

Pre-CERCLA Screening Checklist/Decision Document

Sts. John Mine, Montezuma, Colorado

June 19, 2018

**EPA Region 8
Site Assessment Program
1595 Wynkoop Street
Denver, CO 80202**

Pre-CERCLA Screening – Sts. John Mine

Pre-CERCLA¹ Screening (PCS) and sampling was conducted at the Sts. John Mine on June 19, 2018 by Region 8 Environmental Protection Agency (EPA) Site Assessment Program and other federal and state members of the Colorado Mixed-Ownership Team. Sampling and analysis were completed in accordance with the EPA-approved Sampling and Analysis Plan/Quality Assurance Project Plan: 2018 Colorado Draining Mines Pre-CERCLA Field Screening, prepared by the Colorado Division of Mine Reclamation and Safety, June 2018.

The PCS Checklist/Decision Document, as required by EPA Pre-CERCLA Guidance (Office of Land and Emergency Management (OLEMJ) Directive# 9200.3-107, is included as Attachment A. A sample location figure and summary of soil and water analytical results as reported by the EPA Contract Laboratory is included in Attachment B.

¹ Comprehensive Environmental Response, Compensation, and Liability Act

**Sts. John Mine
Montezuma, Colorado**

**Attachment A:
Pre-CERCLA Screening Checklist Decision Form**

Pre-CERCLA Screening Checklist/Decision Form

This form is used in conjunction with a site map and any additional information required by the EPA Region to document completion of a Pre-CERCLA Screening (PCS). The form includes a decision on whether a site should be added to the Superfund program's active site inventory for further investigation.

EPA Region: 8 **State:** Colorado

EPA ID No. (If Available): Not Applicable

Site Category: Draining Mines	Select a Site Name (Primary): Saints John Mine
Site Number: Unknown	
Date of Site Visit: Jun 19, 2018	Time of Site Visit: 10:53

Checklist Preparer

Title: Liaison to EPA/Ecological Risk Assessor
Name: Robyn Blackburn

Organization: US Fish and Wildlife Service

Street Address: 1595 Wynkoop Street

City: Denver

State: Colorado Zip Code: 80202

Phone: (303) 312-6663

Email: blackburn.robbyn@epa.gov

Site Information (Preliminary)

Site Name (Alternate 1): Sts. John Mine

Site Name (Alternate 2): N/A

Region: 8

State: Colorado County: Summit

Congressional District: 02

Township & Range: T5S/R76W

Section: 34

Section (1/4): SE

Section (1/16): SE

Spatial Location

Latitude: 39.569984

Longitude: -105.87816

Collection Method: GPS (handheld, Smartphone, other device with < 25m accuracy)

Horizontal Accuracy in Meters: <25m

Site Description (of this Spatial Location):

Main portal with draining adit

Mine Site Contact

Title:

Name: NA

Organization:

Street Address:

City:

State:

Zip Code:

Phone:

Email:

Preliminary Assessment (Historical Data)

CERCLA 105d Petition for Preliminary Assessment: No

Petition Date: Not Applicable

RCRA Subtitle C Site Status: Is site in RCRAInfo?: No

RCRAInfo Handler ID #: Not Applicable

Additional RCRAInfo ID #: Not Applicable

State ID: Not Applicable

Other ID: DRMS-163

Ownership Type: Mixed Ownership

Site Type: Abandoned Mine Site

Site Sub-Type: Hard Rock Mining

Federal Facility: No

Federal Facility Owner: Not Applicable

Federal Facility Operator: Not Applicable

Formerly Used Defense Site (FUDS): No

Federal Facility Docket: No

Federal Facility Docket Listing Date: Not Applicable

Federal Facility Docket Reporting Mechanism: Not Applicable

Native American Interest: Unknown

Tribe: Not Applicable

Additional Tribe: N/A

Site Description - Physical Setting

Abandoned Mine Site: Yes

Buildings: Buildings Present

Mill or Milling Equipment or Tailing Present: Yes

Steep Waste Piles: Yes

Safety Hazards Present: Yes

Safety Hazards Hazardous abandoned equipment or facilities , Miscellaneous Debris , Steep Vertical Inclines

Accessibility (provide details with regard to ability to access the site) Moderate Access

Time it takes to reach this site: 30 minutes

Detailed description of how the site was accessed: Unknown

Adjacent to Resident(s): No

Adjacent Residential Features: Not Applicable

Mountainous Steep Terrain: No

Vegetation Present: Yes

Vegetation Density: Moderate/Interspersed

Surface Water Body on or Adjacent to the Site: Yes

Open Fields: Yes

Waste Pile Erosion Observed: Yes

Describe Waste Pile Run Off: waste material is observed in the surrounding vegetation and is included in adit drainage channel.

