

## FORM 8.15A MONITORING PROGRAM SUMMARY

Operator: LCT Energy LP

Operation Name: Rustic Ridge #1 Expansion

Permit #: 65131301

**Mark parameters to be measured with an "\*\*"**

Monitoring Point No. (4 digits max.)	MNWR-01	INDCR-01	INDCR-02	INDCR-03	CHPCR-DS	CHPCR-US
Quad Map ID	Donegal	Seven Springs	Seven Springs	Seven Springs	Donegal	Donegal
Latitude (d m s)	40° 04' 54.47"	40° 04' 14.88"	40° 05' 22.64"	40° 06' 02.66"	40° 04' 44.75"	40° 06' 49.10"
Longitude (d m s)	79° 22' 48.87"	79° 21' 28.80"	79° 20' 50.49"	79° 19' 40.79"	79° 22' 49.22"	79° 23' 40.12"
Surface Elevation (ft)	1560	1468	1500	1560	1560	1734
Location Description	Downstream Minnow Run (38363)	Downstream Indian Creek (38235)	Midstream Indian Creek (38235)	Upstream Indian Creek (38235)	Downstream Champion Creek (38337)	Upstream Champion Creek (38337)
Type**	STRM	STRM	STRM	STRM	STRM	STRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*	*	*	*
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

(\*\*)Type:

AMBIT - Ambient Location  
DMODS - Deep Mine Opening Discharge  
DRLHO - Drill Hole  
LYSMT - Lysimeter  
MDSEP - Mine Drain Seep  
MPIMP - Impoundment  
LCHDR - Leachate Drain

MPOGW - Oil & Gas Well  
MPSED - Sediment Pond  
MPTRM - Treatment Facility  
MPWEL - Well  
MTRWL - Monitoring Well  
PDKWL - Private Drinking Well  
UNK - Unknown

PF - Primary Facility  
PZOMT - Piezometer  
SF - Sub Facility  
SPRG - Spring  
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UDCRF - Underdrain for Coal Refuse

(\*\*\*) microSiemens/centimeter

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Monitoring Point No. (4 digits max.)	CHPCR-M1	28013-01	38390-01	38393-01	38394-01	38403-01
Quad Map ID	Donegal	Seven Springs	Seven Springs	Seven Springs	Seven Springs	Seven Springs
Latitude (d m s)	40° 06' 06.09"	40° 07' 23.36"	40° 04' 34.58"	40° 05' 09.74"	40° 05' 28.49"	40° 06' 31.60"
Longitude (d m s)	79° 23' 45.11"	79° 21' 29.41"	79° 21' 41.75"	79° 21' 10.66"	79° 20' 50.07"	79° 19' 42.86"
Surface Elevation (ft)	1634	1555	1535	1514	1520	1570
Location Description	Midstream Champion Creek (38337)	DS UNT #10 of Fourmile Run (43610)	DS UNT #5 to Indian Creek (38390)	DS UNT #10 to Indian Creek (38393)	DS UNT #13 to Indian Creek (38394)	DS UNT #23 to Indian Creek (38403)
Type**	STRM	STRM	STRM	STRM	STRM	STRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*	*	*	*
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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 PZOMT - Piezometer  
 SF - Sub Facility  
 SPRG - Spring  
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(\*\*\*) microSiemens/centimeter

