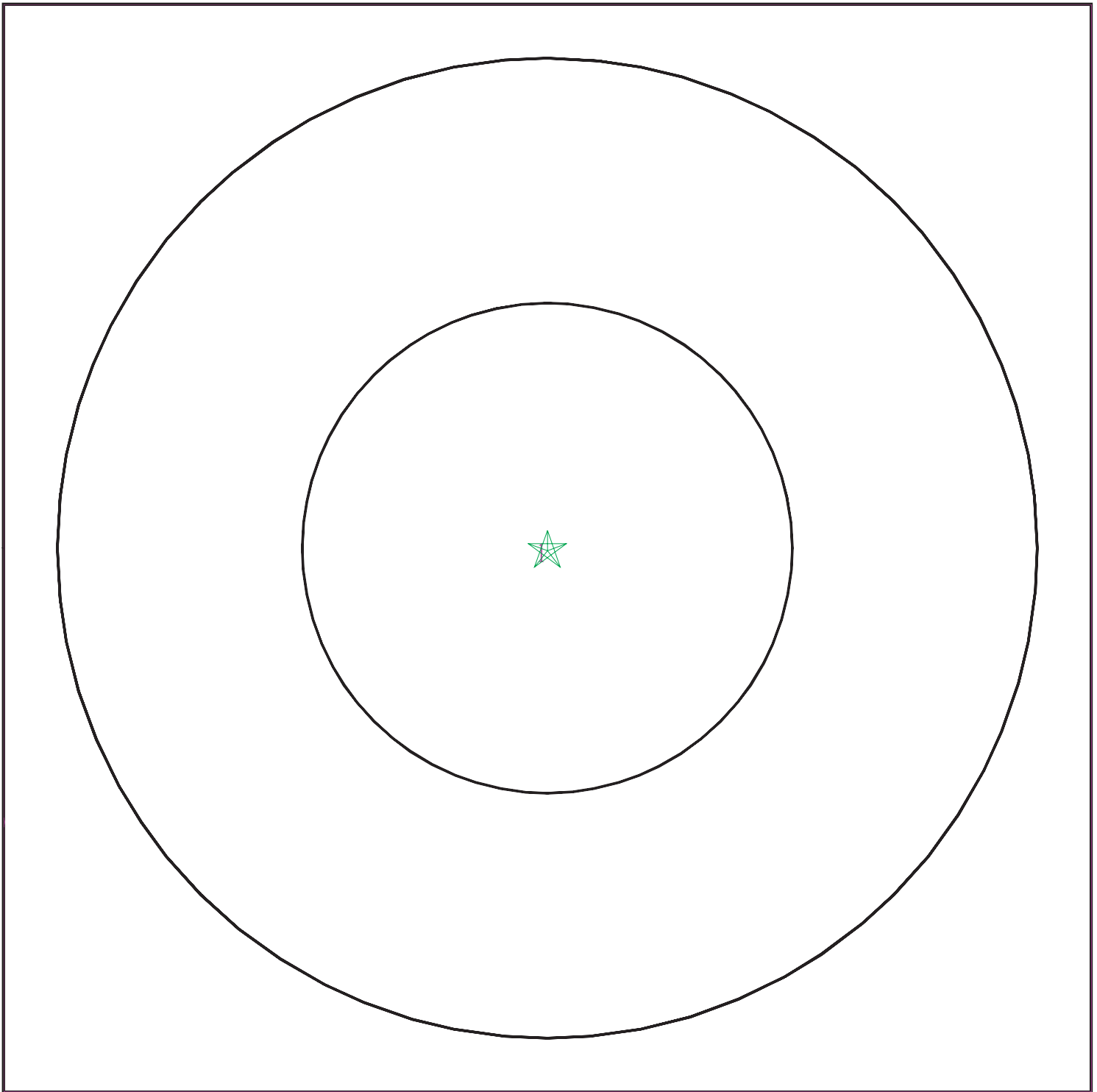
Era: -  
System: -  
Series: -  
Code: N/A (*decoded above as Era, System & Series*)

#### GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 4211551.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Landfill Site  
ADDRESS: N. Golden Hills Dr  
Palmer AK 99645  
LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
CONTACT: Denny Mengel  
INQUIRY #: 4211551.2s  
DATE: February 18, 2015 5:10 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

### Soil Map ID: 1

Soil Component Name: Knik

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
2	11 inches	18 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	18 inches	59 inches	very gravelly sand	Not reported	Not reported	Max: 141.14 Min: 42.34	Max: 7.3 Min: 5.6

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

## FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000024600	1/4 - 1/2 Mile NW
2	USGS40000024663	1/4 - 1/2 Mile NNW
3	USGS40000024785	1/2 - 1 Mile NNE
4	USGS40000024731	1/2 - 1 Mile NW
A5	USGS40000024730	1/2 - 1 Mile NE
A6	USGS40000024762	1/2 - 1 Mile NNE
A7	USGS40000024761	1/2 - 1 Mile NNE
8	USGS40000024786	1/2 - 1 Mile NNW
9	USGS40000024784	1/2 - 1 Mile NNE
10	USGS40000024836	1/2 - 1 Mile NNE
11	USGS40000024837	1/2 - 1 Mile North
B12	USGS40000024280	1/2 - 1 Mile WSW
C13	USGS40000024869	1/2 - 1 Mile North
14	USGS40000024827	1/2 - 1 Mile NNE
B15	USGS40000024271	1/2 - 1 Mile WSW
C16	USGS40000024896	1/2 - 1 Mile North
D17	USGS40000024237	1/2 - 1 Mile SW
18	USGS40000024195	1/2 - 1 Mile SW
E19	USGS40000024878	1/2 - 1 Mile NNE
20	USGS40000024924	1/2 - 1 Mile North
21	USGS40000024923	1/2 - 1 Mile North
F22	USGS40000024925	1/2 - 1 Mile NNW
D23	USGS40000024238	1/2 - 1 Mile WSW
G24	USGS40000024912	1/2 - 1 Mile NNW
E25	USGS40000024911	1/2 - 1 Mile NNE
H26	USGS40000024281	1/2 - 1 Mile WSW
I27	USGS40000024868	1/2 - 1 Mile NNE
D28	USGS40000024230	1/2 - 1 Mile WSW
F29	USGS40000024949	1/2 - 1 Mile NNW
J30	USGS40000024938	1/2 - 1 Mile NNE
K31	USGS40000024879	1/2 - 1 Mile NNW
L32	USGS40000024926	1/2 - 1 Mile NNW
G33	USGS40000024950	1/2 - 1 Mile NNW
I34	USGS40000024895	1/2 - 1 Mile NNE
I35	USGS40000024910	1/2 - 1 Mile NNE
J36	USGS40000024961	1/2 - 1 Mile NNE
H37	USGS40000024282	1/2 - 1 Mile WSW
K38	USGS40000024880	1/2 - 1 Mile NW
K39	USGS40000024897	1/2 - 1 Mile NW
G40	USGS40000024951	1/2 - 1 Mile NNW
K41	USGS40000024927	1/2 - 1 Mile NNW
H42	USGS40000024307	1/2 - 1 Mile WSW

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
43	USGS40000024231	1/2 - 1 Mile WSW
L44	USGS40000024939	1/2 - 1 Mile NNW
45	USGS40000024948	1/2 - 1 Mile NNE
J46	USGS40000024979	1/2 - 1 Mile NNE
K47	USGS40000024928	1/2 - 1 Mile NNW
M48	USGS40000025030	1/2 - 1 Mile North
N49	USGS40000024991	1/2 - 1 Mile NNE
O50	USGS40000024283	1/2 - 1 Mile WSW
P51	USGS40000025011	1/2 - 1 Mile NNW
P52	USGS40000024992	1/2 - 1 Mile NNW
M53	USGS40000025047	1/2 - 1 Mile NNW
Q54	USGS40000024962	1/2 - 1 Mile NNW
N55	USGS40000025029	1/2 - 1 Mile NNE
P56	USGS40000025031	1/2 - 1 Mile NNW
N57	USGS40000025010	1/2 - 1 Mile NNE
Q58	USGS40000024963	1/2 - 1 Mile NNW
O59	USGS40000024272	1/2 - 1 Mile WSW
60	USGS40000024937	1/2 - 1 Mile NNE
R61	USGS40000024716	1/2 - 1 Mile WNW
R62	USGS40000024705	1/2 - 1 Mile WNW
R63	USGS40000024744	1/2 - 1 Mile WNW
R64	USGS40000024725	1/2 - 1 Mile WNW
R65	USGS40000024695	1/2 - 1 Mile WNW
66	USGS40000024763	1/2 - 1 Mile WNW

