



November 11, 2011

State of Colorado  
Office of the State Engineer  
818 Centennial Bldg., 1313 Sherman Street, Ste 821  
Denver, Colorado 80203

To Whom It May Concern,

**Re: Well Construction and Test Report**

Black Range Minerals Colorado LLC would like to recommence the monitoring of a small group of historic monitoring wells located on our Hansen Project located in Fremont County, Colorado.

The Hansen Project was operated by Cyprus Mines Corporation in the 1970's and 1980's, and at one time was fully permitted for mining. Cyprus completed and installed a series of monitoring wells to obtain all the necessary hydrological data required to permit the mine, however production never eventuated.

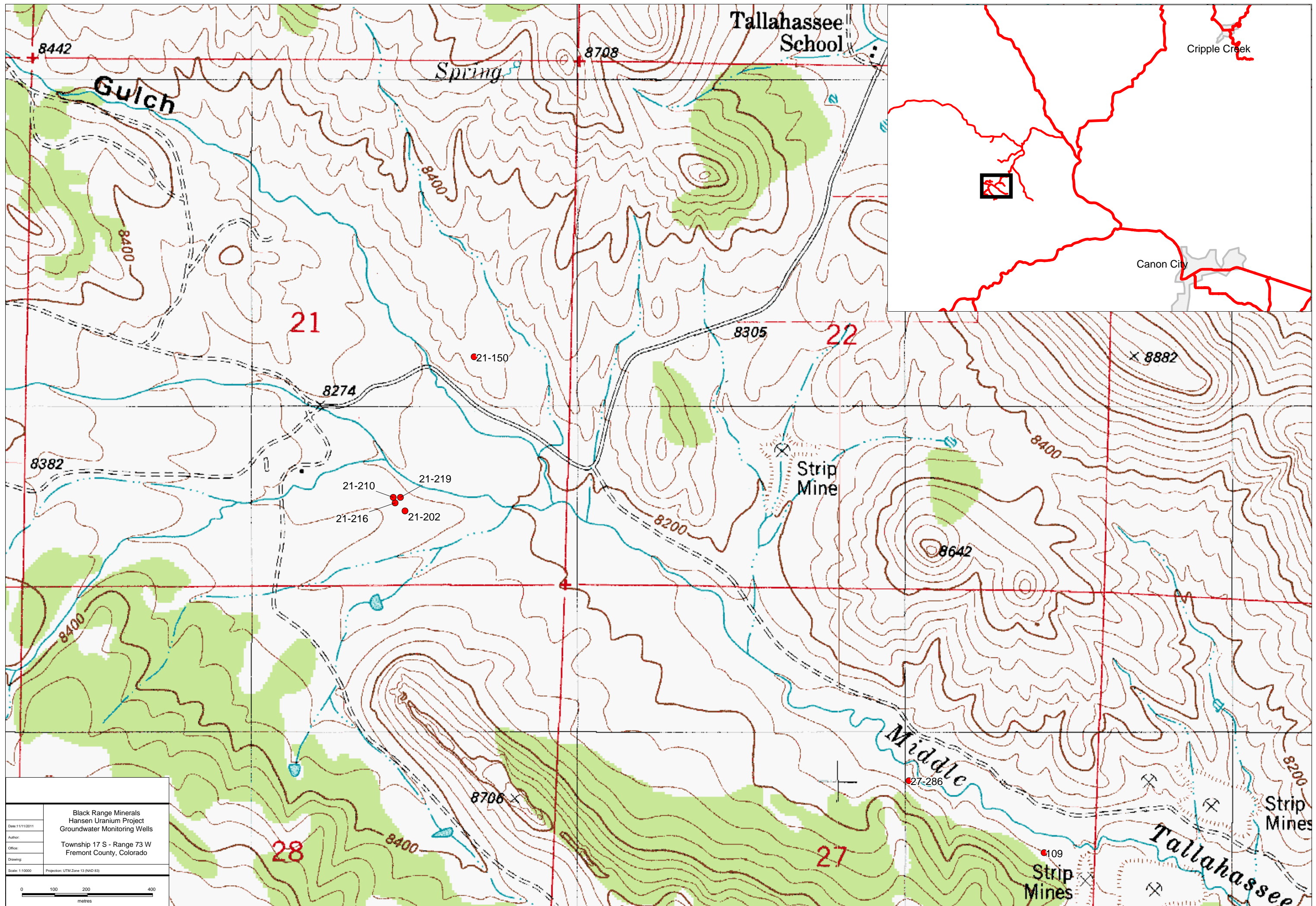
Black Range has obtained the majority of the data pertaining to well locations and construction; we have located and inspected each well in the field. We have identified seven wells that appear to be in good condition and completed in the appropriate formations and would like to recommence a monitoring program for both water quality and level.

Please find attached forms GWS-31 and GWS-46 for each well and a map identifying the location of the seven wells. I believe this is all that is required for the DWR to permit these wells. A representative from my office will be calling to provide credit card details on Monday November 14, 2011.

If you have any queries or require further information please do not hesitate to contact me on 303-279-4946.

Yours sincerely,

Ben Vallerine  
Exploration Manager



[illegible]



# RAMPART EXPLORATION CORPORATION SAMPLE LOG

Hole 21-150 Logged by M. Kaba Date 9/1/78 Page 1 of 2  
 Driller B. Cool TD 800 Date 9/1/78  
 Probe L. Donald TD 797 Date 9/1/78  
 Est. Mud Wt. \_\_\_\_\_ Hole Size 5 1/8 Log Types gam, sp, res. Collar Elev. 8308  
 Location Hansen Area A Development Sec. 21 T. 17S R. 73W  
 Area Tallahassee Creek County Fremont State Co. Collar Coord. N 262,210 E 1,984 417  
 Remarks \_\_\_\_\_

Describe Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspatic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to vol. 50, no. 1, Colorado School of Mines Quarterly. ALTERED \_\_\_\_\_ UNALTERED \_\_\_\_\_