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Monitoring Point No. (4 digits max.)	50550-01	UT CHPCR-01	SW69	SW483	SW484	SW485
Quad Map ID	Seven Springs	Donegal	Donegal	Donegal	Donegal	Donegal
Latitude (d m s)	40° 07' 20.37"	40° 06' 04.48"	40° 05' 46.78"	40° 06' 05.99"	40° 06' 04.98"	40° 05' 48.57"
Longitude (d m s)	79° 21' 28.98"	79° 23' 45.40"	79° 23' 53.64"	79° 23' 39.25"	79° 23' 41.97"	79° 23' 53.19"
Surface Elevation (ft)	1550	1632	1606	1660	1643	1608
Location Description	DS UNT #9 to Fourmile Run (43609)	DS UNT #9 to Champion Creek Outfall 002	DS Champion Creek (38337) Outfall 001	US UNT #9 to Champion Creek Outfall 003	DS Outfall 003 & US Outfall 002	US Champion Creek (38337) Outfall 001
Type**	STRM	STRM	STRM	STRM	STRM	STRM
Flow (cfs/gpm)	*	*	*	*	*	*
Water Elevation (ft)						
Field pH	*	*	*	*	*	*
Lab pH	*	*	*	*	*	*
Temperature (°C)	*	*	*	*	*	*
Alkalinity (mg/l)	*	*	*	*	*	*
Acidity (mg/l)	*	*	*	*	*	*
Iron (mg/l)	*	*	*	*	*	*
Manganese (mg/l)	*	*	*	*	*	*
Aluminum (mg/l)	*	*	*	*	*	*
Sulfate (mg/l)	*	*	*	*	*	*
Suspend Solids (mg/l)	*	*	*	*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*	*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	S159	PZ-1D	PZ-1M	PZ-1S	PZ-2D	PZ-2M
Quad Map ID	Seven Springs	Donegal	Donegal	Donegal	Seven Springs	Seven Springs
Latitude (d m s)	40° 05' 41.85"	40° 06' 04.65"	40° 06' 04.62"	40° 06' 04.59"	40° 06' 29.40"	40° 06' 29.33"
Longitude (d m s)	79° 21' 25.15"	79° 23' 40.28"	79° 23' 40.39"	79° 23' 40.48"	79° 21' 11.66"	79° 21' 11.81"
Surface Elevation (ft)	1692	1670.1	1670.3	1670.1	1671.3	1671.3
Location Description	R. Lilly Spring	Piezometer	Piezometer	Piezometer	Piezometer	Piezometer
Type**	SPRG	PZOMT	PZOMT	PZOMT	PZOMT	PZOMT
Flow (cfs/gpm)	*					
Water Elevation (ft)		*	*	*	*	*
Field pH	*					
Lab pH	*					
Temperature (°C)	*					
Alkalinity (mg/l)	*					
Acidity (mg/l)	*					
Iron (mg/l)	*					
Manganese (mg/l)	*					
Aluminum (mg/l)						
Sulfate (mg/l)	*					
Suspend Solids (mg/l)	*					
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*					
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	PZ-2S	PZ-3D	PZ-3M	PZ-3S	PZ-4D	PZ-4M
Quad Map ID	Seven Springs	Seven Springs	Seven Springs	Seven Springs	Seven Springs	Seven Springs
Latitude (d m s)	40° 06' 29.27"	40° 05' 37.51"	40° 05' 37.39"	40° 05' 37.28"	40° 04' 45.59"	40° 04' 45.51"
Longitude (d m s)	79° 21' 11.96"	79° 21' 19.77"	79° 21' 19.74"	79° 21' 19.69"	79° 22' 11.87"	79° 22' 11.97"
Surface Elevation (ft)	1671.6	1741.9	1741.9	1741.6	1715.1	1715.2
Location Description	Piezometer	Piezometer	Piezometer	Piezometer	Piezometer	Piezometer
Type**	PZOMT	PZOMT	PZOMT	PZOMT	PZOMT	PZOMT
Flow (cfs/gpm)						
Water Elevation (ft)	*	*	*	*	*	*
Field pH						
Lab pH						
Temperature (°C)						
Alkalinity (mg/l)						
Acidity (mg/l)						
Iron (mg/l)						
Manganese (mg/l)						
Aluminum (mg/l)						
Sulfate (mg/l)						
Suspend Solids (mg/l)						
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***						
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	PZ-4S	PZ-7D	PZ-9D	SW509	SW510	SW511
Quad Map ID	Seven Springs	Stahlstown	Donegal	Stahlstown	Seven Springs	Seven Springs
Latitude (d m s)	40° 04' 45.41"	40° 08' 47.01"	40° 07' 11.72"	40° 08' 01.63"	40° 06' 58.19"	40° 07' 13.85"
Longitude (d m s)	79° 22' 11.97"	79° 20' 49.37"	79° 23' 49.61"	79° 20' 44.00"	79° 20' 47.06"	79° 21' 50.18"
Surface Elevation (ft)	1716.0	1640.64	1744.06	1761	1700	1517
Location Description	Piezometer	Piezometer	Piezometer	Trib #43592 to Fourmile Run	UNT #31 to Indian Creek	Trib #43610 to Fourmile Run
Type**	PZOMT	PZOMT	PZOMT	STRM	STRM	STRM
Flow (cfs/gpm)				*	*	*
Water Elevation (ft)	*	*	*			
Field pH				*	*	*
Lab pH				*	*	*
Temperature (°C)				*	*	*
Alkalinity (mg/l)				*	*	*
Acidity (mg/l)				*	*	*
Iron (mg/l)				*	*	*
Manganese (mg/l)				*	*	*
Aluminum (mg/l)				*	*	*
Sulfate (mg/l)				*	*	*
Suspend Solids (mg/l)				*	*	*
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***				*	*	*
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1	1	1	1
End Date (mn / yr)	2	2	2	2	2	2
Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

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Monitoring Point No. (4 digits max.)	SW512	SW513	SW514			
Quad Map ID	Seven Springs	Seven Springs	Donegal			
Latitude (d m s)	40° 07' 20.92"	40° 07' 23.21"	40° 07' 12.81"			
Longitude (d m s)	79° 22' 13.91"	79° 22' 17.60"	79° 23' 30.36"			
Surface Elevation (ft)	1480	1485	1630			
Location Description	Fourmile Run (43605)	DS UNT #8 to Fourmile Run (43605)	US UNT #8 to Fourmile Run (43605)			
Type**	STRM	STRM	STRM			
Flow (cfs/gpm)	*	*	*			
Water Elevation (ft)						
Field pH	*	*	*			
Lab pH	*	*	*			
Temperature (°C)	*	*	*			
Alkalinity (mg/l)	*	*	*			
Acidity (mg/l)	*	*	*			
Iron (mg/l)	*	*	*			
Manganese (mg/l)	*	*	*			
Aluminum (mg/l)	*	*	*			
Sulfate (mg/l)	*	*	*			
Suspend Solids (mg/l)	*	*	*			
Dissolved Solids (mg/l)						
Specific Conductance (S/cm)***	*	*	*			
Osmotic Pressure (mOs/kg)						
Chlorides (mg/l)						
Start Date (mn /yr)	1	1	1			
End Date (mn / yr)	2	2	2			
Frequency	Quarterly	Quarterly	Quarterly			

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