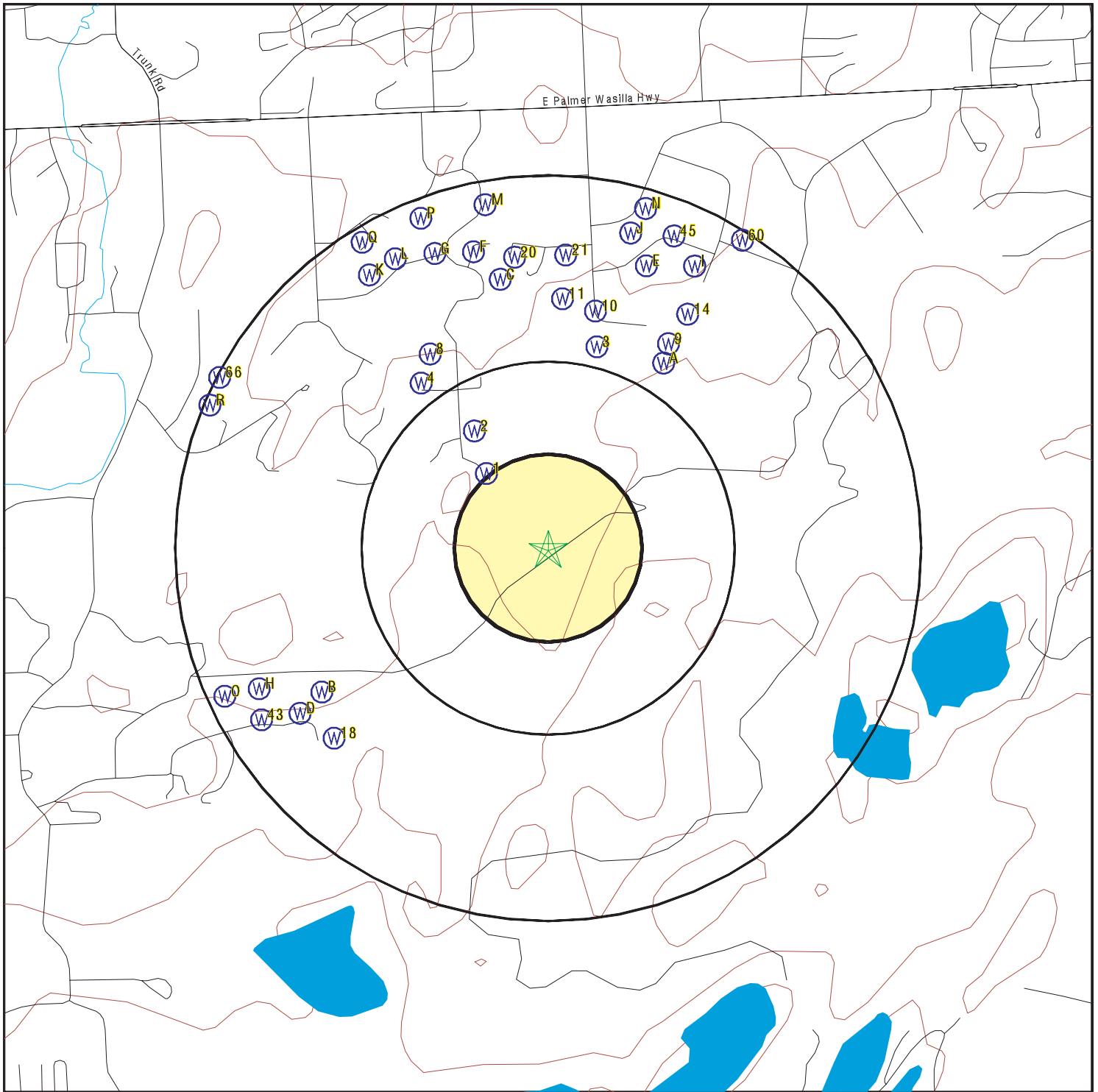
## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.