Depth	Log	Alt.	Description
Qal			soil
T <sub>mi</sub>			andesite breccia; orange-brn, cly + sd. mtx.; limonite + hematite stain; withrd.; h. ox.
40			
			andesite breccia, purp. gy., shang-shrd. gr. cly + sd. mtx.; hematite stain; withrd.; h. ox.
80			
120			
T <sub>tc</sub>			clyst, ga-gy, p. scfd, sd + slt + cly. mtx. (same pebbles), sl. hematite + limonite stain; h. ox.
160			
			clyst. pbl. cgl, rd. gy - ga. gy., shang-shrd. gr., cly + sd + slt. mtx.; mod. limonite + hematite stain; mod. ox.; withrd.
200			
240			hldr. cgl, gy., shang-shrd. gr., sd + cly. mtx.; sl. hematite + limonite stain; sh. ox.
280			clyst. pbl. cgl, dk. gy - ga. gy., shang-shrd. gr., cly + sd. mtx.; mod. hematite + limonite stain; mottled ox.; withrd.
320			
360			pbl - cbl. cgl, gy-brn, shang-shrd. gr., cly + sd. mtx.; mod. hematite + limonite stain; withrd.; mod. ox.

Hole No. 21-150  
 Page 1 of 2

# RAMPAR. EXPLORATION CORPORATION SAMPLE LOG

Hole 21-150 Logged by M. Kahn Date 9/1/78 Page 2 of 2  
 Driller B. Cool - R.E.M. TD 800 Date 9/1/78  
 Probe L. Donald-Frontier Logging Corp. TD 797 Date 9/1/78  
 Est. Mud Wt. \_\_\_\_\_ Hole Size 5 1/8" Log Types gem, sp, res. Collar Elev. 8308  
 Location Hansen Area A Development Sec. 21 T 17 S R 73 W  
 Area Tallahassee Creek County Fremont State Co. Collar Coord. N 262,210 E 1,984,417  
 Remarks \_\_\_\_\_

Describe Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspathic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to vol. 50, no. 1, Colorado School of Mines Quarterly. ALTERED      UNALTERED     

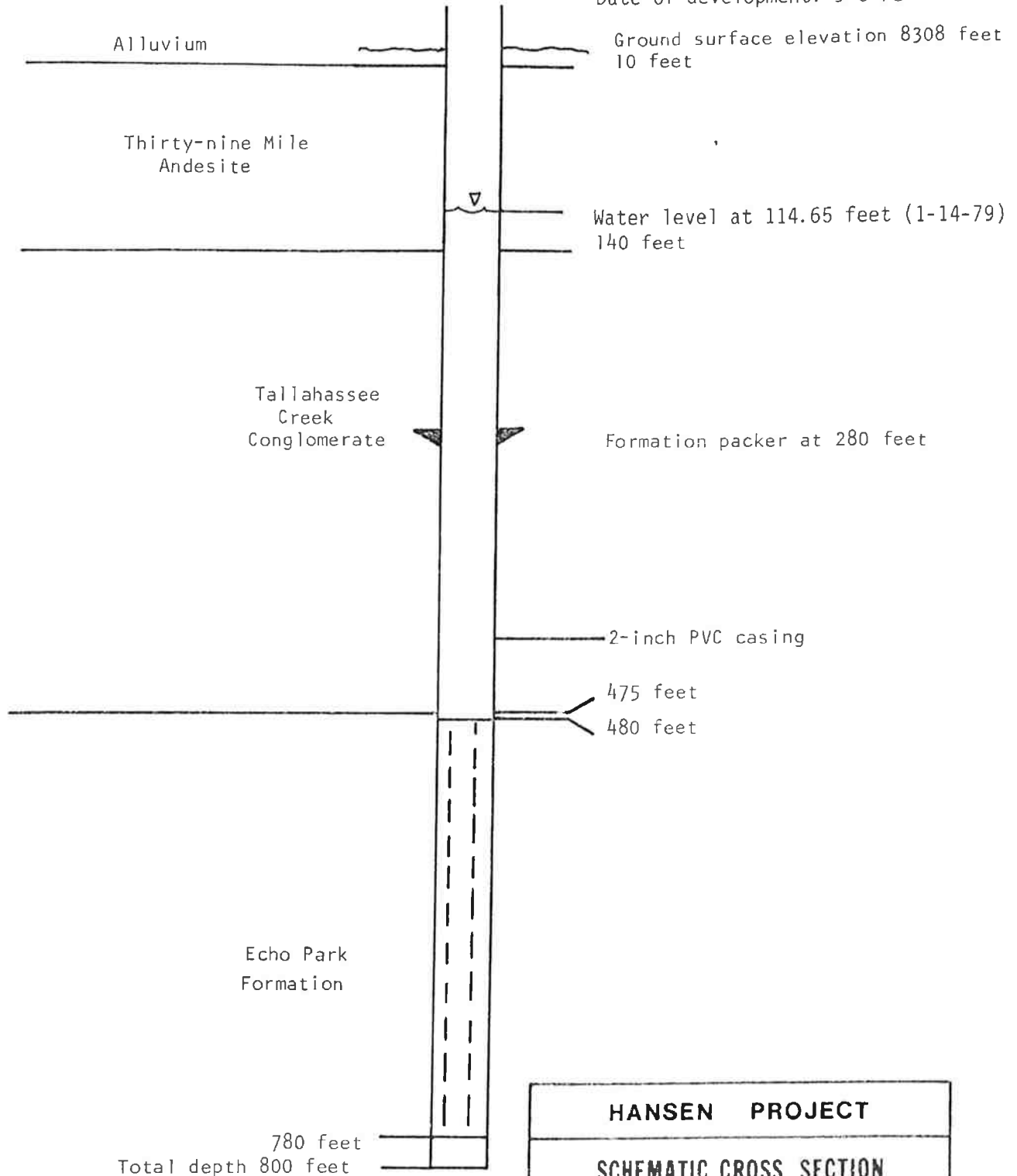
Depth	Log	All.	Description
440			
480			
520			clyst., gy., shrd. gr., med. sstd., sd + cly. mtx., wthrd., sl. ox.
560			
600			ss - clyst., gy., shrd. - shang. gr., med. sstd., sd + cly. mtx., sl. ox., wthrd.
640			
680			ss. pbl. cgl., gy., shrd. - shang. gr., sd + cly. mtx., wthrd., sl. hematite + limonite sto., sl. ox., lithic
720			
760			(same) unex., wthrd., dk. gy.
			ss. bld. cgl., gy., shang. gr., v. w. csdt, sd + cly. mtx., unex. subarkose grading to arkose.