Tailings Erosion Observed: Yes

Describe Tailings Run Off: fine, orange, sediment run off from mine piles observed in downstream channel.

Draining Adits or Seeps Discharge from the Site: Yes

Adits Flow Rate from Site: Significant

Describe Adit Flow from Site: There is an incised channel that is approx. 1-2 feet in width and 2-4 inches deep. Adit drainage results in iron precipitate and this appears to be a perennial flowing stream. discharge drains across some of the waste piles.

Draining Adits or Seeps Discharge Across Waste Piles: Yes

Draining Adits or Seeps Discharge to Adjacent Habitat: Yes

Adit Flows into what habitat: Water Body

Habitat Name: Not Applicable

Physical Setting and Access Features: Accessible and unique recreational area (e.g., tourist/natural attractions, hiking/biking trails, etc.)

Physical Setting (Field Notes - provide a brief summary of physical setting including notable safety concerns, waste types, human uses/exposures to wastes, runoff/drainage, and notable habitat/ecological use): The site is readily accessible, no fencing, and is heavily used for recreation including biking, hiking, and ATVs. The local historical society brings visitors and does regular tours to the mine. Heavy vehicle and recreational traffic.

Site Description - Land Use

Roads/Trails: Yes

Road/Trail Type: Dirt Road

Human Activity: Yes

Human Activity Type: Heavy

Residential: Yes

Residential Density: 1 Residence

Recreational Use: No

Recreational Density: Not Applicable

Camping: Yes

Camping Frequency: Minimal

Fishing: Yes

Fishing Frequency: Minimal

Hiking: Yes

Hiking Frequency: Heavy

Biking: Yes

Biking Frequency: Heavy

Picnicking: Yes

Picnicking Frequency: Minimal

Ecological Activity: Yes

Ecological Activity: Moderate

Observed/likely fishing/consumption of fish/aquatic organisms at the mine site or within ¼ miles downstream: Yes

Are there other observed sensitive environments on-site or downstream of the waste area(s) within ¼ mile? Yes

Sensitive Environment (wetland, stream, creek, river, known to be in the vicinity of a National Park, designated federal/state wildlife or scenic area, fish hatchery/spawning area, designated for wildlife or game management, known to be used by or designated critical habitat for Threatened or Endangered Species, or any other sensitive environment critical to supporting wildlife):

Fish Populations

Other Sensitive Environments:

Land Use (Field Notes - provide a brief summary of human/ecological type of use and use level (e.g., heavily used for biking and camping; observed camp fire rings and picnic tables at the site immediately adjacent to the waste runoff; narrow foot trail with difficult steep access to the waste areas and minimal use of the area, etc.): Heavily used for biking, hiking, and a lot of vehicle and ATV traffic. Easy to access and there is a high level of tourism interest.

Site Surface Description

Draining Adit: Yes **Draining Adit Type:** Discharges to Creek, Stream, River, or Wetlands

Waste Piles: Yes **Number of Waste Piles:** 4

Airborne Release of Fine Material/Dust: Yes

Surface Water on or Immediately Adjacent: No **Water Body Name:** Not Applicable

Wetlands on or Adjacent to Site: Yes

Forested on or Adjacent to the Site: Yes

Riparian on or Adjacent to the Site: No

Site Surface (Field Notes): Site is surrounded by forested area, drainage from high flowing adit creates stream that discharges through the waste piles and into the surrounding forested area, ultimately into a forested stream/creek setting.