# PHYSICAL SETTING SOURCE MAP - 4211551.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons



- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location



SITE NAME: Landfill Site  
 ADDRESS: N. Golden Hills Dr  
 Palmer AK 99645  
 LAT/LONG: 61.5823 / 149.2133

CLIENT: CH2M Hill, Inc.  
 CONTACT: Denny Mengel  
 INQUIRY #: 4211551.2s  
 DATE: February 18, 2015 5:10 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID	Direction	Distance	Elevation	Database	EDR ID Number
1	NW	1/4 - 1/2 Mile	Lower	FED USGS	USGS40000024600
	<a href="#">Click here for full text details</a>				
2	NNW	1/4 - 1/2 Mile	Higher	FED USGS	USGS40000024663
	<a href="#">Click here for full text details</a>				
3	NNE	1/2 - 1 Mile	Lower	FED USGS	USGS40000024785
	<a href="#">Click here for full text details</a>				
4	NW	1/2 - 1 Mile	Lower	FED USGS	USGS40000024731
	<a href="#">Click here for full text details</a>				
A5	NE	1/2 - 1 Mile	Lower	FED USGS	USGS40000024730
	<a href="#">Click here for full text details</a>				
A6	NNE	1/2 - 1 Mile	Higher	FED USGS	USGS40000024762
	<a href="#">Click here for full text details</a>				
A7	NNE	1/2 - 1 Mile	Higher	FED USGS	USGS40000024761
	<a href="#">Click here for full text details</a>				
8	NNW	1/2 - 1 Mile	Higher	FED USGS	USGS40000024786
	<a href="#">Click here for full text details</a>				
9	NNE	1/2 - 1 Mile	Higher	FED USGS	USGS40000024784
	<a href="#">Click here for full text details</a>				

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
10 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024836
11 North 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024837
B12 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024280
C13 North 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024869
14 NNE 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024827
B15 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024271
C16 North 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024896
D17 SW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024237
18 SW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024195

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
E19 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024878
20 North 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024924
21 North 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024923
F22 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024925
D23 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024238
G24 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024912
E25 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024911
H26 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024281
I27 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024868

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
D28 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024230
F29 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024949
J30 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024938
K31 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024879
L32 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024926
G33 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024950
I34 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024895
I35 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024910
J36 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024961

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
H37 WSW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024282
K38 NW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024880
K39 NW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024897
G40 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024951
K41 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024927
H42 WSW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024307
43 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024231
L44 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024939
45 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024948

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
J46 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024979
K47 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024928
M48 North 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000025030
N49 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024991
O50 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024283
P51 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000025011
P52 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024992
M53 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000025047
Q54 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024962

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
N55 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000025029
P56 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000025031
N57 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000025010
Q58 NNW 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024963
O59 WSW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024272
60 NNE 1/2 - 1 Mile Higher	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024937
R61 WNW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024716
R62 WNW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024705
R63 WNW 1/2 - 1 Mile Lower	<a href="#">Click here for full text details</a>	FED USGS	USGS40000024744



## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database

EDR ID Number

R64  
WNW  
1/2 - 1 Mile  
Lower

[Click here for full text details](#)

FED USGS

USGS40000024725

R65  
WNW  
1/2 - 1 Mile  
Lower

[Click here for full text details](#)

FED USGS

USGS40000024695

66  
WNW  
1/2 - 1 Mile  
Lower

[Click here for full text details](#)

FED USGS

USGS40000024763

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: AK Radon

### Radon Test Results

Num Tests	< 0.5 pCi/L	0.5 - 2.0	2.1 - 4.0	4.1 - 10	10-20	> 20 pCi/L
33	4	11	10	5	3	0