Hole No. 21-150  
 Page 2 of 2

HOLE 21-150

Date of completion: 9-1-78

Date of development: 9-5-78



5 1/8" Ø Hole

Depths taken from ground surface

HANSEN PROJECT

SCHEMATIC CROSS SECTION  
OF MONITORING HOLE

WRIGHT WATER ENGINEERS, INC.

[illegible]

# CYPRUS SAMPLE LOG

Hole 21-202 Logged by M. Kahn Date 2/16/79 Page 1 of 2  
 Driller L. Skeem - Stevens + Harris Drilling Co. TD 726 Date 2/16/79  
 Probe L. Donald - Frontier Logging Corp. TD 726 Date 2/16/79  
 Est. Mud Wt. \_\_\_\_\_ Hole Size 5 1/8 Log Types gamyspyres Collar Elev. \_\_\_\_\_  
 Location Hansen Area A Development Sec. 21 T. 17S R. 73W  
 Area Tallahassee Creek County Fremont State Co. Collar Coord. N \_\_\_\_\_ E \_\_\_\_\_  
 Remarks \_\_\_\_\_

Describe Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspatic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to Vol. 50, no. 1, Colorado School of Mines Quarterly. ALTERED ----- UNALTERED -----

Depth	Log	All.	Description
Gal			alluvium, purp. brn. to orang. to purp. brn. sd. + cly. mtx. v. hematite + limonite stn. v. ox. wthrd.
			(same) v. cly. mtx.
Tfm 40			andesite breccia, purp. gy. sd. + cly. mtx. sl. hematite + limonite stn. sl. ox. wthrd.
80			(same) v. hematite stn. v. ox.
120			(same) dk. gy. v. cly. mtx. no ox.
Tfc			
160			
200			cgl. gy. sbang. - sbd. gr. cly. + sd. mtx. sl. mod. hematite + limonite stn. sl. mod. ox. wthrd. vol.
240			clyst. cgl. brn. grading to rd. brn. sbd. - sbang. gr. cly. + sd. mtx. mod. - v. hematite + limonite stn. mod. - v. ox. wthrd.
Tum			tuff, purp. brn. sd. + v. cly. mtx. v. hematite + limonite stn. v. ox. wthrd.
280			tuff, yel. brn. sd. + cly. mtx. v. hematite + limonite stn. v. ox. wthrd.
320			(same) purp. brn. mod. stn. mod. ox.
Tep			clyst. cgl. gn. gy. sbd. - sbang. gr. sd. + cly. mtx. mod. hematite + limonite stn. mod. ox. wthrd.
360			(same) yel. gn. gy. v. limonite stn.

Hole No. 21-202  
Page 1 of 2



# CYPRUS SAMPLE LOG

Hole 21-202 Logged by M. Kahn Date 2/16/79 Page 2 of 2  
 Driller L. Skeem-Stevens+Harris Drilling Co. TD 726 Date 2/16/79  
 Probe L. Donald-Frontier Logging Corp. TD 726 Date 2/16/79  
 Est. Mud Wt. \_\_\_\_\_ Hole Size 5 1/8 Log Types gamy, spyr, res. Collar Elev. \_\_\_\_\_  
 Location Hansen Area A Development Sec. 21 T. 17S R. 73W  
 Area Tallahassee Creek County Fremont State Co. Collar Coord. N. \_\_\_\_\_ E. \_\_\_\_\_  
 Remarks \_\_\_\_\_

Describe Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspathic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to Vol. 50, no. 1, Colorado School of Mines Quarterly. ALTERED \_\_\_\_\_ UNALTERED \_\_\_\_\_

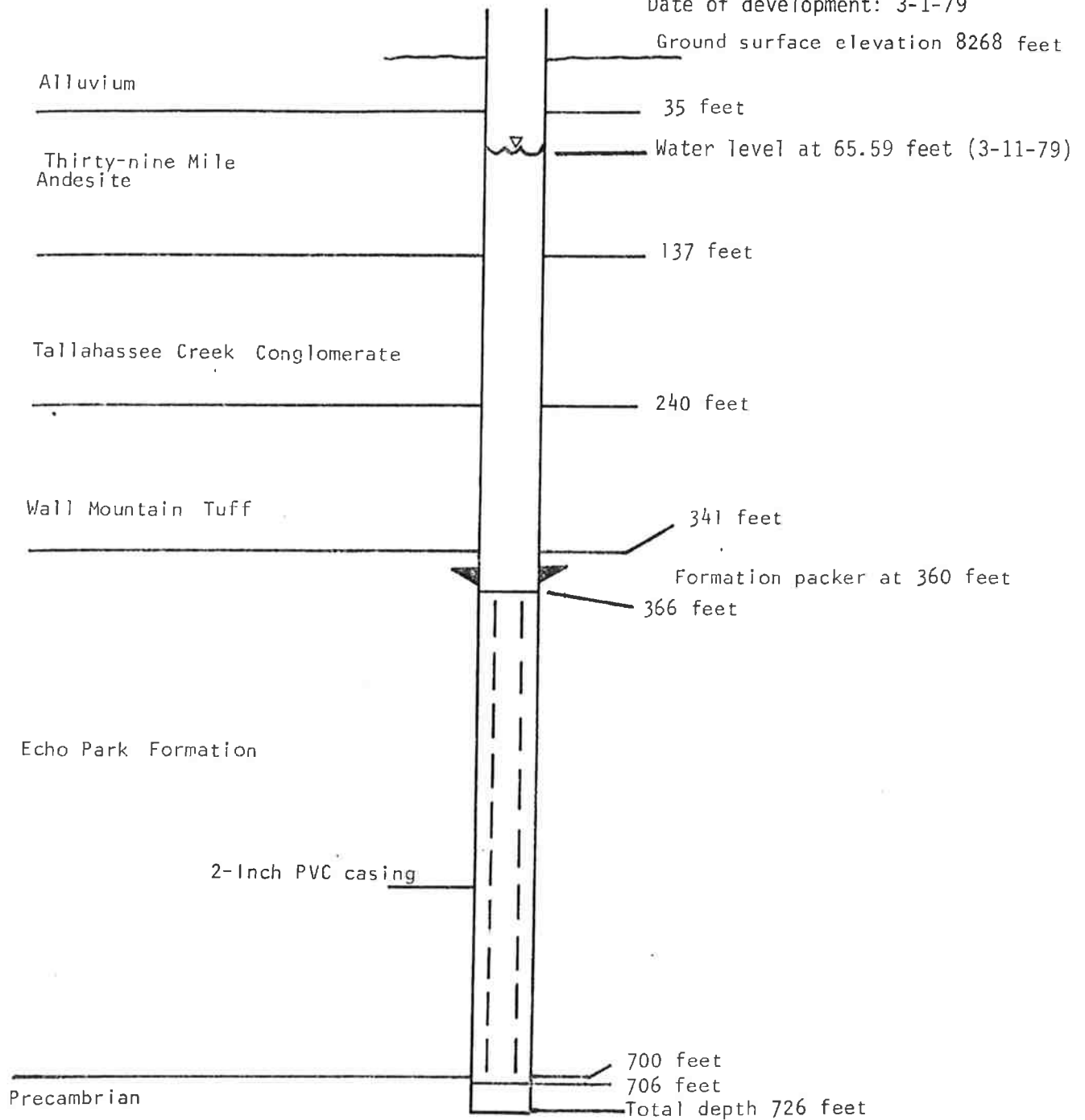
Depth	Log	Alt.	Description
440			sd, clyst, cgl, ga, gy, cly + sd, mtx, sl hematite + limonite, stn, sl. ox, wthrd.
480			cgl, ga, gy, shang - sbrd. gr, sd + cly, mtx, sl hematite + limonite, stn, sl. ox, wthrd.
520			ss, cgl, ga, gy, cgr, sbrd - shang, gr, cly + sd, mtx, sl hematite, + limonite, stn, sl. ox, wthrd, quartzose
560			ss, cgl, arag, c. gr, sbrd - shang, gr, sd + cly, mtx, sl hematite, + limonite, stn, sl. ox, wthrd, arkose
600			(same) brn.
640			(same) gy.
680			granite, bldr, cgl, pink gy - brn, shang, gr, sd + cly, mtx, wthrd.
720			granite, pink
60			