Site Description (Other)

Groundwater Seeps Observed: Yes

Primary Drainage Name: Sts. John Creek

Groundwater Seeps (Field Notes): Not Applicable

Previous Investigations: Yes

Investigation Type: Unknown

Who Completed Investigations at this Site: State

Cleanup Activities: Yes **Cleanup Type:** Historic Evidence of Cleanup

Site Description Cleanup Field Notes: State

Who Completed Cleanup Activities at this Site: State

There were no Cleanup Activities at this Site: No previous cleanups were performed

Previous Regulatory Actions (Permitting and Enforcement): No

Previous Regulatory Type: Not Applicable

Site Feature Name(s): Not Applicable

Who Completed Regulatory Actions at this Site: Not Applicable

Institutional Controls: No **Institutional Control Type:**

Institutional Controls (indicate name/entity on signs/controls): No Institutional Controls

Community Interest: Yes **Community Interest Type:** Watershed Group Activity

Community Interest (Indicate watershed group or other interest group): Snake River Task Force

Survey Form

1. An initial search for the site in EPA's Superfund active, archive and non-site inventories should be performed prior to starting a PCS. Is this a new site that does not already exist in these site inventories?	No
2. Is there evidence of an actual release or a potential to release? Evidence of Potential Release Waste pile material observed in water body or other surrounding environment , Evidence of waste pile runoff/erosion (channels, rills, run off) , Draining mine adit water discharge , Draining mine adit discharging into a stream or water body , Draining mine adit discharging into wetlands or surrounding environment , Draining Mine Adit Water discharging over waste material	Yes
3. Are there possible targets that could be impacted by a release of contamination at the site?	Yes
4. Is there documentation indicating that a target has been exposed to a hazardous substance released from the site?	Yes
5. Is the release of a naturally occurring substance in its unaltered form, or is it altered solely through naturally occurring processes or phenomena, from a location where it is naturally found?	No
6. Is the release from products which are part of the structure of, and result in exposure within, residential buildings or business or community structures?	No
7. If there has been a release into a public or private drinking water supply, is it due to deterioration of the system through ordinary use?	No
8. Are the hazardous substances possibly released at the site, or is the release itself, excluded from being addressed under CERCLA?	No
9. Is the site being addressed under RCRA corrective action or by the Nuclear Regulatory Commission?	No
10. Is another federal, state, tribe or local government environmental cleanup program other than site assessment actively involved with the site (e.g., state voluntary cleanup program)?	No
11. Is there sufficient documentation or evidence that demonstrates there is no likelihood of a significant release that could cause adverse environmental or human health impacts?	No
12. Are there OTHER site-specific situations or factors that warrant further CERCLA remedial/integrated assessment or response?	No

Preparer's Recommendation

Preparer's Recommendation: Add site to the Superfund active site inventory.

Please explain recommendation below: The site includes several large waste piles and a high flowing draining mine adit. The adit drainage discharges across mine waste piles, a dirt driveway that is used to access an adjacent residence, and mine waste runoff is observed to discharge downstream into Sts. John Creek, a 303d-listed stream. Soil lead concentrations in the waste pile ranged up to 11,400 mg/kg and arsenic in soil ranged up to 35.7 mg/kg. Both lead and arsenic concentrations are well above corresponding local soil background concentrations and above EPA Residential/Industrial RSLs. The downstream Sts. John Creek that receives runoff from the mine confluences with the Snake River a short distance downstream, which ultimately discharges into Dillon Reservoir near Keystone Colorado. Acidic/low pH adit mine drainage including cadmium and zinc concentrations discharges into Sts. John Creek and concentrations are well above acute and chronic aquatic life water quality standards. Metals concentrations in Sts. John creek upstream of the adit discharge are below water quality standards. The site is recommended for further evaluation due to elevated soil lead concentrations, adjacent resident, potential for local recreational use, and highly contaminated, mine waste runoff visibly enters the downstream water body.

Site Assessor's Name: David Fronczak

Site Assessor's Signature:



Date: Feb 27, 2019

EPA Regional Review and Pre-CERCLA Screening Decision

EPAs Recommendation: Add site to the Superfund active site inventory.