Federal EPA Radon Zone for MATANUSKA SUSITNA County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

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Federal Area Radon Information for Zip Code: 99645

Number of sites tested: 16

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.546 pCi/L	92%	8%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	5.325 pCi/L	56%	44%	0%

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetlands Inventory Data

Source: Department of Fish & Game

Telephone: 907-465-4100

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## OTHER STATE DATABASE INFORMATION

### RADON

#### State Database: AK Radon

Source: University of Alaska Fairbanks

Telephone: 907-474-7201

Radon Information

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## STREET AND ADDRESS INFORMATION

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**Attachment 4  
Site Improvement Capital and  
Operations Cost Estimates**

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## Summary of Estimated Construction and Annual Operating Costs

### Estimated Construction Cost Ranges

Church Rd Site			Central Landfill Site		
Treatment Facility		\$19,200,000 <sup>a</sup>	Treatment Facility		\$19,200,000 <sup>a</sup>
Polishing		\$2,900,000 <sup>b</sup>	Polishing		\$0 <sup>b</sup>
Site Improvements		\$1,231,000 <sup>c</sup>	Site Improvements		\$2,762,000 <sup>c</sup>
<b>Estimated construction total</b>		<b>\$23,331,000</b>	<b>Estimated construction total</b>		<b>\$21,962,000</b>
Upper range	50%	\$34,997,000	Upper range	50%	\$32,943,000
Lower range	-30%	\$16,332,000	Lower range	-30%	\$15,373,400

Notes/Sources:

<sup>a</sup> Central Landfill Development Plan, CH2M HILL, 2014

<sup>b</sup> Polishing of treated water will be required for discharge to surface water. Estimated at 15% of treatment facility using professional judgement.

<sup>c</sup> Includes building pad and driveway. See attached backup.

Notes/Sources:

<sup>a</sup> Central Landfill Development Plan, CH2M HILL, 2014

<sup>b</sup> No polishing of treated water required because discharge to ground.

<sup>c</sup> Includes 20' wide access road and building pad. Attached backup of \$3.7M for a 36' wide public secondary collector road was reduced by 25% using professional judgement to conservatively estimate the cost for a 20' wide access road for septage haul only.

### Estimated Annual Operating Costs

Church Rd Site		Central Landfill Site			
Treatment Plant Operations		\$1,300,000 <sup>a</sup>	Treatment Plant Operations		\$1,300,000 <sup>a</sup>
Hauling Leachate		\$150,000 <sup>b</sup>	Pumping Leachate		\$3,000 <sup>b</sup>
<b>Estimated operations total</b>		<b>\$1,450,000</b>	<b>Estimated operations total</b>		<b>\$1,303,000</b>
<b>O&amp;M Present Worth, 20 yrs</b>		<b>\$21,600,000 <sup>c</sup></b>	<b>O&amp;M Present Worth, 20 yrs</b>		<b>\$19,400,000 <sup>c</sup></b>

Notes/Sources:

<sup>a</sup> Central Landfill Development Plan, CH2M HILL, 2014

<sup>b</sup> Shamrock haul rates, 2015, see backup

<sup>c</sup> Assumes 3.0% interest rate.

Notes/Sources:

<sup>a</sup> Central Landfill Development Plan, CH2M HILL, 2014

<sup>b</sup> Estimated cost for power, 2015, see backup

<sup>c</sup> Assumes 3.0% interest rate.

See the following pages for cost backup.