HOLE NO. 21-202

Date of completion: 2-16-79

Date of development: 3-1-79

Ground surface elevation 8268 feet



5 1/8" Ø Hole

Depths taken from ground surface

HANSEN PROJECT

SCHEMATIC CROSS SECTION  
OF MONITORING HOLE

WRIGHT WATER ENGINEERS, INC.

FORM NO. GWS-31 10/2011		WELL CONSTRUCTION AND TEST REPORT STATE OF COLORADO, OFFICE OF THE STATE ENGINEER 1313 Sherman St., Ste 821, Denver, CO 80203 Main (303) 866-3581 Fax (303) 866-3589			For Office Use Only	
1. WELL PERMIT NUMBER:						
2. WELL OWNER INFORMATION						
NAME OF WELL OWNER: Black Range Minerals Colorado LLC						
MAILING ADDRESS: PO Box 18041						
CITY: Golden		STATE: CO		ZIP CODE: 80402		
TELEPHONE NUMBER: (303) 279-4946						
3. WELL LOCATION AS DRILLED: SW 1/4, SE 1/4, Sec. 21, Twp. 17 <input type="checkbox"/> N or <input checked="" type="checkbox"/> S, Range 73 <input type="checkbox"/> E or <input checked="" type="checkbox"/> W						
DISTANCES FROM SEC. LINES: 900 ft. from <input type="checkbox"/> N or <input checked="" type="checkbox"/> S section line and 1,750 ft. from <input checked="" type="checkbox"/> E or <input type="checkbox"/> W section line.						
SUBDIVISION: South T-Bar Ranch, LOT 91, BLOCK, FILING (UNIT) 5						
Optional GPS Location: GPS Unit must use the following settings: Format must be UTM, Units must be meters, Datum must be NAD83, Unit must be set to true N, <input type="checkbox"/> Zone 12 or <input checked="" type="checkbox"/> Zone 13					Owner's Well Designation: 21-210	
STREET ADDRESS AT WELL LOCATION: Tallahassee Trail S., Canon City, CO 81212					Easting: 451,389.48	
Northing: 4,266,923.43						
4. GROUND SURFACE ELEVATION 8259 feet						
DATE COMPLETED 02/21/1979 TOTAL DEPTH 110 feet						
DRILLING METHOD Rotary (Air, Foam or Mud)						
5. GEOLOGIC LOG:						
Depth	Type	Grain Size	Color	Water Loc.	6. HOLE DIAM (in.) From (ft) To (ft)	
					7 0 110	
See Attached						
7. PLAIN CASING:						
OD (in)		Kind	Wall Size (in)	From (ft)	To (ft)	
4" ID		PVC	UNK	0	30	
PERFORATED CASING: Screen Slot Size (in): 1.5 x 0.03						
4" ID		PVC	UNK	30	36	
4" ID		PVC	UNK	40	100	
4" ID		PVC	UNK	106	110	
8. FILTER PACK:						
Material		Sand		9. PACKER PLACEMENT:		
Size		Sand		Type 5' of 1/2" Bentonite Chips		
Interval		1' Above Slotted		5' of Cement		
				Depth 30		
10. GROUTING RECORD						
Material		Amount	Density	Interval	Placement	
Remarks:						
11. DISINFECTION: Type Amt. Used						
12. WELL TEST DATA: <input type="checkbox"/> Check box if Test Data is submitted on Form Number GWS 39 Supplemental Well Test.						
TESTING METHOD UNK						
Static Level 25.37 ft.		Date/Time measured: 02/28/1979		Production Rate UNK gpm.		
Pumping Level UNK ft.		Date/Time measured 02/25/1979		Test Length (hrs) UNK		
Remarks:						
13. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402-2. [The filing of a document that contains false statements is a violation of section 37-91-108(1)(e), C.R.S., and is punishable by fines up to \$5000 and/or revocation of the contracting license.]						
Company Name: Black Range Minerals Colorado LLC				Phone: (303) 279-4946		License Number: Unknown
Mailing Address: PO Box 18041, Golden, CO 80402						
Signature: [Signature]		Print Name and Title Ben Vallerine - Exploration Manager				Date 11/11/2011