Add site to the Superfund active site inventory for completion of a:

- ☐ Standard/full preliminary assessment (PA)
- ☐ Abbreviated preliminary assessment (APA)
- ☐ Combined Preliminary Assessment/Site Inspection (PA/SI)
- ☐ Integrated Removal Assessment and Preliminary Assessment
- ☐ Integrated Removal Assessment and Combined PA/SI
- ☐ Other Description

Do not add site to the Superfund active site inventory. Site is:

- ☐ Not a valid site or incident
- ☒ Refer to/being addressed by EPA's Removal Program
- ☐ Refer to/being addressed by a State cleanup program
- ☐ Refer to/being addressed by Tribal cleanup program
- ☐ Refer to/being addressed under Resource Conservation and Recovery Act (RCRA)
- ☐ Refer to/being addressed by the Nuclear Regulatory Commission (NRC)
- ☐ Other Description

EPA Region 8 Reviewer's Name: Jean Wyatt

EPA Region 8 Reviewer's Signature:



Date: Feb 27, 2019

Site Location



Photographs



Flume location downstream of STJ-SW-A01-02

Saints John Mine (DRMS-163) 6/19/2018



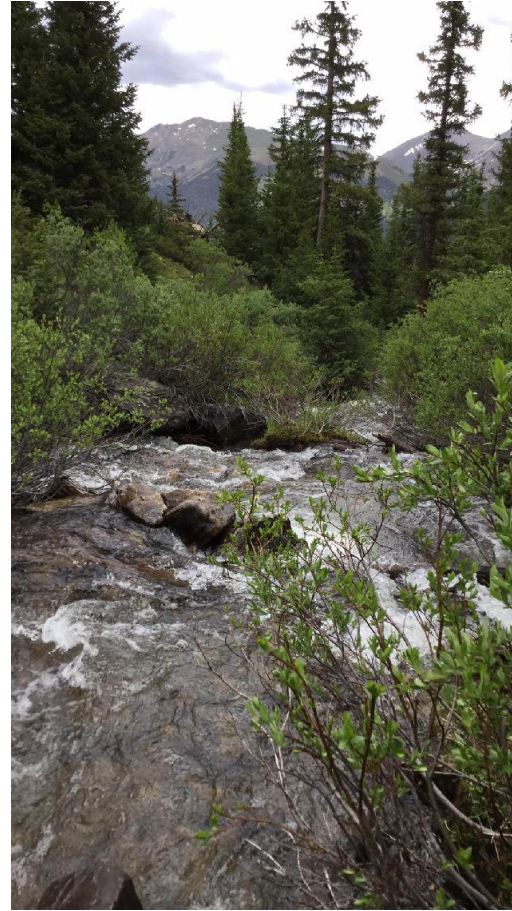
STJ-SW-AO1-01



STJ-SW-AO1-02



STJ-SW-DNS-01



STJ-SW-UPS-01



STJ-SO-BKG-01



STJ-SO-MP01-01



STJ-SO-MP01-01



STJ-SO-MP02-01



STJ-SO-MP02-01



STJ waste pile area



Sts. John Mine - Overview Aerial View

**Sts. John Mine
Montezuma, Colorado**

**Attachment B:
Pre-CERCLA Sampling and Analysis Summary**

2018 Draining Mines Pre-CERCLA Screening - Surface Water, Soil, and SPL Results for Saints John Mine, Summit County, Colorado*																											
STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	SAMPLE TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Hardness
					ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
STJ-SW-A01-01	Dissolved Metals	Surface Water	6/19/2018	12:57	61.6 J-	2 R	1 R	15.2 J-	0.2 J-	16.1 J-	141000 J-	0.13 U	14.4 J-	1.1 J-	1990 J-	0.019 U	24100 J-	9650 J-	32.6 J-	1450 J-	5 R	1 R	5790 J-	0.029 J-	5 R	3510 J-	451
STJ-SW-A01-01.D	Dissolved Metals	Surface Water	6/19/2018	12:57	74.8 J-	2 R	1 R	14.4 J-	0.2 J-	15.4 J-	142000 J-	0.13 U	13.9 J-	0.9 J-	1930 J-	0.019 U	23800 J-	9330 J-	30.9 J-	1420 J-	5 R	1 R	5640 J-	0.027 J-	5 R	3520 J-	453
STJ-SW-A01-02	Dissolved Metals	Surface Water	6/19/2018	12:16	31.4 J-	2 R	1 R	14.5 J-	1 R	14.5 J-	148000 J-	0.13 U	14 J-	0.95 J-	1110 J-	0.019 U	24600 J-	9680 J-	30.1 J-	1470 J-	5 R	1 R	5890 J-	0.028 J-	5 R	3180 J-	471
STJ-SW-DNS-01	Dissolved Metals	Surface Water	6/19/2018	10:03	23.1 J-	2 R	1 R	9.5 J-	1 R	0.36 J-	13600 J-	0.13 U	0.2 J-	0.57 J-	41 J-	0.019 U	2700 J-	146 J-	0.77 J-	711 J-	5 R	1 R	3460 J-	1 R	5 R	111 J-	45
STJ-SW-UPS-01	Dissolved Metals	Surface Water	6/19/2018	11:18	21.8	0.13 U	0.47 U	0.17 U	0.17 U	0.06 U	8260	0.13 U	0.024 U	0.078 U	3.8 U	0.019 U	1390	7.6	1.1	626	1.2 U	0.032 U	1190	0.018 U	0.36 U	12.4	26