**Class 4 ROM Estimate**  
**Site Improvements for Central Landfill Septage Facility**  
**1201 North 49 State Street, Palmer, AK**

Assumptions:  
Please See Notes  
MEANS Location Adjustment = 125.2%  
Assumed Client holds all construction contracts

Item/Activity	Qty	Unit	Unit Cost	Cost	Comments
<b>3 CAPITAL COST</b>					
<b>Roadway Construction</b>					
Mobilization/ Demobilization	2	EA	\$30,000.00	\$60,000.00	
Right of Way	1.00	EA	\$12,000.00	\$12,000.00	See Takeoff Info Tab
Install/Remove Erosion Controls	6,940.00	LF	\$2.00	\$14,000.00	See Takeoff Info Tab
<b>Clearing and Grubbing</b>					
Clearing and Grubbing	3.98	ACRE	\$9,551.21	\$38,000.00	Assume 3470 LF x 50 ft wide; 2012 MEANS-31 11 10 0020 - 0250, Prorated, No burning assumed, Assume free Disposal at landfill
Land Survey	2.00	EA	\$2,500.00	\$5,000.00	
Utility Location	2.00	DAY	\$2,500	\$5,000	
<b>Utilities</b>					
Small Utility Pole Relocation	5	EA	\$ 15,000.00	\$ 75,000	Allowance pending engineering
Medium Utility Pole Relocation	3	EA	\$ -	\$ -	Reroute road to avoid per client's request
Large Utility Pole Relocation	1	EA	\$ -	\$ -	Reroute road to avoid per client's request
<b>Cut and Fill</b>					
Road Cut and Relocate	76,967	CY	\$ 2.75	\$ 212,000	Assume no rock, Excavate and haul < 500 LF
Embankment Fill from Cut	76,967	CY	\$ 2.25	\$ 173,000	Assume no rock, Excavate and haul < 500 LF
Additional Embankment Fill (Type A)	40,534	CY	\$ 6.00	\$ 243,000	Onsite borrow source assumed < 1 mile away
Embankment Compaction	40,534	CY	\$ 2.25	\$ 91,000	6" lifts, 4 passes
Fine Grading Slopes	-	SY	\$ 0.30	\$ -	MEANS 31 22 16.10 3310
Construct Drainage Ditch	1,028	CY	\$ 10.00	\$ 10,000	Assume no rock, Excavate and haul < 500 LF; No design yet
<b>Road Surfacing</b>					
8 oz Non-Woven Fabric Under Road	72,600	SF	\$ 0.10	\$ 7,000	See Takeoff Info Tab
Asphalt Subbase (Type A)	23,326	TONS	\$ 8.50	\$ 198,000	See Takeoff Info Tab
Base Course, Placement, Grade	5,521	TONS	\$ 28.00	\$ 155,000	See Takeoff Info Tab
Gravel	-	TONS	\$ 28.00	\$ -	Removed per client's request
Asphalt	2,981	TONS	\$ 110.00	\$ 328,000	See Takeoff Info Tab
<b>Site Restoration</b>					
Establish Vegetation	138,800	SF	\$ 0.50	\$ 69,000	See Takeoff Info Tab. Assume restoration 20 ft wide
			<b>Subtotal</b>	\$ 1,695,000	
Contractor P&P Bonds on Base Work	2%			\$ 33,900	
			<b>Subtotal</b>	\$ 1,728,900	
<b>Improvements at Central Landfill Site</b>					
Clearing and Grubbing	2.5	AC	\$ 9,551.21	\$ 23,878.02	Assume 3470 LF x 50 ft wide; 2012 MEANS-31 11 10 0020 - 0250, Prorated, No burning assumed, Assume free Disposal at landfill
Asphalt	1,000	TONS	\$ 110.00	\$ 110,000.00	
Base Course	2,200	TONS	\$ 28.00	\$ 61,600.00	
Type A (Fill)	61,000	TONS	\$ 11.00	\$ 671,000.00	
Excavation	3,800	CY	\$ 10.00	\$ 38,000.00	
			<b>Subtotal</b>	\$ 904,478.02	
Contractor P&P Bonds on Improvements	2%			\$ 18,090	
			<b>Subtotal</b>	\$922,567.58	
<b>Total Estimated Construction Cost</b>				<b>\$2,651,468</b>	



<b>OVERSIGHT</b>					
Design	15.0%		\$ 2,651,468	\$397,720	Per MSB comment all planning removed and replaced by 15% design
Project Management	0%		\$3,049,188	\$0	
Construction Management	5%		\$3,049,188	\$152,459	Adjusted per MSB comment
			<i>Subtotal</i>	<i>\$550,180</i>	
Contingency	15%		\$ 3,201,647	\$480,247	
			<b>Total Estimated Capital Cost</b>	<b>\$3,681,894</b>	