# SAMPLE LOG

Hole 21-210 Logged by M. Kaba Date 2/21/79 Page 1 of 1  
Driller R. Howell - R.E.M. TD 110 Date 2/21/79  
Probe L. Donald - Frontier Logging Corp. TD 106 Date 2/21/79  
Est. Mud Wt. \_\_\_\_\_ Hole Size 5 7/8 Log Types gamyspires Collar Elev. \_\_\_\_\_  
Location Hansen Area A Development Sec. 21 T 17S R 73W  
Area Tallahassee Creek County Fremont State Co. Collar Coord. N \_\_\_\_\_ E \_\_\_\_\_  
Remarks \_\_\_\_\_

Describe Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspatic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to Vol. 50, no. 1, Colorado School of Mines Quarterly. ALTERED— — — — UNALTERED=====

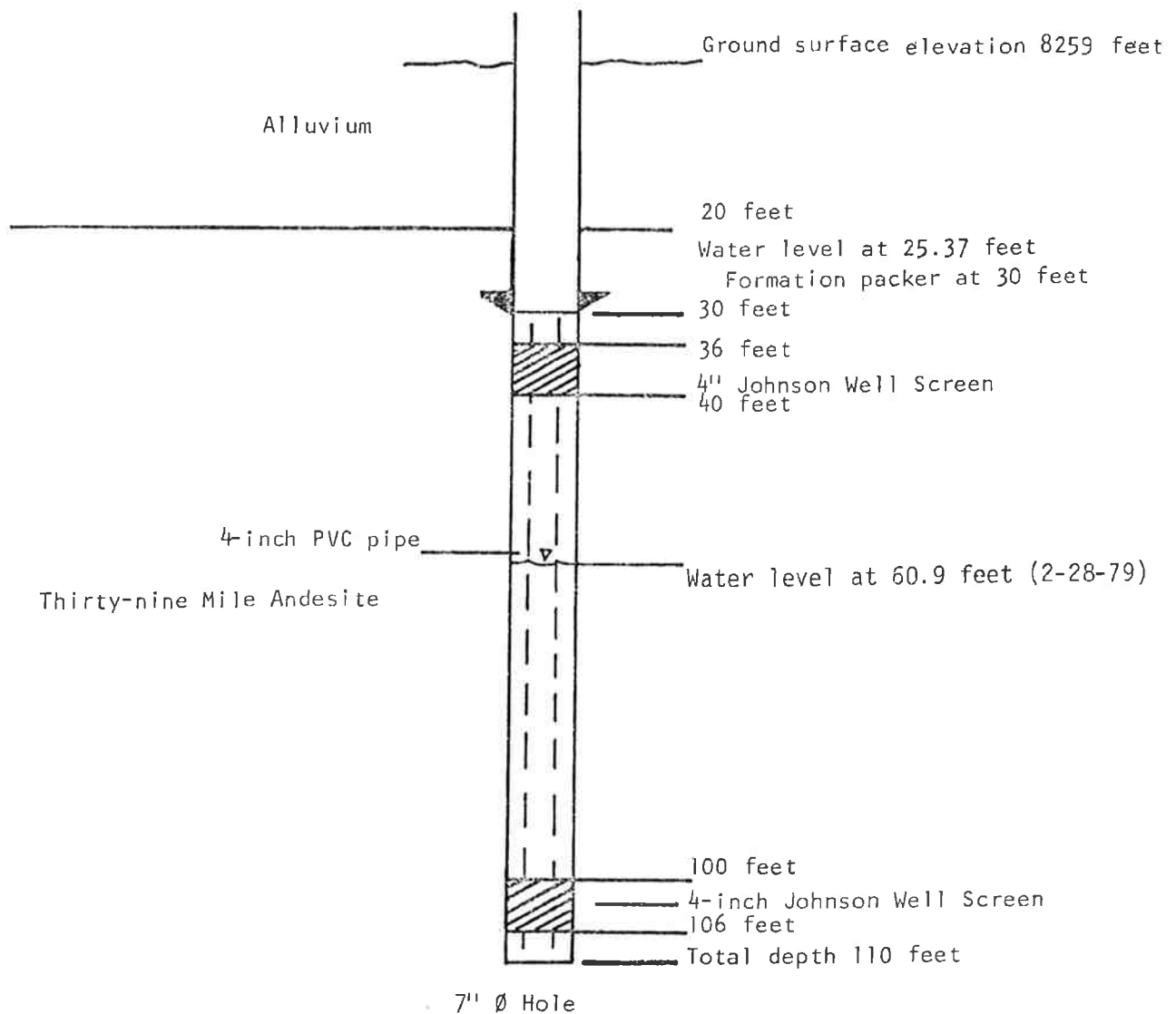
Depth	Log	Alt.	Description
Qal			alluvium, org. brn.
T+ml	v.v		andesite breccia, org., sd.+cly. mtx.; v. hematite + limonite staining
40	v.v		v. ox., w/ hrd.
	v.v		(same) gy., mod. stn., mod. ox.
80	v.v		(same) purp. gy.
20			
60			
00			
40			
80			
20			
60			

Hole No. 21-210  
 Page 1 of 1

HOLE NO. 21-210

Date of completion: 2-21-79

Date of development: 2-25-79



Depths taken from ground surface

HANSEN PROJECT

SCHEMATIC CROSS SECTION  
OF MONITORING HOLE

WRIGHT WATER ENGINEERS, INC.