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	SAMPLE TIME	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
STJ-SO-RWG-01	Total Recoverable Metals	Soil	6/19/2018	10:30	11200	1.8 J-	91.1 J-	149 J-	0.18 J-	12.1 J-	1590	13.9 J-	4 J-	631 J-	30100	796 J-	3010	681 J-	0.0064 U	6 J-	2550	2.9 R	4.9 J-	102 U	0.62 J-	21.2 J-	2940 J-
STJ-SO-MP01-01	Total Recoverable Metals	Soil	6/19/2018	11:04	9360	19.2 J-	17.3 J-	178 J-	0.56 J-	18.2 J-	9210	8.6 J-	10.5 J-	145 J-	44800	10500 J-	3780	7460 J-	0.15	13.9 J-	2780	0.82 J-	46.1 J-	89.4 U	0.54 J-	15.5 J-	3950 J-
STJ-SO-MP02-01	Total Recoverable Metals	Soil	6/19/2018	13:12	8840	10.7 J-	33.5 J-	122 J-	0.54 J-	18.1 J-	8840	12.8 J-	13.8 J-	221 J-	40900	8360 J-	3400	6480 J-	0.5	17.3 J-	3240	0.82 J-	44.3 J-	90.1 U	0.79 J-	18.7 J-	4780 J-
STJ-SO-MP02-01	Total Recoverable Metals	Soil	6/19/2018	13:12	8530	16.5 J-	25.5 J-	157 J-	0.47 J-	42.1 J-	7560	22.3 J-	14.2 J-	211 J-	43600	11400 J-	3340	7410 J-	0.32	20.1 J-	2870	1.7 J-	44 J-	82.3 U	1.1 J-	25.4 J-	14800 J-

Sts. John Mine - Field Measurements								
Location	Date	Time	pH	Temp °C	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm)	Flow (cfs)	Flow Measurement Equipment
STJ-SW-A01-01	6/19/2018	12:57	7.18	3	7.1	992	0.14	4" Cutthroat Flume
STJ-SW-A01-02	6/19/2018	12:16	7.66	5.5	7.76	983	0.13	4" Cutthroat Flume
STJ-SW-DNS-01	6/19/2018	10:03	7.47	5.3	7.34	110	11.14	Flow Tracker
STJ-SW-UPS-01	6/19/2018	11:18	7.73	6.7	7.64	62	7.2	Flow Tracker

Soil Synthetic Precipitation Leaching Procedure Leachate and Corresponding Composite Soil Sample Metals Analytical Results for Soil Samples Collected During the 2018 Colorado Draining Mines Field Season








STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	SAMPLE TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	olybdenu	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium
STJ-SO-MP01-01	SPLP	Leachate	6/19/2018	11:04	191 J	15.6 U	3.3 U	56.5 U	1.4 U	1.3 U	25500	2.1 U	12.9 U	6.3 U	54.4 J	28.3	2500 J	12.3 J	N/A	10.6 U	3240 J	9.5 U	1.1 U	15900	6 U	N/A	14.4 U