**ROM RANGE**

<b>Upper Range</b>	50%	<b>\$ 5,522,841</b>
<b>Lower Range</b>	-30%	<b>\$ 2,577,326</b>

Notes

- 1 The above estimate is based on preliminary design information and therefore is a Class 4 Rough Order of Magnitude (ROM) cost opinion with an accuracy of +50%/-30% and should be used for budgetary purposes only. This is not an offer to perform the work.
- 2 Costs are based on 2012 Means Heavy Construction Cost Data and have been escalated assuming work will commence in 2015
- 3 The Rough Order of Magnitude (ROM) estimates contained in this report have been produced using one or more of the following methods:
  - a. Comparison with recent similar work performed by contractors.
  - b. Ratio methods, using known subcontractor/material/equipment level of effort costs as guides
  - c. RS MEANS 2012/2013 Construction Cost Data
  - d. Historical cost based on CH2M HILL experience

## Class 4 ROM Estimate Site Improvements for Church Road Septage Facility

Assumptions:  
Please See Notes  
MEANS Location Adjustment = 125.2%  
Assumed Client holds all construction contracts

Item/Activity	Qty	Unit	Unit Cost	Cost	Comments
<b>3 CAPITAL COST</b>					
<b>Roadway Construction</b>					
Mobilization/ Demobilization	2	EA	\$20,000.00	\$40,000.00	
Right of Way	1.00	EA	\$12,000.00	\$12,000.00	See Takeoff Info Tab
Install/Remove Erosion Controls	600.00	LF	\$2.00	\$2,000.00	See Takeoff Info Tab
<b>Clearing and Grubbing</b>					
Clearing and Grubbing	-	ACRE	\$9,551.21	\$0.00	2012 MEANS-31 11 10 0020 - 0250, Prorated, No burning assumed, Assume free Disposal at landfill
Land Survey	2.00	EA	\$2,500.00	\$5,000.00	
Utility Location	1.00	DAY	\$2,500	\$2,500	
<b>Site Restoration</b>					
Establish Vegetation	70,000	SF	\$ 0.50	\$ 35,000	See Takeoff Info Tab. Assume restoration 20 ft wide
			<b>Subtotal</b>	\$ 96,500	
Contractor P&P Bonds on Base Work	2%			\$ 1,930	
			<b>Subtotal</b>	\$ 98,430	
<b>Building Pad and Driveway</b>					
Clearing and Grubbing	1.4	AC	\$ 9,551.21	\$ 13,371.69	2012 MEANS-31 11 10 0020 - 0250, Prorated, No burning assumed, Assume free Disposal at landfill
Asphalt	500	TONS	\$ 110.00	\$ 55,000.00	
Base Course	1,400	TONS	\$ 28.00	\$ 39,200.00	
Type A (Fill)	60,000	TONS	\$ 11.00	\$ 660,000.00	
Excavation	500	CY	\$ 10.00	\$ 5,000.00	
			<b>Subtotal</b>	\$ 772,571.69	
Contractor P&P Bonds on Improvements	2%			\$ 15,451	
			<b>Subtotal</b>	\$788,023.12	
<b>Total Estimated Construction Cost</b>				<b>\$886,453</b>	
<b>OVERSIGHT</b>					
Design	15.0%		\$ 886,453	\$132,968	Per MSB comment all planning removed and replaced by 15% design
Project Management	0%		\$1,019,421	\$0	
Construction Management	5%		\$1,019,421	\$50,971	Adjusted per MSB comment
			<b>Subtotal</b>	<b>\$183,939</b>	
Contingency	15%		\$ 1,070,392	\$160,559	
<b>Total Estimated Capital Cost</b>				<b>\$1,230,951</b>	

### ROM RANGE

<b>Upper Range</b>	50%	<b>\$ 1,846,426</b>
<b>Lower Range</b>	-30%	<b>\$ 861,666</b>