[illegible]

**CYPRUS**  
SAMPLE LOG

Hole 21-216 Logged by H. Harlan Date 2-27-79 Page 1 of 1  
 Driller L. Skeen, Stevens and Harris Drilling Co. TD 320 Date 2-27-79  
 Probe L.A. Donald TD 317 Date 2-27-79  
 Est. Mud Wt. \_\_\_\_\_ Hole Size 5 1/8 Log Types gan, res, sp Collar Elev. \_\_\_\_\_  
 Location Hansen Area A Development Sec. 21 T. \_\_\_\_\_ R. \_\_\_\_\_  
 Area Tallahassee Crk. County Fremont State CO Collar Coord. N. \_\_\_\_\_ E. \_\_\_\_\_  
 Remarks \_\_\_\_\_

**Describe** Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspatic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to vol. 50, no. 1, Colorado School of Mines Quarterly.      ALTERED        UNALTERED       

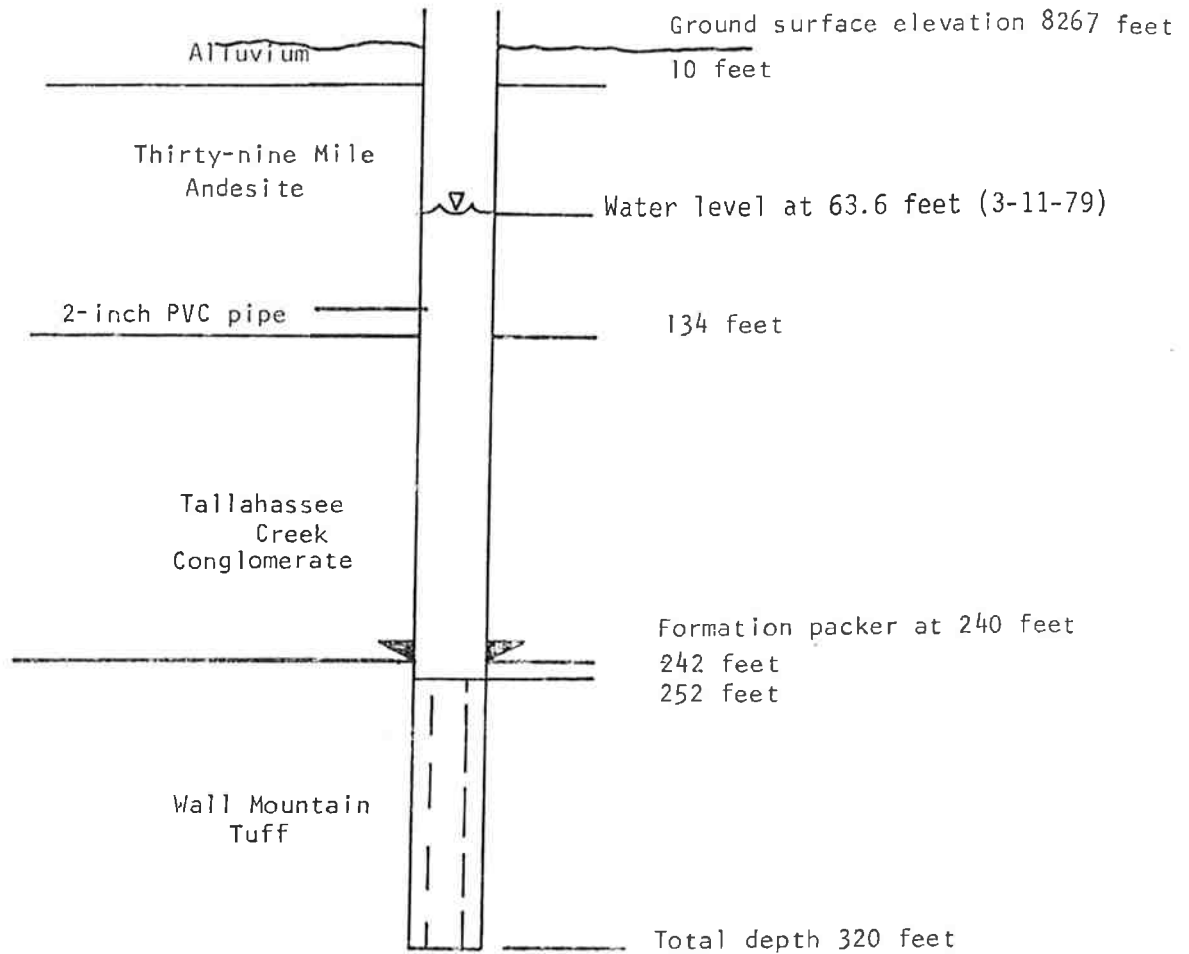
Depth	Log	Alt.	Description
Gal			Alluvium, v. limonitic
T+ml			
			Andesite breccia, yellow 10-20', red-brn. 20-35', v. vx.
40			(Same), gry-grn., v. clayey (ash unit)
			(Same), purple, fresh.
80			
120			
			(Same), m. gry, v. clayey, bentonitic layer.
T+c			
			Cgl., gry. to grn.-gry., fig.-cgl., subang.-subrd., sl. limonitic, clay & sand matrix. Some red nod. 140-150.
160			
200			
240			
T+wm			
			Tuff, m. brn., clayey matrix, limonitic 265-280, hematitic with minor limonite 280-320.
280			
320			
60			

Hole No. 21-216  
 Page 1 of 1

HOLE NO. 21-216

Date of completion: 2-27-79

Date of development: 3-6-79



5 1/8" Ø Hole

Depths taken from ground surface

HANSEN PROJECT

SCHEMATIC CROSS SECTION  
OF MONITORING HOLE

WRIGHT WATER ENGINEERS, INC.

[illegible]

# CYPRUS SAMPLE LOG

Hole 21-219 Logged by M. Kaba Date 3/5/79 Page 1 of 1  
 Driller L. Skeem-Stevens-Harris Drilling Co. TD 220 Date 3/3/79  
 Probe L. Donald-Frontier Logging Corp. TD 213 Date 3/3/79  
 Est. Mud Wt. \_\_\_\_\_ Hole Size 6 3/4 Log Types gamma sp. res. Collar Elev. \_\_\_\_\_  
 Location Hansen Area A Development Sec. 21 T. 17 S. R. 73 W.  
 Area Tallahassee Creek County Fremont State Ca. Collar Coord. N \_\_\_\_\_ E \_\_\_\_\_  
 Remarks \_\_\_\_\_

Describe Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspathic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to vol. 50, no. 1, Colorado School of Mines Quarterly. ALTERED — — — UNALTERED — — —