K-Ray Fluorescence (XRF) Spectrometry Soil Survey Results

Mine Name	XRF Sample ID	Latitude	Longitude	Date	Time	Units	Ti	Ti +/-	Cr	Cr +/-	Mn	Mn +/-	Fe	Fe +/-	Co	Co +/-	Ni	Ni +/-	Cu	Cu +/-	Zn	Zn +/-	As	As +/-	Se	Se +/-	Rb	Rb +/-	Sr	Sr +/-	Zr	Zr +/-	Mo	Mo +/-	Ag	Ag +/-	Cd	Cd +/-	Sn	Sn +/-	Sb	Sb +/-	Ba	Ba +/-	Hg	Hg +/-	Pb	Pb +/-
Saints John Mine	STJ-SO-MP01-X001	39.57018	-105.87852	19-06-18	11:11	PPM	2355	603	<LOD	207	14791	310	54422	740	<LOD	299	<LOD	70	178	17	5155	81	<LOD	110	<LOD	12	175	5	61	3	80	4	12	4	<LOD	44	<LOD	51	<LOD	82	<LOD	89	1472	294	<LOD	30	6729	95
Saints John Mine	STJ-SO-MP01-X002	N/A	N/A	19-06-18	11:27	PPM	1953	590	<LOD	183	9161	227	35402	499	<LOD	239	<LOD	70	162	17	3891	64	272	45	<LOD	14	133	5	151	5	84	4	19	4	<LOD	43	<LOD	51	<LOD	81	133	30	2048	293	<LOD	33	10432	138
Saints John Mine	STJ-SO-MP01-X003	N/A	N/A	19-06-18	11:33	PPM	2150	408	<LOD	133	4442	134	32480	405	<LOD	203	<LOD	53	46	10	1096	24	<LOD	33	<LOD	5	81	3	88	3	76	3	<LOD	9	<LOD	37	<LOD	45	<LOD	72	<LOD	79	<LOD	568	<LOD	14	772	16
Saints John Mine	STJ-SO-MP01-X004	N/A	N/A	19-06-18	11:38	PPM	5086	513	<LOD	156	4106	137	50069	610	<LOD	261	<LOD	61	41	11	904	22	<LOD	20	<LOD	4	159	4	69	3	185	4	<LOD	10	<LOD	38	<LOD	46	<LOD	74	<LOD	82	<LOD	663	<LOD	15	245	9
Saints John Mine	STJ-SO-MP01-X005	N/A	N/A	19-06-18	11:42	PPM	<LOD	883	<LOD	112	2231	88	11998	174	<LOD	120	<LOD	43	30	9	877	20	<LOD	30	<LOD	4	117	3	58	2	62	3	11	3	<LOD	35	<LOD	42	<LOD	68	<LOD	74	<LOD	421	<LOD	13	726	15
Saints John Mine	STJ-SO-MP01-X006	N/A	N/A	19-06-18	11:45	PPM	3732	596	<LOD	216	24158	441	44752	638	<LOD	268	<LOD	68	132	16	4842	79	262	39	<LOD	13	153	5	64	3	102	4	<LOD	11	<LOD	44	<LOD	52	<LOD	82	<LOD	92	<LOD	821	<LOD	31	7083	102
Saints John Mine	STJ-SO-MP01-X007	N/A	N/A	19-06-18	11:47	PPM	3002	462	<LOD	161	15699	285	32797	425	<LOD	206	<LOD	55	67	11	1849	34	58	17	<LOD	6	188	5	60	3	102	3	10	3	<LOD	39	<LOD	46	<LOD	73	<LOD	80	<LOD	636	<LOD	19	1810	30
Saints John Mine	STJ-SO-MP01-X008	N/A	N/A	19-06-18	11:49	PPM	1386	396	<LOD	125	4983	136	37493	240	<LOD	148	<LOD	49	104	12	2550	51	<LOD	59	<LOD	8	130	4	72	3	67	3	13	3	<LOD	37	<LOD	42	<LOD	69	<LOD	99	194	<LOD	18	2721	38	
Saints John Mine	STJ-SO-MP01-X009	N/A	N/A	19-06-18	11:51	PPM	1559	369	<LOD	136	1668	88	25985	339	<LOD	184	<LOD	52	<LOD	28	556	16	<LOD	31	<LOD	5	102	3	74	3	137	4	12	3	<LOD	38	<LOD	44	<LOD	71	<LOD	79	<LOD	514	<LOD	14	676	15
Saints John Mine	STJ-SO-MP01-X010	N/A	N/A	19-06-18	11:54	PPM	2603	528	<LOD	177	11419	247	35153	477	<LOD	226	<LOD	62	113	14	3985	63	<LOD	81	<LOD	9	158	4	85	3	80	3	12	3	<LOD	41	<LOD	49	<LOD	77	<LOD	85	1285	254	<LOD	24	4082	59