### Notes

- 1 The above estimate is based on preliminary design information and therefore is a Class 4 Rough Order of Magnitude (ROM) cost opinion with an accuracy of +50%/-30% and should be used for budgetary purposes only. This is not an offer to perform the work.
- 2 Costs are based on 2012 Means Heavy Construction Cost Data and have been escalated assuming work will commence in 2015
- 3 The Rough Order of Magnitude (ROM) estimates contained in this report have been produced using one or more of the following methods:
  - a. Comparison with recent similar work performed by contractors.
  - b. Ratio methods, using known subcontractor/material/equipment level of effort costs as guides
  - c. RS MEANS 2012/2013 Construction Cost Data
  - d. Historical cost based on CH2M HILL experience

Take Off for Conceptual Estimate  
Matsu Borough Septage Siting Study  
Landfill Site (49th State Street)  
Road Extension and Access Roads

**Road Extension**

12' lanes, 4' paved shoulder, 2' gravel shoulder  
3' ditch, 4:1 foreslope, 2:1 backslope  
Barn roof fill section - 4:1 to clear zone, 2:1 outside clear zone

**Structural section**

Length of Road extension	3470 LF	24 ft	83280
XS area of Asphalt	8.00 SF		
XS area of Base Course	21.50 SF		
XS area of Subbase (Type A)	72 SF		
Volume of Asphalt	27760 CF	1028 CY	
Volume of Base Course	74605 CF	2763 CY	
Volume of Subbase (Type A)	249840 CF	9253 CY	

<b>Asphalt</b>	<b>2082 Ton</b>	150 lb/cf	2.025 ton/cy
<b>Base Course</b>	<b>5520.77 Ton</b>	148 lb/cf	1.998 ton/cy
<b>Subbase (Type A)</b>	<b>18113.4 Ton</b>	145 lb/cf	1.9575 ton/cy

**Excavation**

From InRoads model 69970 CY

**Embankment**

From InRoads model 117511 CY  
230027.783 Ton

**Driveways**

	Length (LF)		Width (FT)	Area(SF)	Volume (CF)			Embankment
	Paved	Gravel			2" Asphalt	6" Gravel	12" Type A	
Septage Facility	1420		30	42600	7242	21300	42600	85200 E2' deep
Recycle center	150		30	4500	765	2250	4500	
Animal shelter	120		30	3600	612	1800	3600	
Landfill South	210		30	6300	1071	3150	6300	
Landfill Middle	270		30	8100	1377	4050	8100	
Landfill North	50		30	1500	255	750	1500	
House		70	20	1400		700	1400	
LeeAnn Dr	130		30	3900	663	1950	3900	
<i>total</i>	<i>2350</i>	<i>70</i>			<i>11985</i>	<i>35950</i>	<i>71900</i>	<i>85200</i>
			<b>Tons</b>		<b>898.875</b>	<b>2660.3</b>	<b>5212.75</b>	<b>6177</b>
					<b>Asphalt</b>	<b>Gravel</b>	<b>Type A</b>	<b>Embankment</b>

**Earthwork Summary**

		unit price	cost
Asphalt	2980.875 Tons	110 \$	327,896.25
Base Course	8181.07 Tons	28 \$	229,069.96
Subbase (Type A)	23326.15 Tons	8.5 \$	198,272.28
Type A (Fill)	236204.783 Tons	8.5 \$	2,007,740.65
Excavation	76967 CY	10 \$	769,670.00
		total cost	\$ 3,532,649.14

**Right of Way - 1 Parcel**

Estimated Take Area	15,610 SF	
Assessed land value	50,000 \$	( <a href="http://www.matsugov.us/myproperty/mydetail.aspx?plD=5572">http://www.matsugov.us/myproperty/mydetail.aspx?plD=5572</a> )
Parcel Area	174,120 SF	3.997245179
Assesed value per sf	\$ 0.29 \$/SF	
Fair market value per sf	\$ 0.37 \$/SF	=assessed*130%
ROW cost with Engineering etc, per sf	\$ 0.75 \$/SF	=raw*2
ROW cost with Engineering etc	\$ 11,707.50	=raw*2
Rounded Cost	\$ 12,500.00	