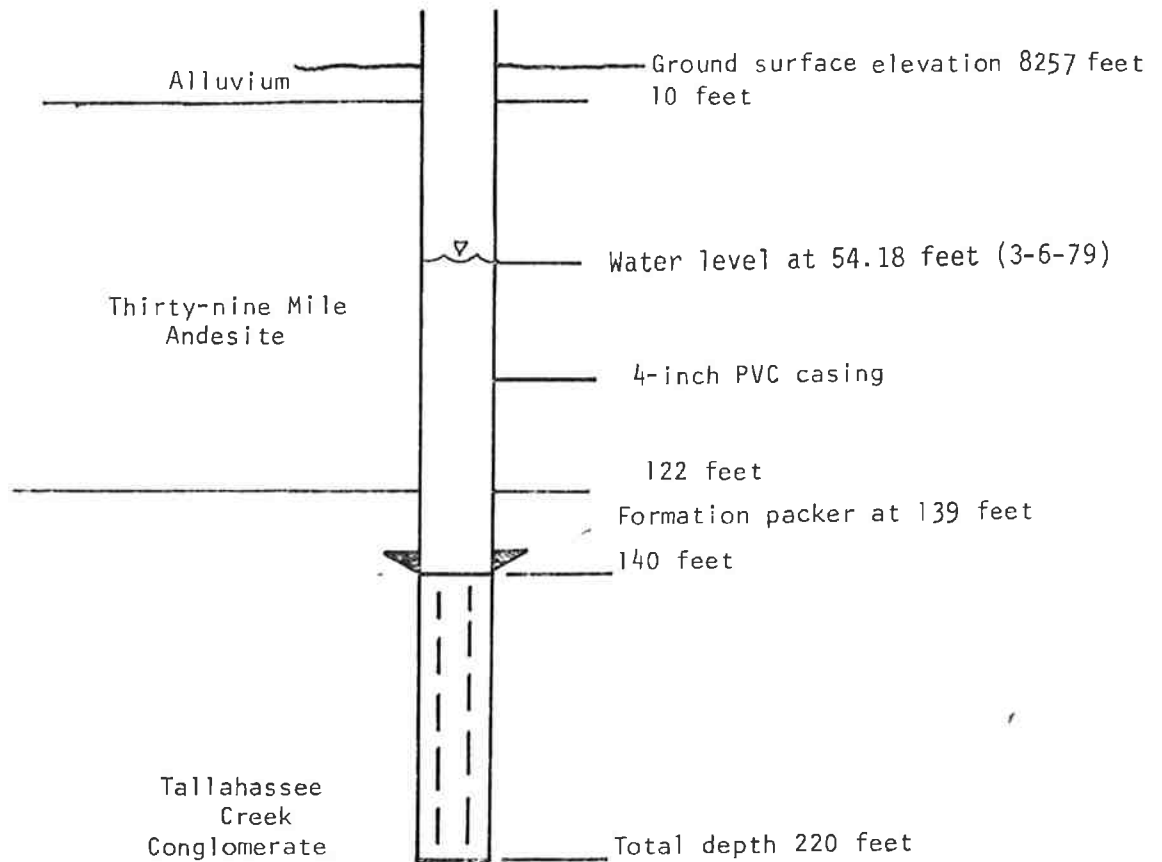
Depth	Log	Alt.	Description
Qal			soil
T+ml			andesite breccia, frag. brn. sd. & lg. mty. w. hematite + limonite staining w/ hrd.
40			
80			(same) purp. gy. w/ sl. gn. gy.
120			
T+e			
160			sgl. gy. grading to gn. brn. sbrd. - skag. gr. sd. & lg. mty. more clay w/ depth, mod. hematite + limonite staining mod. ox. w/ hrd.
200			
40			
80			
20			
60			



HOLE NO. 21-219

Date of completion: 3-3-79

Date of development: 3-5-79



6 3/4" Ø Hole

Depths taken from ground surface

<b>HANSEN PROJECT</b>
<b>SCHEMATIC CROSS SECTION OF MONITORING HOLE</b>
<b>WRIGHT WATER ENGINEERS, INC.</b>

[illegible]