Saints John Mine	STJ-SO-MP01-X011	N/A	N/A	19-06-18	11:56	PPM	3350	524	<LOD	173	12201	253	40130	524	<LOD	239	<LOD	60	92	13	4025	62	169	29	<LOD	10	142	4	52	3	83	3	<LOD	10	<LOD	40	<LOD	47	<LOD	76	<LOD	84	796	243	<LOD	26	4854	67
Saints John Mine	STJ-SO-MP01-X012	N/A	N/A	19-06-18	11:58	PPM	1586	394	<LOD	131	1276	129	24082	314	<LOD	177	<LOD	53	95	12	1427	28	176	19	<LOD	7	94	3	68	3	95	3	<LOD	9	39	13	<LOD	45	<LOD	74	<LOD	82	630	187	<LOD	18	2161	33
Saints John Mine	STJ-SO-MP01-X013	N/A	N/A	19-06-18	12:00	PPM	<LOD	1728	<LOD	189	9183	232	31468	463	<LOD	233	<LOD	65	260	18	3708	64	<LOD	122	<LOD	13	171	5	159	5	90	4	23	4	140	15	<LOD	51	<LOD	82	307	32	2010	291	<LOD	31	8345	116
Saints John Mine	STJ-SO-MP01-X014	N/A	N/A	19-06-18	12:02	PPM	3199	502	<LOD	167	8905	201	36020	457	<LOD	221	<LOD	60	98	13	2761	45	87	23	<LOD	8	158	4	82	3	89	3	15	3	<LOD	39	<LOD	45	<LOD	73	<LOD	81	1168	236	<LOD	21	3349	47
Saints John Mine	STJ-SO-MP02-X001	39.56997	-105.87895	19-06-18	12:31	PPM	3580	595	<LOD	217	14703	307	52605	716	<LOD	294	83	26	175	17	10754	150	<LOD	82	<LOD	9	175	5	123	4	128	4	13	4	<LOD	44	<LOD	51	<LOD	89	<LOD	84	<LOD	841	<LOD	28	3733	58
Saints John Mine	STJ-SO-MP02-X002	N/A	N/A	19-06-18	12:33	PPM	1488	458	<LOD	162	11059	235	33908	450	<LOD	219	<LOD	59	91	13	5319	77	92	23	<LOD	8	200	5	53	3	83	3	12	3	<LOD	40	<LOD	47	<LOD	74	<LOD	81	767	224	<LOD	24	2969	44
Saints John Mine	STJ-SO-MP02-X003	N/A	N/A	19-06-18	12:35	PPM	2424	505	<LOD	186	9365	222	64071	803	<LOD	300	<LOD	70	523	22	1115	26	116	20	<LOD	7	168	4	65	3	110	4	<LOD	10	<LOD	40	<LOD	47	<LOD	77	<LOD	84	<LOD	705	<LOD	18	2257	37
Saints John Mine	STJ-SO-MP02-X004	N/A	N/A	19-06-18	12:37	PPM	2475	484	<LOD	168	10765	228	34585	463	<LOD	223	<LOD	62	72	13	3334	54	<LOD	68	<LOD	7	180	5	89	3	181	4	<LOD	10	<LOD	40	<LOD	48	<LOD	78	<LOD	85	703	228	<LOD	22	2945	45
Saints John Mine	STJ-SO-MP02-X005	N/A	N/A	19-06-18	12:39	PPM	2191	427	<LOD	153	10611	137	37821	457	<LOD	199	<LOD	54	55	10	1588	30	<LOD	38	<LOD	5	177	4	69	3	141	4	<LOD	9	<LOD	37	<LOD	40	<LOD	70	<LOD	77	680	201	<LOD	16	1025	19
Saints John Mine	STJ-SO-MP02-X006	N/A	N/A	19-06-18	12:41	PPM	1249	372	<LOD	127	4295	131	21767	294	<LOD	171	<LOD	51	<LOD	28	1090	24	<LOD	20	<LOD	4	110	3	71	3	99	3	<LOD	9	<LOD	38	<LOD	45	<LOD	73	<LOD	80	<LOD	535	<LOD	13	337	10
Saints John Mine	STJ-SO-MP02-X007	N/A	N/A	19-06-18	12:44	PPM	2113	492	<LOD	177	11491	249	32436	449	<LOD	221	<LOD	58	95	13	3718	60	156	25	<LOD	8	155	4	58	3	110	4	<LOD	10	<LOD	41	<LOD	49	<LOD	86	861	236	<LOD	24	3321	50		
Saints John Mine	STJ-SO-MP02-X008	N/A	N/A	19-06-18	12:46	PPM	2145	424	<LOD	178	11548	232	31468	463	<LOD	233	<LOD	65	260	18	3708	64	<LOD	122	<LOD	13	171	5	159	5	90	4	23	4	140	15	<LOD	51	<LOD	82	307	32	2010	291	<LOD	31	8345	116
Saints John Mine	STJ-SO-MP02-X009	N/A	N/A	19-06-18	12:48	PPM	1534	486	<LOD	180	15334	304	33612	471	<LOD	223	<LOD	62	112	14	3747	61	254	35	<LOD	11	191	5	54	3	60	3	16	3	<LOD	42	<LOD	49	<LOD	79	<LOD	87	<LOD	704	<LOD	27	6420	88
Saints John Mine	STJ-SO-MP02-X010	N/A	N/A	19-06-18	12:50	PPM	2006	437	<LOD	160	15354	287	37536	487	<LOD	228	<LOD	59	100	13	3941	61	254	35	<LOD	8	157	4	54	3	116	4	10	3	<LOD	39	49	15	<LOD	74	<LOD	82	<LOD	609	<LOD	22	3303	48
Saints John Mine	STJ-SO-MP02-X011	N/A	N/A	19-06-18	12:52	PPM	2509	403	<LOD	130	8632	189	27352	351	<LOD	182	<LOD	51	85	12	2221	38	87	19	<LOD	7	96	3	56	3	83	3	13	3	<LOD	47	<LOD	54	<LOD	70	<LOD	77	<LOD	546	<LOD	17	2390	35
Saints John Mine	STJ-SO-MP02-X012	N/A	N/A	19-06-18	12:54	PPM	2205	492	<LOD	178	10519	236	38130	511	<LOD	242	<LOD	55	112	14	3273	54	<LOD	20	<LOD	4	110	3	58	3	104	4	11	3	<LOD	41	<LOD	49	<LOD	84	<LOD	88	<LOD	598	<LOD	25	5675	77
Saints John Mine	STJ-SO-MP02-X013	N/A	N/A	19-06-18	12:55	PPM	2113	424	<LOD	178	11548	232	31468	463	<LOD	233	<LOD	65	260	18	3708	64	<LOD	122	<LOD	13	171	5	159	5	90	4	23	4	140	15	<LOD	51	<LOD	82	307	32	2010	291	<LOD	31	8345	116
Saints John Mine	STJ-SO-MP02-X014	N/A	N/A	19-06-18	12:57	PPM	3894	611	<LOD	186	9192	229	40056	559	<LOD	255	<LOD	69	182	17	4174	68	<LOD	107	<LOD	11	158	5	216	5	119	4	11	4	<LOD	46	<LOD	51	<LOD	82	<LOD	89	1526	288	<LOD	29	6403	90
Saints John Mine	STJ-SO-MP02-X015	N/A	N/A	19-06-18	12:59	PPM	2540	597	<LOD	162	14543	339	55420	803	<LOD	325	<LOD	79	415	24	18331	259	<LOD	92	<LOD	10	146	5	89	4	98	4	13	4	<LOD	46	<LOD	54	<LOD	85	<LOD	92	<LOD	861	<LOD	33	4116	67

Figure A.1
2018 Colorado Draining Mines
Pre-CERCLA Screening
Surface Water and
Soil Sampling Locations

DRMS Mine #163
Saints John Mine, Montezuma, CO
Snake River Watershed
Summit County

-  2018 Screening Event Mines
-  Surface Water Grab Sample Locations
-  Center of Soil Composite Sample Locations
-  Major Streams
-  Wetlands
-  Private
-  US Forest Service

Map Date: December 12, 2018

Data Sources:
Sample Locations: U.S. EPA (2018).
Mine Locations: CDPHE and DNR (2018).
Streams: CDOW (2004).
Wetlands: U.S. Fish and Wildlife Service (2017).
Ownership: BLM (2018).
World Imagery Web Service: ESRI (2018).

Map Projection: UTM Zone 13N, WGS84, Meters



Area of Interest