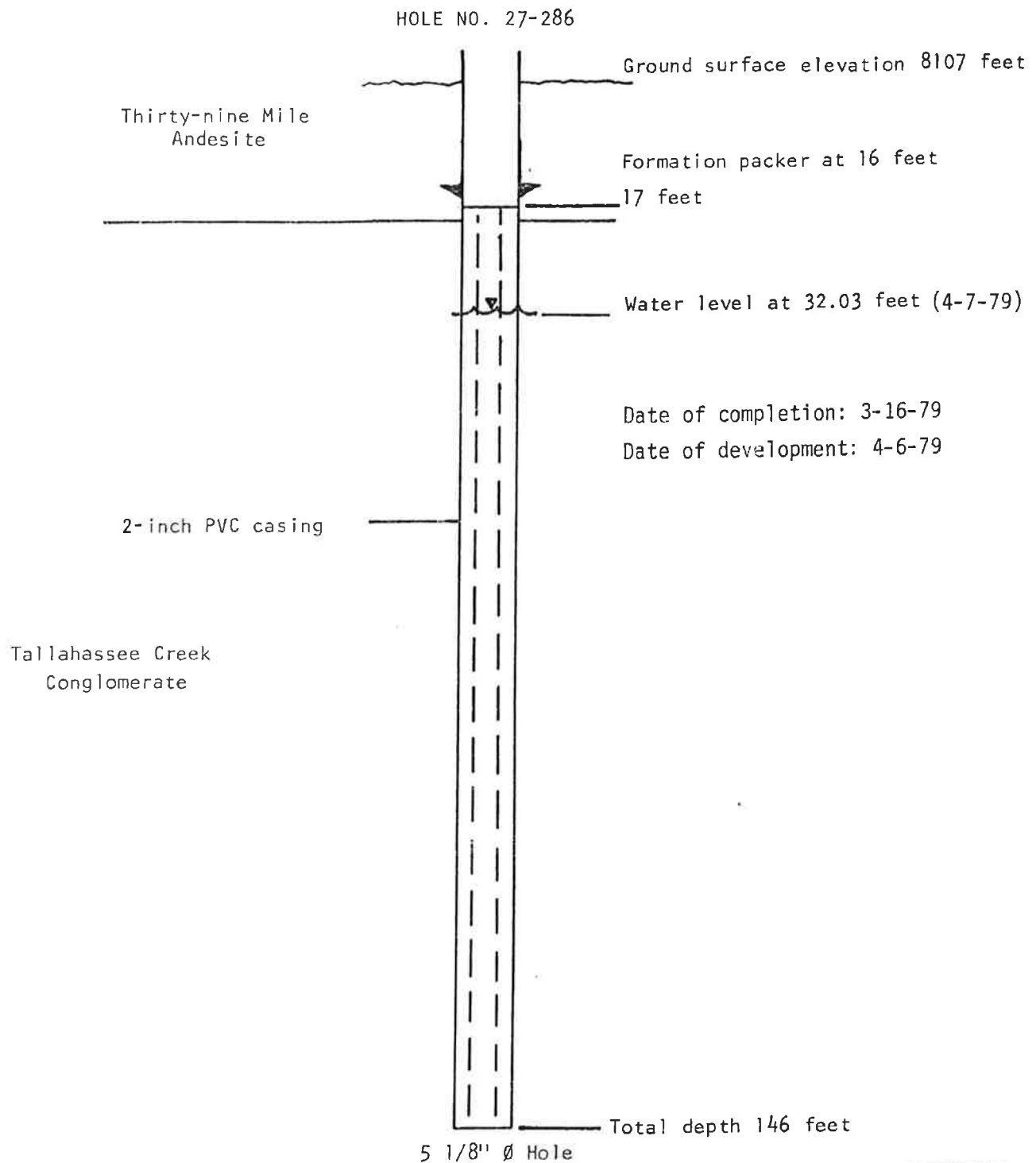
**CYPRUS**  
SAMPLE LOG

Hole 27-286 Logged by M. Kahn Date 3/16/79 Page 1 of 1  
Driller M. Stevens - Stevens + Harris Drilling Co. TD 145 Date 3/16/79  
Probe L. Donald - Frontier Logging Corp. TD 138 Date 3/16/79  
Est. Mud Wt. \_\_\_\_\_ Hole Size 5 1/8 Log Types gamma Collar Elev. \_\_\_\_\_  
Location Picnic Tree, Tallahassee Creek Sec. 27 T 17S R 73W  
Area A County Fremont State Co. Collar Coord. N. \_\_\_\_\_ E. \_\_\_\_\_  
Remarks \_\_\_\_\_

**Describe** Rock Type, Color, Grain Size, Grain Shape, Sorting, Consolidation, Staining (Limonite, Hematite, etc.), Cementation, Effervescence, Composition (Quartzose, Arkosic, Feldspatic, Tuffaceous, etc.) Alteration. Describe Igneous and Metamorphic Rocks According to Vol. 50, no. 1, Colorado School of Mines Quarterly.      ALTERED        UNALTERED       

Depth	Log	Alt.	Description
Ttm	V		rhyolite, breccia, cong. brn, sd. + clay. mtx, v. gne + hite. stn, v. ex. with
	V		(same) brn.
40	V		(same) gy. to purp. gy., mod. hematite stn, mod. ex.
PE	V		clst. agl, gn. gy., shrd. - shang. gr, sd. + clay. mtx, mod. hematite) +
80	V		limonite. stn, mod. ex. with rd. schist?
	V		(same) gy.
120	V		
60	V		
00	V		
40	V		
80	V		
20	V		
60	V		

Hole No. 27-286  
 Page 1 of 1



Depths taken from ground surface

**HANSEN PROJECT**

**SCHEMATIC CROSS SECTION  
OF MONITORING HOLE**

**WRIGHT WATER ENGINEERS, INC.**

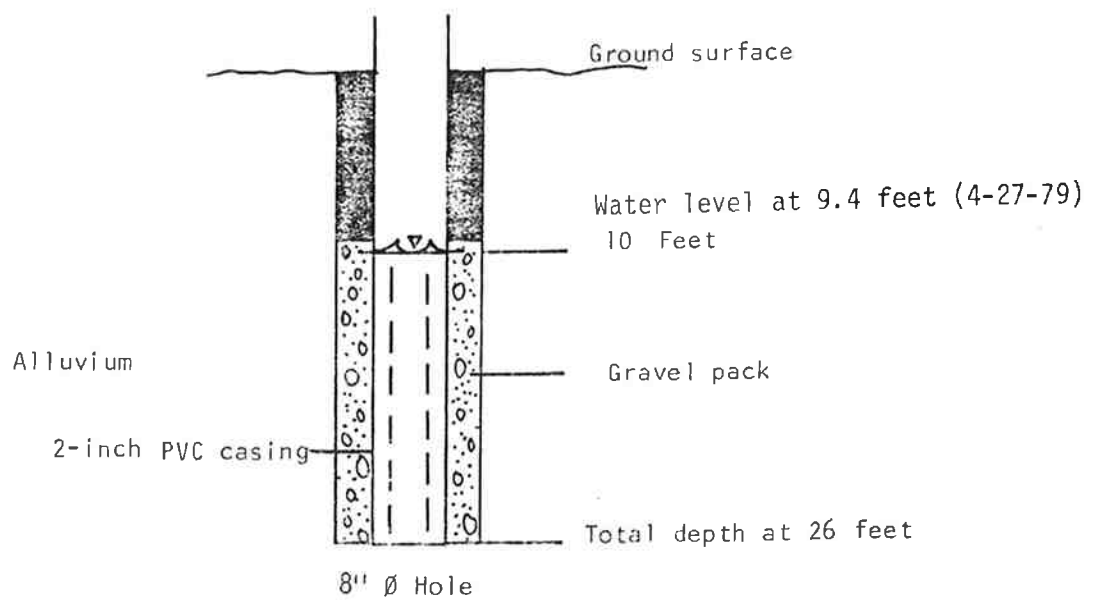
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453,381 x 4,265,836

HOLE NO. 109  
SITE NO. 4409

Date of completion: 10-12-78  
Date of development: April, 1979



Depths taken from ground surface

**HANSEN PROJECT**

**SCHEMATIC CROSS SECTION  
OF MONITORING HOLE**

**WRIGHT WATER ENGINEERS, INC.**